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ABSTRACT BOOK

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ORAL

ABNORMAL PLACENTATION - 042

Ultrasonographic and pathological diagnostic correlations in abnormal placentation

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Introduction: Routine obstetrical and maternal-fetal clinical practice involves the ultrasonographic (US) assessment of the placental structure throughout gestation by standard 2D examination, but also through advanced 3D and Doppler techniques. The aim of the study is to achieve systematic correlations between abnormal placentation evaluated by ultrasonography and pathological diagnosis of this gestational structure.
Materials and Methods: Tertiary multicentric research including 727 unselected pregnancies diagnosed by ultrasonography with placental or fetal membranes abnormalities, in the 4 years range 2012-2016. Ultrasound scanning was followed by morphological study of these structures. US examination interval ranged from 11(+4) - 38(+5) gestational weeks. The study includes 716 singletons and 11 multiple pregnancies. US diagnostic evaluation included transabdominal, transvaginal or mixed assessment.
Clinical cases and summary results: Ultrasound and histological correlations were observed in: placental infarctions 73 cases (10.04%), placental echolucencies 16 (2.2%), placenta circummarginata 42 (5.77%). placental tumors 7 (0.96%). placenta praevia 23 (3.16%). retroplacental bleeding 49 (6.74%). amniotic bands 29 (3.98%). morbidly adherent placenta (accreta. increta. percreta) - 28 (3.85%). molar placenta 27 (3.71%). succenturiate lobes 42 (5.77%). placental abruption 9 (1.23%).
Conclusion: A significant number of placental abnormalities can be detected by ultrasonography from the first trimester of pregnancy. Standard 2D US examination is essential for diagnosis, but 3D and Doppler advanced ultrasound techniques complement and support the evaluation. Some placental macroscopic anatomical structures have obvious and well defined ultrasound expression, bringing details for the maternal-fetal outcome. There are a significant number of structural or functional fetal anomalies, some with syndromic involvement, whose identification by ultrasound examination should lead to pathological assessment of the placental structure. Some placentation abnormalities detected by ultrasound, can draw attention to the need for invasive prenatal diagnosis.

Keywords: Histological, abnormalities, maternal-fetal outcome.

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Prevalence of placental insufficiency complications on oocyte donation pregnancies

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Introduction: Normal placentation requires development of maternal-fetal inmunotolerance. Placental insufficiency complications of pregnancy, as preeclampsia (PE) and intrauterine growth restriction (IUGR) might be caused by an abnormal maternal immune response to paternally-derived antigens. Pregnancies conceived by oocyte donation (IVF-DO) have to cope with a higher degree of antigenic dissimilarity, which has been linked to an increased rate of placental insufficiency complications. To evaluate such association in our setting, we present a description of our perinatal results in IVF-DO pregnancies.
Materials and methods: The study group included 136 women who conceived through IVF-DO within 2011-2015 and were followed up at our center. Medical files were reviewed to make a description of the basal characteristics, looking for perinatal complications including PIH, PE, IUGR, neonatal intensive care unit (NICU) admission and perinatal mortality. We searched for differences in obstetric outcomes between singleton and multiple pregnancies.
Clinical cases and summary results: We studied 136 pregnancies, 94 singletons and 42 multiples (41 twins and one triplet). Maternal age distribution was bimodal with two peaks at 30 and 40 years. Mean body mass index (kg/m2) was 24.2(SD3.6). In singleton pregnancies, prevalence (%) of PE and IUGR was 7.5 and 8.5 respectively, while in multiple pregnancies reached 17.1 and 7.5. These differences were not statistically significant. There were 11 cases of IUGR, 8 (7.3%) as percentile <3rd with no doppler anomalies, one (1.2%) with an elevated doppler resistive index on umbilical artery and two with absent telediastolic umbilical flow. Four of them were early onset (diagnosed before 34 weeks) and seven of late onset. There were 14 (10.4%) cases of preeclampsia, all of late onset except for one which delivered at 27 weeks due to setting of HELLP syndrome. Mean gestational age at delivery (weeks) was 38.9 (SD7.5) in singletons and 35.7 (SD3.6) in multiples. Mean neonatal weight was 2795 (SD784) grams. There were 3 cases of Apgar <7 at 5 minutes (2.2%), 13 (9.6%) infants who required NICU admission, two postnatal deaths, (one on a singleton, one on a twin pregnancy), and one stillbirth.
Conclusion: Given that in spontaneously conceived pregnancies in Spain, prevalence of PE in singletons is 2.5-3% and 8-9% in multiples, we have observed a higher rate in both subgroups of IVF-DO. These data are consistent with previous studies suggesting that IVF-DO

gestations have a higher prevalence of placental insufficiency complications.

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Impact of risk factors in specific areas of behavioral development in monochorionic healthy twins investigated with Griffiths' scale

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Introduction: Different studies had widely demonstrated that complications of monochorionic (MC) pregnancies increase mortality and morbidity of newborn twins. The follow-up of these children assesses their neurological outcome, trying to identify the associated risk factors. The aim of the present study was to evaluate the impact of risk factors associated with MC pregnancies (GA, TTTS, Apgar, level of Hb at birth, BPD) on specific areas of neurobehavioral development in a population of healthy MC twins at 1 (64.1%) 2 (28.2%) and 3 (7.7%) years of age. In particular we wanted to investigate the impact of risk factors that are usually associated with MC pregnancies on locomotor, personal and social, language, eye and hand coordination and performance development.

Materials and methods: It was a retrospective observational study. Between 2008-2015 were studied 82 children at V. Buzzi Children's Hospital born between 2007-2012 from 48 MC pregnancies (mean GA = 31.3 ± 2.61, range = 27.30-35.5, mean BW = 1452 ± 448g, range = 620-2870g). Initially were enrolled 91 children: the 10,1% had a motor impairment and they were excluded, while the 89,9% were healthy. In the present study neurobehavioral outcomes of healthy MC twins were evaluated using the Griffiths Mental Development Scale (GMDS, Griffiths, 1984). The GMDS was utilized to gain a measure of 5 areas of child development: locomotor, personal and social, language, eye and hand coordination and performance.

Clinical cases and summary results: Data were analyzed with SPSS 20.0. Pearson's and Kendall's correlations and linear regressions were performed to investigate the impact of risk factors associated with MC pregnancies (GA, TTTS, Apgar, level of Hb at birth, BPD) on children's neurobehavioral development. Lower GA predicts worst scores in personal and social Griffiths'subscale (β=0.241, sig.=0.029). TTTS during pregnancies is related to worst scores in eye and hand coordination Griffiths'subscale (T=−0.201, sig.=0.035). No relations were found between TTTS, considering different treatment, and scores obtained in Griffiths'subscale. Lower Apgar at minute 1 predict worst scores in personal and social Griffiths'subscale (β=0.273, sig.=.016) and worst scores in language Griffiths'subscale (β=0.319, sig.=0.005). Higher level of Hb at birth predicts worst scores in motor Griffiths'subscale (β=−0.294, sig.=0.011). BPD predicts worst scores in language Griffiths'subscale (β=−0.350, sig.=.001).

Conclusion: MC pregnancies have an impact on neurobehavioral development of healthy MC twins. MC twins with lower GA, lower Apgar at minute 1 and higher level of Hb at birth are at risk to develop difficulties in personal and social areas. MC twins suffering from TTTS independently from the treatment are at risk to develop difficulties in eye and hand coordination. Lower Apgar at minute 1

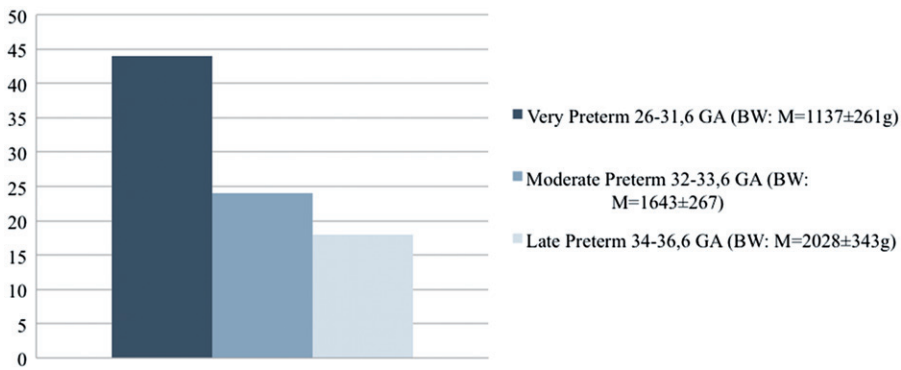

Table 1 – *sample characteristics*

Apgar minute 1	M=6.58	SD=1.88		
Apgar minute 5	M=8.38	SD=1.14		
Hb at birth	M=16.01	SD=3.21		
BPD	NO	n=79 (96.3%)		
	YES	n=3 (3.7%)		
TTTS	NO	n=60 (73.2%)		
	YES	n=22 (26.8%)	Untreated	n=3 (13.6%)
			Laser	n=9 (40.9%)
			Amnioreduction	n=10 (45,5%)

and BPD could impair the language development. Further large cohort studies are needed to confirm these data.

Keywords: Monochorionic, twins, healthy, Griffiths mental development scale

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Placenta-associated pregnancy complications in pregnancies complicated with placenta previa

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Introduction: Defective placentation is associated with many pregnancy complications, including preeclampsia, IUGR, PROM, preterm birth, late miscarriage and placental abruption. We believe that an abnormal placental location, such as in of placenta previa, may cause faulty placentation and increase the risk of placental insufficiency associated pregnancy complications. Indeed, placenta previa has been associated with the development of pregnancy complications related to placental insufficiency. With advancing maternal age, fertility treatments and cesarean deliveries the prevalence of placenta previa is rising. We aim to examine the hypothesis that pregnancies complicated with placenta previa have an increased risk of placental insufficiency associated pregnancy complications.
Materials and methods: Our study included all deliveries that took at Soroka University Medical Center (Beer Sheva, Israel) between January 1998 and December 2013. Of them 1249 were complicated by placenta previa and represented our study group. A composite outcome was created to include conditions associated with placental insufficiency. It included hypertensive disorders (i.e. gestational hypertension, mild and severe preeclampsia, HELLP and eclampsia), small for gestational age neonates and placental abruption.
Clinical cases and summary results: Patients with pregnancy complicated by placenta previa had significantly different obstetrical characteristics including bad obstetric history (8% versus 4%, $p<0.001$), recurrent abortions (11% versus 5%, $p<0.001$). Patients with placenta previa had higher rates of vaginal bleeding in the second half of pregnancy (3% versus 0%, $p<0.001$), gestational diabetes (8% versus 5.5%, $p<0.001$), placental abruption (10% versus 1%, $p<0.001$), adherent placenta (4% versus 0.5%, $p<0.001$), preterm delivery (52% versus 8%, $p<0.001$), with a median gestational age of 36 versus 39 weeks, $p<0.001$. The composite outcome was significantly more prevalent in the placenta previa group (21% versus 13%, $p<0.001$).
Conclusion: Our study demonstrated an increased rate of placental insufficiency associated complications in women with placenta previa. This is of clinical relevance and suggests that a careful surveillance for women with placenta previa may help in minimizing maternal, fetal and neonatal complications.

Keywords: Placental pathology, preeclampsia, fetal growth assessment

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The role of decidual natural killer cells in recurrent missed abortions

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Introduction: Recurrent or habitual missed abortions (RMA) are defined as three or more consecutive abortions. In the first trimester of pregnancy habitual missed abortions occur in about 1% of population. The aim of this immuno-histochemical study of decidua in RMA of unknown etiology was to identify subpopulations of decidual lymphocytes in recurrent miscarriages and compare the distribution of immunocompetent cells in artificial abortions and RMA.
Materials and methods: The study included 30 women with at least 2 consecutive miscarriages in the first trimester of pregnancy. Curettements of the third missed abortion were immunohistochemically analyzed. The control group consisted of 20 women without loaded reproductive anamnesis, with the abortion for social reasons. Criteria for exclusion from the study were diagnosed uterine anomalies, positive screening for thrombophilia and women who suffered from diabetes mellitus and disorders in the function of the thyroid gland. Immunophenotyping was performed by immuno-alkaline phosphatase (APAAP) using monoclonal antibodies: CD 56 and CD 57.
Clinical cases and summary results: The number of missed abortions (1,223) was on the average 9.7% of all deliveriies during the test period. Among them RMA were registered in 52 (4.2%) patients and in 30 (57%) the exact etiology of abortions was not determined. RMA was most common in the 25-34 years of age group. The largest number of RMA showed the ultrasound characteristics of missed abortion in 60% of cases and was in nulliparous patients (76.7%). The number of NK CD56 positive cells did not differ significantly between the types of abortion. In the decidual tissue, a number of NK CD57 positive cells was significantly higher in missed abortions compared to artificial interruptions ($p < 0.01$).
Conclusion: The number and phenotypic structure of NK cells are significantly different in normal pregnancy decidua and in RMA. The NK cell dominance is present in the RMA group, in favor of CD56+ and CD 57 of subpopulations.

Keywords: Decidual natural killer cells, recurrent missed abortions

CESAREAN SECTION - 287

Maternal and neonatal outcomes of the gentle caesarean delivery: a clinical report of one and a half years experience in a Dutch hospital

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Introduction: As the global caesarean section (CS) rate raises to alarming levels, a British research group introduces the 'natural caesarean', giving the parents the opportunity to watch the birth and provide an early and uninterrupted skin-to-skincontact (SSC), resulting in higher breastfeeding success rates and an easier bonding process. An enhancement of maternal satisfaction and reduction of pain experience is assumed. Alterations in ambience temperature in the operation room to keep the newborn warm and an extended amount of people present may influence the infection risk post partum. Goal of this research was to prove equal risks compared to the conventional CS, alongside an improvement of maternal satisfaction to support the decision to continue offering the gentle caesarean in our hospital.

Materials and methods: Included were all elective (gentle) CSs at term gestation in the Bronovo hospital between January 2013 and July 2014, compared with the conventional CSs from 2010 to 2013. Excluded were women with diabetes mellitus, connective tissue disease, immunocompromitation, fever or active infectious diseases, altering a possible infection risk. The operative technique of the gentle CS is unaltered. However, the ambient temperature will be heightened and the patient will be covered by a Bair Hugger preventing the newborn from cooling down. Parents get the opportunity to see their baby been born through a transparant window in our operation blanket and mother and child will be reunited, if both in good health, by SSC. This will not be interrupted during the stay at the operation complex.

Clinical cases and summary results: The introduction of the gentle CS did not increase the incidence of the surgical site infections (SSIs) or other postoperative infections. Moreover, the incidence of SSI in our cohort was comparable to the national numbers reported by the RIVM. Since the introduction of the gentle CS, mainly positive feedback was given. Therefore the need for patient information concerning the safety of mother and child became more apparent. The application of measures (e.g. warmed mattress, bair hugger and higher ambience temperature) to prevent mother and child from cooling down is successful, an important procedure as the newborn lacks the ability to regulate his/her core body temperature and hypothermia of the mother causes higher rates of SSIs. The introduction of the gentle CS seemed to result in a shortening of operating time, less door movements, less blood loss and a higher post-operative body temperature. This may be a representation of a general improvement and awareness, possibly boosted by the gentle CS, of restraining potential risk factors to a minimum, presumably

Postoperative infections and their consequences

	Conventional caesarean section			Gentle caesarean section			Difference in percentage (95% CI)	P-value
	n	mean(range)	std	n	mean(range)	std		
Total	739			246				
Surgical site infection								
Superficial(%)	7 (0.9)			2 (0.8)			-0.1 (-1.5to1.2)	NA
Deep(%)	5 (0.7)			1 (0.4)			-0.8 (-1.9to0.3)	0.466 ¥
Onset of SSI (in days)‡		13.5 (4-28)	8.0		10.3 (5-17)	5.0		0.561 †
Other infections								
Cystitis (%)	6 (0.8)			1 (0.4)			-0.4 (-1.4to0.6)	0.687 ¥
Mastitis(%)	12 (1.6)			1 (0.4)			*-1.2 (-2.4to0.0)*	0.204 ¥
Pneumonia(%)	1 (0.1)			-			-0.1 (-1.2to1.0)	NA
Length of admission (days)¶		3.1 (2-12)	0.7		2.9 (2-7)	0.6		<0.001 †
Re-admission by indication (within 30 days postpartum) (%)	11 (1.5)			2 (0.8)				0.536 ¥
SuperficialSSI	1 (9.1)			-				
DeepSSI	3 (27.3)			1 (50)				
Mastitis	2 (18.2)			-				
Pneumonia	1 (9.1)			-				
FUO*	4 (36.4)			1 (50)				

* fever of unknown origin
‡ n=12 for conventional CS, n=3 for gentle CS (=amount of all SSIs)
¶ n=736 for conventional CS, n=246 for gentle CS
†Mann-Whitney
¥ Fisher's Exact Test
NA=not applicable

leading to less SSIs. The results showed that the gentle CS was at least as safe as the conventional CS concerning direct neonatal outcomes and a positive trend concerning breastfeeding rates. Although the gentle CS group was small, we could not find an increase of postoperative infection rate, justifying continuation of this relatively recent introduced family centred care.
Conclusion: We showed a comparability in maternal infection rate and immediate neonatal outcomes between the gentle CS (*n*=287) and the conventional CS (*n*=875), indicating that the gentle CS is a safe alternative. With the introduction of the gentle CS the amount of door movements, length of surgery and total perioperative blood loss declined significantly, which might lead to a lower risk of surgical site infection.

Keywords: Gentle caesarean section

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Low versus normal first-trimester maternal papp-a levels and pregnancy outcome

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Introduction: Pregnancy-associated placental protein A (PAPP-A) is a glycoprotein produced by the placental syncytiotrophoblasts, and it is detectable in the maternal circulation from early pregnancy. PAPP-A is responsible for the cleavage of insulin-like growth factor binding protein-4 (IGFBP-4) from insulin-like growth factor (IGF), and thus it contributes to the regulation of fetal growth. PAPP-A is used as part of the first-trimester combined screening (FTS) for Down's syndrome but has also been studied as an independent marker for adverse pregnancy outcome. The risks of aneuploidy, hypertensive disorders,spontaneous abortion,small for gestational age births,prematurity and stillbirths have been shown to increase with decreasing PAPP-A levels. Still, the value of PAPP-A as an individual marker is debatable, and different cut-off values for low PAPP-A have been used in previous studies. The objective of our study was to estimate the clinical significance of low PAPP-A (<0.3 MoM) in our routinely screened population in the Helsinki University District area.
Materials and methods: A cohort of 961 pregnant women with low PAPP-A levels (< 0.3 MoM) and 961 age-matched women with normal PAPP-A levels (0.9-1.1 MoM) were followed over a four year period (2009-2012).The reference group selection was based on the assumption that the exposure related to decreased PAPP-A production would be absent in women with PAPP-A level close to 1.0 MoM (0.9 - 1.1 MoM). The FTS was performed according to the guidelines of the Finnish Ministry of Social Affairs and Health and the NT measurement was performed according to the Fetal Medicine Foundation protocol. Patients were considered screen positive with NT $\geq$3 mm or a FTS risk $\geq$1/250, and genetic counseling with chromosomal analysis was offered in these pregnancies. Pregnancy-induced hypertension (PIH) was identified as a normal blood pressure in the early pregnancy and a measurement $\geq$145/90 mmHg at least twice during pregnancy. Increased blood pressure with proteinuria >300 mg/ 24 h was identified as preeclampsia. A spontaneous abortion was identified as a loss of the pregnancy or fetal viability before completed 22 pregnancy weeks, and preterm delivery as any delivery before completed 37 pregnancy weeks. Fetal death before delivery and after completed 22 pregnancy weeks was identified as stillbirth (SB), and small for gestational age (SGA) was identified as a gender-specific birth weight less than −2 SD. The prevalence of adverse pregnancy outcomes was determined. This included aneuploidies, fetal structural abnormalities, hypertensive disorders of pregnancy, spontaneous abortion, PTD, SB and SGA births.
Clinical cases and summary results: Compared to the reference, the overall incidence of pregnancy failure (OR 17.8, p <0.001) was increased in the group with low PAPP-A. In the study group, the risk of aneuploidies (OR 116.1) and spontaneous abortion (OR7.7) was significantly higher (p <0.001), but no difference was detected in the incidence of major structural abnormalities (p=0.738). The incidences of preterm delivery (OR 2.5), PIH (OR 1.9), preeclampsia (OR 10.9) and small for gestational age births (OR 4.9) were all significantly higher in the group with low PAPP-A. Nine cases (0.9 %) of stillbirth occurred in pregnancies with low PAPP-A whereas there were none in the reference group.
Conclusion: Low PAPP-A and the associated adverse outcomes reflect poor placental function. However, due to controversial data, a low positive predictive value and a lack of follow-up consensus, PAPP-A can not be considered suitable for routine screening of adverse pregnancy outcome. Still, low PAPP-A is clearly a warning sign and risks should to be considered in planning the follow-up scheme of pregnancies with low PAPP-A. On the contrary, normal PAPP-A appeared to be reassuring with a very low risk of adverse outcome.

Keywords: PAPP-A, aneuploidy, spontaneous abortion, preeclampsia, preterm delivery, stillbirth

Pregnancy and delivery outcomes in the study and reference groups

	Study group (n=961)	%	Reference group (n=961)	%	*p*-value	OR	95 %CI
All pregnancies not proceeding to delivery*	134	14.0	9	0.9	<0.001	17.1	8.7-33.9
Aneuploidy	104	10.8	1	0.1	<0.001	116.0	16.2-836.6
Spontaneous abortion	30	3.1	4	0.4	<0.001	7.7	2.7-22.0
Structural abnormalities	4	0.4	5	0.5	0.738	0.799	0.2-3.0
Preterm delivery	111	11.6	48	5.0	<0.001	2.5	1.8-3.5
PIH	39	4.8	24	2.5	0.012	1.9	1.1-3.2
Preeclampsia	45	5.5	5	0.5	<0.001	10.9	4.3-27.6
SGA	107	12.9	28	2.9	<0.001	4.9	3.2-7.5
Stillbirth (no chromosomal abnormality)	9	0.9	0	0	<0.001	n/a	

*spontaneous abortion, TOP
PIH=pregnancy induced hypertension
SGA=small for gestational age

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Adherence to guideline based quality indicators for caesarean sections in South Australia

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Introduction: The incidence of caesarean sections (CS) in Australia has shown an upward trend to 34% in 2013.1 A CS is associated with an increased risk of maternal morbidity and mortality.2,3,4 Beside that it has significant cost implications for the health care system in Australia.5,6 Therefore it's important to determine factors which may explain this incidence. International guidelines are developed to assist healthcare professionals, such as gynaecologists and obstetricians, for the decision to perform a caesarean section. Current care will be evaluated according to guideline-based quality indicators, recently developed by Dutch researchers and thereby identify target groups for future improvements.7,8
Materials and methods: Design & setting: A retrospective medical chart review in two hospitals in South-Australia.
Methods: We studied women undergoing a CS between May 1st to July 31st 2015. Women were classified according the Robson classification and we determined adherence to guideline based quality indicators, that were derived from literature. We quantified adherence by calculating performance scores, defined as the number of women in which the indicator was applied to and consistent with, in both elective and emergency CS care.
Clinical cases and summary results: We studied 470 women that had a CS. The main groups of women were nulliparous women having a primary emergency CS (29%) and multiparous women having an elective repeat CS (28%). Four groups with relatively poor adherence, (based on their high frequency of occurrence and low performance scores) were: (1) women with suspected fetal compromise (frequency of occurrence 19%, adherence 29%), (2) women with failure to progress (frequency of occurrence 19%, adherence 85%), (3) women with breech presentation at term (frequency of occurrence 6%, unable to calculate performance scores because of limited documentation) and (4) women with a previous CS (frequency of occurrence 38.7%, adherence 52%).
Conclusion: In women undergoing CS, we identified four groups with relatively poor adherence to the guidelines with indications for CS. Future efforts can be made in those categories for improvement of care.

Keywords: Caesarean section, quality indicators, clinical guidelines, practice guidelines

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Patient decision aid with individual risk estimation: an effective tool in choosing the mode of delivery after cesarean section

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Quality indicators on elective CS	Frequency of occurence (%) N = 470	Performance score (%)
Preterm breech delivery (frank, complete breech)	17 (3.6%)	??
Breech presentation at term	29 (6.2%)	??
Offer external cephalic version in case of non-cephalic position	25 (5.3%)	12 (48%)
Previous CS	182 (38.7%)	
* 1x previous CS	* 116 (63.7%)	
Discussed VBAC vs. CS		95 (52.2%)
Inform on risks and chance for successful VBAC		56 (30.8%)
** >=2x previous CS (CS recommended)	**66 (36.3%)	
Quality indicators on emergency CS		
In case of suspected fetal distress use STAN (ST-analysis) or micro blood analysis	89 (18.9%)	25 (29.1%)
In case of non-progressive labour first stage:	91 (19.4%)	
Rupture of membranes		91 (100%)
Urinary catheterization		80 (87.9%)
Use of pain medication		81 (89%)
Preferably use of epidural analgesia		78 (85.7%)
Augmentation of labour		79 (86.8%)
Adequate contractions*		55 (60.4%)
In case of non-progressive labour second stage:	36 (7.7%)	
Active pushing recommended		
Adequate contractions recommended*		30 (83.3%)
Consider vacuum extraction if the head is <1/5th palpable per abdomen		26 (72.2%) 14 (38.9%)

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Introduction: International guidelines indicate that when no contra-indication for vaginal birth after cesarean (VBAC) exists, women pregnant after a previous cesarean section (CS) should be able to choose between an intended VBAC or an elective repeat cesarean section (ERCS). Although in the Netherlands the majority of women opt for intended vaginal delivery, previous studies showed that in many cases women were not adequately informed about their options. We developed a patient decision aid (DA) aiming to increase guideline adherence in counseling women pregnant after CS and to enhance patient involvement in decision making while not leading to an increase in CS rate.
Materials and methods: Women pregnant after one previous CS without a contra-indication for an intended VBAC were enrolled in six matched pairs of hospitals. Women in the intervention hospitals received a DA, including both information on benefits and risks of intended VBAC or ERCS and a prediction model to calculate the individual VBAC probability. Counseling in the control hospitals was performed according to usual care. The hypothesis was that the use of a DA did not lead to a decrease in VBAC rate. The VBAC rate in the period before the study started was 48%. A difference of >10 % was considered 'inferior' care. The sample size needed was 400 per study arm.
Clinical cases and summary results: We included 924 women of whom 483 were enrolled in the intervention group and 441 in the control group. In total 256 women filled in a questionnaire on decision making: in the intervention group 133 of 137 women (98%) stated they were involved in the choice for the mode of delivery, as compared to 78 of 119 women (68%) in the control group ($p < 0.001$). The total VBAC rate was comparable (217 (45%) versus 203(46%)). In the intervention group more women chose an ERCS (201 (42%) versus 137 (31%), adjusted odds ratio (OR) 1.59 (95% BI 1.17-2.15). In the intervention group, 217/282 women attempting VBAC delivered vaginally (77%), compared to 203/304 women in the control group (67%) (Adjusted OR 1.44 (0.97-2.14)). Consequently, 10% more emergency CS were performed in the control group. After correcting for confounders, the odds ratio for an emergency CS in the intervention group compared to the control group was 0.57 (95% BI 0.39-0.81).
Conclusion: Implementing a decision aid for mode of delivery after CS results in improved patient involvement, an unchanged VBAC rate but better risk selection with a 43% reduction in the emergency CS rate.

Keywords: Vaginal birth after cesarean, repeat cesarean section, decision aid

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Niche ratio after single- or double-layer interrupted closure: a prospective assessment of primary cesarean hysterotomy scar using saline contrast sonohysterography

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Introduction: The formation of uterine niches at the site of cesarean section (CS) is a complication of CS. Numerous studies have suggested the potential involvement of a niche in uterine rupture, placenta accrete, cesarean scar pregnancy (CSP) in a future pregnancy, and postmenstrual spotting. Whether suture techniques can affect niche development is not yet fully established, partly due to the complexities in diagnosing a uterine niche and the scarcity of prospective studies on this topic. We analyzed the incidence and severity of niches formed at the site of the cesarean scar in interrupted single- and double-layer sutures for primary CS by saline contrast sonohysterography (SCSH), which has been reported to have a higher diagnostic efficacy for identifying niches than transvaginal sonography.
Materials and methods: An interventional prospective cohort study of women undergoing their first CS with a transverse lower uterine segment incision was performed between June 2011 and July 2014. SCSH was performed 3-4 months after CS, and in the case of a niche, the depth and residual myometrium were recorded. The severity of the niche was expressed as niche ratio, a ratio of the niche depth to the sum of the niche depth and residual myometrium thickness. The predictors of a niche included in the univariate analysis were the maternal age, gestational week, plural fetal pregnancy, primipara, preeclampsia, cervix dilatation $\geq$5 cm, retroflexion of the uterus, and blood loss, and these were extracted using logistic regression analysis.
Clinical cases and summary results: 267 women undergoing primary CS were included. Single-layer interrupted sutures were used in 58 women, and double-layer interrupted sutures were used in 209. Niches were identified in 14/58 (24.1%) patients with single-layer interrupted sutures and in 55/209 (26.3%) with double-layer interrupted sutures (p= 0.74). The frequency of patients with niche ratio $\geq$0.4 was significantly higher in the single-layer interrupted sutures group than in the double-layer interrupted sutures group (7/58 [12.1%] versus 6/209 [2.9%], p= 0.004). Single-layer closure was associated with more than a five-fold increase in the odds of a larger niche (niche ratio $\geq$0.4) (odds ratio, 5.59, 95% confidence interval [CI], 1.71-18.28), regardless of the maternal age, gestational wk, plural fetal pregnancy, primipara, preeclampsia, cervix dilatation $\geq$5 cm, and retroflexion of the uterus. Blood loss per 100 mL was also associated with an increased odds of a larger niche (odds ratio, 1.11, 95% CI, 1.03-1.19).
Conclusion: The incidence of large niche formation(niche ratio $\geq$0.4) was significantly lower with double-layer closure, although it may not increase the overall frequency of niche formation. The odds of a larger niche were more than five-fold higher with single-layer closure. Our study provided critical results that can be used for better CS planning, patient counseling, and designing larger multicenter studies.

Keywords: Cesarean section, hysterotomy, suture techniques

002

Adverse obstetric outcomes with endometriosis: meta-analyses

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Introduction: Women with endometriosis at pregnancy have known an increased risks of impaired obstetric outcomes. The objective of this study was to assess the association between women with endometriosis and adverse obstetric outcomes.
Materials and methods: Two reviewers independently determined all prospective cohort study, retrospective cohort study, multicentric, observational and cohort study, population-based prospective cohort study, and retrospective secondary analysis published using PubMed MEDLINE database, KERIS (Korea education and research information service), Scopus, Google Scholar, and the Cochrane Central Register of comparing obstetric outcomes women with endometriosis and women without endometriosis. Meta-analyses were estimated with Odds ratios (OR) and 95% confidence intervals (95% CI) using random effect analysis according to heterogeneity of studies.
Clinical cases and summary results: Data from eight effect sizes from five studies involving 47 003 patients were enrolled. These meta-analyses showed women with endometriosis have an increased risks of preterm birth (adjusted OR 1.38; 95% CI, 1.10, 1.73), cesarean section (adjusted OR 1.47; 95% CI, 1.40, 1.54). No significant difference were observed in the incidence of small for gestational age(SGA) and placental complication such as placenta previa and placental abruption between the two groups.
Conclusion: These meta-analyses demonstrate women with endometriosis at pregnancy have an increased risks of impaired obstetric outcomes. Therefore, it is worthy for obstetrics to increase the careful inspection in women with endometriosis during pregnancy.

Keywords: Endometriosis, adverse obstetric outcomes, meta-analyses

CORD ACID-BASE BALANCE - 158

Early outcome of neonates with umbilical cord blood acidemia (PH<7.1)

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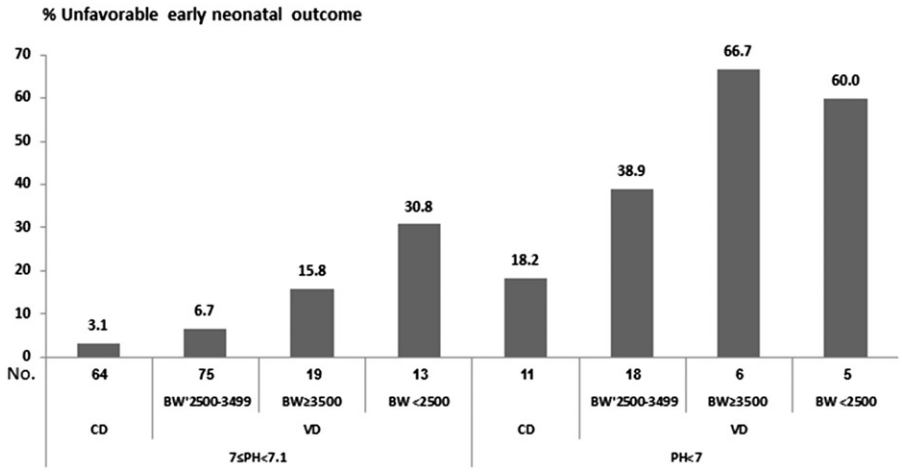
Introduction: During 2014-2015, we observed an increase in cases of umbilical cord blood (UCB) acidemia (pH<7.1). Hence, we investigated the impact of this finding on early neonatal outcome (ENO) up to 72 hours of age.
*Materials and methods:*We routinely obtain UCB for gas analysis at all Cesarean deliveries (CD), vacuum extraction deliveries (VED) and vaginal deliveries (VD) with fetal distress. Starting 2014, our obstetricians aimed for reduction of CD rate. All 5519 neonates born between 1/1/2011 and 10/7/2015 with available UCB gas results were studied. Favorable ENO was defined as a 5-minute Apgar score≥7, no resuscitation at birth, no mechanical ventilation, no intracranial or severe subgaleal hemorrhages, no convulsions, no hypoxic ischemic encephalopathy, no therapeutic hypothermia, normal neurological examination and cranial ultrasound.
Clinical cases and summary results: UCB pH was as follows: pH7.1 (*n*=5308, 96.2%). Three variables were significantly associated with risk of UCB pH<7.0 (multivariate logistic regression): birth at 2014-2015 versus 2012-2013 [*p*=0.005, OR 4.5, 95% CI: 1.57-12.9], 5-min Apgar Score ≤7 [*p*<0.001,8.77, 3.08-24.98], VD [*p*<0.001, OR 9.1, 95% CI,3.61-22.96] and VED [*p*=0.003, 3.57, 95% CI: 1.52-8.37). Five variables were significantly associated with unfavourable ENO (≥1): VD [*p*=0.001, OR 2.1, 95%CI: 1.36-3.25], VED [*p*=0.001, OR 1.74, 95%CI: 1.24-2.45], GA <35 weeks [*p*=0.016,OR 1.59, 95%CI: 1.09-2.32], GA of 35-37.6 weeks [*p*<0.001, OR 7.58, 95%CI: 4.47-12.84], intrapartum fever [*p*=0.026, OR 1.79, 95%CI: 1.07-2.98], cord around neck [*p*=0.004, OR 5.85, 95%CI: 1.74-19.6], UCB pH 7.0-7.1 [*p*=0.026,OR 1.99, 95%CI: 1.09-3.65] and pH <7.0 [*p*<0.001, OR 13.2, 95%CI: 6.36-26.8]. Of 40 neonates with UCB pH<7.0, 16 (40%) had unfavorable ENO, as compared to 12 of 171 (7%) with UCB 7.0≤pH<7.1.
Conclusion: The risk for unfavorable ENO increased significantly with UCB pH <7.0, none-Cesarean birth, GA<38 weeks, maternal intrapartum fever and cord around neck. UCB pH<7.0 inferred favorable



ENO of 81.9% and 51.7% after CD and VD, respectively. With UCB pH of 7.0-7.1, ENO was favorable in 96.9% (CD) and in 90.6% (VD). The change in local policy regarding mode of delivery could have contributed to the year-of-birth dependent changes of UCB acidemia and neonatal outcome.

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Umbilical cord blood base deficit predicts the development of significant hyperbilirubinemia in healthy term and near-term newborns

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Introduction: In the era of early discharge of newborns from hospital the recognition, follow-up, and early treatment of neonatal jaundice has become more difficult. We tested the predictivity of umbilical blood gas parameters at birth for developing pre-discharge hyperbilirubinemia.
Materials and methods: A total of 537 consecutive healthy term and near-term newborns, admitted to maternity ward of Policlinico Abano Terme (Italy), underwent to umbilical cord hemogasanalysis at birth and capillary heel total serum bilirubin (TSB) at 36 hour of life, to test predictivity hyperbilurubinemia risk, of >9 mg/dL bilirubin level, corresponding to $\geq$ 75% on TSB nomogram of Bhutani et al. (Pediatrics 1999,103:6-14). The relationship between umbilical cord pH, pO2, pCO2, bicarbonate, base deficit and neonatal hyperbilirubinemia were determined with statistical analysis.
Clinical cases and summary results: It was found that 133 (24.8%) screened newborns had TSB levels of >9 mg/dL at 36 hours of life. When the cord blood gas analysis components were compared, their academia levels were significantly higher: HCO3- ($20.71 + 2.37$ versus $21.29 + 2.25$ mEq/L, $p < 0.010$), base deficit ($-3.52 + 3.188$ vs, $-2.68 + 3.266$ mEq/L, $p < 0.010$), and lactacidemia ($3.84 + 1.864$ vs, $3.39 + 1.737$ mEq/L, p9 mg% (OR=0.593, p=0.005), and the hyperbilirubinemia risk increases by 40% with the increase of 1 mEq/l of base deficit.
Conclusion: Umbilical cord blood gas analysis is a reliable diagnostic test for intrapartum hypoxic stress, with base deficit significant predictive estimate regarding neonatal significant bilirubin risk zone on an hour specific bilirubin nomogram generating risk stratification score in healthy term and near term neonates.

Keywords: Early discharge, predictivity hyperbilirubinemia, cord blood gas analysis

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Umbilical arterial PH $\leq$7.00 and base excess > -12. Is it an acceptable definition of pathological fetal acidemia?

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Introduction: The classical definition of pathological fetal acidemia includes an umbilical arterial pH $\leq$ 7.00 and a base excess (BE) $>$ -12 mmol/L. Both values are considered necessary to attribute a poor neonatal outcome to an intrapartum event. A recent analysis of $>$ 50,000 consecutive cord samples suggested that the risk for encephalopathy, an accepted precursor to cerebral palsy of intrapartum origin, begins to rise at 7.10. The objective of this study is to determine the sensitivity of this definition (pH $\leq$ 7.00 and a BE $>$ -12 mmol/L) for predicting morbidity at term neonates.
Materials and methods: We conducted a four year retrospective case-control study of all nonanomalous, singleton, vertex, term births with severe neonatal acidemia (umbilical arterial cord gas pH $\leq$ 7.00). Neonates in the control group were matched to each neonate in the case group in a one-to-one fashion using subsequent delivery, matched by gestational age and an umbilical cord gas pH $>$ 7.00 and $\leq$ 7.10. The primary outcomes were a composite neurological morbidity including those with $\geq$ 1 of: neonatal death, encephalopathy, seizures abnormal tone or imaging and a composite systemic morbidity including those with $\geq$ 1 of: intubation, ventilation $>$ 24h, hepatic or renal impairment. Arterial blood BE was determined in all the sample.
Clinical cases and summary results: A total of 14523 term, singleton, nonanomalous neonates were identified who had paired and validated cord blood gas analysis. Of those, 94 were severely acidemic (pH $\leq$ 7.00) and were compared with 99 mild acidemic neonates (pH $>$ 7.00 and $\leq$ 7.10) (Figure 1). Among all the acidemic neonates (pH $\leq$ 7.10) both pH and BE were significantly related to each adverse outcome and lower on average among those affected compared to those who were not (Table 1). A 16% of the sample showed any kind of neonatal morbidity, a 10.8% showed neurological morbidity and a 13.4% systemic morbidity. The definition of pathological fetal acidemia (pH $\leq$ 7.00 and BE $>$ -12 mmol/L) had a sensitivity of 80.6% for predicting any kind of neonatal morbidity, 85.7% for neurological morbidity and 84.6% for systemic morbidity.
Conclusion: The current definition of pathological fetal acidemia had a high sensitivity for predicting a poor neonatal outcome. However, the 15-20% of neonates with morbidity will not present an umbilical arterial cord gas within this range.

Keywords: Metabolic acidemia, morbidity, prediction, sensitivity

Figure 1. Flow chart of patient recruitment

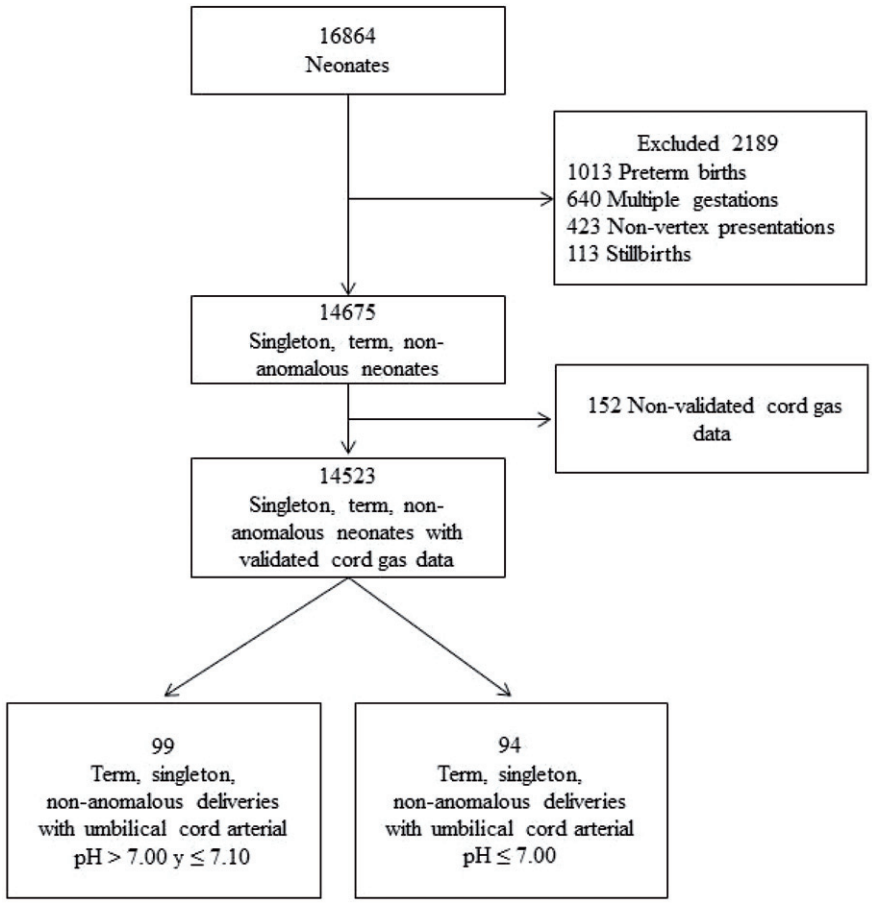

Table 1. Comparison of median arterial pH and base excess of neonates experiencing adverse outcome with those who did not

		pH ≤ 7.00				pH ≤ 7.10			
		pH	P	**BE**	p	**pH**	p	**BE**	p
Encephalopathy	Yes	6.83	0.011	-20.7	0.007	6.83	0.011	-20.7	0.007
	No	6.96		-14.5		7.02		-11.5	
Death	Yes	6.84	0.114	-20.9	0.117	6.84	0.043	-20.9	0.040
	No	6.95		-14.6		7.02		-11.6	
NICU admission	Yes	6.84	<0.001	-20.3	0.001	6.85	<0.001	-20.0	<0.001
	No	6.96		-14.4		7.03		-11.3	
Apgar 5 < 7	Yes	6.84	<0.001	-20.1	<0.001	6.86	<0.001	-19.4	<0.001
	No	6.96		-14.2		7.04		-11.1	
GM	Yes	6.93	0.056	-16.8	0.021	6.96	<0.001	-14.7	<0.001
	No	6.96		-14.5		7.03		-11.0	
NM	Yes	6.88	0.025	-18.9	0.015	6.92	<0.001	-18.6	<0.001
	No	6.96		-14.6		7.03		-11.3	
SM	Yes	6.91	0.025	-18.6	0.021	6.95	<0.001	-15.8	<0.001
	No	6.96		-14.4		7.03		-11.2	

**Data expressed as median pH and BE. GM = Global morbidity; NM = Neurological morbidity; SM = Systemic morbidity.*

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Vasomotor effects of hydrogen sulfide in human umbilical vessels

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Introduction: Hydrogen sulfide (H2S) has recently emerged as a biologically active gas with multiple effects on the cardiovascular system. However, the information on the vascular effects of H2S in human vessels is scarce. We aimed to investigate the vasomotor actions of Na2S, which forms H2S and HS− in solution, in human umbilical artery (HUA) and vein (HUV) rings.
Materials and methods: HUA and HUV rings from 20 healthy term newborns were mounted in organ baths (5 mL) containing Krebs-Ringer bicarbonate buffer bubbled with 95% O2/5% CO2 (hyperoxia), 21% O2/5% CO2/74% N2 (normoxia) or 95% N2/5% CO2 (hypoxia) and maintained at 37 °C. Concentration-response curves to Na2S were performed in vessels under resting tone or following pre-contraction with KCl (62.5 mM), or serotonin (5-HT, 1 μM).
Clinical cases and summary results: HUA rings did not respond to Na_2S (1μM-1mM) either at resting tone or during contraction evoked by serotonin (5-HT, 1μM) or KCl (62.5mM). In contrast, Na2S induced a concentration-dependent contraction in HUV rings under resting tone and a concentration-dependent relaxation when the HUV rings were contracted with 5-HT (42 ± 5% relaxation) or KCl (12 ± 5% relaxation). Na_2S-induced contraction of HUV was impaired following removal of extracellular Ca2+, endothelial denudation, NO synthase inhibition (L-NAME), or soluble guanylate cyclase (sGC) inhibition (ODQ). Na_2S-induced relaxation of HUV was impaired by the KATP channel inhibitor glibenclamide.
Conclusion: In conclusion, our results show that exogenous H_2S does not have vasomotor effects on HUA but induced contraction (mediated through inactivation of the NO/sGC axis) and relaxation (mediated through KATP channels) in HUV. Our data suggest a role for H_2S in the venous side of human umbilical circulation.

Keywords: Hydrogen sulfide, umbilical artery, umbilical vein

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PH, base excess or lactate. Which is better for predicting neonatal morbidity?

Martí Gamboa S., Pascual Mancho J., Lapresta Moros M., Rodríguez Lázaro L., Ruiz Sada J., Redrado Giménez O., Rodrigo Rodríguez M. and Castán Mateo S.

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Introduction: Umbilical cord blood acid-base analysis provides an objective assessment of newborn metabolic status. Recent studies are questioning the significance of base excess in acidemic neonates or the ability of lactate for predicting morbidity at term. The objective of this study is to determine which parameter of the cord gas analysis, pH, base excess (BE) and lactate has a bigger predictive ability for neonatal morbidity at term.
Materials and methods: We conducted a four year retrospective case-control study of all nonanomalous, singleton, vertex, term births with severe neonatal acidemia, defined as an umbilical cord gas pH ≤ 7.00. Neonates in the control group were matched to each neonate in the case group in a one-to-one fashion using subsequent delivery, matched by gestational age and an umbilical cord gas pH > 7.00 and ≤7.10. The primary outcomes were a composite neurological morbidity including those with ≥1of: neonatal death, encephalopathy, seizures or abnormal tone and a composite systemic morbidity including: intubation, ventilation for >24 hours, hepatic or renal impairment. The predictive ability of lactate, BE and pH were compared using ROC curves. Optimal cut-off values of lactate, base excess and pH were estimated.
Clinical cases and summary results: A total of 14523 term, singleton, nonanomalous neonates were identified who had paired and validated cord blood gas analysis. Of those, 94 were severely acidemic (pH ≤7.00) and were compared with 99 mild acidemic neonates (pH >7.00 and ≤7.10) (Figure 1). The ROC curve analysis revealed that pH, BE and lactate had a similar predictive ability for global neonatal morbidity (AUC: 0.75, 0.77, 0.78 respectively), neurological morbidity (AUC: 0.81, 0.79, 0.80 respectively) and systemic morbidity (AUC: 0.75, 0.78, 0.77 respectively). The optimal cut-off value of each parameter, and its sensitivity and specificity for predicting global, neurological and systemic neonatal morbidity is described in Table 1.
Conclusion: pH, BE and lactate showed a similar predictive ability for global, neurological and systemic neonatal morbidity. The optimal cut-off values obtained had a high sensitivity and specificity for pH and BE. Further studies are needed to find an optimal cut-off value for lactate with higher sensitivity.

Keywords: Ph, base excess, lactate, morbidity, prediction

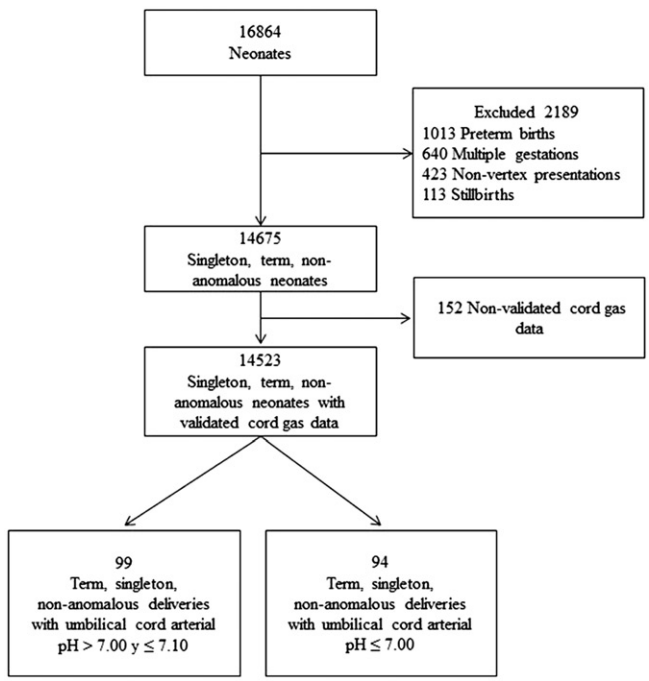

Table 1. Optimal cut-off value, sensitivity (Se) and specificity (Sp) of pH, base excess (BE) and lactate for predicting global, neurological and systemic neonatal morbidity.

	Global morbidity			Neurological morbididty			Systemic morbidity		
	Cut-off value	Se	Sp	Cut-off value	Se	Sp	Cut-off value	Se	Sp
pH	7.00	83.9%	63.6%	7.00	90.5%	61.6%	7.00	84.6%	62.3%
EB	-13.25	80.6%	67.3%	-13.25	85.7%	65.1%	-12.45	84.6%	62.9%
Lactate	10.75	51.6%	87.7%	10.95	57.1%	87.2%	10.75	53.8%	86.8%

CULTURE AND CHALLENGES - 180

Breaking the cultural and social taboos associated with women sexuality in Pakistan

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Chanan Development Association

Introduction: In Pakistani society women sexuality and HIV/AIDS both considered as taboo and a big stigma which creates an environment of frustration and repression among women and girls to internalized the sex, sexual and their sexual rights as a big cultural, social and religious sin to talk about all these topics which is hindering them from accessing the available information and healthcare services regarding sexual and reproductive health information, Lack of information and services increase the vulnerability of community women, high risk sexual behaviors, unintended pregnancies, teenage pregnancies, unsafe abortions, family planning methods and HIV and AIDs including STIs, STDs.
Materials and methods: The project aims at empowering community women give them accurate information through interactive theater and capacity building.
The activities of the projects are
1. Conducting research in District Lahore to find out the knowledge, Attitude, and Perception of women about Gender, Sexuality and HIV/AIDS
2. Educating 1000 community women of District Lahore about Gender, Sexuality rights, family planning including STIs, STDs and HIV/AIDS, mode of Transmission and Prevention
3. Enabling community women to establish ''Sexuality Education Clubs'' in their areas for replicating the information among other women of their communities and to enable them to fight the stigma and discrimination related to sexuality and HIV/AIDS in Islamic society.
Clinical cases and summary results: 1. 5000 community women of ''Lahore'' got accurate education about gender, sexuality rights and HIV/AIDS
2. 25 Sexuality Education Clubs established and start functioning efficiently, 1700 young women volunteered to be part of these Clubs
Conclusion: Need to give Sexuality education to community women as they have no source to get accurate information about their gender, sexuality health and rights which creates their vulnerabilities to HIV/AIDs and creating space for them to internalized the sex, sexual and sexual rights as cultural, social and religious taboo to keep them away on getting information about such sensitive issues.

Keywords: Women sexuality, family planing, birth spacing

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Adolescent contraception before and after childbirth - choices and challenges for the future

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Introduction: About 16 million girls aged 15 to 19, and around 1 million girls under 15, give birth every year in the world. Adolescents are at high risk for rapid repeat pregnancy: approximately 12-49% of adolescent mothers are pregnant again in the first year after delivery. Unintended pregnancy is a serious cause of adolescent morbidity, and use of effective contraception is one of the pillars preventing adolescent pregnancy. An opportune time to introduce contraceptive methods with adolescents is the postpartum period. Effective postpartum contraception is a unique opportunity to lengthen inter-pregnancy intervals. The aim of this study was to determine which methods of contraception are used before and after pregnancy among adolescents who have had children.
Materials and methods: A cross-sectional study was performed and data was obtained from medical records of all adolescents who underwent childbirth review consultation at the University of Campinas Women's Hospital, between July 2011 and Sept. 2013. Inclusion criteria were adolescents aged between 10 and 19 years who were attended in puerperal medical consultation. Exclusion criterion was a first consultation after 90 days postpartum. All data were routinely transcribed into a specific form and inserted into a spreadsheet created in Epi Info 7. Statistical analyses were performed using averages, standard deviation, percentage correlations, and Fisher's exact test. The statistical software used was Statistical Analysis System (SAS) version 9.4 for Windows. The study was approved by the Research Ethics Committee.
Clinical cases and summary results: All 196 postpartum adolescents were included. The average first postpartum follow-up consultation happened 44 days after birth. The average age of patients was 16.18 years (+1.43), more than half had menarche at age 12 years or younger (65%), the first sexual intercourse occurred between 13 and 14 years in 49% of them, and 76% had a vaginal delivery. Contraception before pregnancy was used by 74% of these adolescents. The most frequent method used was combined oral contraceptives (56.85%) followed by condoms (34.4%). Among the primiparas, 57% used combined oral contraceptives (COCs) before pregnancy, and 37% reported the use of condoms. Among adolescents with two or more deliveries, 57% reported the use of COCs and 22% used DMPA. Comparing primiparas and adolescents with two or more births, the type of contraceptive used prior to pregnancy is statistically different (p= 0.0086 in Fisher's exact test). The main reason for abandoning the use of contraception was to become unintended pregnant (41%), followed by reports of side effects (22%), behavior issues (18%), desire for pregnancy (16%), and difficult access to contraception (3%). After the births, DMPA was the contraception method mostly frequently used (71%), followed by oral contraceptives (11.8%) and IUDs (11.2%). Table 1 shows a comparison between the desired contraceptive method and the prescribed method in postpartum follow-up consultations among 134 girls who manifested a preferred contraceptive method.
Conclusion: The most popular used contraceptive method before pregnancy was combined oral contraceptive, and the main justification to stop contraception was unintended pregnancy. After delivery, the method more desired and prescribed was DMPA in accordance with the choice of the adolescent. Nevertheless, it is important to promote the use of long-acting, reversible contraceptive (LARCs) to avoid unintended pregnancy among teenagers.

Keywords: Adolescents contraception, pregnancy

Table 1 – Correlation between desired contraceptive method and prescribed contraceptive method in adolescents at the first postpartum consultation.

Desired contraceptive method	*Prescribed contraceptive method*				
Frequency	ORAL CONTRACEPTIVE	DMPA	IUD	OTHERS	Total
ORAL CONTRACEPTIVE	17	8	0	2	27
DMPA	0	77	0	2	79
IUD	1	5	17	0	23
OTHERS	0	0	0	5	5
Total	18	90	17	9	134

* Frequency Missing = 62 Symmetry test p=0.05 Kappa=0.75 (CI 95% 0.65-0.85)

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Obstetrical and perinatal outcome of oldest pregnant women

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Introduction: Pregnancy in women aged >40 years old is becoming more commom. In the last years there is a trend to delay childbearing and this trend is stronger in developed countries. In Spain during the last years the prevalence of pregnancy over 40 years has doubled. A lot of complications have been associated with increasing maternal age. There is an increase in the risk of: Gestational Diabetes, Obesity, Hipertension, and preterm labour. Intrapartum complications like: increased use of Oxitocyn, caesarian sections, instrumental delivery and haemorrhage are more frequent in older women. Also perinatal outcomes are worse in older women. We present obstetrical and perinatal outcomes in women over 40 who gave birth in our hospital, Complejo Hospitalario de Navarra, Spain, between 2006 and 2012.
Materials and methods: This is a retrospective study with a total of 32368 patients who gave birth in our hospital between 2006 and 2012.1557 (4.8%) of all patients were aged 40 or more years old. The aim of the study is to investigate if there are significant differences in obstetric outcome, complications in childbirth and perinatal outcome among women younger and older than 40 years. We analyzed this obstetric variables: Rate of pregnancy-induced hypertension, gestational diabetes, premature rupture of membranes, placenta previa, placental abruption and preterm labor. Regarding the delivery, the following variables were compared: type of delivery, and rate of inductions. To compare perinatal outcome, the following variables were analyzed: Rate of prematurity, birth weight, Apgar and cord blood pH.
Clinical cases and summary results: Between 2006 and 2012 the prevalence of pregnancy in women over 40 years in our hospital rose from 3.4% in 2006 to 6.5% in 2012. Regarding obstetric complications the following results were obtained. Old pregnant equal or greater than 40 years had a higher rate of pregnancy-induced hypertension (4%) compared to those under 40 years (2%) with significant differences. Gestational diabetes rate was also higher in women of equal or more than 40 years, with a rate of gestational diabetes 11.3% versus 4.7% in those under 40 years. The premature rupture of membranes was more frequent in older women, with a rate of 2.2% compared to 1.2% in younger women, there are also significant differences. On the other hand also the older women had a higher rate of placenta previa (1.2% versus 0.5%). However there was no statistically significant difference in the rate of abruption. We also found no differences in the rate of preterm labor. Women equal or over age 40 have a higher rate of caesarean sections (23% versus 14%), with statistically significant differences. The rate of labor inductions, is also higher in patients 40 years of age or older (39% versus 34%). There are no significant differences in weight. In both groups. We found a similar rate of macrosomas fetuses and less than 2500 grams fetuses. In relation to Apgar in the first minute, there are no significant differences. Finally, no differences in the rate of pathological arterial pH in the umbilical cord were found.
Conclusion: Complications in pregnancy and childbirth increases with age. Age is a risk factor in pregnancy. The increasing age of pregnant women is becoming more common, especially in developed countries. We must inform patients in the preconception period of the risks of maternal age and make proper control of pregnancy in these women, to achieve similar results to younger patients.

Keywords: Pregnancy outcome, maternal age

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Outcomes from birth to hospital discharge of infants with tracheo-oesphaegal fistula/oesophageal atresia from a UK - based tertiary neonatal surgical centre over 8 years

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Presenter: **S-L. Chuang**

Introduction: Background: Limited published outcome data exists on infants with tracheo-oesophageal fistula/oesophageal atresia (TOF/OA).
Aim: To determine outcomes from a tertiary neonatal surgical centre of infants born with TOF/OA over 8 years.
Materials and methods: Clinical and demographic data were collated retrospectively on all babies admitted to the NICU with a diagnosis of TOF/oesophageal atresia (OA) from 1st January 2006 to 31st December 2014 using clinical notes and the Standard Electronic Neonatal Database. Ethical approval was not required as the study was regarded as health outcomes surveillance.
Clinical cases and summary results: Of 79 infants; 22.8% were inborn. Majority, 73 (92.4%) had TOF and 6 (7.6%) isolated OA. Mean birthweight and gestation was 2423g and 37.1 weeks respectively. Most common associations were cardiac (69.6%), 8.9% chromosomal anomalies and 17.7% had at least 3 features of VACTERL. Most TOF/OA was repaired by day 4, 1/3 were ventilated pre-operatively and 15.2% required 2 or more operations. Ventilation was averagely for 15 days; commonest post-operative complications were pneumothorax or lung collapse (32.9%), pleural effusion (15.2%) and chylothorax (7.6%). Nearly half (46.8%) had gastro-oesophageal reflux disease (GORD), 10.1% had trachea/broncho-malacia, 11.4% had mild chronic lung disease i.e, oxygen therapy at 28 days of life but only 3.8% were on oxygen at 36 weeks corrected age. Most common discharge complication was feed-related with 16.5% on nasogastric or jejunal feeds. Overall mortality was 10.1%
Conclusion: Survival to discharge was 90%. Significant ongoing co-morbidities post-discharge mainly related gastrointestinal tract interventions. TOF-OA babies' in-hospital feeding progress should be monitored closely and aggressively managed.

Keywords: Outcomes, tracheo-oesophageal fistula, oesophageal atresia

DOCTORS AND MIDWIVES: CARE OR CURE - 452

The effect of attending a prenatal childbirth preparation course on labor duration and outcomes

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Introduction: Due to the stressful and painful nature of childbirth and its potential for maternal and neonatal complications, woman from all cultures need support in this life-changing stage of their life. It has been postulated that increased knowledge and skills during pregnancy prepares pregnant mothers for labor and leads to promoted health. The purpose of the current study was to evaluate the effect of attending a prenatal childbirth preparation course on labor duration and outcomes.
Materials and methods: In this cross sectional study, 53 primiparous women were compared with 54 primiparous women that did and did not attend a prenatal childbirth preparation course, respectively. Women delivered between April and July 2014. The State-Trait Anxiety Inventory (STAI) was used to diagnose anxiety before delivery. Data regarding demographic and clinical characteristics, obstetrical risk factors, pregnancy complications and adverse perinatal outcomes were collected from the perinatal database of our center. In addition, through post-partum interviews, coping strategies learned in the prenatal course were assessed, patients graded their childbirth experience and breastfeeding was evaluated. Data were analyzed using description analyses and a p value <0.05 was considered statistically significant.
Clinical cases and summary results: Most women who attended the prenatal course (87.2%) felt it helped decrease their anxiety of labor. Over 90% of women thought that attending the course greatly (63.8%) or moderately (27.7%) facilitated their positive coping with the delivery. Almost all women (97.9%) in the study group were satisfied with the course and would recommend it to a friend. The STAI score was significantly lower in the study group compared with controls (p=0.025). The first stage and the entire duration of labor were significantly shorter (p=0.036 and p=0.026, respectively) in women who attended the prenatal course. No significant differences were found with regard to mode of delivery, rate of episiotomy and perineal tears, use of analgesics and perinatal outcomes between the groups. Women in the study group rated their labor experience significantly higher (7.0±2.9 versus 5.6±3.0, p=0.016) and exhibited significantly higher rates of breastfeeding (86.8% versus 54.7%, p <0.001) than controls.
Conclusion: The knowledge acquired in the prenatal childbirth preparation course aids in reducing anxiety of labor, is associated with a significantly shorter first stage and entire duration of labor and with an improved labor experience. Moreover, attending the prenatal course, increases women's awareness to the importance of breast-feeding and results in significantly higher rates of breastfeeding.

Keywords: Prenatal childbirth preparation course, The State-Trait Anxiety Inventory (STAI), labor duration, labor experience, breastfeeding

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Why home or hospital birth? A qualitative study exploring women's motives and preferences about place of birth in the Netherlands

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Introduction: The Dutch maternity care system – with its strong midwifery profession and the option for a home birth – is under pressure nowadays. There is an on-going debate regarding the safety of home birth and the way maternity care is organized in the Netherlands. In addition, the home birth rate is rapidly decreasing. In 2000, nearly 30% gave birth at home, compared to 16% in 2013. Recent studies on place of birth or birth setting has mainly focused on birth outcomes and issues of safety. Despite the fact that women-centred care is given as an important point by all professionals involved in maternity care, women's views on place of birth are relatively unknown. The aim of this study was to explore women's decisions related to place of birth – at home or in a hospital.
Materials and methods: A qualitative study with an explorative descriptive design using semi-structured interviews. A sample of 23 healthy nulliparous women in the third trimester of their pregnancy with a preference for a home birth, a midwife-led hospital birth or an obstetrician-led hospital birth. We used thematic analysis to identify and examine themes in the data.
Clinical cases and summary results: We examined key motivating factors for place of birth as well as how women conceptualize childbirth and how this affects their birth place choices. While being in their own home was the most important aspect for women who choose a home birth, women's choice for a hospital birth was driven by aspects of safety. However, women's choice for one place did not necessarily exclude the other one. Most women had primarily a preference for a place of birth instead of a highly motivated choice, especially women who prefer a home birth. They were often careful with their decisions and they did not have explicit expectations about childbirth to avoid disappointments. Although most women saw childbirth mainly as a natural process, the language they spoke about childbirth was in certain extent, the language of risk.The caregivers' attitude also seems to have an influence: midwives seem to act more and more from the medical paradigm instead of the social-physiological paradigm when they provide information to women about childbirth and place of birth.
Conclusion: Caregivers should go more deeply into women's expectations and internal motivations of women regarding childbirth and place of birth, in order to create more awareness of women's decisions. Thereby should caregivers be aware of the effect of the language they speak about childbirth.

Keywords: Place of birth, home birth, preferences, qualitative study

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Does a POP-team contribute to the prevention of child abuse

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Introduction: Maternal psychopathology, drug abuse, social problems during pregnancy are risk factors for child abuse. Adequate selection of pregnant women at risk provides the opportunity to prevention of future child abuse. For this reason a multidisciplinary collaboration between psychiatrist, obstetricians, pediatricians and social workers (POP-team) was established in 2007 in the Rijnstate Hospital, Arnhem, the Netherlands. During weekly meetings women at risk are reviewed. The POP-team assesses the presence of psychiatric or psychosocial problems, suggests policy social help and medical treatment. In severe cases Child Protective Services (CPS) are consulted. In this study we investigated the psychiatric and psychosocial problems were directive in consulting the CPS and their decision
Materials and methods: Retrospectively we included all women and their children who were reviewed by the POP-team from 1 January

2010 until 31 December 2013. Data were collected from the medical records of mother and child. They comprised maternal demographic and psychosocial characteristics, medication, substance abuse, obstetrical details and psychiatric diagnosis. Neonatal characteristics, problems and hospital admissions in the first year of life were evaluated. Outcome was the consultation of the CPS and their decision. A multivariate regression analysis was performed to identify risk factors for consultation of the CPS.
Clinical cases and summary results: 649 women were identified of which 103 women were excluded because of delivery at home, termination of pregnancy, preconceptional advice or loss to follow-up. 546 women with 557 children were analyzed. The CPS was consulted in 99 (15%) cases, (92 prenatal and 7 neonatal). Main factors for consultation CPS were: maternal psychiatric disorder(*n*=6), mental retardation (*n*=9), psychosocial problems (*n*=26), substance abuse (*n*=4), teenage pregnancy (*n*=3), combination of several of these factors (*n*=50). All CPS consultations were receptive, 21 children (3%) were placed in foster families, the other parents got intensive accompaniment.
Conclusion: Having a POP-team to review socially vulnerable pregnant women is advisable. Severe psychiatric disorders , mental retardation, domestic violence and accommodation problems are the most important factors for consulting the CPS. By consulting the CPS extra support can be arranged. In case of serious problems children can be protected by placement in a foster home. The data in our study indicate that our POP-team contributes to prevention of child abuse in a hospital setting.

Keywords: Psychiatric and psychosocials problems, vulnerable pregnant women, child abuse

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Why women want other or no delivery care (wonder study)

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Introduction: In the Netherlands, it appears that an increasing number of women choose to go against medical advice and opt for a high risk home birth or even an unattended birth (unassisted childbirth, UC). In a system where low risk pregnancies are the domain of midwives, and high risk pregnancies are supervised by obstetricians, there are clear guidelines to demarcate the boundaries between these two groups of professionals. However, some women opt to go against recommendations and deliver at home with twins, a breech or a vaginal birth after previous caesarean section. There are even approximately 200 women each year who choose to have a UC. This study attempts to elucidate the reasons why some women make these choices.
Materials and methods: Twenty-eight women and their partners were interviewed in depth by three of the authors. These audio files were transcribed and thematically analysed using the MaxQDA programme. Main themes and subthemes were indentified through coding by two of the authors.
Clinical cases and summary results: We will present the main themes and some of the sub themes, including some citations from the women themselves. Themes that have emerged are, among others, a mismatch between the medical professionals' biophysical model, and the more nature- and body knowledge oriented discourse used by the subjects, influence of social media and networks, differences in risk perception, the cascade of interventions, and fear.
Conclusion: There appears to be a mismatch in risk perception and frame of reference between medical professionals and some pregnant women. This may cause patients to go against medical advice in their choices of place and mode of birth. We will present some tips and pointers for a suggested way to find common ground in the discourse with these patients, so that the common goal, a healthy mother and a healthy infant, can be achieved.

Keywords: Unassisted child birth, home birth, midwives, obstetricians, high risk, against medical advice

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Assesment of attitudes and satisfaction among women who undergone cesarean section without medical indication

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Introduction: To identify attitudes and satisfaction among women who undergone cesarean section without medical indication, to examine the reasons why women choose cesarean section without medical indication and whether these reasons can be reduced.
Materials and methods: A retrospective study was conducted including 48 women who gave birth by cesarean section without medical indication (study group), compared to 48 women, randomly selected, who gave birth vaginally (control gtoup). Deliveries occurred in a tertiary medical center. Using a questionnaire and medical records, maternal attitudes about cesarean section without medical indication and satisfaction were compared between the two groups.
Clinical cases and summary results: The main reasons to choose cesarean section without medical indication were: past traumatic birth experience (68.8%), avoidance of prolonged vaginal delivery (66.7%) and avoidance of pain during labor (64.6%). There was disagreement between the women of the two groups regarding the following assumptions: the improving effect a regular birth has on born babies (50% versus 25%), babies born surgically will be spending more time in the hospital (25.5% versus 52.2%), anesthetic drugs can pass the newborn and cause him to be apathetic (30.2% versus 71.7%) and surgery have a greater risk than normal delivery (51.1% versus 85.4%).
Conclusion: There is lack of knowledge among all women regardless of selection through birth, the risks and complications for operative delivery compared with vaginal delivery.

Keywords: Cesarean section without medical indication, vaginal delivery, maternal attitudes, maternal satisfaction

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"Why should one choose CD without medical indication?"

	Cesarean delivery N=48	Vaginal delivery N=48	P value
Choose the date	6(12.5%)	27(56.3%)	<0.001
Avoid pain	31(64.6%)	46(95.8%)	<0.001
Avoid vaginal tear	20(42.6%)	44(91.7%)	<0.001
Avoid prolong labor	32(66.7%)	44(91.7%)	0.003
Past traumatic labor	33(68.8%)	44(91.7%)	0.005
Avoid recurrent vaginal exam	16(33.3%)	27(56.3%)	0.024

FETAL GROWTH RESTRICTION - 226

Association of mid-trimester doppler parameters with abdominal circumference percentile in low-risk pregnant women

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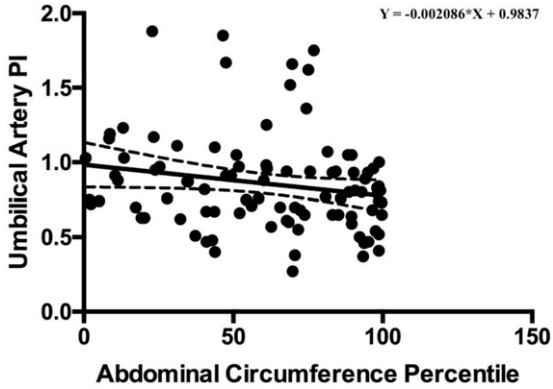
Introduction: Purpose of this study was to investigate association between Doppler parameters of umbilical artery pulsatility index (PI), uterine artery PI and middle cerebral artery PI with abdominal circumference (AC) percentiles. Rationale behind the study question was to find an appropriate mid-trimester Doppler parameter to identify pregnancies at risk for fetal growth restriction(FGR).
Materials and methods: Data from previously performed mid-trimester scans between 20 and 24 weeks of gestation was used in this study. AC percentiles were calculated using data from INTERGROWTH-21 study. After normalising the PI value of each Doppler parameter, linear regression plots were used to test for possible association between Doppler parameters and AC percentile. When a possible association was observed, the correlation of AC percentiles predicted by the model and the actual values were tested with correlation coefficient analysis.
Clinical cases and summary results: Results of 122 pregnant women were included in the analysis. Linear regression analysis have shown no significant association between Doppler parameters of uterine artery PI (R2=0.037, Cohen's f=0.19, p=0.06) and middle cerebral artery PI (R2=0.013, Cohen's f=0.11, p=0.25) and AC percentile. However there was a significant association between umbilical artery PI (R2=0.07, Cohen's f=0.27, p=0.009) and AC percentile. The equation of linear regression model was AC%= -38.38*(UA PI)+103.0 indicating a 0.1 point increase in PI predicts a 3.8% drop in AC percentile. Predictive power of model was tested on a separate group of pregnant women and the correlation between predicted and actual AC percentiles were weak to moderate (r=0.26, p=0.009, n=86).
Conclusion: Although the final predictive power of the model was weak, there was a significant relation between umbilical artery PI and AC percentiles whereas other Doppler parameters failed to show significant association. Since AC percentile is a strong determinant of birth weight, predictive power of umbilical artery PI during mid-trimester for identifying fetuses at risk for FGR should be investigated further.

Keywords: Growth restriction, Doppler, mid-trimester, regression



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Antithrombotic medication in pregnant women with previous intrauterine growth restriction

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Introduction: The aim of this prospective study is to analyze the pregnancy outcome in patients who were on antithrombotic medication (AM) because of previous pregnancy with fetal intrauterine growth restriction (IUGR).
Materials and methods: The study included three groups: 1) studied group (SG) - 21 women on low dose aspirin (LDA) and/or low molecular weight heparin (LMWH) because of previous pregnancy with IUGR, 2) primary group (PG) - 15 previous pregnancies with IUGR of the same women, 3) control group (CG) - 45 pregnancies matched for parity with the SG, without previous IUGR and no medication. The three groups were compared for mean gestational age (GA) at delivery, birth weight (BW), incidence of early preeclampsia (PE), IUGR, intrauterine fetal death (IUFD), neonatal death (NND), admission to NICU, cesarean section (CS) for chronic or acute fetal distress (FD). Student's t-test was applied to assess differences between the groups. p <0.05 was considered statistically significant.
Clinical cases and summary results: The SG and the PG were not significantly different regarding mean GA at delivery (33.7 versus 29.8 w.g.), proportion of CS for FD (53.3% versus 57.1%) and of babies admitted to NICU (66.7 vs.71.4%). The mean BW in the SG was significantly higher than in the PG (2115 vs.1091 g) while there were significantly less cases of IUFD (14.3 versus 53.3%), early PE (9.5 versus 46.7%) moderate and severe IUGR (10.5%/36.8% versus 41.7%/58.3%). Neonatal mortality in the SG (5.6%) was significantly lower than in the PG (57.1%). In the SG compared to the CG mean GA age at birth was significantly lower (33.7 versus 38 w.g.). So was BW (2114 versus 3094 g.). There were significantly more cases with IUGR in the SG - moderate/severe (10.5%/36.8% versus 6.7%/2.2% in CG) and more NICU admissions (66.7 versus 4.4% in the CG). There were no cases with severe PE, IUFD, and CS for FD in the CG group while in the SG they were 9.5%, 14.3% and 53.3% respectively.
Conclusion: The outcome of pregnancies with AM because of previous fetal IUGR is improved compared to the index ones. However, it is less favorable compared to the outcome in matched cases with no history of IUGR in previous pregnancies.

Keywords: Antithrombotic medication during pregnancy, low molecular-weight heparin, low dose aspirin, intrauterine growth restriction

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Validation of a predictive risk model for adverse perinatal outcome in late-onset small for gestational age fetuses

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Presenter: **A. Vázquez Sarandeses**

Introduction: Small for gestational age fetuses (SGA) are those with an estimated fetal weight (EFW) below the 10th centile. A high proportion of them also suffer from fetal growth restriction (FGR), with poorer perinatal outcomes including stillbirths, intrapartum fetal distress and neonatal acidosis. Hence, it is essential to distinguish between them to adequate monitoring and time to delivery. Umbilical artery Doppler (UA) is the best validated parameter to define FGR, but as the pregnancy is approaching its due date, UA is more usually normal in FGR. Recently, a risk model has been proposed to identificate late-onset FGR, based on alternative ultrasound parameters. Our aim was to validate this model in our population.

Materials and methods: We performed a retrospective cohort study of 202 singleton pregnancies evaluated in our center between January 2014 and June 2015 in which an EFW<10th centile was identified ≥32+0 weeks ?gestation. Following the same methodology described by Figueras et al (Ultrasound Obstet Gynecol 2015), cerebroplacental ratio (CPR), mean uterine artery pulsatility index (mUtA-PI) and EFW were obtained from the last scan. Fetuses with congenital anomalies were excluded. Cases were classified as high risk for adverse outcome if they had any of the three parameters of the model: CPR95th centile and EFW 3rd centile. As defined in the original model, we considered adverse perinatal outcome as cesarean delivery (CD) for non reassuring fetal status (NRFS) or umbilical artery pH<7.15.

Clinical cases & summary results: 133/202 (65.8%) SGA cases were classified as high risk. 62/202 (30.7%) cases had an adverse perinatal outcome, including non-exclusively 51 cases of CD for NRFS and 17 cases of pH<7.15. There was one case of stillbirth in the low risk group. Figure 1 shows the prognostic model according to the perinatal outcome. The predictive performance of this algorithm in our validation cohort compared to the original one showed a sensitivity (%) of 82.3 (95% CI 70.9-89.8) vs. 82.8, a specificity (%) of 41.4 (95% CI 36.6-41.7) vs. 47.7, a positive predicted value (%) of 38.3 (95% CI 30.5-46.8) vs. 36.2, and a negative predicted value (%) of 84.1 (95% CI 73.7-90.9) vs. 88.6. Positive and negative likelihood ratios were 1.4 (95% CI 1.1-1.5) and 0.4 (95% CI 0.8-0.2), respectively. Additionally, the high risk group had lower birth weights (g) than the low risk group (2180 vs. 2588, p<0.001) and lower gestational age (weeks) at delivery (36.7 vs. 38.2, p<0.001).

Conclusion: In our population, the predictive risk model for adverse perinatal outcomes in late-onset SGA showed a predictive capability similar to that observed by the original study. According to this algorithm, the measurement of CPR, mUtA-PI and EFW in the evaluation of late-onset SGA is of moderate usefulness for predicting adverse perinatal outcome.

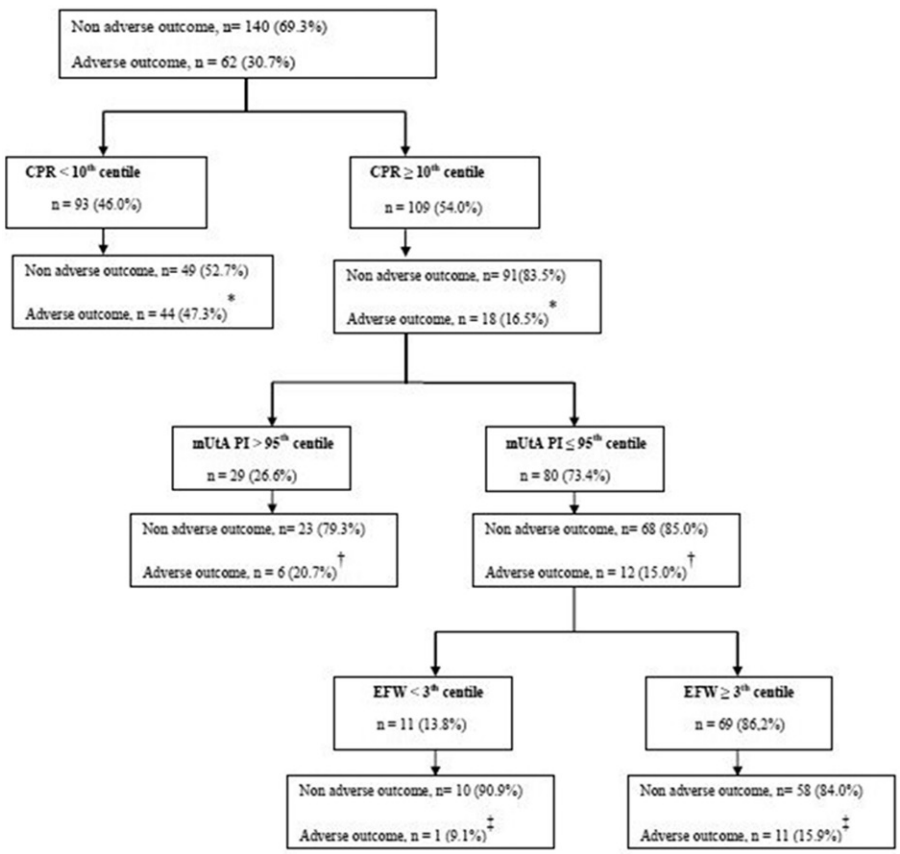

Figure 1. Predictive model of risk of adverse perinatal outcome in SGA fetuses with cerebroplacental ratio (CPR), mean uterine artery pulsatility index (mUtA PI) and estimated fetal weight (EFW). *p<0.001; †p=0.561; ‡p=1.0.

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Early markers of endocrino-metabolic disease in growth restricted fetuses

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I. Alonso Larruscain

Introduction: The adjustments to malnutrition in the growth restricted fetus (GRF) that lead to obesity, insulin resistance, diabetes and cardiovascular disease in adulthood are not well known. The most feasible explanation for this association is the hypothesis of catch up. In utero, fetal metabolism is constantly readjusting to slow growth. When this adaptation is inconsistent with postnatal nutrition, it may be associated with rapid weight gain in infancy. This can lead to an adaptation that predisposes a set of metabolic syndrome related signs, increasing the risk of comorbidities (obesity, diabetes, dyslipidemia, coronary heart disease and hypertension). Some studies postulate a greater influence of catch up growth than the low birth weight itself in developing metabolic disease.
Materials and methods: This is a prospective cohort study of GRF children born in the Hospital Infanta Cristina (Parla) during 2012 and 2013. Variables of anthropometric data, perinatal history, as well as blood pressure, analytical data (fat, sugar and hormone profile) were collected during follow-up the first year of life in consultations of Pediatric Endocrinology. 126 GRF children were born in the time period established, 125 accepted the inclusion in the study; 67 of these completed the full monitoring for a year. Two main comparative groups were established: those GRF who made a catch up growth (increase in Z score of weight of more than 0,67) during the follow-up (47) and those who did not get it (20).
Clinical cases & summary results: No direct correlation was found in the GRF population between the presence of complications during pregnancy, maternal anthropometry, maternal smoking and the presence or absence of a recovery growth. The analyzed characteristics of the children in terms of sex, race and prematurity did not influence the presence of a recovery growth. Triglycerides at 12 months was the only analytic variable in which statistically significant differences were found in the GRF group who made catch up growth during follow-up. This parameter could be proposed as early marker of future endocrine-metabolic pathology in GRF population. There were no differences in other laboratory markers analyzed (insulin, cholesterol, glucose, HOMA, IGF-1 and IGF-BP3).
Conclusion: Those GRF with catch up growth during the first year of life may have early changes in the triglycerides at the end of that period.

Keywords: Growth restricted fetus, endocrinometabolic disease, early markers

MEDIAS (D.T.)	NO CATCH UP	CATCH UP	p
Triglycerides at birth (mg/dl)	35,38 (18,05)	46,11 (24,59)	0,16
Triglycerides 9 months (mg/dl)	105,85 (86,37)	115,87 (77,09)	0,71
Triglycerides 12 months (mg/dl)	79,11 (21,54)	119,31 (70,20)	**0,03**

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Proteomic technologies in prenatal diagnosis

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Presenter: **V. A. Linde**

Introduction: Normal prenatal development depends on the balanced functioning of the fetoplacental system, which is largely determined by the dynamics of protein composition placenta. Modification of the proteins spectrum, performing essential functions in placenta, can serve as a trigger mechanism for the development of subsequent metabolic disorders at fetus. The use of post-genomic technologies makes it possible to evaluate the sum total of proteins of a biological object and creates qualitatively new opportunities for system searches of molecular markers of a pathology. Among the leading complications of pregnancy, resulting in prenatal morbidity and mortality, is fetal growth restriction (FGR)
Objective: Study of the protein spectrum of placenta in physiological pregnancy and FGR.
Materials and methods: The study involved women with physiological pregnancy (n=27) and FGR (n=21). The material of the study was full-term placentas obtained after the delivery (weeks 38-40). The proteomic analysis was carried out using the two-dimensional electrophoresis and matrix-assisted laser desorption/ionisation time-of-flight mass spectrometry of peptides. Proteins were identified using the Mascot program, Swiss-Prot and NCBI database.
Clinical cases & summary results: In placentas of women with FGR there are 18 proteins down-regulated as compared with physiological pregnancy: actin cytoplasmatic, proteasome subunit α type 6, prohibitin, α-centractin, tropomyosin-α1, annexin A4, actin-related protein, neutral α-glucosidase AB, protein ERp29, 4-trimethylaminobutyraldehyde dehydrogenase, 14-3-3 protein epsilon. The increased expression was determined for endoplasmin, vimentin, actin, α1-antitripsin, tropomyosin-β. The increase in the production of certain proteins, in particular vimentin and tropomyosin-β that are responsible for the safety of the structure of a cytoskeleton, may have a compensatory value aimed at maintaining cell integrity under conditions of the complicated gestation.
Conclusion: Changes in the production of proteins that regulate pro- and antioxidative balance, processes of cell differentiation, proliferation, trophic of a fetus, intercellular transport, apoptosis and angiogenesis play a pathogenetic role in the development of FGR and can be used for its diagnosis.

Keywords: Proteomic analysis, placenta, fetal growth retardation

FETAL ULTRASOUND - 505

Impact of prenatal evaluation of congenital malformations in fetus on postoperative mortality

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Presenter: **I. Y. Gordienko**

Introduction: Appropriate prenatal diagnosis of congenital pathology that requires urgent surgical correction is the global problem of perinatal medicine. Management of patients in specialized clinic allows to start necessary interventions right after birth. Prenatal evaluation of pathology is important for establishing complete preoperative diagnosis. The most important factors, which influence survival in patients with congenital diaphragmatic hernia (CDH), are associated pathology, liver invasion, degree of pulmonary hypoplasia and time of diagnosis. Mortality rates in live-born with CDH range from 10 to 50%, depending on country, clinic etc. In case of omphalocele infant mortality varies from 6 to 43%, for gastroschisis to 11% and is mostly caused by associated bowel pathology.
Materials and methods: Prenatal dispensary system which considers the fetus as the patient has been established in Department of Fetal Medicine since 1985. Prenatal diagnosis was made in 151 fetuses with CDH, 97 with gastroschisis and 79 with omphalocele. Detailed ultrasound (US) examination and karyotyping were performed. Associated malformations (AM) were found in 27.8% and chromosomal anomalies (CA) in 2.7% of fetuses with CDH. Among fetuses with gastroschisis, AM were present in 6.2%. In cases of omphalocele, AM and CA were found in 26.6% and in 8.7%, respectively. During the pregnancy postnatal prognosis was specified, with assessment of established indices and new US indices from our clinic. Strategy for delivery and management for the newborn was defined in each case by interdisciplinary council.
Clinical cases and summary results: From 1988 to 2015, 88 neonates with CDH, 70 with gastroschisis and 29 with omphalocele were diagnosed in our clinic. Comparison of postoperative mortality in groups of patients with mentioned pathology during the 1st period from 1988 to 2005 and 2nd period from 2006 to 2015 showed a significant decrease of postoperative mortality ($p<0.01$). In operated newborns with CHD (27 from 40 and 37 from 48 during the 1st and 2nd period, respectively), postoperative mortality decreased from 44.4% to 10.8%. All newborns with gastroschisis and omphalocele were operated. Postoperative mortality in patients with gastroschisis during the 1st and 2nd period was 62.9%, and 20.9%, respectively. Common causes of death were associated malformations, mostly intestinal atresia of various levels, infections and necrosis of abdominal wall in 1 case. For the patients with omphalocele, postoperative mortality during the 1st and 2nd period was 57.1%, and 10%, respectively.
Conclusion: The prenatal dispensary system with implementation of effective strategy of perinatal help, development of local protocols of operations and interdisciplinary collaboration of specialists in prenatal diagnostics, obstetricians and surgeons, enabled to decrease postoperative mortality considerably during last 10 years in newborns in cases of CDH, gastroschisis and omphalocele. The work of the team was optimized because of increased level of specific knowledge in each of involved specialists.

Keywords: Prenatal diagnosis, congenital malformations, postoperative mortality

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Ultrasound evaluation of foetal spine position and success rate of the manual rotation of foetus in occiput posterior position: a pilot study

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Presenter: **L. Attamante**

Introduction: Persistent Occiput Posterior Position (OPP) is the most common malpresentation in labour, causing about 18% of caesarean sections and increasing the operative delivery rate (about 70%). Manual rotation of the foetal occiput (MRFO) is considered a reasonably safe technique that can allow spontaneous delivery in OAP reducing the risk of operative and caesarean delivery, but it has a failure rate from 10 to 26%. The main aim of this pilot study was to evaluate if the ultrasound diagnosis of both position of the occiput and of the foetal spine can increase the success rate of the manual rotation of the foetal occiput in second stage arrest in persistent occiput posterior position.
Materials and methods: At Sant'Anna Hospital of Turin from January 2014 to September 2015 we prospectively enrolled in a pilot study 35 primiparous women who presented arrest of the second stage of labour (diagnosed as lack of foetal head descent after two hours of adequate maternal expulsive efforts) with foetus in cephalic presentation and occiput posterior position diagnosed by ultrasound. These women were randomized to group A where the foetal spine position was not known by the operator and to group B where the operator knew the spine position. The main outcome of the study was the rate of success of the MRFO with or without the "a priori" knowledge of foetal spine position by the operator. Secondary outcomes were perineal injuries, blood loss, duration of the expulsive period and neonatal APGAR at 5'.
Clinical cases & summary results: The two groups were found to be homogeneous for rate of posterior spine (respectively 7 and 6 cases), maternal age, maternal BMI, use of epidural analgesia and foetal weight at birth. The manual rotation was successful in 47.4% of patients of group A and in 87.5% of women of group B (p-value=0.030), significantly improving the percentage of spontaneous deliveries (21.1% vs. 68.8%, p-value=0.0043) and the maternal outcome. Blood loss was significantly lower for Group 2, probably due to the lower percentage of perineal damages and to a shorter second stage of labour after MRFO. Even if the series of data is relatively small, the comparison reached a significant p-value. No differences were found on the neonatal side.
Conclusion: Manual rotation of the foetal occiput is a safe and useful procedure that should possibly be performed in second stage arrest of labour in occiput posterior position. Despite the low power of our study, we think that these preliminary results are encouraging and allow us to speculate on the usefulness of the a priori knowledge of the position of the foetal spine to improve the success rate of the manoeuvre. Wider series of data are however needed to yield more robust results and conclusions.

Keywords: Manual rotation of foetal occiput, second stage of labour, ultrasound evaluation of foetal spine position, occiput posterior position

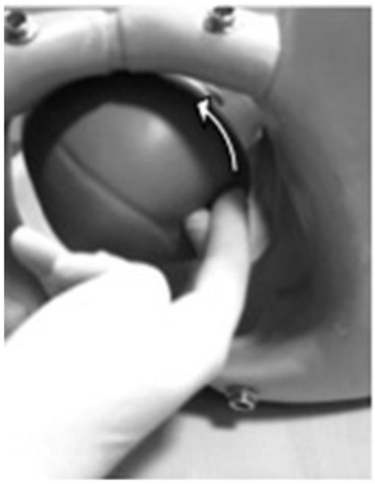

Table – Results. Data are expressed as median (min-max) or percentage

Variables	Group A (n=19)	Group B (n=16)	p-value*
Successful MRFO % (n of cases)	47.4	87.5	0.03
US posterior spine %	31,5	37,5	0.02
Spontaneous deliveries %	21.1	68.8	0.007
Operative deliveries %	73.7	31.3	0.018
Episiotomies %	73.7	50	NS
II-III degree perineal lacerations %	15.8	0	NS
I degree perineal lacerations %	5.3	12.5	NS
Intact perineum %	5.3	37.5	0.032
Blood loss (cc)	310 (150-450)	235 (100-400)	0.041
Expulsive stage duration after MRFO (min)	40 (30-49)	40 (25-53)	NS
5' APGAR	9 (7-9)	9 (8-9)	NS

% (n of cases)

Mann-Whitney U test or Fisher Exact test

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Accuracy of mid-trimester transcerebellar diameter measurements for pregnancy dating

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Introduction: Accurate dating of a pregnancy is perhaps the most important part of antenatal care as all future management strategies will rely on gestational age. The gold standard of pregnancy dating is crow-lump length (CRL) measurement between 9th to 13th gestational age. Purpose of this study was to compare pregnancy dating via mid-trimester transcerebellar diameter(TCD) measurements with dating via CRL measurements.
Materials and methods: This was a retrospective cohort study conducted between July 2015 and February 2016 in Ankara University Department of Obstetrics and Gynecology. First day of last menstrual period (LMP) was calculated for each pregnancy by using both first trimester CRL measurements and mid-trimester TCD measurements. A mean of three measurements was used for each variable. First day of LMP was expressed in days calculated as [Day of USG + Month of USG*30] minus [Gestational age in days] according to either CRL or TCD measurements. First day of LMPs were compared with Wilxocon matched-pairs rank test. Correlation between two methods was analysed with interclass correlation coefficient and Bland-Altman plot.
Clinical cases and summary results: A total of 89 pregnancies between 17 and 26 weeks of gestational age at the time of mid-trimester scan were included in the analysis. Median CRL of study population was 59 mm (IQR 54 to 65.5 mm) and median of TCD measurements was 22.56 mm (IQR 18.2 to 23.31 mm). Median gestational age at CRL measurements was 87 days (IQR 84 to 90 days) and median gestational age at TCD measurements was days 158 days (IQR 127 to 163 days). Median difference between LMPs calculated with CRL or TCD measurements was 2 days (IQR -2 to 6 days) and correlation between two methods had a correlation coefficients of 0.98 (95% CI 0.97 to 0.98). Bland Altman plot of two methods can be seen in Image 1.
Conclusion: By using mid-trimester TCD measurements, an accurate dating of most pregnancies were achieved with an error margin of -2 to +6 days when CRL measurements were used as gold-standard. TCD can be used for accurate dating of pregnancies when first day of LMP or first trimester CRL measurement is not available.

Keywords: Dating, transcerebellar diameter, crown-rump length, accuracy

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Fetal cardiac tumor

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Presenter: **Andrea Safont**

Introduction: Cardiac tumors are rare, with an incidence varying from 0.17/10.000 to 28/10.000. Rhabdomyomas are the most common tumors in intrauterine life, followed by teratomas and fibromas. Although fetal cardiac tumors are extremely rare, poor prognostic indicators include development of intracardiac flow obstruction, alteration of the atrioventricular valve function with consequent regurgitation, arrhythmia, cardiac dysfunction and hydrops. Early detection of congenital tumor is critical to improving outcome. Many studies have demonstrated the frequent association of fetal cardiac rhabdomyoma with tuberous sclerosis and the incidence may be as high as 50%.
Clinical cases & summary results: We present a case of fetal cardiac tumor ultrasound diagnose at 21 + 1 weeks of gestation. An intracardiac solid homogeneous and isoecogenic mass of 3×3 mm was observed between tricuspid valve and lateral myocardium wall. Normal cardiac function was observed. Genetic study was performed. Maternal karyotype was normal. Fetal karyotype was normal. Specific genetic tuberous sclerosis study did not detect any alteration. At 34 + 2 weeks of pregnancy the tumor had decreased and was difficult to detect on ultrasound. At 36 + 2 weeks of pregnancy no tumor was visualized. At birth echocardiographyc study did not show any alteration.
Conclusion: Fetal cardiac tumors can be detected by echocardiography. However, differential diagnosis is important as this will affect prognosis and subsequent management. In this case rhabdomyoma was suspected so genetic study was conducted but did not show any alteration.
Spontaneous regression of the tumor was observed and confirmed at birth with favorable neonatal outcome.

Keywords: Fetal cardiac tumor, rhabdomyoma, tuberous sclerosis, echocardiography

469 (CASE REPORT)

Fetal intraabdominal umbilical vein varix: antenatal diagnosis and management

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Introduction: Fetal intraabdominal umbilical vein varix (FIUVV) is a very rare clinical finding. It is defined as a focal dilatation of the umbilical vein. The prevalence of FIUVV is reported to be between 1.1 to 2.8 per 1000 pregnancies. Although controversial, finding of FIUVV has usually been associated with poor obstetric outcomes. Because of this ambiguity, antenatal management and timing of delivery are also not determined clearly. Here we present a case with FIUVV complicated with intrauterine growth restriction, managed successfully in our department.
Clinical cases & summary results: A 24-year-old, gravida 1 para 0 woman was referred to our department with the suspicion of fetal pelviectasis at 29 weeks. Combined test and fetal anatomy survey were reported to be normal. An intraabdominal umbilical vein varix with diameter of 11 mm and highly turbulent flow were revealed on sonogram and Color Doppler (Figure 1). Fetal biometry was normal (estimated fetal weight was 13p). Umbilical artery Doppler indices were normal and there were no other fetal anomaly. The patient was followed up weekly till 34 weeks of gestation. At 34 weeks of gestation, estimated fetal wieght was 1900 gr (4p), (AC 2,3 p). Doppler studies were normal. Daimeter of the umbilical vein varix was 13 mm.Then, the patient was followed up on twice-weekly basis. At 37 weeks,patient was admitted for induction of vaginal delivery. However c-section was performed due to arrest of labor. A 2100 gr baby with APGAR scores of 9 and 10, respectively was delivered. The baby was discharged without any complications.
Conclusion: We are in the opinion that, detection of FIUVV should warrant a detailed sonogram and fetal echocardiography. Karyotyping should be reserved only for those with accompanying other fetal anomalies. Then, the patient should be followed up on weekly basis till term in the absence of any complications. The reasons for this close surveillance are possibility of thrombus formation, monitorization of fetal well-being and growth. Delivery should be planned after 38 weeks of gestation.

Keywords: Fetal, umbilical vein varix, antenatal diagnosis, management

FIRST TRIMESTER SCREENING AND PREVENTION STRATEGIE - 461 (CASE REPORT)

Detection of 15q (Prader Willi/ Angelman) deletion in maternal cell-free fetal dna test, a case report

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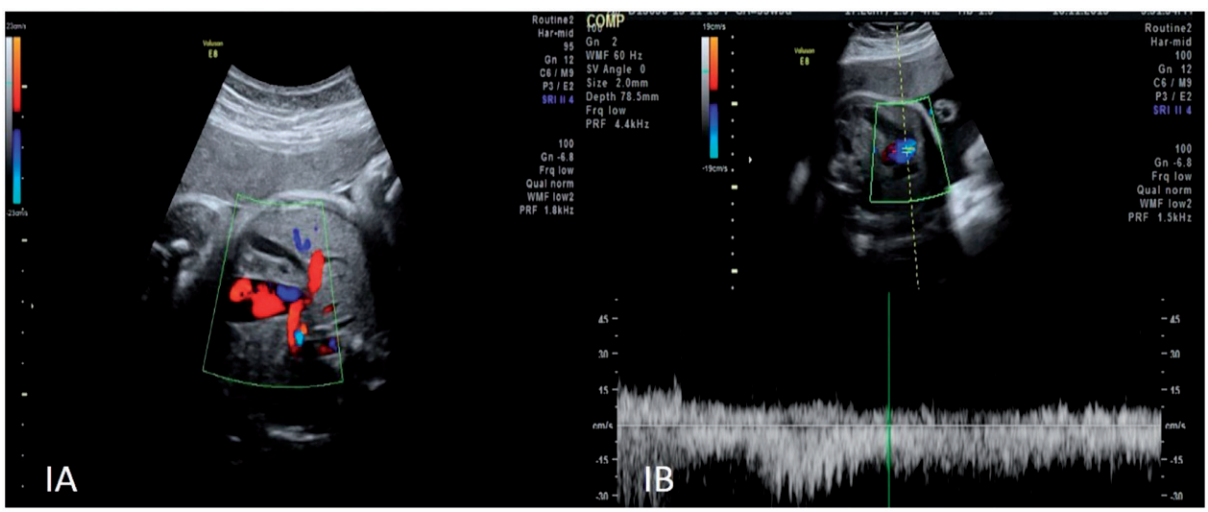
Introduction: The number of invasive diagnostic procedures has been significantly decreased since non-invasive prenatal screening (NIPS test) was introduced into prenatal screening work-up. NIPS is considered to be an effective test in the diagnosis of some of known microdeletion syndromes. The evidence for using this test for screening these syndromes is limited. due to the low prevalence rate of microdeletion syndromes, NIPS test's positive predictive value might not be high enough to screen population, and most of the positive test results, therefore, might be false-positive for patient population with an average risk. We presented the first 15q (Prader-Willi/Angelman syndrome) deletion detected by nips in a patient with a twin pregnancy who had undergone in vitro fertilization.
Clinical cases and summary results: A 29-year-old woman with dichorionic diamniotic twin pregnancy applied to our clinic for nips test on her own choice at about 12 weeks gestational age. massively parallel sequencing technology was used for detection of chromosomal aneuploidies and microdeletion syndromes, resulting in positive for 15q microdeletion (figure1). She was counseled for prenatal ultrasound and underwent amniocentesis procedure in order to be able to confirm the test result. It was confirmed with fish technique that one of the fetuses has a15q deletion (figure2). A selective fetocites procedure was succesfully done for the fetus with 15q deletion. The other baby was vaginally delivered at term. the postnatal evaluation of the baby was unremarkable.
Conclusion: As a consequence, theoretically NIPS tests may have a lower chance in the detection of micro deletion syndromes, but it should be assessed with wider studies to be able to reveal its role as a screening tool in the evaluation of these diseases in a population with an average risk. Additionally, NIPS testing shows that commercial



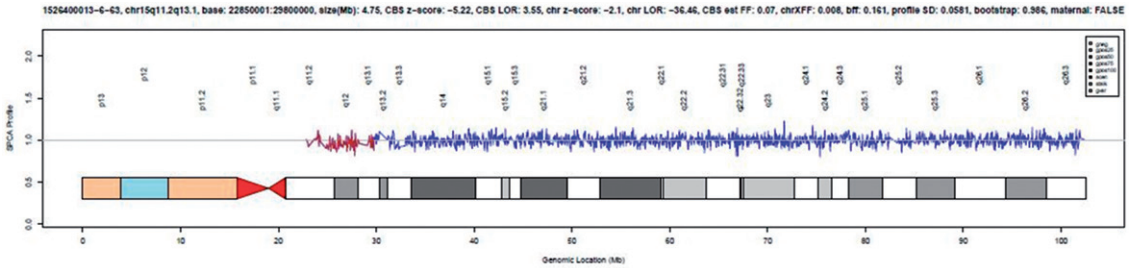


Figure1: Massive parallel squencing result in non-,invazive prenatal test

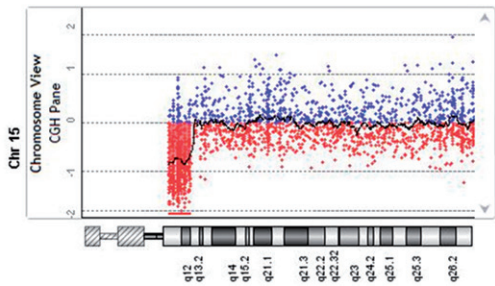


Figure2: Comparative genomic hybridization in amnios fluid

marketing of medical tests directly to the patients can cause overuse of some medical tools before exact evidence emerges.

Keywords: Non-invazive prenatal testing, prenatal detection of 15q deletion, prenatal diagnose of Angelman/Prader-Willi syndrome , prenatal diagnose of micro deletion syndromes

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First trimester biochemical screening in female kidney and liver graft recipients

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Presenter: **N. Mazanowska**

Introduction: Frist trimester combined screening is based on taking into account maternal age, results of an ultrasound examination performed between 11 and 13 + 6 weeks of pregnancy and serum biochemistry, assessing concentrations of placental products such as free beta-hCG and PAPP-A in maternal blood sample. It is well known that factors such as maternal weight, smoking or method of conception influence the concentration of free beta-hCG and PAPP-A and in calculation of patient specific risk the measured level is converted into multiples of the expected median (MoM). There are no data available on the levels of free beta-hCG and PAPP-A in post-transplant pregnancies. The aim of the study was to evaluate the first trimester biochemical serum markers in pregnant kidney and liver graft recipients.

Materials and methods: Sixty-two post-transplant women that delivered in our Department in years 2010-2014 were identified. Among them there were thirty-three liver and twenty-nine kidney recipients. Eighteen patients underwent combined first trimester screening based on the maternal age, ultrasound markers (nuchal translucency, nasal bone, ductus venosus flow and tricuspid flow) as well as serum biochemistry performed by the holders of FMF certificate of competence. The blood samples were analyzed by means of the Delfia and Roche Cobas analyzer. The calculations were performed by means of software approved by the FMF and the measured levels of free-bhCG and PAPP-A were exhibited as multiples of median (adjusted to gestational age, maternal weight, smoking status, ethnicity and method of conception).

Clinical cases & summary results: The eighteen patient that underwent combined screening were 10 liver and 8 kidney recipients. The results of combined screening did not reveal high risk of trisomy in all the patients except for one. In one patient due to calculated high risk of trisomy 21 in the first trimester (with no wish for invasive procedure at that time) and premature rupture of membranes in 20 week of gestation cordocentesis was performed which revealed normal male karyotype. The pregnancy resulted in preterm delivery in the 25th week of pregnancy and the baby died. The median MoM for PAPP-A in the liver recipients was 1.679 and for free beta-hCG 2.186. In the kidney recipients median MoM for PAPP-A was 1.139 and for free beta-hCG was 2.107. Second trimester ultrasound examination revealed no congenital anomalies in the fetuses. All the pregnant graft recipients were followed up in our center until delivery and no cases of trisomy 21, 13 or 18 as well as no other congenital abnormalities were detected.

Conclusion: Our preliminary results may indicate that the serum biochemistry might be changed in graft recipients. The main limitation of the study, which is a small number of participants enrolled, emerges from an alarming fact that only 29% of pregnant post-transplant patients were referred to our center before 14 weeks. The performance of the first trimester combined screening in the post-transplant population remains to be established and the optimization of perinatal care is essential.

Keywords: First trimester screening, PAPP-A, free beta-hCG, graft recipient, posttransplan pregnancy

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Fetal aneuploidy screening results in maternal plasma samples redrawn due to insufficient fetal cfDNA in the initial sample

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Introduction: To determine the redraw success rate of samples initially receiving no cfDNA result due to low fetal fraction (FF) and to characterize the results of redrawn samples.

Materials and methods: A review of initial cfDNA results of 229,454 consecutive samples submitted to Ariosa Diagnostics for the HarmonyTM Prenatal Test was conducted. cfDNA samples were reviewed and categorized as having an increased probability for

trisomy 21 (T21), trisomy 18 (T18) and trisomy 13 (T13), decreased probability for trisomy and no reportable results due to low FF. Samples that received no reportable results due to low FF (<4%) were identified, tracked and matched to repeat cfDNA samples. The results of redrawn samples were also categorized and compared to the results of initial samples. The overall and redraw success rates were evaluated (Table 1). Pregnancy outcome data was not obtained.
Clinical cases and summary results: Of the 229,454 samples submitted, 97.4% (223,649) received a result on their initial cfDNA sample, with 1.49% (3287) receiving results indicating an increased probability for trisomy 21, 18 or 13. Non-reportable results due to low fetal fraction were seen in 1.8% (4100) of the initial samples. Of this group, 74.2 % (3041) elected to have a repeat cfDNA sample collected, with 68% (2058) receiving a reportable result on their second sample. While the mean fetal fraction was lower in the redrawn samples (6.58% compared to 11.49% in the initial samples), results indicating a low probability for trisomy 21, 18 and 13 were generated for 98% (2017) of these samples.
Conclusion: Of cfDNA samples redrawn after an initial sample failure due to low FF, 68% received a result with 98% indicating a low probability for the autosomal trisomies. Recommendations that women receiving 'no call' cfDNA screen results be referred for diagnostic testing due to an increased aneuploidy risk result in increased number of invasive prenatal diagnostic tests. This study shows submitting a second cFDNA sample yields a reportable result for most women and is a viable pathway in clinical care.

Keywords: NIPT, redraws, low-risk results

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Hipothyroidism screening during pregnancy

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Presenter: **María Castillo Lara**

Introduction: Hypothyroidism may have adverse effects on pregnancy, depending upon the severity of biochemical abnormalities. It has been associated with preeclampsia, preterm delivery, neuropsychological and cognitive impairment. Subclinical hypothyroidism is defined by tyroid stimulating hormone (TSH) elevated levels with normal free tetraiodothyronine (T4), with no clinical manifestations of hypothyroidism. There is controversial regarding the cut-off value of TSH level used in pregnant women. The aim of this study was to determine the correct cut-off of TSH in order to diagnose subclinic gestational hypothyroidism. Secondary, we determine the TSH level which predicts better the presence of positive thyroglobulin antibodies (anti-TG) and anti-thyroid peroxidase/antimicrosomal antibodies (anti-TPO).
Materials and methods: The inclusion criteria for this study were pregnant women between 6-12 weeks of gestation. The exclusion criteria were pre-pregnancy thyroid disease, other medical history of Diabetes or Hypertension, or abnormal levels of free T4 at the moment of the study. Covariates: the following data were collected from each patient: gestational age at the time of the serum determination, TSH determination in serum, free T4, anti-TG and anti-TPO antibodies. In the first visit, TSH, free T4, anti-TG and anti-TPO antibodies, were determined. Statistics: In order to determine the correct cut-off of TSH we calculate TSH centiles and, to evaluate the capacity of TSH to predict the detection of anti-TG autoantibodies we performed a ROC (Receiver Operating Characteristic curve).
Clinical cases & summary results: 107 pregnant women were included in our study. Seven presented abnormal levels of free T4 and were excluded. Range, median and standard deviation of free T4, anti-TG and anti-TPO antibodies was obtained. The group selected was resampled to a 5000 participants sample (by the technic of bootstrap).Based on this, we calculated TSH percentiles (Table 1). 11 patients present high levels of anti-TG antibodies, (>115UI/ml). Figure 1 showed ROC curve, in order to determine the best cut-off point of TSH associated with positive anti-TG antibodies.
This point corresponds with TSH level of 2.47 μUI/ml; which present a sensitivity of 81,8% and the specificity of 68,5% (AUC = 0.801).
9 participants showed high levels of anti-TPO antibodies (>34UI/ml). We performed ROC curve to determine the best cut-off point of TSH levels that will predict the presence of positive anti-TPO.
The calculated AUC 0.563; conclude that TSH levels are not valid to predict the presence or absence of positive anti-TPO.
Conclusion: In our area, the limits of normal level for TSH in the first trimester of pregnancy are between 0,066μUI/ml and 4.721μUI/ml.
In the first trimester, the cut-off of TSH that best predicts the presence of anti-TG antibodies is 2.47μUI/ml.
TSH is not a valid parameter to predict the presence of positive antiTPO antibodies in the first trimester.

Keywords: Subclinic gestational hypothyroidism, free tetraiodothyronine, thyroglobulin antibodies, anti-thyroid peroxidase/antimicrosomal antibodies

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Accuracy and reproducibility of fetal fraction measurement using quantitation at polymorphic loci with microarray

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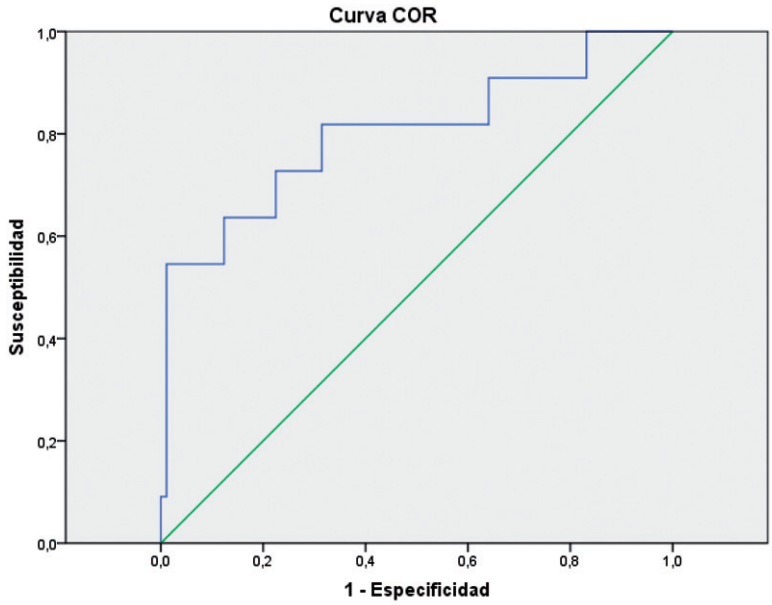
Roche Sequencing Unit

TABLE 1. RESULTS COMPARISON

	T21 Increased probability	T18 Increased probability	T13 Increased probability	Total Increased probability	Median FF
Redraw due t low FF (Reported)	0.83% (17)	0.53% (11)	0.63% (13)	1.99% (41)	6.58%
First draw – adequate FF (Reported)	1.09% (2,411)	0.28% (610)	0.12% (266)	1.49% (3,287)	11.49%
	p=0.24	p=0.03	p<0.01	p=0.06	p<0.01



		Valor (µUI/ml)	Bootstrap[a] Sesgo	Error típico	Intervalo de confianza al 95% Inferior	Superior
Percentiles	2,5	*0,066*	0,023	0,062	0,029	0,281
	5	0,126	0,075	0,120	0,050	0,498
	10	0,414	,070	0,175	0,185	0,850
	50	2,009	-0,020	0,161	1,765	2,400
	90	3,789	0,006	0,204	3,395	4,090
	97,5	*4,721*	0,510	1,375	4,032	8,820

Introduction: Measurement of the proportion of cell-free DNA (cfDNA) in maternal plasma that originates from the pregnancy, commonly known as fetal fraction (FF), is widely considered to be a critical quality control metric in the application of cfDNA screening for fetal aneuploidy. Different methodologies have been employed for FF estimation with varying demonstrations of accuracy when compared to a standard measure of Y sequence quantitation in pregnancies with a male fetus. We have previously demonstrated that FF measurement is reproducible using single nucleotide polymorphisms (SNPs) across different quantitation methods (microarray and sequencing). In this study we evaluate the accuracy and reproducibility of FF measurement with SNPs compared to Y sequences using microarray quantitation.
Materials and methods: Maternal plasma samples were assayed on custom arrays designed to quantify non-polymorphic targets on chromosomes of interest for aneuploidy assessment (21, 18, 13, X, and Y) and polymorphic targets (for fetal fraction assessment) as previously described. The coefficients of determination were calculated for the measurement of fetal fraction between SNPs and Y sequences as well as for fetal fraction measurements between the first and second tubes for the same patient sample.
Clinical cases and summary results: Comparison of the SNP to Y sequence quantitation showed a strong correlation ($r^2 = 0.99$). Fetal fraction measurement between the first and second tubes was highly reproducible ($r^2 \geq 0.99$).
Conclusion: Microarray quantitation of SNPs is an accurate and reproducible method for fetal fraction estimation. This study provides a useful benchmark for ensuring reliability and accuracy of fetal fraction measurement.

Keywords: NIPT, Fetal fraction, cfDNA, prenatal testing

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Cervical biomarkers as predictors of successful labor induction by foley catheter

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Introduction: Prediction of successful labor induction is difficult, indicating a need for a biochemical test. The levels of insulin-like growth factor binding protein-1 (IGFBP-1) and phosphorylated IGFBP-1 (pGFBP-1) in the cervical fluid reflect cervical ripeness. Matrix metalloproteinases (MMPs) and their endogenous tissue inhibitors (TIMPs) are mediators in preterm labor but also appear to play a role in the initiation of labor at term. The mechanism of Foley catheter is a direct mechanical stretching of the cervix and lower uterine segment, combined with local secretion of endogenous prostaglandins. Little is known of the effect of Foley catheter induction on biochemical mediators in the cervix.
Materials and methods: We included 35 nulliparous women with uncomplicated singleton pregnancy, intact amniotic membranes, cephalic presentation, and an unripe cervix (Bishop score <6) $\geq$ 37 weeks of gestation scheduled for induction of labor by Foley catheter

Table 1 Cervical biomarker levels.

	At start of IOL				At balloon expulsion				
μg/L	Mean	SD	Median	Range	Mean	SD	Median	Range	*p*-value
IGFBP	25.2	55.3	1.8	0.07–261	64.5	132.4	23.5	1.1–718	0.008
pHIGFBP	71.6	176.4	5.5	0.3–976	143.7	270	75.5	3.4–1530	0.001
MMP-8	683.6	582.6	446	28–1998	241.6	151.1	230	23–661	0.000
TIMP-1	25.6	31.3	16.2	1.1–161.9	39	34.4	32	7.2–172.4	0.45
TIMP-2	11.4	8.2	9.3	1.2–38.5	48.6	93.3	18.9	1.0–539.0	0.018
MMP-9	697.7	748.4	431.5	11–3019	159.6	160	178.4	13.5–666.7	0.000
MMP-2	29.1	25.8	25.5	0.7–110.9	7.9	5.8	5.6	2.0–29.5	0.77
MMP-8/TIMP-1 molar ratio	36.8	55.3	14.2	0.4–245.9	4.5	6.6	3.9	0.1–39.5	0.000

between September 2014 and June 2015. Serial cervical swab samples were collected at Foley catheter insertion and expulsion. The concentrations of IGFBP-1, pIGFBP-1, MMP-2, MMP-8, MMP-9, TIMP-1, and TIMP-2 were analyzed. Concentrations of cervical IGFBP-1, pIGFBP-1, and MMP-8 were measured by immunoenzymometric assays using monoclonal antibodies (Medix Biochemica, Espoo, Finland). MMP-2, MMP-9, TIMP-1 and TIMP-2 analyses were carried out by using commercial ELISA kits (Biotrak ELISA Systems,GE Healthcare Life Sciences and Quantikine ELISA Kit,R&D Systems).

Clinical cases and summary results: The median time from Foley catheter insertion to expulsion was 255±169 minutes. Table 1 shows the concentrations of the cervical biomarkers at the start of labor induction and after Foley catheter expulsion. The median IGFBP-1 and pIGFBP-1 levels increased (from 1.8 to 23.5 and from 5.5 to 75.5 μg/l, p=0.008, p=0.001, respectively) in relation to the time the Foley catheter was retained. MMP-8 and MMP-9 levels decreased (from 446 to 230 and from 431.5 to 178.4 μg/l, p=0.00, p=0.00, respectively) during Foley catheter induced cervical ripening. On the contrary, the TIMP-2 concentrations increased (from 9.3 to 18.9 μg/l, p=0.02). The levels of MMP-2 and TIMP-1 did not significantly change. The cesarean delivery rate was 44 % (n=15). There were no significant differences in the biomarker levels according to the mode of delivery.

Conclusion: IGFBP-1, pIGFBP-1 and TIMP-2 levels increase, and MMP-8 and MMP-9 levels significantly decrease in the cervix during Foley catheter induced ripening in nulliparous women and seemed to be biochemical mediators of this event. However, these cervical biomarkers are not suitable for predicting the outcome of labor induction.

Keywords: Induction of labor, Foley catheter, Cervical biomarker, Insulin-like growth factor binding protein-1 (IGFBP-1), Matrix metalloproteinases

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Platelets in first trimester as a predictor of perinatal outcome: a based population study

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Presenter: **G. Nozaleda Pastor**

Introduction: Prediction of perinatal outcome from early stages in pregnancy has become a health priority as a way to improve both maternal and neonatal healthcare. Normal pregnancy is characterized by an increase in platelet aggregation and slightly lower mean platelets counts than in healthy non-pregnant women. Longitudinal studies showed that in women with adverse perinatal outcome such as Preeclampsia (PE) and intrauterine growth restriction (IUGR) there is a reduction in platelet count. Some other studies showed that hypertensive disorders cannot be predicted based on platelet count during early stages of pregnancy. Nevertheless, an increased mean platelet volume (MPV) reflects enhanced platelet activation which may be caused by impairment in uteroplacental circulation.

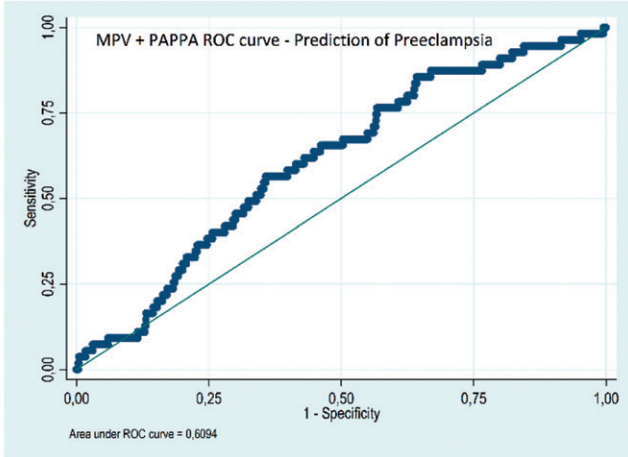
Materials and methods: A retrospective population-based study was conducted between 2013 and 2015 to examine whether platelet levels and MPV in the first trimester of pregnancy, 8-14 weeks of gestation, are associated with obstetric complications. The second aim is to rule out variables that may have a significant contribution on platelet levels during first trimester. Robust linear multiple regression model was constructed to rule out variables that were significantly related to platelet count levels during first trimester of pregnancy. ROC curves analysis were performed to test MPV alone and in combination with PAPPA levels to find out whether these markers are good predictors of PE and IUGR.

Clinical cases & summary results Platelet count was measured in 6097 patients at first trimester of pregnancy assuming that the distribution did not follow an exact normal pattern in our sample. Results from the linear multiple regression including 2124 observations with a R-squared of 0,022 showed that there was a significant contribution on platelets count at first trimester from: maternal ethnicity, presence of rheumatologic disease and maternal weight ($p<0,05$). There was not significant association between platelet count at first trimester and any adverse perinatal outcome. The area under ROC curve for PE and IUGR including MPV alone and in combination with PAPPA levels at first trimester of pregnancy showed the following results: 0.609 for PE by MPV + PAPPA, 0.596 for IUGR by MPV + PAPPA, 0.534 for PE by MPV.

Conclusion: The major finding of our study is that platelet count during first trimester of pregnancy is not associated with PE, IUGR, preterm delivery, gestational diabetes or any adverse perinatal outcome at birth. High MPV alone and in combination with low PAPPA levels at first trimester appears not to be a good predictor of PE or IUGR either.

Keywords: Platelets, perinatal outcome, preeclampsia, intrauterine growth restriction

		Platelets
Preeclampsia	Chi Square	2.130
	df	4
	p	.712
Perinatal/Antenatal death/Late miscarriage	Chi Square	1.319
	df	4
	p	.856
Non reassuring CTG	Chi Square	2.111
	df	4
	p	.715
CS due to non reassuring CTG	Chi Square	2.705
	df	4
	p	.608
IUGR (< 10th Centile)	Chi Square	.902
	df	4
	p	.924
Preterm delivery (< 37 wks)	Chi Square	1.242
	df	4
	p	.871
Ph at birth <7.10	Chi Square	1.564
	df	4
	p	.815
Resuscitation > 3	Chi Square	1.019
	df	4
	p	.907
Apgar 5min ≤7	Chi Square	1.341
	df	4
	p	.854



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Observational study of misoprostol 200 μG vaginal delivery system (MISODEL®) in Dutch obstetric practice

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Introduction: Patient population as well as obstetric practice in the Netherlands may deviate from those in the USA, where the phase III study on Misodel® was performed. Aim of this prospective, observational, multi-centre, open-label study was to retrieve 'real world evidence' about the effectiveness and safety of misoprostol 200 micrograms misoprostol vaginal delivery system (Misodel®) in Dutch obstetric practice.
Materials and methods: Misodel® was applied in accordance with clinical routines after obtaining informed consent for (coded) use of medical chart information. Primary endpoint was the time to vaginal delivery after insertion of Misodel®. Key secondary endpoints were time to any delivery, Caesarean section rate, need for oxytocin after priming, maternal/foetal/neonatal safety and experience of the treating physician.
Clinical cases and summary results: Thirteen centres enrolled 106 patients, of whom 55% were nulliparous, from December 2014 till August 2015. Total vaginal delivery rate was 78%. Median time to vaginal delivery was 14.0 h, 19.1 h for nulliparous and 12.6 h for multiparous women. Incidences of a. vaginal delivery and b. vaginal delivery and Caesarean section combined within 24 h were 60.4% and 71.7% respectively. The proportion of women needing oxytocin for augmentation was 58.9% for nulliparous and 25.0% for multiparous women. The incidences of tachysystole and tachysystole with foetal heart rate involvement were 23.6 and 14.2% respectively. Tocolysis was given in 14.2% of the cases. Meconium-stained liquor was seen in 16.0%. Two neonates had a low 5-minute APGAR-score and six neonates were diagnosed with metabolic acidosis (umbilical artery pH < 7.05 and base deficit > 12 mmol/l). Experience of the treating physician with Misodel® regarding efficacy, safety, single dose for 24 h, controlled release, ease of insertion, possibility of retrieval and reduction in vaginal examinations scored on average 4 out of 5.
Conclusion: Use of Misodel® in Dutch obstetric practice resulted in a relatively high vaginal delivery rate and a short time to vaginal delivery. In the majority of multiparous patients, oxytocin augmentation was not needed. Foetal and neonatal safety warrant the cautious use of Misodel®. Dutch doctors were satisfied with the use of Misodel®.

Keywords: Induction of labour, misoprostol vaginal delivery system, Misodel

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Minor alterations of glucose metabolism: the flat OGTT and its effects on fetal growth

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Introduction: It has been hypothesized that an enhanced insulin response can influence fetal growth. This altered response would result in a reduction of physiological post prandial glycemic peak and thus, reducing the transplacental passage of nutrients, could lead to compromise the optimal fetal growth. The presence of such alteration can be detected during the oral glucose tolerance test in the form of an inadequate increase in blood sugar after the load called ''flat curve''. In the literature are reported few studies which confirm this

hypothesis (1-4) . However, the threshold value that could represent a risk factor is not uniquely defined.
Materials and methods: We performed a retrospective study over the past five years (2010-2015) on 18376 women who delivered at Careggi University Hospital. Of these 1294 (7%) were excluded because had a multiple gestation and 114 (0.7%) for pregestational diabetes. 6517 (38.1%) were not screened for gestational diabetes, 1933 (11.3%) had a positive screening and 8518 (49.9%) were screened negative and constitute our study group. We analyzed this population in order to find a useful cut-off value for defining the ''flat OGTT'', than we verify the effect of the ''flat OGTT'' on pregnancy outcome.
Clinical cases and summary results: It has been defined as a flat curve an OGTT whose delta between fasting glucose and blood glucose one hour after administration of 75 g glucose was less than 5 mg/dl. In the OGTT negative group we had 494 women with flat curve and 8024 women with delta > 5 who constitute our control group. We found an increased risk of small for gestational age (SGA) <10° centile (11.8% versus 9.0% *p*= 0.033 OR 1.36 95% CI 1.03, 1.81) and severe SGA <3° centile (4.7% versus 2.8% *p*=0.019 OR 1.69 95%CI 1.09, 2.62) in the flat curve group respect to controls. In the study group we had a parallel decrease in the incidence of macrosomia (3.6% versus 6.2% *p*=0.023 95% CI 0.57 0.36, 0.93). In a multivariate analysis we saw that being underweight, gain insufficient weight at term and having a flat OGTT are all independent risk factors associated with SGA. Finally, we went to analyze the correlation between flat OGTT and other obstetric outcome. The complications considered were caesarean section, preterm delivery (<37 weeks), operative delivery and intrauterine fetal death. None of these outcomes were statistically significant associated.
Conclusion: Our study confirm the results already present in the literature that pregnant women with flat OGTT in pregnancy are at increased risk of SGA. Based on these data it is desirable that dietary intervention studies in pregnancy are conducted in order to determine whether this risk can be reduced.

Keywords: Flat curve, small for gestational age, gestational diabetes

ASSOCIATION BETWEEN FLAT CURVE AND SGA

	FLAT CURVE (N=494)	CONTROLS (N=8024)	p	OR (95%CI)
< 10° pc	58 (11.8%)	709 (9.0%)	0.033	1.36 (1.03, 1.81)
<5° pc	28 (5.7%)	358 (4.5%)	0.225	1.28 (0.86, 1.90)
<3° pc	23 (4.7%)	224 (2.8%)	0.019	1.69 (1.09, 2.62)

MULTIVARIATE ANALYSIS OF RISK FACTORS ASSOCIATED WITH SGA

DELIVERIES >37WKS	UNIVARIATE ANALYSIS		MULTIVARIATE ANALYSIS	
	OR (95% CI)	p	OR (95% CI)	p
FLAT CURVE	1.43 (1.06, 1.95)	0.021	1.41 (1.02, 1.94)	0.038
INSUFFICIENT WEIGHT GAIN	1.54 (1.29, 1.83)	<0.001	1.44 (1.21, 1.72)	<0.001
BMI	0.94 (0.92, 0.96)	<0.001	0.95 (0.92, 0.97)	<0.001

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Fatty acid profiles at antenatal booking are a predictor of gestational diabetes mellitus

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Presenter: **Saidee Samuelson**

Introduction: Gestational Diabetes Mellitus (GDM) is a condition resulting from insulin insensitivity, it currently affects around 16% of pregnant women in the UK. The pathogenesis of insulin insensitivity is complex, however the contribution of the innate immune and inflammatory response is clear. Fatty acids are known independently to influence causative factors associated with GDM risk.
Materials and methods: 300 pregnant women were recruited to a double blind placebo controlled study, to examine the effect of fish oil supplementation on the lipid profile and infant outcomes of high risk pregnant women. At recruitment participants booking bloods were taken in early pregnancy prior to supplementation. Their fatty acid composition were analysed and compared to normal healthy controls. The lipid profile were analysed by sub group based on current known risk factors, in this case to GDM.
Clinical cases & summary results: The n-3 and n-6 polyunsaturated fatty acids (PUFA's) were analysed. Compared to normal health control (NHC) pregnancies the fatty acid (FA) profiles of women who went on to develop GDM showed:

- Sub-optimal n-6 PUFA
- Elevated n-3 PUFA
- Elevated LA/AA ratio
- Elevated LA/DHA ratio

LA= linoleic acid; AA = arachidonic acid; DHA = docoshexaenoic acid;
Conclusion: There are significant, defined differences in lipid profiles of pregnant women at risk of GDM compared to NHC pregnancies. This suggest significant differences in either periconceptual dietary status, periconceptual gut nutrient interactions or of periconceptual FA metabolism/regulation in women at high risk of GDM when compared to NHC women. This outlines a predictive value to baseline FA profile that may identify women who would benefit from peri-conceptual supplementation of targeted FAs.

Keywords: Predicting GDM, PUFAs, DHA, Fish oil, omega-3, omega-6

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Birth at 37 weeks gestation and associated perinatal risks versus term delivery - case-control study

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Presenter: **M. L. Ognean**

Introduction: Early term delivery rate is increased worldwide and in Romania in the latest years due to multiple factors including increased maternal age and more complicated pregnancies, increased number of multiple pregnancies, improved pregnancy management, and increased number of deliveries induced for maternal and fetal medical complications, gestational age estimation errors, demographic changes, etc. Early term birth - compared to term delivery - is associated with increased rate of perinatal complications as revealed by data published in the literature. The authors aimed to evaluate the short term prognosis of infants delivered at 37 weeks gestation compared to infants delivered at term.

Materials and methods: In order to evaluate the short term prognosis of infants delivered at 37 weeks gestation versus infants delivered at term for each infant born at 37 weeks a pair case having a birth weight˘ 100g was identified in the database of the Maternity Hospital Sibiu during the study period (1 January 2013 - 31 December 2015). Epidemiological data - birth weight (BW), gestational age (GA), gender, residence, maternal characteristics -, labor and delivery, and perinatal complications - birth resuscitation, Apgar score, respiratory distress, pulmonary hypertension, jaundice, anemia, neonatal intensive care unit (NICU) admission, etc. - were extracted from the database and compared using SPSS 10.0 for Windows; p was considered statistically significant if < 0.05 (confidence interval 95%).

Clinical cases & summary results: The study included 686 infants: 343 born at 37 weeks gestation (mean BW 2953.7±415.6 g) and 343 delivered at term (mean BW 2957.4±406.2 g). No difference was found between the groups as regards the gender (51% male in both groups) but more twins (8.2 vs 3.2%, p=0.009) and more infants conceived using assisted reproductive techniques (5.2 vs 0.3%, p=0.000), and more C-section deliveries (39.7 vs 27.1%, p=0.000) were found at 37 weeks gestation. Apgar score was lower at 1 and 5 minutes (p=0.000, p=0.006), but no difference was found as regards the need for resuscitation at birth. Respiratory distress was identified more often at 37 weeks gestation (9.9 vs 0%, OR 2.11[CI 1.94-2.39]), as well as peristent pulmonary hypertension (23.7 vs 4%, p=0.003, OR 7.45[CI1.64-23.72]), jaundice needing phototherapy (47.5 vs 22.2%, p=0.000, OR 3.18[CI2.28-4.43]), anemia at birth (30.7 vs 15.9%, p=0.014, OR 2.34[CI1.17-4.70]), and need for NICU admission (10.5 vs 1.2%, p=0.000, OR 9.94[CI3.49-28.24]).

Conclusion: Delivery at 37 weeks gestation increases the risks for perinatal complications, mostly those related to immaturity - cardiac and respiratory difficulties, hyperbilirubinemia, anemia -. These complications are partially explained also by the increased number of multiple pregnancies and C-section deliveries in the group of 37 weeks gestation infants. A specific analysis of the epidemiology of early term birth is mandatory in order to decrease their number and improve the neonatal prognosis.

Keywords: Early term, neonatal prognosis, perinatal complications

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Expected financial and health impact of advising pregnant women to use calcium supplements: a decision analysis

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Introduction: Calcium supplementation is an efficacious intervention for the prevention of pre-eclampsia. Despite its documented protective effect, relative cheapness, and safety, calcium supplementation is still not routinely advised to pregnant women in most countries. We aimed to predict the impact of advising pregnant women to use calcium supplements (1000 mg/day) on the number of cases of pre-eclampsia prevented and related health care costs.

Materials and methods: By use of a decision-analytic model, we assessed the expected impact of advising calcium supplementation during pregnancy, to either (1) all pregnant women, (2) women at high risk of developing pre-eclampsia, or (3) women with a low dietary calcium intake compared with current care. Calculations were performed for a hypothetical cohort of 100 000 pregnant women living in a high-income country. Difference in number of cases of pre-eclampsia between the new scenarios and current care was calculated in terms of absolute reduction, relative reduction, and number needed to advise. Net financial impact was expressed as the difference between health care expenses and savings. Sensitivity analyses were performed to assess the impact of variations in input values on model outcomes.

Clinical cases and summary results: Advising calcium supplementation to all pregnant women, women at high risk of pre-eclampsia, or women with a low dietary calcium intake would reduce the incidence of pre-eclampsia by 25%, 8%, or 13%, respectively. Expected net financial benefits of the three scenarios were of €4 621 465, €2 059 165, or €2 822 115 per 100 000 pregnant women, respectively. Sensitivity analyses showed a clinical and financial net benefit of advising calcium supplementation during pregnancy compared with current care for all scenarios under all plausible parameter variations.

Conclusion: Advising pregnant women to use calcium supplements can be expected to cause substantial reductions in the incidence of pre-eclampsia as well as related health care costs. Largest impact is expected from calcium supplementation advice to all pregnant women, not subgroups only.

Keywords: Calcium supplementation, pre-eclampsia, prevention, decision analysis, impact

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Oxidative stress: their role in pregnancy and miscarriage

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Introduction: The pregnancy is defined as a condition of increased oxidative stress. Some studies show that the systemic and placental oxidative stress have a role in pathophysiological mechanism of spontaneous and recurrent miscarriage occurence. The goal of this research was to determine the intensity of pro-oxidative processes (LPx and GSH), antioxidative enzymes (SOD, CAT, GSH, GSH-Px) and TAS in patients with spontaneous abortions.
Materials and methods: A total of 85 patients in the first trimester of pregnancy, were involved in the research: 35 patients with missed abortion (group M) and control group of 50 healthy pregnancies (group N). The intensity of lipid peroxidation (Lx) was determined with a modified thyobarbituric acid method. The GSH content in the homogenate was determined based on the amount of non-protein sulfhydryl residues using the Ellman reagens. Antioxidative parameters were measured with: SOD method with xanthine oxidase-using commercial RANSOD sets, CAT method by Aebi, the enzyme activity was measured by monitoring the decomposition of H2O2 at 240 nm, the activity of GSH-Px was determined using hydrogen peroxide as a substrate. The total antioxidative status (TAS) was determined using the FRAP method.
Clinical cases and summary results: The average value of Lx in group M was 44.57 pmol/mg Hgb and in group N was 26.06 pmol/mg Hgb (p <0.001). Alsow, there is a statistically highly significant difference (p <0.001) in CAT and in TAS content between patients with missed abortion and the control group: (CAT, M-21.46 and N 30.94 nmol/mg Hgb), (TAS, M-277.66 and N-452.12 μmol/L). A statistically significant (p <0.05, r=0.37) positive correlation between LPx and CAT in the group of patients with missed abortion was also noted. The other results were: (GSH, M-3.10 and N-3.07 μmol/ml Er), (SOD, M-1211.66 and N-1116.36 IU/g Hgb), (GSH-Px, M-1091.57 and N-1291.38 nmol/mg Hgb). By ANOVA testing, there is a statistically significant difference (p <0.05) in SOD and GSH-Px between patients of exemined group.
Conclusion: Determination of the value of pro-oxidative and antioxidative parameters in patients with spontaneous abortion can indicated the condition of fetoplacental unit and these analyses can be included in protocol of rutine perinatal diagnosis.

Keywords: Oxidative stress, spontaneous abortions, perinatal diagnosis

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Polyhydramnios in pregnant women undergoing long-term hemodialysis: a treatable pathology, a hemodialysis dose adequacy tool and an outcome predictor

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Introduction: Although still uncommon, pregnancy occurs in women on chronic hemodialysis (HD) with a frequency that is probably increasing. In this population, polyhydramnios (PH) is a common complication with prevalence ranging from 20 to 60%. Increased fetal urine production secondary to urea osmotic diuresis probably is the cause of the excessive amniotic fluid volume. Different reports suggested that polyhydramnios in HD patients could be treated by increasing HD dose and, therefore, decreasing maternal and fetal blood urea levels and osmotic diuresis. In the past 15 years we have followed up 87 pregnancies in patients requiring HD. The objectives of the study are to demonstrate that PH could be treated adjusting HD dose and to confirm the association between amniotic fluid volume and fetal outcome.
Materials and methods: In this retrospective cohort study, prospectively collected data from all 87 pregnancies in women undergoing dialysis at the University of São Paulo Medical School, between January 2000 and December 2015, were analyzed. Forty four pregnant women on HD developed PH or excess of amniotic fluid (PH, amniotic fluid index (AFI) > 25cm, excess of amniotic fluid AFI > 18 cm), thirty eight of them were treated increasing the dialysis time in half an hour. All patients treated normalized the amniotic fluid volume, within 30 days. Six patients were not treated because they refuse increasing hemodialysis time or they developed PH late in pregnancy.
Clinical cases and summary results: The mean AFI±SD before and after the change in HD dose were, 27.1±7.4 versus 17.36±3.3 cm, respectively (p <0.0001, Wilcoxon test). The mean serum urea level before and after the change in HD dose were, 91.8±21.8 versus 64.8±14.4 mg/dL, respectively (p <0.0001, t test). The gestational age and fetal weight of the patients with excess of amniotic fluid were significantly higher than the remaining 43 patients (35±2 versus 32±4 weeks, p <0.001 and 2081±537 versus 1347±677g, p <0.0001, respectively). Using a multivariate linear regression model, with birth weight as the dependent variable, we observed that PH was positively related to birth weight, even after adjusting to predialysis serum urea, hemodialysis dose and to the presence of preeclampsia.(β=329, 95% CI 83 to 576, p=0.01). At multivariate logistic regression analysis, the presence of PH was positively related to a better fetal outcome (p=0.03). We also observed a normal umbilical Doppler velocimetry at the time of the PH diagnose in all patients with elevated AFI.
Conclusion: We conclude that PH in pregnant women undergoing hemodialysis is a treatable pathology, can be used as an HD dose adequacy tool and is related to a better fetal outcome. We also speculate that the presence of PH is probably an indirect evidence of an adequate placental blood flow and this may be the reason for the better fetal outcome.

Keywords: Polyhydramnios, hemodialysis

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Fetal speech movements in response to intravaginal emission of music are due to audition, not to vibration

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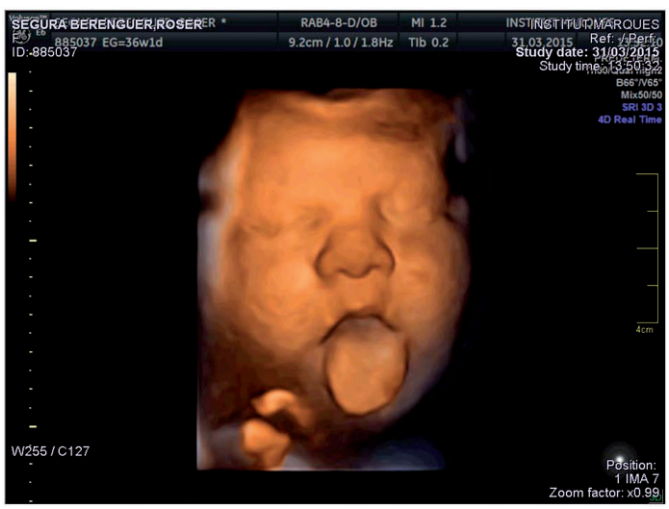
Introduction: The main aim of this study was to analyze fetal speech response to an acoustic stimulus emitted by a vaginal device, and compare it with vibration applied with the same device.
Materials and methods: This study compared fetal response to musical stimuli applied intravaginally (IVM) with intravaginal emission of vibration (IVV). Responses were quantified by recording fetal speech movements identified on 3D/4D ultrasound. Fifty-six normal pregnancies between 16 and 39 weeks of gestation were randomized to 3D/4D ultrasound with: IVM with a specially designed device emitting a flute monody at 53.7 dB, and IVV with the same device at 68 dB. Fetal speech movements were quantified at baseline, during stimulation, and for 5 minutes after stimulation was discontinued.
Clinical cases and summary results: IVM elicited mouthing (MT) and tongue expulsion (TE) in 86.7% and 46.6% of fetuses, respectively, with significant differences when compared with IVV (p= 0.004). There were no changes from baseline in IVV. TE occurred $\geq$5 times in 5 minutes in 13.3% with IVM. IVM was related with higher occurrence of MT (odds ratio = 10.980, 95% confidence interval = 3.105-47.546) and TE (odds ratio = 10.943, 95% confidence interval = 2.568-77.037). The frequency of TE with IVM increased significantly with gestational age (p= 0.024).
Conclusion: Our findings suggest that neural pathways participating in the auditory-motor system are developed as early as gestational week 16, and that fetuses at 16 39 weeks of gestation respond to intravaginally emitted music with repetitive MT and TE movements, that are not observed when we apply intravaginal vibration.

Keywords: Fetal hearing, fetal behaviour, intravaginal music, ultrasound



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Prevention and treatment of fetal cytomegalovirus infection with cmv-hyperimmune globulin: a multicentre study in Madrid (GECITMA Group)

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Introduction: Congenital cytomegalovirus (CMV) infection is the most common cause of congenital viral infection in the Western world and can lead to severe neurological sequelae. The aim of this study is to investigate the use of cytomegalovirus (CMV) hyperimmune globulin (HIG) in prevention and treatment of CMV fetal infection in Madrid (Spain).
Materials and methods: A retrospective observational study comprising all pregnancies treated with CMV-HIG (2009-2015) in three tertiary hospitals in Madrid was conducted. Investigators offered HIG treatment (200 UI/kg) in pregnancies with a CMV primary infection (prevention group, HIG before amniocentesis) or with fetal infection (treatment group: positive PCR in amniocentesis/cordocentesis). Symptomatic congenital CMV infection at birth was defined as the presence of at least one: abnormal physical exam (petechiae, jaundice, hepatoesplenomegaly, neurologic abnormalities), hearing loss, laboratory abnormalities, or abnormal ultrasound or MRI.
Clinical cases and summary results: During the study period 36 mothers received at least one dose of HIG. Median gestational age (g.a) at primary infection was 20w [IQR=10-25], and at amniocentesis was 21 weeks [20-26]. No severe adverse events of HIG were observed and median g.a at birth was 38.3 weeks [38-40]. Prevention group included 17 pregnancies, all with a primary CMV infection. One pregnancy of this group was interrupted due to abnormal cordocentesis and fetal symptoms on follow-up (the necropsy also showed congenital CMV findings Fetal infection was confirmed in 7/17 (38.5%) patients, and 1/16 (5.9%) was symptomatic at birth (abnormal ultrasound, mild unilateral hearing loss (50 dB), but with good neurodevelopmental outcome at 12 months of age). No other children presented long term sequelae at 12 month of age in the prevention group. Treatment group included 19 pregnancies with positive PCR either in amniotic fluid or fetal blood. Hearing loss at birth was present in 4/19 (21%), motor impairment in 3/19 (16%) and 9/19 (47%) were symptomatic at birth. At 12 months of age, three children (3/16, 18.8%) in the treatment group presented motor impairment and 4 children (4/16, 25%) presented hearing loss. Children with CNS fetal US abnormalities before HIG treatment, presented a high risk of long term sequelae (3/3, 100%) compared with children without fetal CNS abnormalities (2/29, 6.7%, p=0.009,OR=77, 95% CI: 3-1954).
Conclusion: In our population CMV-HIG treatment was not associated to relevant adverse events. A high rate of infected fetuses were found in the prevention group. Almost half of the children in the treatment group had any symptoms at birth. Fetuses without CNS abnormalities in US before HIG treatment presented low risk of long term sequelae.

HIG seems not to be useful in fetuses with previous brain abnormalities in US. Randomized controlled trials are needed.

Keywords: Congenital cytomegalovirus infection, pregnancy, hyperimmune globulin

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Altered gentamicin pharmacokinetics in neonates undergoing controlled hypothermia

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Introduction: In the Netherlands, approximately 170 term infants are admitted annually to a Neonatal Intensive Care Unit for controlled hypothermia suffering from hypoxic-ischemic encephalopathy due to perinatal asphyxia.[1] In these patients analgesic-, antiepileptic-, sedative- and antibiotic drugs are frequently prescribed. The effect of hypothermia on their pharmacokinetic (PK) properties is however largely unknown. In the "PharmaCool Study"[2] the population PK properties of these drugs were assessed in neonates undergoing controlled hypothermia. The results of the antibiotic gentamicin are reported here.
*Materials and methods:*Data of patients included in a multicenter prospective observational cohort study conducted in ten Dutch and two Belgian NICUs between November 2010 and October 2014 (the "PharmaCool Study"[2]) were collected. Term newborns (>37 weeks gestational age (GA)) fulfilling the criteria of perinatal asphyxia were cooled within 6 hours after birth to a core body temperature of 33.5°C for 72 hours. Thereafter the infants were rewarmed to normothermia (36.5°C). Blood samples were drawn during the cooling-, rewarming- and normothermic phase for gentamicin concentration analysis. A non-linear mixed-effects regression analysis (NONMEM®) was performed to describe the population PK of gentamicin. The most optimal dosing regimen was evaluated based on Monte Carlo simulations of the final model.
Clinical cases and summary results: In total, 47 patients receiving gentamicin during controlled hypothermia were included. An allometric two-compartment model with GA as a covariate on clearance (Cl) best described the PK. During hypothermia the Cl of a typical patient (3 kg, GA 40 weeks, 2 days PNA) was 1.9 L/h/70kg (inter-individual variability (IIV) 27%) and volume of distribution of the central compartment (Vc) was 33 L/70kg (IIV 41%). Cl was constant during hypothermia and increased with 29% after reaching normothermia.
Conclusion: The PK of gentamicin in neonates undergoing controlled hypothermia is described. The 29% higher Cl in the normothermic phase suggests a delay in normalization of Cl after hypothermia has ended and rewarming has occurred. We recommend an empiric dose of 5 mg kg-1 every 36 hours or every 24 hours for patients with GA 36-40 weeks and GA 42 weeks, respectively. The PK properties of analgesic-, antiepileptic- and sedative drugs in this patient population will also be analysed and reported in future.

Keywords: Gentamicin, neonates, population pharmacokinetics, controlled hypothermia

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Group B streptococcus colonization in obese and diabetic pregnant women

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Presenter: **GEMMA MORENO COCA**

Introduction: Group B streptococcus (GBS) is a common gastrointestinal and lower reproductive tracts commensal. It is a known perinatal pathogen involved in neonatal meningitis, pneumonia, septic abortions and chorioamnionitis. Maternal obesity and gestational diabetes have been suggested as risk factors for rectovaginal Group B streptococcus colonization. Many studies have linked obesity to GBS colonization in both pregnant and nonpregnant women. Besides, pregnant diabetic women appear to have higher group B streptococcus colonization rates when compared to pregnant women without diabetes. The objective of this study was to investigate the association between obesity and maternal diabetes with GBS colonization in a term cohort of a non-tertiary community hospital.
Materials and methods: We conducted a retrospective cohort study on 413 women with singleton term pregnancies who gave birth consecutively between January and March 2015. Maternal body mass index was calculated from the patients' weight and height at the beginning of the pregnancy. Obesity was defined as BMI ? 30kg/m2. The diabetic group included both pregestational and gestational diabetes mellitus. Culture specimens for GSB were obtained with a sterile swab from the lower vaginal walls and rectum at 34-36 weeks of gestation. Student T-test and Chi-square or Fisher's exact tests were used for continuous or categorical variables respectively. Their association with GBS colonization was assessed using odds ratios with 95% confidence intervals. PASW-18 software was used for data analysis.
Clinical cases & summary results: Of the 413 women admitted in labor at term during the study period, 27 had an unknown GBS status and were excluded from the study. The prevalence of GBS colonization in the entire cohort of 386 women was 23.3%. Regarding body mass index, we found 321 non-obese women and 65 obese women. 36 of 231 (11.2%) non-obese women were identified carriers of group B

streptococcus; compared to 54 of 65 (83.1%) obese women (OR 38.86, 95% CI 18.63 - 81.067). Regarding gestational and pregestational diabetes, we identified 355 non-diabetic women and 31 diabetic women. 73 of 355 (20.6%) non-diabetic women were colonized by BGS, compared to 17 of 31 (54.8%) diabetic women (OR 4.69, 95% CI 2.21 - 9.958).
Conclusion: Our cohort study showed a significantly increased risk of Group B streptococcus colonization in obese and diabetic pregnant women at term. We found a higher GBS colonization rate in the pregnant obese and diabetic population. Our findings suggest that maternal obesity and gestational diabetes are factors that need to be considered in strategies for reducing group B streptococcus disease in neonates.

Keywords: GSB, Group B streptococcus, obesity, gestational diabetes.

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Is chorioamnionitis a risk or a protective factor for patent ductus arteriosus in preterm infants? a systematic review and meta-analysis

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Presenter: **E. Villamor**
Introduction: There is a substantial body of evidence supporting that chorioamnionitis (CA) is a major risk factor for spontaneous preterm birth but the independent contribution of CA to prematurity-associated mortality and morbidity is much more difficult to assess because observational studies comparing the outcomes of infants with and without CA are, in general, comparing the effects of placental infection with vascular placental pathology. This may result in significant differences between the CA and the ''control'' group in terms of, for example, GA, birth weight (BW), or use of antenatal corticosteroids. These differences may exert an important influence in outcomes such as patent ductus arteriosus (PDA).
Materials and methods: In an attempt to perform a thorough assessment of the possible association between CA and PDA in preterm infants, we conducted a systematic review and meta-analysis in which adjusted odds ratios (ORs), whenever available, were pooled. In addition, we analyzed the magnitude of the differences in potential confounders, such as GA or BW, between the infants of the CA and the control group. Finally, we performed a meta-regression in order to investigate the effect of confounders on the association between CA and PDA.
Clinical cases & summary results: We identified 1188 potentially relevant studies from which 45 (27186 patients, 7742 CA cases, 8033 PDA cases) met the inclusion criteria. Random effects meta-analysis based on the unadjusted ORs from the 45 studies showed a significant positive association between CA exposure and PDA (OR 1.352, 95% CI 1.172 to 1.560). The association remained significant for histological CA (OR 1.442, 95% CI 1.205 to 1.726) but not for clinical CA (OR 1.208, 95% CI 0.953 to 1.531). Meta-regression showed that the differences in GA or BW between the CA-exposed and non-exposed groups were significantly correlated with the effect size of the association between PDA and CA. Adjusted ORs were reported in 11 studies (19577 infants). Meta-analysis of these 11 studies showed a significant negative association between CA and PDA (OR 0.802, 95% CI 0.751 to 0.959). This association remained significant for clinical (OR 0.849, 95% CI 0.703 to 0.916) but not for histological CA (OR 1.214, 95% CI 0.781 to 1.692).
Conclusion: Differences in GA and BW between infants exposed and unexposed to CA may account for the higher risk of PDA observed when unadjusted data were pooled. The present study confirms that confounders need to be taken into account in meta-analyses assessing the association between CA and clinical outcomes in preterm infants.

Keywords: Patent ductus arteriosus, chorioamnionitis, meta-analysis, meta-regression

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Hand hygiene in reducing bloodstream infection rate in neonatal unit of cipto mangunkusumo hospital indonesia

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Presenter: **Tiara Nien Paramita**
Introduction: Healthcare-associated infections (HAI) - bloodstream infections (BSI) is one of the major problem in neonatal unit especially in developing countries. One of the most effective and inexpensive strategy recommended by WHO to reduce HAI-BSI rate is good hand hygiene. However, hospital staff hand hygiene compliance varies considerably among health centers. Cipto Mangunkusumo Hospital (CMH) is the main referral and teaching hospital in Indonesia with high rate of daily Neonatal Intensive Care Unit (NICU) admission. An infection control bundle has been implemented since 2013, with proper hand hygiene as one of the main focus. In this study, we would like to analyse the effectiveness of hand hygiene as the possible low-cost solution to the bloodstream infection rate in neonatal unit in CMH.
Materials and methods: The study used cross sectional design. Hand hygiene was defined as any hand washing using soap and tap water, or handrub using alcohol-based solution. Solution used for handrub is self-produced by CMH pharmacy with 95% of ethanol and 3% of H2O2. BSI was defined as clinical signs of sepsis, abnormal laboratory septic marker and positive blood culture. Hand hygiene compliance data was collected from monthly audit, while BSI data was collected retrospectively over 60 months of time from hospital database. Bacterial culture on hands of 25 members of NICU staff and tap water was conducted in November 2014 as part of infection control review. Spearman correlation test was performed to assess correlation between hand hygiene compliance and BSI rate.
Clinical cases & summary results: During 2011-2015 period, average hand hygiene compliance is 73.13% (SD 14.47) and BSI rate is 10.63 per 1000 catheter days (SD 6.35). This study showed highest hand hygiene compliance from nurses ($r=0.880$; $p<0.05$) and doctors ($r=0.772$; $p<0.05$) among other professions, while hand hygiene

practice was performed most often before touching the patient (r=0.876)
Conclusion: The lack of correlation between hand hygiene compliance and blood stream infection case does not represent the unimportance of hand hygiene in infection control practice. Many factors could possibly affect this result, such as the tap water bacterial contamination and improper hand hygiene technique. This study suggests that the result of infection control practice depend on many factors and cannot rely on a single intervention.

Keywords: Hand hygiene compliance; blood stream infection; neonatal unit; infection control

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Risk factors associated with hearing loss and neurologic impairment in the spanish network of infants with congenital cytomegalovirus infection (REDICCMV)

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Presenter: **Laura Castells Vilella**
Introduction: We aimed to study risk factors associated with hearing loss and neurologic abnormalities at 12 months of age in the Spanish cohort of children with congenital cytomegalovirus infection (cCMV; REDICCMV).
Materials and methods: A prospective multicentric study was performed from January-2011 to May-2015 in Spain. All children with confirmed cCMV were included. Hearing loss (>25dB in ABR) and neurologic abnormalities (motor impairment, microcephaly, epilepsy and neurodevelopmental delay evaluated by a pediatric neurologist) were studied at birth and at 12 months of age. The collection of data was made with the parents consent and in accordance with the clinical research ethics committee norms.
Clinical cases & summary results: 297 children with cCMV from 34 hospitals were included. 229 (82.7%) children were diagnosed during the fetal or newborn period, and 111/225 (49.3%) were symptomatic at birth. Among asymptomatic infants at birth (n=61), 23.0% and 7.8% presented hearing loss and neurologic abnormalities at 12 months, respectively. Symptomatic children at birth presented higher risk of hearing loss and neurologic sequelae at 12 months of age (OR:3.2 [CI95%: 1.5-7.2] and OR:9.0 [CI95%:2.9-27.9] respectively). Blood viral load at birth was not associated with sequelae. Children with severe disease were given a longer course of antiviral treatment. In a multivariate logistic regression analysis, only hearing loss at birth was associated with hearing loss at 12 months (OR:33.2 [IC95%9.8?112.4]; p=0.0001). GPT>80 IU/L and hearing loss at birth were associated with neurologic abnormalities at 12 months (OR:7.5 [IC95%:1.0-57.0]; p=0.05 and OR:6.9 [IC95%:2.1-22.2], p=0.001 in both).
Conclusion: In our cohort, symptomatic cCMV newborns were at high risk of sequelae at 1 year of age, which also affected one fourth of asymptomatic patients at birth. Hearing loss at birth was associated with both hearing loss and neurologic impairment at 1 year of age; neonatal hepatitis was also a risk factor for neurologic sequelae at 12 months of age.

Keywords: Congenital cytomegalovirus infection, hearing loss, neurologic impairment

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Histological chorioamnionitis: does it prevent late-onset sepsis in preterm infants?

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Presenter: **M. van Doorn**
Introduction: Premature infants are highly susceptible to late-onset sepsis (LOS). Although the mechanisms underlying this vulnerability are not yet fully understood, the importance of the innate immune system is increasingly acknowledged. Fetal exposure to histological chorioamnionitis (HCA), a common risk factor for preterm birth, is suggested to enhance epigenetic changes in innate immune cells. This enhancement may have a protective influence on LOS in premature infants. However, results from previous studies on this subject are conflicting. Therefore, this study aims to investigate the association between HCA and LOS in preterm infants.
Materials and methods: All infants admitted from January 1st 2005 until December 31st 2011 to a level III Neonatal intensive care unit (NICU) in the Netherlands, with a gestational age (GA) between 25 and 32 weeks, or with a birth weight of ?1500 grams were eligible for study participation. Infants with major congenital anomalies, without placental histologic exam, or who suffered from clinical LOS or necrotizing enterocolitis (NEC) before or during a LOS episode were excluded. Demographic and clinical data were obtained from the patient folder and electronic health record. Histological assessment of placenta, extraplacental membranes and umbilical cord was performed according to a standardized diagnostic framework. Incidence of LOS and LOS severity were compared between infants with and without HCA.
Clinical cases & summary results: Seven hundred five premature infants were included in this study of whom 35% developed LOS. LOS incidence was inversely related to GA. Mean birth weight was 1270 $\pm$ 350 gram with a mean GA of 29.2 $\pm$ 2.1 weeks. Signs of inflammation were seen in two hundred seven (29%) placenta's. LOS incidence was significant lower in infants born at a GA of ?29 with HCA in comparison to infants without HCA (OR:0.484 [CI:0.238-0.984], p=0.045). This effect was not seen in infants born at <29 weeks GA (OR:1.590 [CI:0.909-2.783], p=0.104). A possible positive effect in this age group may have been overshadowed by the high rate of LOS in this group (50-60%) in comparison to the literature. After adjustment for confounding factors there was no difference in LOS disease severity between infants with or without HCA exposure (OR:1.328 [CI:0.644-2.740], p=0.442).

Conclusion: LOS incidence is reduced in infants born at ?29 weeks of gestational age with signs of HCA. Priming of the fetal innate immunity by inflammatory stimuli could possibly explain this effect. Understanding the underlying mechanisms may direct future strategies to improve neonatal innate immune response in order to prevent LOS and improve neonatal outcome. Further research should provide the evidence necessary to draw firm conclusions.

Keywords: Histological chorioamnionitis; late-onset sepsis

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Anti-inflammatory effects of budesonide in human fetal lung

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Introduction: Lung inflammation in premature infants contributes to development of bronchopulmonary dysplasia (BPD), a chronic lung disease with long-term sequelae. Pilot clinical trials administering the corticosteroid budesonide suspended in surfactant have found reduced BPD without apparent adverse effects as occur with systemic dexamethasone therapy. The objective of this study was to determine potency, stability and anti-inflammatory effects of budesonide in vitro to inform design of an appropriate dosing regimen of lung-targeted corticosteroid therapy for future clinical trials.
Materials and methods: We used cultured explants of second trimester human fetal lung treated with either budesonide or dexamethasone and examined responses by microscopy, immunoassays, RNAseq, liquid chromatography/tandem mass spectrometry and pulsating bubble surfactometry.
Clinical cases and summary results: Treatment of lung explants with budesonide suppressed secreted chemokines IL-8 and CCL2 (MCP-1) within 4 h reaching 90% decrease at 12 h, which was fully reversed 72 h after removal of steroid. Half-maximal effects occurred at 0.04-0.05 nM, representing a 5-fold greater potency than for dexamethasone. Budesonide significantly induced 3.6% and repressed 2.8% of 14 500 sequenced mRNAs by 1.6- to 95-fold, including 119 genes that contribute to the glucocorticoid inflammatory transcriptome, 29 of these genes are known targets of NF-κB. By global proteomics, 22 secreted inflammatory proteins were hormonally regulated. Budesonide retained activity in the presence of surfactant and did not alter the in vitro surface properties or stability of surfactant. There was some formation of palmitate-budesonide in lung tissue, which serves as a tissue reservoir of steroid, but no detectable metabolism to inactive 16α-hydroxy prednisolone.
Conclusion: We conclude that budesonide is a potent and stable anti-inflammatory glucocorticoid in human fetal lung in vitro. The study provides new findings for molecular effects of budesonide that define the glucocorticoid inflammatory transcriptome, identify new potential biomarkers for both budesonide action in lung cells and the pathogenesis of BPD, and inform design of the optimal budesonide:-surfactant treatment regimen for clinical trials to prevent lung disease in premature infants.

Keywords: Inflammatory, chemokines, surfactant, RNAseq, proteomics

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Pathogen to keep in mind: ureaplasma species induce pro-inflammatory immune responses in human neonatal and adult monocytes

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Presenter: **Kirsten Glaser**
Introduction: Colonization with Ureaplasma species (spp.) has been associated with adverse pregnancy outcome, and perinatal transmission has been implicated in the development of fetal systemic inflammatory response syndrome. Being mostly opportunistic commensals, pathogenicity of Ureaplasma spp. has been generally considered low in children and adults. Controversy remains concerning the clinical relevance of Ureaplasma infection in neonates and its implication in the pathogenesis of inflammatory disorders. Ureaplasma infection has been associated with diseases of prematurity, such as lung and brain injury in very immature preterm infants. The present study addressed pro-inflammatory features of Ureaplasma isolates in human neonatal and adult monocytes.
Materials and methods: Purified neonatal and adult CD14+ cells were stimulated either with Ureaplasma urealyticum (U. urealyticum) and U. parvum alone or simultaneously with Ureaplasma isolate and E. coli LPS. Monocyte TNF-α, IL-1β and IL-8, cytokine response as well as TLR2 and TLR4 expression were analyzed by means of real-time quantitative PCR and flow cytometry.
Clinical cases & summary results: U. urealyticum and U. parvum induced significant mRNA and protein expression of TNF-α, IL-1β and IL-8 in both neonatal and adult monocytes ($p<0.05$, $p<0.01$, $p<0.001$ and $p<0.0001$; vs. unstimulated controls). In contrast to LPS, Ureaplasma infection led to a significantly increased expression of TLR2 mRNA in both cells ($p<0.01$ and $p<0.001$ in neonatal monocytes, $p<0.01$ and $p<0.0001$ in adult monocytes). TLR4 mRNA was significantly suppressed in adult CD14+ cells exposed to U. urealyticum or U. parvum (both $p<0.001$), but was unaffected in Ureaplasma-stimulated neonatal monocytes. Simultaneous infection of monocytes with LPS and Ureaplasma isolates significantly enhanced IL-1β mRNA expression in adult monocytes ($p<0.05$ and $p<0.01$; vs. LPS alone), but significantly suppressed IL-8 mRNA expression ($p<0.05$; vs. LPS alone) as well as intracellular TNF-α, IL-1β and IL-8 protein synthesis in human adult monocytes ($p<0.05$ and $p<0.01$ respectively; vs. LPS alone).
Conclusion: Our data confirm a pro-inflammatory capacity of Ureaplasma spp. in both neonatal and adult monocytes. Moreover, results in neonatal and adult monocytes might point to relevant immunomodulatory effects of ureaplasmas comprising induction of TLR2 and suppression of TLR4 mRNA expression and modulation of LPS-induced cytokine responses.

Keywords: Ureaplasma species, preterm infants, infection, inflammation, cytokine response, monocytes

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Time to positivity (TTP) of neonatal blood cultures: analysis over a decade from an irish regional neonatal unit

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Introduction: A positive blood culture is considered as the gold standard for the diagnosis of neonatal sepsis. In general, the more pathogenic the bacteria is the faster it will grow and flag positive sooner than a commensal or contaminant. Isolated flora seems to be changing over time as well with Escherichia coli (E. coli) becoming a more prevalent significant growth overtaking the group B streptococcus (GBS) after the introduction of widespread screening and intrapartum antibiotic use in many maternity units. Predicting the pathogenicity of the isolated bacteria depending on the time to positivity (TTP) would be beneficial in the antimicrobial management (including the selection of antiobiotcs and deciding the duration of treatment) in neonatal units.
Materials and methods: We conducted a retrospective laboratory review of the computerised database of blood culture results over a 14 year period (2001 -2014) from an Irish Regional stand-alone Maternity Hospital. Specimens from all newborn infants were included and TTP was defined as the time from when the sample was placed in the automated blood culture analyser to when the machine flagged a positive result. An automated blood culture PedsBacT alert system was utilised during the study period. A single medical scientist has overseen the data transfer over this period (JP). Demographic details of newborn infants were obtained from maternity hospital and neonatal databases as well as healthcare records. Audit committte of the University Maternity Hospital Limerick approved the study.
Clinical cases & summary results: Over a 14 year period there were 11,432 neonatal blood cultures were taken with 605 (5.3%) becoming positive. The range of positivity varied - low of 9/670 (1.3%) in 2013, high of 64/710 (9.0%) in 2002. Time to positivity (TTP) of our cohort was as follows: 0-11 hours - 46 (7.6%), 12-24 hours - 273 (45.1%), 25-36 hours - 123 (20.3%), 37-48 hours - 103 (17.0%) and >48 hours - 60 (9.9%). Overall 442 (73.1%) were positive within 36 hours, and 545 (90.1%) within 48 hours. All Klebsiella species and other Coliform isolates were detected within 24 hours; 95% E.coli, GBS, Enterococci, & S.aureus bacame positive within 24 hours. There were no cases of culture positive Listeria. All cultures positive with S. aureus, GBS, Klebsiella sp. and other Coliforms were detected within 36h and we observed that 96.1% of cultures were positive in <24h & 98.1% in <36h. Predominant pathogenic microorganisms were- S. aureus 23 (3.8%), Enterococcus 22 (3.6%), E. coli 21 (3.5%), & GBS 18 (3%). Pathogenic bacteria have significantly shorter mean TTP, with Gram negatives flagging sooner than Gram positives (OR of 1.55)
Conclusion: We observed a 5.3% rate of overall neonatal blood culture positivity. Vast majority of the most pathogenic organisms in blood cultures turned positive within the first 24 hours (96%). Our obervations support the discontinuation of empirical antibiotics after 36 hours (versus the traditional 48hours) in the absence of ongoing clinical evidence or other compelling laboratory results for neonatal infection.

Keywords: Time to positivity (TTP); Blood culture: neonatal sepsis; Antibiotics

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Predictive value of amniotic interleukin - 6 for intraamniotic inflammation in women with PPROM and for early-onset sepsis in their neonates

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Introduction: Chorioamnionitis can cause as well as result from preterm premature rupture of membranes and could be associated with maternal and neonatal complications with long-term adverse outcome. Intraamnionic inflammation is accompanied with elevated concentration of quantity of proinflammatory substances in amniotic fluid, mainly interleukin - 6 (AFIL - 6). The purpose of the study was to evaluate the accuracy of the AFIL - 6 concentrations as a marker of intramniotic infection in women with a preterm premature rupture of membranes (PPROM). Secondly, in women with PPROM and low levels of AFIL-6 simuntaneously the average time of expectant management was evaluated. The tertiary outcome was to identify the correlation between the concentrations of AFIL-6 and early-onset sepsis in neonates.
Materials and methods: Thirty one pregnant non-laboring women <34 weeks of gestation (range: 24 + 0-33 + 6) with PPROM and subsequently their thirty one neonates were enrolled in our study. The study group of women underwent t amniocentesis for determination of the AFIL - 6 and microbial invasion of the amniotic cavity (MIAC) together with histological examination of placenta, amniotic membranes and umbilical cord. AFIL-6 concentrations were determined using a quantitative immunoassay. The infection indicating level of AFIL-6 was defined as concentration >1000 pg /ml. After delivery, the study group of neonates was followed for clinical symptoms very closely of early-onset sepsis and concurently the laboratory analysis of blood account, CRP and microbial testing were performed.
Clinical cases and summary results: The concentration of AFIL-6 >1000 pg/ml was found in 35.4% women with PPROM (11/31), in 72.7% (8/11) of them was the histologically proven chorioamnionitis present. An AFIL- 6 concentration >1000 pg/ml had 73% sensitivity, 95.7 % specificity and positive likelihood ratio of 6.7 to determinate the intraamniotic infection. The positive and negative predictive value of the test was 85.7% and 74.2%, respectively ($p<0.01$). The correlation between AFIL-6 >1000 pg /ml and MIAC in women with PPROM had 57% sensitivity and 92% specificity ($p<0.01$). In the entire neonatal study group early-onset sepsis in 32.2% neonates (10/31) was detected. The positive microbial specimens were cultured in 6 affected neonates (2× Escherichia coli, 1× Serratia marcescens, 3× Ureoplasma urealyticum). In neonates born to the mothers with AFIL-6 >1000 pg /ml the occurrence of early-onset sepsis was 54.5 % (6/11). In women with PPROM and expectant management the time of delayed delivery averaged 13.2 days. Neonates born to mother in this subgroup revealed early-onset sepsis in 19.04% (4/21) cases. One child developed recurrent meningitis caused by *Escherichia coli*. The evaluation of AFIL-6 at above mentioned threshold had 60% sensitivity, 76.2% specificity, 54.5% positive predictive value and 80 % negative predictive value in detection of early- onset neonatal sepsis ($p=0.4$).
Conclusion: AFIL-6 >1000 pg/ml was found in 35.4 % women with PPROM (11/31), in 72.7% (8/11) of them was the histologically comfirmed chorioamnionitis. An AFIL- 6 concentration >1000 pg/ml had 73% sensitivity, 95.7% specificity and positive likelihood ratio of 6.7 to determinate the intraamniotic infection. The positive and

negative predictive value of the test was 85.7% and 74.2%. In neonates born to the mothers with AFIL-6 >1000 pg/ml the occurrence of early-onset sepsis was 54.5% (6/11).

Keywords: Chorioamniitis, neonatal sepsis, IL-6, intraamniotic infection

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Computerised antepartum fetal monitoring updated: the new Dawes-Redman 2016 system

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Introduction: The Dawes-Redman system of computerised antepartum cardiotocography (AN CTG) has been used in many countries for 25 years. It applies 14 criteria of normality, developed from the Oxford database (now >70 000 AN CTG with detailed outcome data). When criteria are met, at a variable time after 10 mins, the record can be stopped. Otherwise it is stopped at 60 mins with 'Criteria not met' when a summary of the reasons is given. The new system, Dawes-Redman 2016, grades the reasons why criteria are not met with a score of 3-10. 3 is the worst outcome (fast sinusoidal rhythm) and 10 is 'Criteria met'. Intermediate scores display a spectrum of risk to inform clinical staff of the urgency of the problem. The scores are derived from Oxford data. The performance of the system is reported here.

Materials and methods: All AN CTGs from singleton pregnancies at Oxford (Jan 1991-Nov 2011) were analysed. 71 235 from 27 197 pregnancies were valid traces: lasting either 60 min or less, only if Dawes-Redman criteria were met. The lowest score per pregnancy was considered. Three exclusive compromise groups were defined:

- Mild: low Apgar (<4 at 1min or <7 at 5min) or acidaemia (cord arterial pH10mmol if delivered by elective Caesarean, or pH14mmol otherwise).
- Severe: stillbirth, neonatal death (<28 days) or birth asphyxia (a low Apgar AND either metabolic acidaemia or a clinical diagnosis of BA with admission to Special Care).
- Birthweight <3rd Yudkin centile but no mild or severe compromise.

We define adverse outcome to be a composite of any of the above.

Clinical cases and summary results: The 27 197 women with valid antepartum CTG traces represent 22% of all deliveries in Oxford for that period and are characterised with significantly higher rates of adverse labour outcome when compared to deliveries with no antepartum monitoring (7.91% versus 4.43%, $p<0.001$). The performance of Dawes-Redman 2016, on the entire archive, is shown in Table 1. The risk for mild and severe compromise consistently increases as scored fall from 10 to 4. Score 3 is reserved for a fast sinusoidal pattern, which carries 60% risk for low Apgar (due to fetal anaemia). The system was not designed to detect the risk for intrauterine growth restriction but low scores clearly relate to this problem.

Conclusion: The Dawes-Redman 2016 CTG system enhances the functionality of the original system. It grades the estimated risk of adverse outcome when criteria of normality are ''not met''. The figures are based on a large clinical archive. Dawes-Redman 2016 replaces the binary conclusion of 'Criteria Met' or 'Not met' with a measured spectrum of risk to guide clinical management at the bedside. The new system will be marketed in 2016/2017 (Huntleigh-diagnostics.com).

Table 1. Incidence of compromise corresponding to the lowest CTG score for each pregnancy.

		Exclusive groups			Combined
Score	*Number of pregnancies*	*% Mild compromise*	*% Severe compromise*	*% weight <3rd centile*	*% Adverse outcome*
3 (Sinusoidal)	5	60.00%	0%	0%	60.00%
4	94	17.02%	23.40%	26.60%	67.02%
5	102	18.63%	10.78%	20.59%	50.00%
6	307	11.73%	5.21%	20.52%	37.46%
7	312	6.73%	2.56%	8.33%	17.63%
8	794	6.42%	0.88%	16.75%	24.06%
9	910	4.51%	0.44%	7.03%	11.98%
10	24673	3.19%	0.47%	2.78%	6.44%

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Fetal lactate sensor

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Introduction: In the developed world, it can be estimated that 80% of labors are continuously monitored with electronic fetal monitoring (EFM). Since the beginning of EFM there has been an escalation of operative deliveries - in USA now every third pregnancy ends in a caesarean delivery. Increased C-section rates are not associated with a lower incidence of birth asphyxia [1], and lead to a 100% increase in healthcare costs for obstetrics [2]. We developed a micro dialysis probe integrated into the fetal scalp electrode allowing continuous measurement of lactate, giving instant information about the oxygenation status of the fetus.

1. The Cochrane Database of Systematic Reviews 2006 Issue 3
2. New York Times 30 June 2013

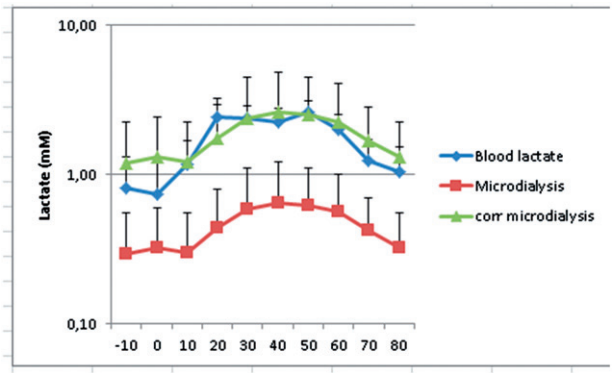
Materials and methods: 4 Adult male wistar rats were anaesthetized using isoflurane. After shaving, micro dialysis probes were inserted in the back of the animal and fixated with a suture. A pulse oximeter was clamped on the tail to monitor oxygenation and heart rate. A jugular vena cannula was inserted to draw blood samples (100 microl each), for analysis of lactate and saturation. Dialysis was performed using sterile saline solution at 1.5 microl/min. Samples were collected in 300 microl polypropylene vials, for lactate analysis. After stabilization of 15 min, sampling was started. Lactate, pH and saturation in blood samples was analyzed using a handheld Abbott analyzer. Lactate from dialysis samples was quantified with an enzymatic assay in a 96 well plate.

Clinical cases and summary results: Upon decreasing of oxygenation (t=0 min), increasing nitrogen (0.8 l/min) and decreasing oxygen (0.05l/min), saturation dropped below 40% for an hour. Blood lactate levels increased 2.5 fold (image).Upon restoration of saturation (0.8 l/min oxygen), lactate levels returned to baseline levels rapidly. The lactate levels are depicted as measured in dialyze and blood. With a recovery of the dialysis membrane for lactate of about 20%, levels corrected for recovery match blood lactate levels. Dialysis lactate levels increased at the same time as blood lactate levels increased, indicating that micro dialysis can be used as alternative for blood lactate analysis.

Conclusion:

Lactate can be quantified in subcutaneous tissue of the Rat
Lactate increases upon transient deprivation of of oxygen
Microdialysis can be used to monitor [Lactate] subcutaneously in vivo
Monitoring lactate may be useful as an adjunct to EFM, preventing unnecessary interventions.

Keywords: Monitoring fetal hypoxia, lactate, microdialysis



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ST events redefined: cut off for relative ST Analysis

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Introduction: Fetal ST analysis failed to decrease perinatal asphyxia and cesarean section rates. False positive ST events may explain this result. We observed that fetuses are more prone to ST events when the orientation of the fetal electrical heart axis is aligned with the orientation of the scalp electrode. We may improve diagnostic accuracy of ST analysis when we correct for this effect. We propose a new method ''relative ST analysis'' with redefined ST events. ST events will be based on relative rather than absolute rises from the individual's T/QRS baseline. This study aims to determine the optimal cut off for relative ST events in fetal electrocardiography (fECG) to detect fetal metabolic acidosis.
Materials and methods: Post hoc analysis on women from the Dutch STAN trial (ST+CTG branch). Exclusion criteria: fetal cardiac malformation, fever, tocolysis, no fECG tracing/signal quality $\leq$50% in last hour and no cord blood sample. We automatically extracted all T/QRS values and determined their medians in shifting windows of 5, 10, 15, 20 and 25 minutes. T/QRS baseline was the lowest value of these continuously shifting windows. We calculated relative T/QRS rises for each minute with the formula: (recent T/QRS median - T/QRS baseline)/(T/QRS baseline). Metabolic acidosis was set as cord artery pH12 mmol/l (pH12 mmol/l in cases with one blood sample). We set the cut off at the point closest to (0,1) in the receiver operating characteristic (ROC) curve.
Clinical cases and summary results: We included 762 women, 12 of which had metabolic acidosis (1.6%) and determined the optimal diagnostic accuracy for events defined as the median T/QRS over 5 minutes compared to the lowest T/QRS baseline over 15 minutes. Relative ST analysis showed an area under the ROC curve of 0.84 (95%CI 0.76 - 0.91) for metabolic acidosis. The optimal cut off was set at a 103% rise from T/QRS baseline, with sensitivity of 0.75 and specificity of 0.80. When metabolic acidosis was defined as cord artery pH 12 mmol/l, we found 6 cases of metabolic acidosis (0.8%). Area under the ROC curve was 0.87 (95%CI 0.79 - 0.94) and we found sensitivity of 0.83 and specificity of 0.83 at the point closest to (0,1).
Conclusion: Relative ST analysis is a promising method to detect fetal acidosis. We may improve diagnostic accuracy of ST analysis when we adjust the current definition of ST events. This may provide a promising and objective method in fetal monitoring independent of cardiotocography. Relative ST analysis needs external validation.

Keywords: ST analysis, fetal surveillance, fetal electrocardiography

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Reduced incidence of cord metabolic acidosis using ST-analysis of the fetal electrocardiogram for intrapartum surveillance

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Introduction: Due to the limited specificity of cardiotocography there is a demand for an additional test that enables more accurate identification of fetuses at risk for intrapartum asphyxia. For several years intrapartum ST-analysis of the fetal electrocardiogram with STAN is being considered for this purpose. However, studies regarding its benefits are conflicting. Several cohort studies have shown a continuing improvement of perinatal outcomes following the introduction of the STAN-methodology. It has, therefore, been suggested many other factors influence the results. The objective of the present study is to evaluate perinatal outcomes over a long period of time, fourteen years, with increasing STAN-usage in a high-risk population.
Materials and methods: This retrospective cohort study was performed between in a tertiary referral center, which participated in the Dutch STAN-trial during 2006-2008. Inclusion criteria were: high-risk singleton pregnancies with fetuses in cephalic presentation, a gestational age of $\geq$36 weeks and the intention to deliver vaginally in the period between 2000 and 2013. STAN-usage increased from using one monitor in 2000 to nine in 2010. Data was collected on the following perinatal outcomes: the number of fetal blood samples, vaginal instrumental deliveries or cesarean sections, cord metabolic acidosis (pH >7.05 and BDecf <12 mmol/L), cord acidosis (pH <7.00), Apgar scores, moderate and severe neonatal encephalopathy, and perinatal death. Trend analysis was used to detect changes over time.
Clinical cases and summary results: A total of 19.664 high-risk pregnancies were included. Since the implementation of the STAN-method, the cord metabolic acidosis rate declined from 2.5% to 0.4% (p <0.001). This decrease largely occurred during the STAN-trial, when only two to three delivery rooms were equipped with a STAN-monitor. Furthermore, there were significant reductions in fetal blood sampling rate from 11.8% to 8.8% (p <0.001), and the total number instrumental vaginal deliveries from 13.8% to 10.3% (p <0.001). There were no changes in Apgar scores and neonatal encephalopathy. When the study population was dichotomized, the incidence of moderate and severe NE was 1.56 per 1000 births in the years 2000-2007 and 0.86 in 2008-2013 with an OR of 0.39 (χ2, 95%-CI 0.17-0.89, p=0.035).

Conclusion: Since the use of the STAN-method, there has been a significant decrease in fetal blood sampling, and the number of cesarean sections and vaginal instrumental deliveries. Most striking is the 84% reduction of the incidence of metabolic acidosis, especially the rapid decline at the time of the STAN-trial. The pattern of the decline suggests that, in addition to STAN-technology itself, intensified training of personnel also greatly contributes to the observed effect.

Keywords: CTG, fetal blood sampling, intrapartum fetal surveillance, metabolic acidosis, ST analysis, fetal ECG, STAN

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A data-driven system for continuous fetal moniotring in labour: the oxford prototype

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Introduction: Intrapartum cardiotocography (CTG) is widely used. Maternal and fetal risk factors confound the relation of CTG patterns to fetal health, visual interpretation is unscientific, without reliable estimates of the risk for the fetus. Unnecessary operative deliveries are performed whilst some babies at risk are not delivered in a timely fashion.
Commercial computerised systems are not widely adopted. They aid visual assessment of standard features (baseline rate, decelerations etc.) but do not quantify the associated fetal risks or incorporate other risk factors. Our prototype data-driven system (OxSys) objectively quantifies the intrapartum CTG. It takes account of clinical risk factors and relates to the perinatal outcome in a large cohort. We report how an early OxSys prototype performs.
Materials and methods: Considered were all normally formed babies, born Mar'00-Dec'11 at Oxford, who had intrapartum CTG, paired cord gas analyses, and gestation >35 weeks (n=23,903). We studied four exclusive groups:

- Severe compromise (composite of stillbirth, neonatal death (<28 days), neonatal encephalopathy, seizures, and resuscitation at birth followed by intensive care),
- Moderate compromise (umbilical cord arterial blood pH at birth <7.05),
- Mild compromise (7.05≤pH<7.15),
- Healthy (all remaining).

The prototype, OxSys 1.5 analysed each CTG with a moving 15min window, updated every 5 minutes. OxSys 1.5 alerted if the first hour of the trace was unreactive or, at any time, the Decelerative Capacity (Georgieva et al, BJOG 128,2014) exceeded a threshold, adjusted for preeclampsia or thick meconium.
Clinical cases and summary results: Table 1 shows that, when compared to the rate of emergency deliveries due to presumed fetal compromise as recorded in the patients' notes at birth, OxSys 1.5 had significantly lower alert rates in the Healthy group (i.e. lower false positive rate, 14.46% versus 16.40%, p <0.001) and slightly higher alert rates in the compromise groups (i.e. higher sensitivity). We demonstrate that the false positive rate was high and the sensitivity was low for both clinical practice and OxSys 1.5.
Conclusion: The Oxford prototype computerised intrapartum system OxSys 1.5 compares favourably to assessment in clinical practice. More work is needed to achieve better performance. Our approach to evaluating diagnostic accuracy, presented here, allows methods for CTG interpretation to be compared and improved. We can include any new knowledge in the system and test its contribution by measuring changes in sensitivity and/or the false positive rate.

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Does subacute hypoxic pattern on the ctg trace during active second stage of labour result in poor neonatal outcomes?

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Introduction: Subacute hypoxia occurs mainly during second stage of labour when a fetus is exposed to a rapidly evolving hypoxic stress within 30-60 minutes and is characterised by deep and wide decelerations with progressively reduced time spent on the baseline (typically a 1:3 baseline to deceleration ratio). This may result in a drop of fetal pH at the rate of 0.01/every 2-3 minutes. The objective of our study was to determine the effect of the subacute hypoxic pattern on the CTG trace on perinatal outcomes.
Materials and methods: 1800 CTGs were analysed to determine the occurrence of subacute hypoxic pattern over a 30 minute period after obtaining permission from the Research and Audit Office. Effect subacute pattern on the CTG trace on the Apgar score and umbilical cord arterial pH was determined.
Clinical cases and summary results: Approximately 10% fetuses developed a subacute hypoxic pattern on the CTG during the second stage of labour, after 30 minutes of active maternal pushing. The use of prostaglandins or oxytocin to induce or augment labour

Table 1. Relation of clinical practice and OxSys 1.5 to perinatal outcomes in 23,903 births. Reported are the total number of births in each group; the number (%) detected in clinical practice, i.e. Caesarean or vaginal operative delivery due to presumed fetal compromise; the number (%) of births where OxSys 1.5 had an alert.

Outcome groups (exclusive)	**Compromise** *(sensitivity)*			**Normal** *(false positive rate)*
	Severe	**Moderate**	**Mild**	
Number of births	190	629	3,233	19,851
Detected in clinical practice	71 (37.37%)	198 (31.48%)	733 (22.67%)	3,255 (16.40%)*
Detected by OxSys 1.5	83 (43.68%)**	225 (35.77%)***	795 (24.59%)†	2,871 (14.46%)‡

*972 (29.9%) were Caesarean sections.
McNemar's test for comparison of proportions: ** p = 0.140; *** p = 0.087; †p = 0.049; ‡ p<0.001.

was associated with 42% of all cases of subacute hypoxia. 12.1% of fetuses with a subacute hypoxic pattern had an umbilical cord arterial pH <7.0 compared to 7.7% without the subacute hypoxic pattern.
Conclusion: 30% of fetuses demonstrated features of subacute hypoxia on the CTG trace during active maternal pushing. The use of oxytocin or prostaglandins appear to increase the likelihood of subacute hypoxic pattern. Subacute hypoxia which occurs secondary to a combination of repetitive and prolonged compressions of the umbilical cord and reduction in utero-placental oxygenation, which results in a progressively less time spent at the normal baseline fetal heart rate appears to increase the likelihood of lower umbilical cord arterial pH at birth. This may be secondary to reduced time available to expel carbon dioxide and metabolic acid as well as to obtain fresh oxygenated blood from the placental venous sinuses.

Keywords: Cardiotocograph, subacute hypoxic pattern, rate of fall in pH

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Electronic fetal monitoring during labor: comparison of abdominal fetal electrocardiography and doppler cardiotocography

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Introduction: Electronic fetal monitoring is a method of fetal well being monitoring during labur. It is the most utilized worldwide. Nerveless it presents a poor sensitivity and limits regarding variability inter- and intra-observer, frequently due to record of undetermined tracks. Recently a non-invasive electronic feta monitoring has been introduced. It is called Monica AN24 (abfECG) and is able to monitor both maternal and fetal heart rate by abdominal ECG and uterine activity by electrohysterography (EHG). This new tool presents superiority in distinguishing fetal and maternal heart rate and it appears more efficacy in obese pregnant. The aim of our study is to compare lecture and clinicians interpretation of fetal heart tracing obtained by these different tools.
Materials and methods: A total of twenty eight simultaneous CTG and abfECG have been evaluated. One expert senior observer calculated the percentage of success of each recording; total amount of small and large accelerations, small and large decelerations and uterine contractions have been counted. Ninety-two traces lasting 30 minutes each have assigned to four clinicians (2 senior and 2 junior) to be classified according to ACOG classification.
Clinical cases & summary results: Overall perceived signal quality was significantly superior for abfECG than CTG Doppler (94.19% vs. 88.23%, p<0.01). The number of small accelerations, small decelerations and uterine contractions detected were greater in the trace obtained using abfECG, while big decelerations were counted fewer times. During second stage of labour, signal quality decreased using both recording methods (85.00% vs. 84.60%, p = 0.638). Given 46 CTG tracks of 30 minutes each and the corresponding abfECG tracks (total: 92 tracks), percentage of agreement (Pa) among 4 observers in interpreting the FHR patterns according to ACOG criteria was calculated. Overall Pa was superior for abfECG than Doppler CTG (47.8% vs. 39.1%), although this difference was not significant. All observers choose the same ACOG category (namely ACOG 1, 2 or 3) in 47.8% of abfECG tracks, and only in 39.1% of Doppler CTG tracks. A bad signal quality hindering the interpretation of the track was reported on average in 8.7% abfECG recording and in 35.9% Doppler recording (p<0.05). On average, in 0.5% of abfECG tracks no ACOG category was attributed due to a bad signal quality, while this happened in 3.8% of Doppler CTG recordings (p<0.05).
Conclusion: Monica AN24, through a better acquisition of the fetal heart rates signal, could provide clearer information about fetal well being and uterine contractions improving the skills of interpretation of the CTG pattern and decreasing variability between clinicians.

Keywords: Electronic fetal monitoring, abdominal CTG, fetal well being, sensitivity.

Table 2. Quality signal

	First and Second Stage of Labour			Second Stage of Labour		
	CTG Doppler	abfECG	p-value	CTG Doppler	abfECG	p-value
FHR success rate (%)	**88.23** ± 12.50 (44 – 99.3)	**94.19** ± 8.86 (60.4 – 100)	<0.01	**84.60** ± 18 (44 – 100)	**85.00** ± 19 (35 – 100)	ns
Small accelerations (n)	**9.6** ± 9.6 (0 – 32)	**31.2** ± 32.1 (0 – 128)	<0.001	**2.2** ± 3.1 (0 – 9)	**4.3** ± 3.5 (0 – 12)	ns
Big accelerations (n)	**14.3** ± 12.6 (0 – 56)	**21.4** ± 22.9 (0 – 114)	0,145	**3.8** ± 4.0 (0 – 13)	**4.8** ± 4.6 (0 – 15)	< 0.05
Small decelerations (n)	**0.4** ± 0.9 (0 – 4)	**8.3** ± 9.8 (0 – 35)	<0.001	**2.3** ± 3.9 (0 – 14)	**1.7** ± 2.5 (0 – 10)	ns
Big decelerations (n)	**8.3** ± 7.0 (0 – 25)	**5.2** ± 7.2 (0 – 24)	<0.001	**5.0** ± 5.1 (0 – 18)	**1.7** ± 1.3 (0 – 5)	0,003
Uterine contractions (n)	**31.6** ± 37.9 (0 – 140)	**76.4** ± 58.55 (0 – 232)	<0.001	**7.1** ± 9.4 (0 – 36)	**22.4** ± 10.9 (5 – 46)	<0.001

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The FIGO 3-tier system of assessing fetal heart rate tracings is superior to the NICHD 3-tier system in detecting neonatal acidemia

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Introduction: Despite the ubiquity of electronic fetal monitoring (EFM), the validity of the relationship between various fetal heart rate (FHR) patterns and fetal acidemia has not yet been established, although several classification systems have been developed in the last forty years. In 2008, a three categories system was accepted unanimously by obstetric community in the NICHD workshop. Seven years later, a three categories system was proposed by the FIGO Intrapartum Fetal Monitoring Expert Consensus Panel. The objective of this study is to determine which system presents more validity for fetal acidemia detection.

Materials and methods: We conducted a one year retrospective case-control study of all singleton, non-anomalous gestations delivered at $\geq$ 37 week with neonatal acidemia, defined as an umbilical cord gas pH$\leq$7,10 and base excess (BE) <-8 mmol/L. A sub-analysis was performed in those fetus with pH$\leq$7 and BE $<$ -12mmol/L. Neonates in the control group were matched to each neonate in the case group in a one-to-one fashion using the subsequent delivery matched by gestational age. The primary exposure was 30 minutes of EFM immediately prior to delivery, interpreted by two obstetricians, blind to clinical and outcome data. Both reviewers categorized EFM patterns into FIGO and NICHD categories systems. Relative risks, 95% confidence intervals and test characteristics for acidemia were calculated.

Clinical cases and summary results: During the period of study 3490 women met inclusion criteria, of these, 102 delivered an acidemic fetus (Figure 1). There were no meaningful differences in maternal demographics between the neonates in the case group and those in the control group (Table 1). According to the NICHD system, 94.2% of Category I tracings were normal. Category II included normal (30.9%), suspicious (34.3%) and pathological (34.6%) tracings. All category III tracings were pathological, although 95.2% of pathological tracings belonged to category II. When analyzing the validity of both systems, we found that NICHD system presented 2.9% sensitivity and 100% specificity for detecting mil acidemia (pH $\leq$ 7.10) whereas FIGO system showed 43.1% sensitivity and 81.5% specificity. For the detection of severe acidemia (pH $\leq$ 7.00), the FIGO system presented a higher validity (Sensitivity: 69.0%, Specificity: 73.4%) than the NICHD system (Sensitivity: 7.1%, Specificity: 99.1%).

Conclusion: The FIGO 3-tier system had a better sensitivity and specificity than the NICHD 3-tier system for identifying mild and severe fetal acidemia.

Keywords: Fetal acidemia, classification systems, sensitivity, specificity

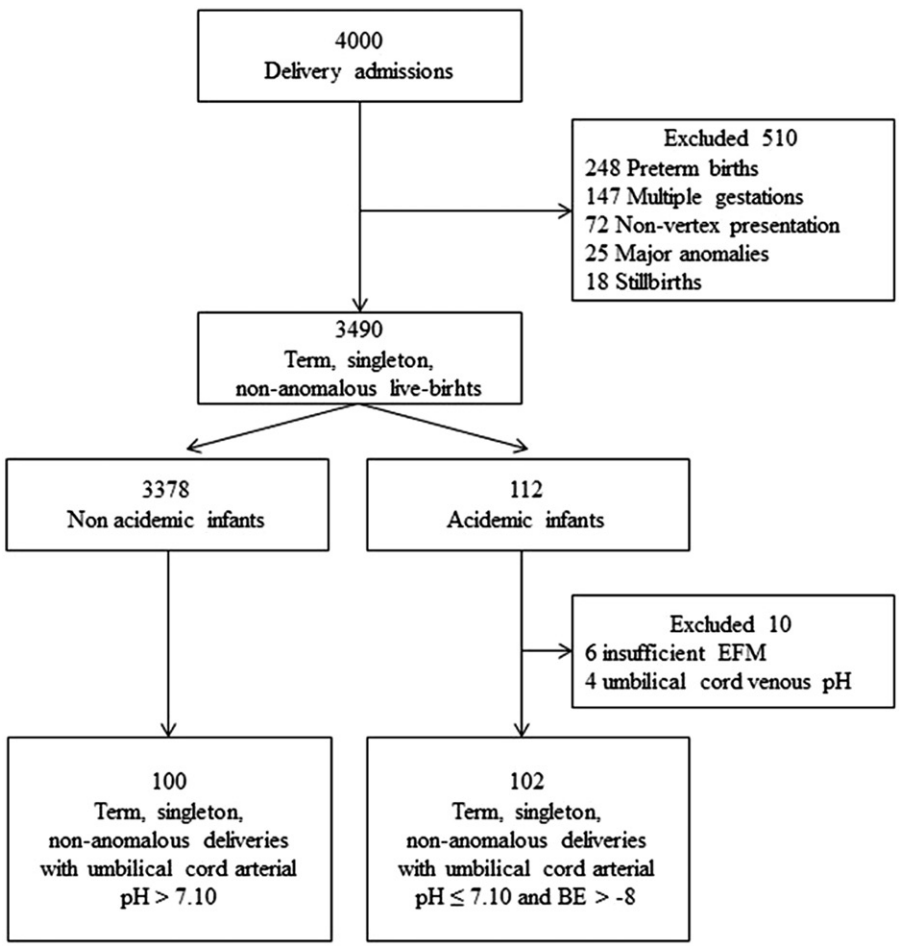

Table 1. Maternal, intrapartum and neonatal variables

	Acidemia N= 102	No acidemia N = 100	P
Maternal age, y	32.30 (± 5.04)	30.92 (± 6.17)	0.082
Gestational age, d	279.48 (± 8.37)	278.60 (± 6.85)	0.073
Nulliparity	77 (75.5)	58 (58.0)	0.008
Prior low transverse cesarean section	9 (8.8)	7 (7.0)	0.631
Regional anesthesia	101 (99)	96 (96.0)	0.167
Induction of labor	43 (42.2)	24 (24.0)	0.006
Presence of meconium	39 (38.2)	15 (15.0)	<0.001
Maternal fever	24 (23.5)	12 (12.0)	0.032
Vaginal delivery	37 (36.3)	73 (73.0)	<0.001
Operative vaginal delivery	37 (36.3)	19 (19.0)	0.006
Cesarean delivery	28 (27.4)	8 (8.0)	<0.001
Birthweight, g	3292 (± 401)	3114 (± 529)	0.740
Cord pH	7.04 (± 0.06)	7.26 (± 0.06)	<0.001
Base deficit	10.52 (± 3.87)	3.91 (± 2.80)	<0.001

Data are mean ± standard deviation, n (%) unless otherwise specified

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Significance of the first hour of the fetal heart rate monitoring: nonreactive versus reactive initial trace

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Introduction: Fetal heart rate (FHR) 'cyclicity' is defined as alternating episodes of low variability (quiet sleep) and reactivity (increased variability and/or accelerations, i.e. active sleep), Fig. 1. Antepartum, the Dawes-Redman normality criteria require at least one episode of FHR reactivity in an hour. During early labour, identification of the nonreactive FHR may also be informative, because of its association with pre-existing fetal compromise such as neurological injury, infection or inflammation (Phelan & Kim, Seminar Perinatol 24,2000) but this has only been subject to limited research (Spencer & Johnson, BJOG 93,1986). We used computerised methods to detect nonreactive FHR patterns in labour at the onset of FHR monitoring and report their incidence and association with perinatal outcome.
Materials and methods: All singleton births at Oxford in Jan 1993-Dec 2011, of gestation >35 weeks with intrapartum FHR monitoring of ≥1 hour duration were included, excluded were breech presentations or congenital abnormalities. The first hour of the FHR was analysed regardless of what point in labour the FHR monitoring began. Cases in which FHR monitoring commenced during the latent phase of labour (cervical dilatation <3cm) were included provided they were delivered within 24 hours. Nonreactive FHR was defined automatically as Decelerative Capacity <1 (Georgieva et al, BJOG 128,2014) and no accelerations during the first hour. Severe compromise was a composite outcome of stillbirth, neonatal death (48hrs of intensive care.
Clinical cases and summary results: In total 51 000 cases were included, 185 (0.36%) were identified as nonreactive (34% before established labour, 57% in the first stage of labour, 4% in the second stage and 5% with unknown dilatation). Their characteristics were compared with the remaining 50,815 births (Table 1). Those with nonreactive patterns were nearly five times more likely to have severe compromise, twice as likely to have thick meconium and three times more likely to be growth restricted (all significant). There were seven cases of severe compromise in the nonreactive group and 430 in the remaining cases. Thus, the sensitivity of the test was only 1.39%, but because a nonreactive FHR is so rare (0.36%) the false positive rate was also very low (about 3 in 1000). The risk for severe compromise was 1 in 118 for the entire dataset, but increased to 1 in 26 in the nonreactive cases, and to 1 in 5 in the nonreactive cases with thick meconium.
Conclusion: Persistently nonreactive FHR in the first hour of intrapartum monitoring is rare. Computerised FHR monitoring can reliably alert clinicians if such a pattern is present. The nonreactive initial FHR detects over 1% of severe compromises early with minimal over-intervention. Moreover, nonreactive initial FHR in the presence of thick meconium presents a 1 in 5 risk for severe compromise, indicating the need for prompt intervention.

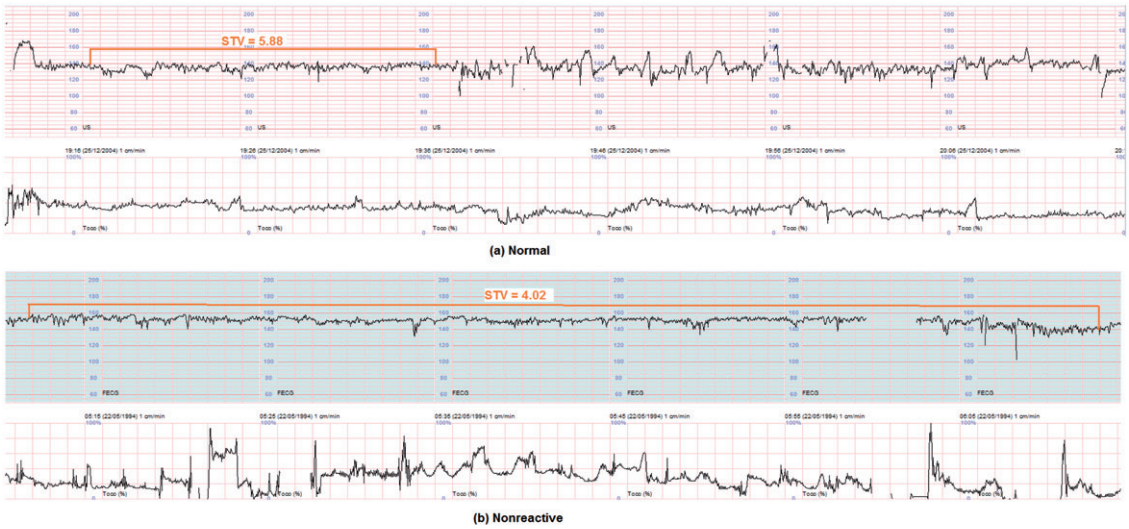

Table 1. Comparison of the cases with nonreactive initial FHR and the remaining deliveries.

	Nonreactive (n_1 = 185)	Remaining births (n_2 = 50,815)	Odds Ratio (95% Confidence Interval)
Nulliparous	117 (63.24%)	29,943 (50.67%)	**1.68 (1.24-2.26)**
Pre-eclampsia	24 (12.97%)	5,822 (9.85%)	1.36 (0.89-2.10)
Gestational Diabetes Mellitus	0 (0%)	495 (0.84%)	n/a
Induction	81 (43.78%)	23,318 (39.46%)	1.19 (0.89-1.60)
Any operative delivery	94 (50.81%)	20,980 (35.50%)	**1.88 (1.41-2.50)**
Caesarean	47 (25.41%)	6,668 (11.28%)	**2.68 (1.92-3.73)**
Thick meconium	24 (12.97%)	4,009 (6.78%)	**2.05 (1.33-3.15)**
Epidural	86 (46.49%)	24,263 (41.06%)	1.25 (0.93-1.67)
Oxytocin	79 (42.70%)	21,532 (36.44%)	1.30 (0.97-1.74)
Low Apgar	11 (5.95%)	1,324 (2.24%)	**2.76 (1.50-5.09)**
Resuscitation	8 (4.32%)	567 (0.96%)	**4.67 (2.29-9.52)**
Convulsions	0 (0%)	97 (0.16%)	n/a
SCBU ≥48hrs	16 (8.65%)	1,876 (3.17%)	**2.89 (1.73-4.83)**
Severe compromise	7 (3.78%)	430 (0.84%)	**4.61 (2.15-9.87)**
Meconium aspiration syndrome	2 (1.08%)	255 (0.50%)	2.17 (0.54-8.78)
Baby below the 3rd Yudkin centile	7 (3.78%)	818 (1.38%)	**2.80 (1.31-5.98)**
Baby above the 97th Yudkin centile	12 (6.49%)	2,530 (4.28%)	1.55 (0.86-2.79)
Stillbirth or Neonatal Death	1 (0.54%)	27 (0.05%)	**11.89 (1.61-87.96)**

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Remifentanil elicits a sinusoidal heart rate pattern in the human fetus

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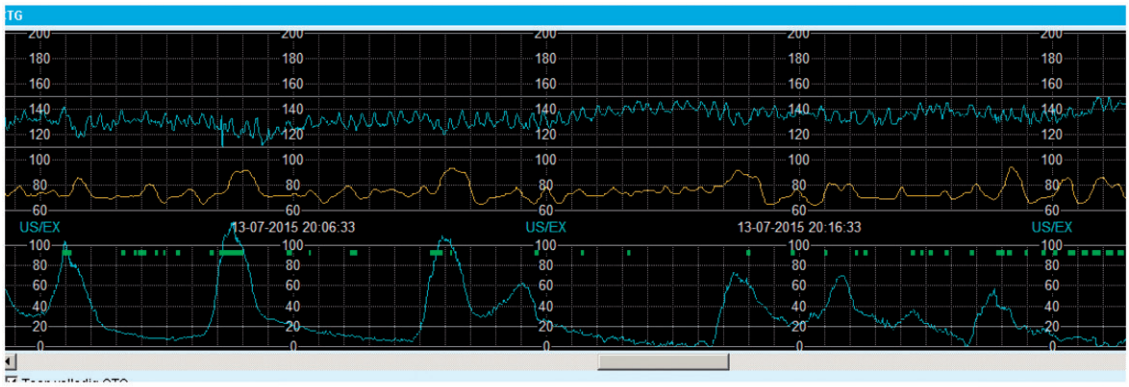
Introduction: A sinusoidal heart rate (SHR) pattern is a rare and still not completely understood fetal heart rate (FHR) pattern which was first described in 1972 as fixed, uniform fluctuations of the fetal heart rate. A true SHR pattern is rarely seen and considered as a sign of severe fetal jeopardy, being associated with increased perinatal morbidity and mortality and poor perinatal outcome. The pattern is best known for its association with fetal conditions causing severe acute or chronic fetal anemia, but has also been seen during severe fetal intrapartum asphyxia/hypoxia. Besides the presence of a true SHR pattern during fetal jeopardy, other conditions with SHR patterns have been reported. These SHR patterns are mostly transient, resolving spontaneously and are associated with a good fetal outcome. They have been related to different causes, such as fetal sucking movements and regular mouthing. Earlier, narcotic analgesics (butorphanol, alphaprodine, meperidine and nalbuphine), given to the mother during labour, also have been reported as a possible cause of this SHR pattern. Remifentanil is a more recent narcotic analgesic used as pain relief during labour. In a short period of time we observed several cases with a SHR pattern after administration of remifentanil. Based on these cases we aimed to investigate the



Outcome	Intervention group (n = 64)	Control group (n = 64)
Primary outcome		
SHR pattern	22 (34)[a]	6 (9)[a]
Pattern type		
- intermittent	19 (86)	6 (100)
- continuous	3 (14)	0
Amplitude of oscillations		
- minor (< 15bpm)	20	4
- intermediate (15-25 bpm)	2	2
- major (> 25 bpm)	0	0
Time course of SHR		
- delay till onset – min	12 ± 13	-
- total duration SHR pattern / total duration remifentanil use (%)	54 ± 29	-
- SHR pattern before remifentanil	4 (18)	-
Secondary outcome		
Five minute AS < 7	0 (0)	0 (0)
Umbilical artery pH < 7.10	2 (3.1)	3 (4.7)

Table 1. Primary and secondary outcome. Data are presented as mean ± SD or number (percentage).

a. p = 0.001

possible relation between remifentanil and the appearance of a SHR pattern.

Materials and methods: We conducted a retrospective cohort study and analyzed FHR patterns during the period of June 1st 2015 to August 30th 2015. The study population included nulliparous and multiparous women during labor with a singleton or multiple pregnancy, gestational age exceeding 32 weeks and at least 60 minutes of interpretable cardiotocography (CTG). Women in the intervention group were using remifentanil, while women in the control group were either having no pain relief or receiving epidural analgesia (EA). Groups were matched for spontaneous or induced labour and for the type of delivery. All FHR patterns were assessed by two independent investigators, who were blinded for the use of remifentanil. Tracings were reviewed during labour, starting from the beginning of first stage. A SHR pattern was identified using criteria of Modanlou et al. and a minimum period of ten minutes of this pattern was set as an inclusion criterium. Primary outcome was the presence of a SHR pattern related to the use of remifentanil. Several components of the SHR pattern were described: delay until onset of the SHR pattern after start remifentanil, total duration of SHR pattern in relation to total duration of remifentanil use, the presence of a intermittent or continuous pattern and the amplitude of oscillations. Secondary outcome was the neonatal condition at birth, assessed by the Apgar score (AS) after five minutes and the umbilical artery pH.

Clinical cases and summary results: One hundred twenty-eight tracings from fetuses during labour were reviewed, 64 from women receiving remifentanil en 64 from women without remifentanil. In the intervention group, 22/64 tracings (34%) showed a SHR pattern after the administration of remifentanil, compared to 6/64 tracings (9%) in the control group (p = 0.001). Time of onset after remifentanil administration varied from zero till 45 minutes (mean 12 min $\pm$ 13 min). Amplitude of oscillations in both groups were all $<$ 25 bpm, with only two SHR patterns in each group having an amplitude between 15 and

25 bpm. Total duration of available CTG did not differ significantly between the intervention and the control group (mean 465 min ± 232 versus 362 min ± 229). There were no significant differences in five minute AS and umbilical artery pH between intervention group and control group, with none of the neonates having a five minute AS < 7 and only two neonates in the intervention group versus three neonates in the control group with an umbilical artery pH < 7.10, with normal AS. There were no cases of severe fetal anemia that could explain the SHR patterns. Also no serious side effects of remifentanil on maternal vital functions were reported.
Conclusion: Remifentanil use during labour frequently elicits a SHR pattern in the human fetus. The high incidence of this pattern (34%) in this study and the short interval between the administration of remifentanil and its appearance strongly suggests a causal relationship. No adverse neonatal outcomes were reported, which indicates that the presence of a SHR pattern after the administration of remifentanil does not seem to indicate fetal distress. Following these results, this study indicates that a SHR pattern observed after start of remifentanil, without other FHR signs suggestive of fetal distress, does not warrant further fetal investigation. For clinicians this knowledge is of crucial importance as the recording of a SHR pattern may otherwise lead to unnecessary interventions and also to unnecessary maternal anxiety. The underlying mechanism is unknown and additional studies are still necessary to further clarify this unusual pattern.

Keywords: Neonatal outcome, remifentanil, sinusoidal heart rate pattern

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Impact on obstetric indicators of central fetal monitoring with computer analysis of cardiotocographic signals and real-time alerts

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Introduction: Avoidance of fetal hypoxia/acidosis and unnecessary obstetric intervention remains a high priority for intrapartum care. The objective of this study was to evaluate the impact of introducing a central fetal monitoring system with computer analysis of cardiotocographic signals and real-time alerts (Omniview-Sisporto®), on the cesarean section and adverse neonatal outcome rates of a tertiary care hospital.
Materials and methods: The clinical database of a tertiary care university hospital was searched for the period between january 2001 and december 2014, to determine yearly rates of cesarean section (CS), cs for non-reassuring fetal state (NRFS), and newborn hypoxic-ischemic encephalopathy (HIE). the periods before and after the introduction of central fetal monitoring system in december 2003 were compared. results were calculated with 95% confidence intervals (95% CI).
Clinical cases and summary results: After introduction of the system, there was a significant reduction in overall CS rates (29.2%, 95% CI 28.9–30.8 VERSUS 28.3%, 95%CI 27.8–28.8), CS for nrfs rates have also decreased (5.5%, 95%CI 5.0–6.0 VERSUS 4.9%, 95%CI 4.7–5.2). However, it did not reach estatistic significance. more importantly, there was a significant decrease in the number of HIE cases per 1000 births (5.3, 95%CI 4.0–7.0 VERSUS 2.2, 95%CI 1.7–2.8).
Conclusion: Introduction of central fetal monitoring with computer analysis of cardiotocographic signals and real-time alerts was associated with a significant reduction in cesarean section rates and in the incidence of hypoxic-ischemic encephalopathy.

Keywords: Central monitoring, real-time alerts, cardiotocography, heart rate, fetal, cesarean section

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Neoclot-study: neonatal central-venous line observational study on thrombosis

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Introduction: In critically ill (premature) neonates, central venous catheters (CVCs) are increasingly used for monitoring and administration of medication or parenteral nutrition. A serious complication, however, is the development of catheter-related thrombosis (CVC-thrombosis), which may resolve by itself or cause severe complications such as stroke. Due to lack of evidence, management of neonatal CVC-thrombosis varies among neonatal intensive care units (NICUs). In the Netherlands a partly consensus based national management guideline has been developed which is implemented in all 10 neonatal intensive care units (NICUs).
Materials and methods: The NEOCLOT study is a multicentre prospective observational cohort study, including 150 preterm and term infants (0-6 months) admitted to one of the 10 NICUs, developing CVC-thrombosis. Patient characteristics, thrombosis characteristics, risk factors, treatment strategies and outcome measures will be collected in a web-based database. Management of CVC-thrombosis will occur as recommended in the protocol. Violations of the protocol will be noted. Primary outcome measures are a composite efficacy outcome consisting of death due to CVC-thrombosis and recurrent thrombosis (CVC-thrombosis or pulmonary embolism), and a safety outcome consisting of the incidence of major bleedings during therapy. Secondary outcomes include individual components of primary efficacy outcome, all-cause mortality, clinically relevant non-major and minor bleedings and the frequency of risk factors, protocol variations, residual thrombosis and post thrombotic syndrome.
Clinical cases and summary results: At the moment about 50 neonates are included in this study. A total of 150 infants are needed.
Conclusion: The NEOCLOT study will evaluate the safety, efficacy and feasibility of the new, national, neonatal CVC-thrombosis guideline. Furthermore, risk factors as well as long-term consequences of CVC-thrombosis will be analysed.

Keywords: Central venous catheters, thrombosis, neonate, national guideline

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The predictive value of amniotic fluid ph and electrolytes on neonatal respiratory disorders

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Presenter: **M. Cetinkaya**

Introduction: Amniotic fluid (AF) pH can be affected by both maternal and fetal conditions. Fetal AF may have effect on fetal lung maturation. Down-regulation of epithelial Na channels and an increase of pulmonary compliance accompany to pulmonary adaptation developing at the first hours of life. Lower genomic expression of Na channels in airways were found to be associated with respiratory distress syndrome (RDS) in preterms. Although pH and electrolyte value of AF may be relevant to fetal and maternal conditions, there is no study about this topic in the literature. The aim of this study is to determine the possible role/s of amniotic fluid pH and electrolytes to predict neonatal respiratory morbidities.

Materials and methods: From all infants, 1 ml of AF was aspirated during C-section before incision of membranes. pH value and electrolytes of AFs were analyzed by the blood gas machine (Siemens RAPIDLab®1200 Systems). Maternal and neonatal demographic features and clinical outcomes, presence of morbidities such as respiratory distress syndrome (RDS), transient tachypnea of the newborn (TTN) were all recorded.

Clinical cases & summary results: AF of 184 infants were evaluated. A total of 26 infants developed RDS and 35 had a diagnosis of TTN. Receiver operating characteristic analysis showed a statistically significant difference of AF Na and K values between the group with respiratory morbidity and the healthy group ($p<0.001$, $p<0.04$). Besides AF Na value was statistically significantly different between the preterm neonates with RDS and healthy preterm neonates ($p<0.015$). AF pH did not show any statistically significant value for TTN in term and RDS in preterm infants.

Conclusion: To our best of knowledge, this is the first study that defines the mean values of AF pH and electrolytes at term and preterm neonates both healthy and with respiratory morbidities. Also this study suggests that the Na and K values of AF may be predictors of respiratory distress in neonates, more studies are needed to evaluate the role of AF pH and electrolytes on prediction of neonatal respiratory morbidities

Keywords: Amniotic Fluid, pH, Electrolytes, Respiratory Distress Syndrome, Transient Tachypnea of Newborn

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A microscopic evidence for the thrombogenicity of umbilical catheters

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Introduction: Umbilical catheterization is a routine procedure performed in the neonates to obtain a central vascular access. It is painless for the child and easy for the operator as after birth the vessels are opened in the umbilical stump. The major complication that limits the usage time of umbilical catheters is thrombosis, leading to embolic events and infection. Among children, neonates are most prone to thromboembolic disease. This is due to their immature hemostasis, small vessel diameter and hemodynamics altered by congenital defects and persistent fetal circulation. However, almost 90% of thrombi in neonates are associated with arterial or venous access devices.

Materials and methods: New and used polyurethane umbilical catheters were examined using Computed Tomography (Phoenix Nanotom®) and Scanning Electron Microscopy (Hitachi TM3000). The project was performed in frame of the collaboration agreement, with a permission from the Bioethics Committee.

Clinical cases and summary results: /Multiple images here - please notice: I am sending a pdf file with my results seen as actual images.

Figure 2. Linear transducer ultrasound image of a catheter-related thrombus in abdominal aorta: a) on day 3 of UAC presence, b) day 4, just after UAC removal.

Figure 3. CT and SEM imaging of a new umbilical catheter, 75% of the device consist of radiopaque polymer (barium sulfate, 2) dedicated to assess the catheter' position on an X-ray. We suggest it is mostly responsible for the roughness of catheter's surface.

Figure 4. Graduation numbers on a new catheter show a fractured structure. A simulation of a traumatic tweezers use was performed, resulting in paint peeling and catheter crumbling.

Figure 5. Comparison of a groove at a tip of the new catheter (left) and a groove filled with inclusions removed from the patient (right).

Figure 6. SEM images of an umbilical catheter from a patient indicate that the clot formation has begun.

Figure 7. An illustration of what can happen if we do not react to the clotting process. A central catheter (non umbilical) was kept in a patient for 10 weeks and a calcification of a thrombus had taken place - confirmed calcium phosphate content by SEM Energy Dispersive Spectroscopy.

Conclusion:

*The irregular surface of umbilical catheters may be the source of clotting formation, thus a regular thrombosis monitoring is recommended while the catheter's presence.

*New techniques (ultrasound) allow us a bedside monitoring of the catheter position and thrombus formation. Rough radiopaque catheters with imprinted numbers may not be needed anymore.

*Careful tweezers' use while inserting the catheter is recommended due to its predisposition to damage.

Keywords: Umbilical catheterization, umbilical vessels, thrombogenicity, thrombosis, neonatal intensive care, neonates

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Probiotic supplementation and retinopathy of prematurity, bronchopulmonary dysplasia and periventricular leukomalacia in preterm infants: a meta-analysis

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Presenter: **E. Villamor**

Introduction: Recent meta-analyses showed that probiotic supplementation reduces the risk of necrotizing enterocolitis (NEC) and late onset sepsis (LOS) in preterm infants but it remains to be determined whether this reduction translates into a reduction of other complications of the prematurity.

Materials and methods: We conducted a systematic review and meta-analysis to evaluate the possible role of probiotics in altering the risk of retinopathy of prematurity (ROP), bronchopulmonary dysplasia (BPD), and periventricular leukomalacia (PVL).

Clinical cases & summary results: Sixteen randomized controlled trials (5294 infants; probiotics: 2647) were included in the meta-analysis that showed a significantly decreased rate of LOS (risk ratio, RR, 0.86, 95% confidence interval, 95% CI, 0.768 to 0.968, P=0.012) but could not demonstrate a significant effect of probiotics on severe ROP (RR 0.841, 95% CI 0.666 to 1.063, P=0.148, 9 studies), any ROP (RR 1.053, 95% CI 0.903 to 1.228, P=0.508, 4 studies), BPD (RR 0.1.066, 95% CI 0.973 to 1.168, P=0.172, 15 studies), or PVL (RR 1.347, 95% CI 0.979 to 1.851, P=0.067, 6 studies). Meta-regression did not show any significant association between the RR for LOS and the RRs for the others outcomes.

Conclusion: In conclusion, our results suggest that ROP, BPD, and PVL rates are not affected by probiotic supplementation in preterm infants. Further studies addressing this issue are needed to confirm our findings that must be interpreted with caution because the effects of probiotics seem to be strain specific and, therefore, pooling data from different strains may result in misleading conclusions.

Keywords: Probiotics, oxidative stress, preterm

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The belgian prenatal microarray (bemapre) consortium: sharing prenatal genomic array data in a national database

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Presenter: **J Muys**

Introduction: In 2013, a national consensus between the eight Belgian genetic centers was reached to use genomic arrays as a first-tier diagnostic test for the detection of chromosomal aberrations in prenatal invasive samples. Consensus guidelines were established regarding technical aspects, the organization of pre- and post-test counseling as well as the interpretation and reporting of certain copy number variations (CNV). These guidelines are subjected to constant re-evaluation and refinement. Following this uniform reporting policy, a national prenatal CNV database was created. We report on the realization and current status of this database.

Materials and methods: A national consensus approach on how counseling and interpretation of results are managed in Belgium when using microarray in prenatal diagnosis is presented. Belgian genetic centers agreed on using a database provided by Cartagenia NV (Agilent Technologies). It was decided to include all prenatal cases with a non-benign CNV with a minimal size of 400kb. A simple, unambiguous, uniform labeling system for all CNVs was implemented. Criteria for minimal genotypic and phenotypic information were drafted.

Clinical cases & summary results: All centers have imported their data into the database or are in the process of doing so. Approximately one third of all CNVs in the database are pathogenic in nature (55.4% de novo, 25.4% maternally inherited, 19.2% paternally inherited). Two thirds of cases in the database are variants of unknown significance (11.4% de novo, 45.7% maternally inherited, 42.9% paternally inherited). The first results will be presented.

Conclusion: The BEMAPRE database is almost fully established; nearly all prenatal data are imported. The resulting database constitutes an elaborate source of data, which we will now start mining for genotype-phenotype correlations. By ameliorating genotype–phenotype knowledge of prenatally registered CNVs, we will develop a strong scientific base for clinical decision-making in prenatal diagnosis. This work is a collaboration of all Belgian academic genetic centers.

Keywords: Invasive prenatal diagnosis, Microarray, genetic

NEONATAL LUNG – 754 (CASE REPORT)

Pulmonary involvement in neonatal lupus: a challenging diagnosis

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Presenter: **F. Flor-de-Lima**

Introduction: Neonatal Lupus Erythematosus (NLE) refers to a clinical spectrum of cutaneous, cardiac and systemic abnormalities observed in newborns whose mothers have autoantibodies against Ro/SSA, La/SSB or, rarely, anti-U1RNP. It is considered a model of passively acquired autoimmunity. Pulmonary involvement is relatively frequent in adult and juvenile patients with Systemic Lupus Erythematosus (SLE), but its occurrence in newborns is exceedingly rare. Our aim is to describe a case of Acute Lupus Pneumonitis (ALP) in a newborn with NLE.

Clinical cases & summary results: A newborn was born from a mother with SLE and positive anti-SSa and –SSb with a previous child who died due to complications from NLE myocarditis. A prenatal diagnosis of heart block was made despite maternal disease control and early transplacental treatment with dexamethasone. Third-degree heart block and positive anti-SSa were confirmed at birth. A temporary pacemaker was placed at D3 and a definitive pacemaker only at D15 due to sepsis with concurrent mild respiratory failure. Despite adequate antibiotic therapy, negative cultures and decreasing inflammatory parameters at D17 severe hypoxemic respiratory failure ensued, requiring mechanical ventilation. Chest x-ray showed symmetrical interstitial infiltrates. ALP and Pulmonary Embolism were suspected and lung CT angiography revealed diffuse ground glass opacities. After 3 methylprednisolone pulses, followed by oral prednisolone, he improved rapidly. Lung infiltrates regressed and he was discharged home at D46, asymptomatic.

Conclusion: There are few reports of ALP in NLE and its diagnosis is a challenge as it is mostly one of exclusion. A high degree of suspicion by neonatologists and a multidisciplinary approach to these patients are fundamental in order not to delay establishing a diagnosis. Although very little has been reported in the literature, early aggressive treatments probably crucial for a favorable outcome without long-term sequelae.

Keywords: Lupus Erythematosus; Newborn

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One year pulmonary outcomes in the trial of late surfactant (TOLSURF)

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Introduction: Preterm Infants requiring mechanical ventilation for more than 7 days experience episodes of dysfunctional surfactant and are at high risk for death or bronchopulmonary dysplasia (BPD). Infants ≤28 0/7 wks' gestational age (GA) ventilated at 7 to 14 days in TOLSURF were randomized to late surfactant (calfactant) versus sham treatment, all received inhaled nitric oxide. There was no difference in the primary outcome of survival without BPD at 36 wks' post-menstrual age, determined by physiologic O2/flow reduction (Ballard RA, J Pediatr 2015).

Materials and methods: We evaluated the effect of treatment on pulmonary outcomes at one year corrected age (CA). 450/ 511 enrolled infants survived. We collected data on pulmonary morbidity by parental surveys at 3, 6, 9 and 12 months CA. Morbidity was determined if parents reported medications (diuretic, bronchodilator, inhaled or systemic steroid, pulmonary), pulmonary hospitalization, or home respiratory support. Infants were classified as No Pulmonary Morbidity (No PM) if no morbidity reported in any survey, and Persistent Pulmonary Morbidity (Persistent PM) if morbidity reported in ≥3 surveys (versus No Persistent PM if no or ≤2 surveys). We analyzed the effect of treatment assignment on these outcomes with GEE, to account for clustering of siblings, adjusting for imbalances in baseline characteristics.

Clinical cases and summary results: There were no differences in GA (25.3±1.2 versus 25.3±1.2, p=0.90), male sex (57 versus 53%, p=0.40), percent with intrauterine growth restriction (IUGR ≤10th percentile, 18 versus 14%, p=0.22), or maternal race/ethnicity (p=0.47) in treatment versus control groups

Treated infants were less likely to require home respiratory support (38.5 versus 53%) relative benefit 1.28 (95%CI 1.07,1.55 p= 0.006). Of note, treated infants were less likely to be products of multiple gestation (26 versus 36%, p=0.02), and had younger mothers (27.8±6.1 versus 29.8±6.6 years, p=0.0007). 110/439 (25%) of infants were classified as No PM and 153/426 (36%) as Persistent PM. Adjusted Relative Benefit for treatment versus control was 1.40 (95% CI 0.96, 2.04, p=0.08) for No PM and 1.24 (95% CI 1.08, 1.42, p=0.003) for No Persistent PM.

Conclusion: Late surfactant treatment was associated with reduced requirement for home respiratory support and, in the adjusted model, for decreased occurrence of persistent pulmonary morbidity during the first year and a trend toward disease-free outcome. Late surfactant administration was well tolerated and appears to be safe.

Keywords: BPD, late surfactant, 1 year pulmonary outcome

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Heart rate characteristics index and extubation outcome in neonates: a retrospective cohort study

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Introduction: Heart Rate Characteristics index (HRCi) is a numerical score derived from a mathematical model of electrocardiogram analysis of heart rate variability, asymmetry and entropy to predict clinical deterioration. Displaying the HRCi to clinicians reduced mortality in very low birth weight infants, primarily due to reduction in late onset sepsis related mortality. Acute respiratory deterioration accounts for 34% of the abnormal HRCi spikes, due to the effect of breathing pattern alterations, lung inflammation, hypoxia and hypercapnia on heart rate variability and decelerations. This retrospective observational cohort study examines the hypothesis that HRCi can predict the outcome of a clinical decision to extubate a neonate from ventilation either before or shortly after the extubation.
Materials and methods: A retrospective review of all ventilated neonates was undertaken between June 2014 and January 2015 in Singleton Hospital, UK, where HRCi monitoring is routine. Clinical data and hourly HRCi were recorded for intended intubation-extubation events (episodes). Each episode started 6 hours prior to extubation or at intubation (if within 6 hours) and ended at 72 hours post-extubation (controls), earlier if re-intubated (cases). Episodes with insufficient HRCi scores were excluded. Mean HRCi of 6-hourly epochs were analysed; the post-extubation epoch (PEE) means were normalised to pre-extubation mean (baseline) as fold changes. Baseline HRCi and subsequent PEE mean fold changes were compared by non-parametric tests. A logistic regression mixed model was used to test for independent variables.
Clinical cases & summary results: On initial search, 102 infants were identified as ventilated during the study period. Of these, 36 infants were excluded – 14 were not extubated on the unit (died/transferred out), 4 had no HRCi data available and 18 had insufficient HRCi due to a very short period of ventilation following admission to the unit. The remaining 66 infants contributed to 97 episodes included in the final analysis. Of these episodes, 18 were cases and 79 controls. Cases had significantly lower gestation ($p<0.01$) and birth weight ($p<0.01$) but longer duration of ventilation ($p<0.05$) and more culture positive sepsis ($p<0.01$). Baseline HRCi and PEE-1 fold changes were higher in cases compared to controls ($p<0.01$). Table 1 shows the relationship between HRCi thresholds and extubation failure. In a multi-variable logistic regression mixed model, pre-extubation HRCi, PEE-1 fold-change and positive blood culture remained significant independent predictors of extubation failure.
Conclusion: The baseline and post-extubation HRCi were significantly different in neonates who failed extubation, compared to those who succeeded, possibly due to a difference in their respiratory characteristics. Sepsis increased the risk of extubation failure but HRCi was a poor predictor of this outcome. In contrast, a low baseline and minimal changes to post-extubation HRCi had a strong negative predictive value, and may add to the confidence of clinicians considering extubation.

Keywords: Neonate, Heart Rate Characteristics, Ventilation, Extubation

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Pulse oximeter saturation target limits for preterm infants: a survey among european nicus

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Presenter: **M.J. Huizing**

Introduction: Oxygen saturation targeting in preterm infants remains a very controversial topic worldwide. In practice, there is substantial variation as to acceptable oxygen saturation limits for these infants. We aimed to survey the current practices on oxygen saturation targets in European Neonatal Intensive Care Units (NICUs) and the changes introduced in these practices during the last years.
Materials and methods: A request to participate in a web-based survey was sent to a delegate of the National Neonatology Society of 31 European countries, with the request of distributing it among the country's NICUs. The head of the NICU or a senior neonatologist was asked to complete the survey. The survey was conducted between November 2015 and February 2016.
Clinical cases & summary results: We obtained valid responses from 193 NICUs, treating 8590 preterm newborns per year, across 27 countries. Of these centers, 140 (72,5%) had a unit policy or guideline for desired oxygen saturation range for infants born at $\leq$28 weeks. Forty different saturation ranges were reported (ranging from 82-93 to 94-99). The five most frequently utilized oxygen saturation ranges were 85-95 (8 NICUs; 4,1%), 88-95 (23; 11,9%) 90-94 (10; 5,2%), 90-95 (54; 28%), and 91-95 (10; 5,2%). A total of 143 NICUs (74,1%) changed their oxygen saturation limits over the last five years. The five most

Table1

Positive test threshold	Sensitivity % (95% CI)	Specificity % (95% CI)	Positive Predictive Value % (95% CI)	Negative Predictive Value % (95% CI)
Baseline HRCi				
≥1	89 (65 – 99)	52 (40 – 63)	30 (18 – 44)	95 (84 – 99)
≥2	39 (17 – 64)	78 (68 – 87)	29 (13 – 51)	85 (75 – 92)
≥3*	11 (1 – 35)	95 (88 – 99)	33 (4 – 78)	82 (73 – 90)
HRCi PEE-1 fold-change				
≥1	72 (47 – 90)	59 (48 – 70)	29 (16 – 44)	90 (79 – 97)
≥2**	No cases	97 (91 – 99)	No cases	81 (72 – 88)

* No additional case for HRCi ≥ 4 or higher
** No additional case or control for HRCi fold-changes ≥ 3

frequently reported previous limits were 85-92 (11 NICUs; 5.7%), 85-95 (19; 9.8%), 88-92 (33; 17.1%), 88-93 (14; 7,3%), and 88-95 (10; 5,2%). When asked about the strength of the scientific evidence supporting the beneficial/harmful effects of the oxygen saturation targeting policy that was used in their NICU, 4 (2,1%) found it very weak, 25 (13%) found it weak, 58 (30,2%) found it neutral, 97 (50.5%) found it strong and 8 (4,2%) found it very strong.
Conclusion: We detected a high degree of heterogeneity in the pulse oximeter target limits across European NICUs. A significant number of NICUs have changed their policy in the last years, probably as a consequence of the most recent published investigations and recommendations.

Keywords: Oxygen, saturation targets, hypoxia, hyperoxia

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The feasibility of ultrasound diagnostics in confirmation of endotracheal tube position in neonates

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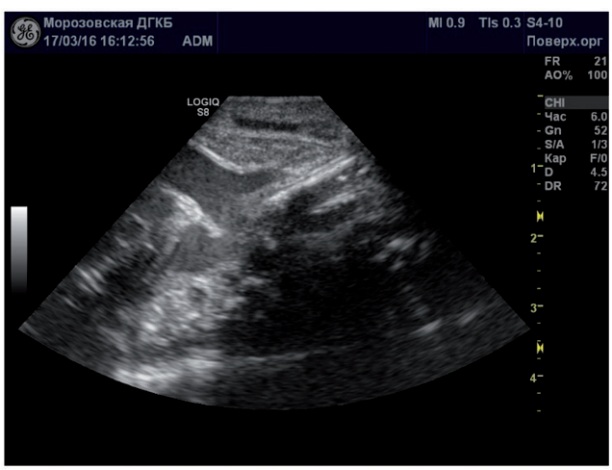
Presenter: **A. Erokhina**

Introduction: Endotracheal intubation is the common procedure routinely managed in neonatal intensive care unit (NICU) and delivery room. Incorrect endotracheal tube (ETT) position is associated with serious complications such as right upper lobe and left lung atelectases, pulmonary air leak syndromes, hypoxemia and even death. ETT position can be confirmed by using chest radiography; but chest X-ray is often delayed and patients are exposed to ionizing radiation. Ultrasound diagnostics (USD) might be a new, quick and safe method to confirm correct tube placement. The aim of our investigation was to assess the feasibility of USD in determining ETT position and to compare its results with the current gold standard – chest radiography.
Materials and methods: It was a prospective, single-centre, observational study conducted at the Morozovskaya Children Hospital (Moscow, Russia). 42 intubated neonates who underwent upper airway USD and chest X-ray were observed. Imaging was made by highly qualified ultrasound specialist and pediatric radiologist who were blinded to the results of another method. USD was made by microconvex 4-10 MHz transducer on Loqic S8 ultrasound machine via a suprasternal approach; an aortic arch (AA) was used as a USD marker; the distance between AA and ETT tip was measured. On chest X-ray the distance from the ETT tip to the carina was measured. The mean gestation age of the patients was 29.7±5.2 (23-40 w), mean body weight at the day of investigation was 1652.9±996 g (520-3990 g).



Clinical cases & summary results: The ETT was visualized by US in all examined neonates. The mean time interval between ultrasonography and chest radiography was 2.4 hours (0.35-5.0 h). The concordance of chest ultrasound and X-ray data was 98% (41/42); in 1 case chest X-ray showed the deep ETT position, but at USD the distance was normal, and US was made 2 hours before radiographic imaging. Correlation between the distance from ETT tip to carina on chest X-ray and ETT-tip to aortic arch on US was strong – 0.8 ($p<0.05$). We proposed that deeply positioned ETT on X-ray is registered at Th3-Th4 level, on the US the distance ETT – tip to the aortic arch less than 1 cm. Sensitivity of USD to detect deeply positioned ETT was 91% (10/11), specificity of USD was 100% (31/31), positive predictive value - 100%, negative predictive value - 97%.
Conclusion: Bedside ultrasound is a feasible imaging modality to visualize the position of the endotracheal tube which has a very good correlation with gold standard – chest X-ray and high sensitivity to determine deeply positioned ETT. The major limitation of our trail is that a single highly qualified specialist performed all US imaging. Randomized controlled trials involving nonqualified operators (neonatologists) are required to implement this technique into routine clinical practice.

Keywords: Endotracheal tube position, ultrasound

OUTCOME - 016

Maternal inflammatory bowel disease during pregnancy is not a risk factor for long-term morbidity of the offspring

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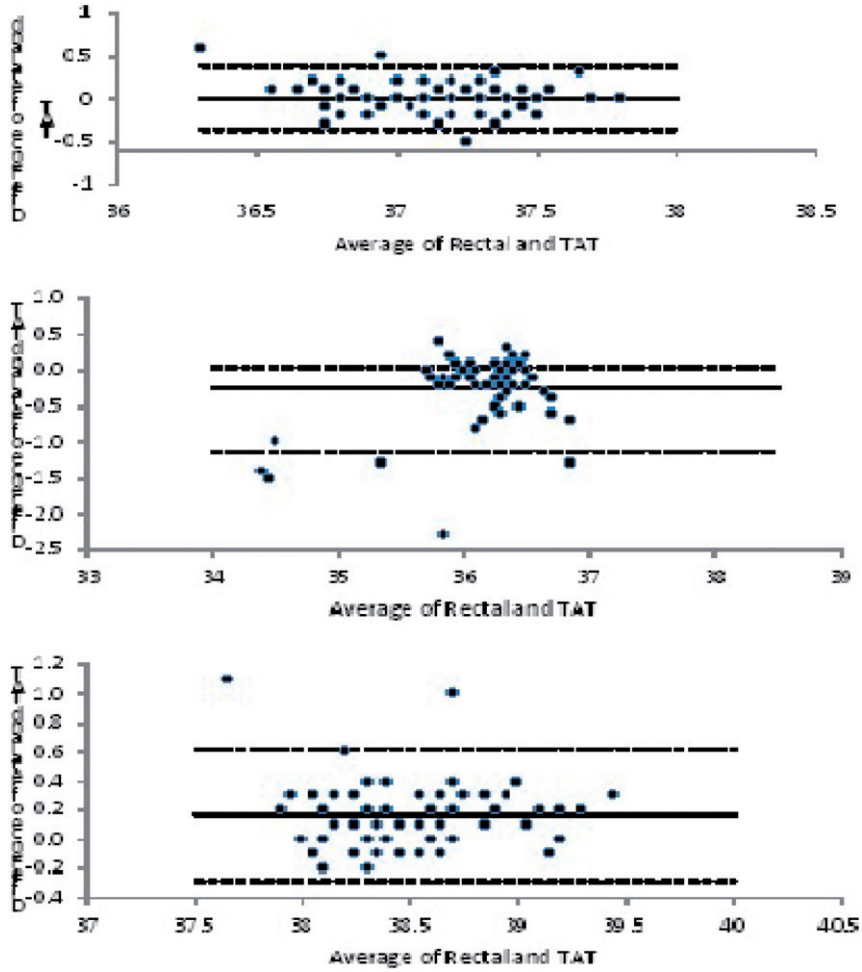
Introduction: Our objective was to investigate whether offspring's of women suffering from inflammatory bowel disease (IBD) during their pregnancy are at an increased risk for long-term pediatric morbidity.
Materials and methods: This population-based cohort study compared the incidence of long-term (up to the age of 18 years) hospitalizations due to cardiovascular, endocrine, neurological, hematological, respiratory and urinary pediatric morbidities of offsprings of mothers affected by inflammatory bowel disease during their pregnancy.
Deliveries occurred between the years 1991 and 2014 in a regional tertiary medical center. Newborns with congenital malformations as well as multiple pregnancies were excluded from the study.



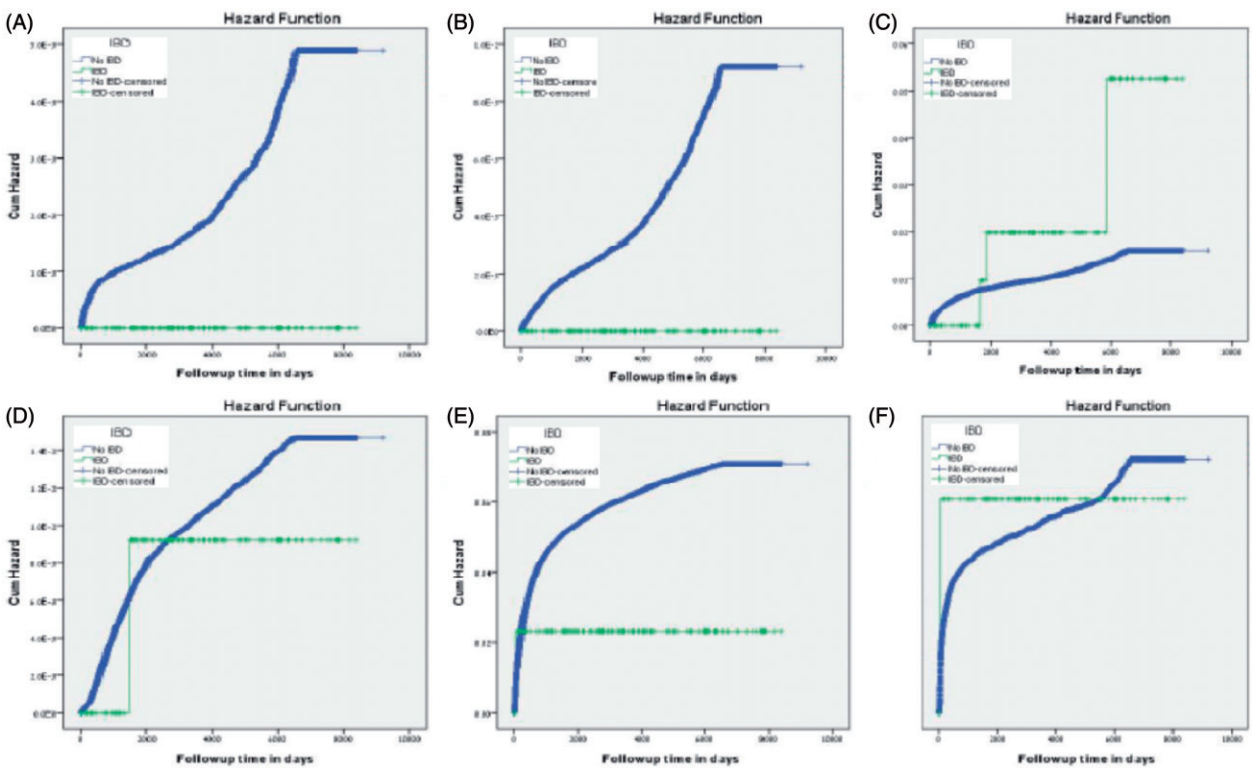


Figure 1. Kaplan-Meier survival curve demonstrating the cumulative incidence of hospitalizations up to the age of 18 years in children born to mothers with and without IBD.
A - Cardiac hospitalizations B - Endocrine hospitalizations C - Hematological hospitalizations D - Neurological hospitalizations E - Respiratory hospitalizations F - Urinary hospitalizations.

Clinical cases and summary results: During the study period 255 352 deliveries met the inclusion criteria; 0.05% of the offsprings were born to mothers with inflammatory bowel disease (n=133). During the follow-up period, children born to mothers with inflammatory bowel disease did not have an increased risk for long-term (up to the age of 18 years) cardiovascular, endocrine, hematological, neurological, respiratory or urinary morbidity.
Conclusion: Maternal inflammatory bowel disease during pregnancy is not a risk factor for long-term morbidity of the offspring.

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The association of neonatal morbidity and long-term neurological outcome in infants who were growth restricted and preterm at birth

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Introduction: Although severe neonatal morbidities are often used as surrogates for neurodevelopmental outcome in perinatal research, the relationship between the two outcomes is rarely evaluated. In TRUFFLE, a randomised trial of delivery for very preterm fetuses dependent on venous Doppler or cardiotochographic criteria, we used composite outcomes to evaluate neonatal and developmental outcomes at 2 years of age. We aimed to study in a secondary analysis, the relationship between neonatal morbidity and two-years neurodevelopmental outcome in a large cohort of surviving children after early fetal growth restriction (FGR).
Materials and methods: Data were collected prospectively from the recognition of fetal growth restriction (and study entry) until age two years, corrected for preterm birth. We studied the association between neonatal morbidity (NNM) and neurodevelopmental impairment (NDI), retaining trial allocation in all statistical models. NNM included any of bronchopulmonary dysplasia, brain injury, sepsis or necrotising enterocolitis. NDI was a composite of Bayley cognitive score <85, cerebral palsy or severe sensory impairment.
Clinical cases and summary results: This study cohort comprised 402 infants born at a mean gestational age of 30 + 4 (range 26 + 1 to 40 + 4) and with a mean birthweight of 1023 (SD 321) gram. NNM occurred in 104 cases (26%) and was more frequent in 17 of 39 infants (44%) with NDI than in the 87 of 363 infants (24%) with normal outcome (OR 2.5 (1.3-4.8; p=0.01). However for 22 of 39 infants with NDI (56%) there was no preceding NNM. As anticipated, NNM was inversely related to birth gestational age. In contrast, NDI was not related to gestational age. The incidence of NNM rose as BWR fell. In multivariable analyses, cerebral ultrasound abnormalities were most strongly associated with adverse 2-year outcome, together with trial roup allocation, birth weight ratio (BWR), infant sex and Apgar score.
Conclusion: With the exception of cerebral ultrasound abnormalities, commonly used neonatal morbidities are poor markers of later neurodevelopmental impairment and should not be used as surrogate outcomes for NDI.

Keywords: Fetal growth restriction, prediction, neonatal morbity, neurodevelopmental impairment

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Growth from birth to age 12.5 in children born growth restricted

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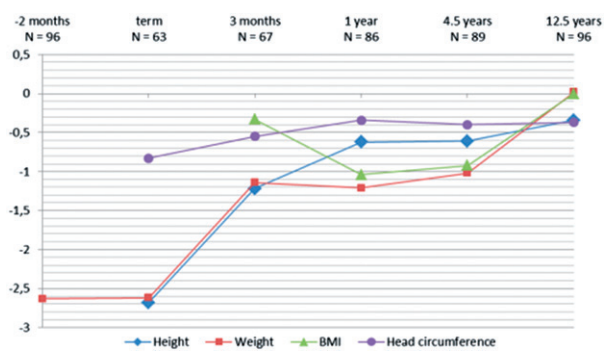
Introduction: Early onset hypertensive disorders of pregnancy are strongly associated with placental insufficiency and consequently fetal growth restriction (FGR) and preterm birth. It is suggested that these children have an increased risk for short stature during childhood, and decreased adult height, overweight and obesity. In earlier studies we found that the degree of FGR had a strong positive relation to anthropometry in early childhood. We aimed to investigate growth from birth to age 12.5 and the associations with the degree of FGR.
Materials and methods: Eligible subjects were 149 children born from mothers participating in the Preeclampsia Eclampsia Trial Amsterdam. Birth weight ratio (BWR) was used as measure of FGR, and was defined as birth weight/ expected birthweight P50 (customized growth charts). Catch up growth was defined as height standard deviation score (SDS) within target height range (±1.6SD). Thinness, overweight and obesity were defined according to international (IOTF) guidelines. Anthropometry at age 12.5 was done in 96 children. GA range was 27-38 weeks (mean 32). Mean BWR was at p2.3. Mean target (parental) height was −0.25 SDS.
Clinical cases and summary results:

- The figure shows height, weight, BMI and head circumference measurements expressed as SDS up to age 12.5.
- At age 12.5 median pubertal stages were Tanner B4 and G2.
- Mean height (SD) at age 12.5 was -0.34 SDS (1.0). A total of 95% had complete catch up growth, including two out of three children on growth hormone therapy. Height was not associated with BWR.
- Mean weight (SD) was 0.02 SDS (1.1). The lower BWR was, the larger change in weight SDS between age 0 and 12.5.
- Mean BMI (SD) was −0.00 SDS (1.2). Thinness, overweight, obesity were found 15%, 3% and 2% of the cohort respectively. Neither BMI at 12.5 years nor the increase of BMI between 1 and 12.5 years was associated with BWR.

Conclusion: In this homogeneous cohort of growth restricted children at a wide GA range, linear growth is comparable to the population and 95% of children are within the target height range. Mean BMI SDS is comparable to that of the Dutch reference population. The degree of FGR was not related to height and BMI at age 12.5.

Keywords: Fetal growth restricton, growth



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Use of magnesium sulfate in severe perinatal asphyxia and short-term neurologic outcomes

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Presenter: **Gertiana Bime-Mullalli**

Introduction: The goal was to study whether postnatal magnesium sulfate infusion could improve neurologic outcomes at discharge for term neonates with severe perinatal asphyxia.

Materials and methods: Thirty two term neonates (>= 37 weeks of gestation) with severe perinatal asphyxia were studied in a prospective, longitudinal, placebo-controlled trial. Patients were assigned randomly to receive either 3 doses of magnesium sulfate infusion at 250 mg/kg per dose (1 ml/kg per dose) 24 hours apart (treatment group) or 3 doses of normal saline infusion (1 ml/kg per dose) 24 hours apart (placebo group). Both groups also received supportive care according to our unit protocol for perinatal asphyxia.

Clinical cases & summary results: In the treatment group, moderate encephalopathy was present in 18% (3 of 16) of the patients and severe encephalopathy in 31% (5 of 16, 3 were dead) of patients at admission. In the placebo group 25% (4 of 16) of patients had moderate encephalopathy and 37.5% (6 of 16, 2 were dead) of patients had severe encephalopathy. At discharge, 25% (4 of 16) of infants in the treatment group had neurologic abnormalities, compared with 37.5% (6 of 16) in the placebo group. Also, neuroimaging (transfontanelar sonogram) performed on day 14 yielded abnormal findings for fewer infants in the treatment group than in the placebo group (31% vs 37.5%). Infants in the treatment group were more likely to be receiving oral feedings at discharge than were those in the placebo group (69% vs 63%). Good short-term outcomes at discharge occurred for 62.5% of the patients in the treatment group, compared with 43% of the patients in the placebo group.

Conclusion: Postnatal magnesium sulfate treatment improves neurologic outcomes at discharge for term neonates with severe perinatal asphyxia.

Keywords: Perinatal, asphyxia, magnesium sulfate

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Fetal gender as a predictor for adverse perinatal outcomes

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Introduction: Fetal gender has been explored in the past regarding pregnancy complications and several associations have been found. However, fetal and neonatal outcomes have only been scarcely explored. In our study we further explore the association of fetal gender with fetal heart rate monitoring, fetal cord blood gas and Apgar scores.

*Materials and methods:*A retrospective study comparing singleton deliveries was conducted. We compared pregnancies with male versus female fetuses. Maternal baseline characteristics, pregnancy complications, delivery complications and neonatal outcomes including fetal heart rate monitor patterns and cord blood gases were collected. Multivariable logistic regression model analysis was performed to control for confounders.

Clinical cases and summary results: A total of 682 fetuses were included in the study, out of which there were 56% (n=383) males and 44% (n=299) females. Maternal baseline characteristics and pregnancy complications were comparable between the groups. Male gender was significantly associated with low Apgar scores (19% vs 10%, $p<0.01$), lower pH (7.18 versus 7.23, $p<0.001$), higher PCO2 (61.8 versus 54.9, $p<0.01$) and greater base excess (−7.47 versus −6.40, $p<0.01$), as compared with females. Male gender was associated with a significant higher rates of abnormal fetal monitor patterns, during the first and the second stages of delivery (68% vs 55% and 78% versus 68%, respectively $p<0.01$ for both(וכנל). A multivariate analysis was performed for the prediction of abnormal monitor patterns, low pH and Apgar score, controlling for gestational age, maternal age and fetal weight (Table). Gender was found to be significantly associated with both first and second stage pathological monitor patterns, and was also found as an independent risk factor for pH under 7.1, and for low 1st minute Apgar under 7 (Table).

Conclusion: Male gender is an independent risk factor for pathological monitor patterns and lower pH and Apgar scores.

Keywords: Fetal heart rate monitoring, fetal gender, fetal outcomes

Fetal male gender as a predictor for adverse outcomes.

Variables		OR	95% CI	p Value
Pathological monitor	1st stage of labor	1.76	1.28-2.43	0.001
	2nd stage of labor	1.73	1.20-2.50	<0.01
pH<7.1		1.64	1.14-2.35	0.01
1st minute Apgar<7		2.03	1.29-3.20	0.01

Adjusting for gestational age, maternal age and fetal weight.

PREECLAMPSIA – 537

Mitochondrial dna methylation in fetal cord blood of iugr and preeclamptic pregnancies

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Presenter: **Chiara Novielli**

Introduction: The adverse intrauterine environment in Preeclampsia (PE) and Intrauterine Growth Restriction (IUGR) can impact on future adult health through fetus' epigenome reprogramming.
We found increased mitochondrial (mt) DNA levels in cord blood of IUGR and PE fetuses. The methylation of mtDNA has been recently showed altered in cancer tissues and cardiovascular diseases.
Here we evaluated mtDNA methylation of loci involved in mt replication (D-loop) and function (TF/RNR1,CO1) in IUGR and PE cord blood.
Materials and methods: Singleton pregnancies delivering by elective cesarean section were included. We studied 24 term and 6 preterm ($\leq$37weeks) pregnancies with normal fetal growth, 24 IUGR, 14 PE/IUGR and 9 PE. Fetal blood was collected from a clamped segment of the cord and analyzed for biochemical parameters. Extracted DNA was bisulfite-converted and amplification of D-loop, TF/RNR1, CO1 mt loci obtained with specific primers. Methylation at CpG sites was quantified by pyrosequencing. Clinical data and methylation levels were compared between groups using independent-sample t-test (eventually adjusted after Levene's test) or Mann-Whitney U test, depending on distribution. Correlation between values was assessed by Pearson correlation. Differences and correlations were considered significant when $p<0.05$.
Clinical cases & summary results: Term and preterm controls significantly differed only for gestational age (GA) and fetal weight (FW). All cases had lower GA, fetal and placental weight than term controls, but GA similar to preterm controls. IUGR (with/without PE) had lower fetal and placental weight than preterm controls and were hypoxic and lactacidemic. D-loop,TF/RNR1 and CO1 loci had no significant methylation differences between term and preterm controls and presented low methylation in all cord blood samples. Nevertheless, D-loop methylation levels decreased significantly compared to controls in PE/IUGR (p=0.03) and in the most severe cases, i.e. early PE (onset$\leq$34weeks) and IUGR with altered umbilical artery pulsatility index (p=0.003/0.005). Moreover, in pathological cases D-loop methylation correlated with GA, FW and umbilical vein pO2 (r=0.38/0.39/0.5;p=0.01/0.008/0.004). CO1 methylation levels inversely correlated to mtDNA content in both pathological cases and whole population (r=-0.43/-0.37;p=0.01/0.006).
Conclusion: IUGR and PE higher mtDNA levels might be explained by D-loop hypomethylation in the most severe cases, being possibly also mediated by other factors influencing mt replication.
The increase of both CO1 accessibility to transcription (due to CO1 hypomethylation) and mtDNA content might suggest a compensatory attempt to energy production. Further analyses are needed to disclose possible differentially methylated mt genes associated to pregnancy or fetal-origin diseases.
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Keywords: IUGR, preeclampsia, epigenetics, mitochondria

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Risk factors for cardiovascular disease 11-14 years after severe preeclampsia

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Presenter: **Ellika Andolf**

Introduction: Several epidemiological studies show that women with a history of preeclampsia have a higher risk for cardiovascular disease later in life. Few data are available on how those who stay healthy after preeclampsia differ from those who dońt.
Materials and methods: Women admitted to Danderyd University Hospital, Stockholm, Sweden for severe preeclampsia (n=148) between 1999-2004 were invited to participate in a follow up after 11-14 years and 82 agreed to participate. Participants filled in questionnaires on health and family history, on physical activity, stress and sleep patterns. Blood pressure, Body Mass Index (BMI) and various blood markers were analysed. Data from the index pregnancy were retrieved from medical records
Clinical cases & summary results: Of 82 participants, 24 had hypertension or were on antihypertensives at follow up. Of these 24, three had hypertension already before the index pregnancy, all 24 had higher blood pressure in early pregnancy, preeclampsia diagnosed at an earlier gestation and were more often treated for hypertension at discharge after delivery than those that stayed healthy. At follow up these 24 also had a higher BMI and HbA1c. There was no difference in age, family history of cardiovascular disease, physical activity, stress and sleep patterns.

	Hypertension N=24	No hypertension N=58	P-value
Age at index pregnancy	33.7 ± 4.9	31.5 ± 4.8	0.064
Blood pressure early index pregnancy Systolic (mmHg) Diastolic (mmHg)	 123 (100-165) 80 (60-105)	 120 (90-136) 70 (30-95)	 < 0.007 < 0.004
Gestational week when diagnosed with hypertension	31.5 16-36	35.0 14- 40	0.001
Blood pressure at follow up Systolic (mmHg) Diastolic (mmHg)	 135 (112-169) 85± 9,2	 120 (102-160) 73,4 ± 8,1	 < 0.001 < 0.001
BMI at follow up (kg/m2)	27.5 21.5- 41.6	24.1 19.0-40.8	0.011
Waist circumference (cm) at follow up	92.0 84.3- 98.0	84.0 75.0 – 90.0	0.005
HbA1c (mmol/mol) at follow up	34.0 25.00-73.00	32.0 26.0-48,0	0.035

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Conclusion: Women with high risk for cardiovascular disease after preeclampsia can possibly be identified already at the time of the index pregnancy.

Keywords: Preeclampsia, long term consequenses, Hypertension, Cardiovascular disease

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Hypertensive pregnant: relationship between drug therapy and tension control

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Presenter: **M. Boia**

Introduction: Gestational hypertension and pre-eclampsia were the most commonly diagnosed hypertensive conditions in pregnancy, and according to the WHO despite all the investigation and treatments available remains a major cause of morbidity and maternal and fetal mortality.

Materials and methods: Prospective and observational study of 139 pregnant women, submitted to the accomplishment of ambulatory blood pressure monitoring, between January 2007 and June 2015, and who met criteria for gestational hypertension or history of chronic high blood pressure. This study aims to determine the type of antihypertensive medication prescribed, their impact on blood pressure control and the occurrence of adverse events (AE) in pregnant, postpartum and fetus/newborn; the AE was defined as the occurrence of mother, fetal or neonatal dead, pre-eclampsia, eclampsia, gestational diabetes, prematurity and fetal growth restriction.

Clinical cases & summary results: The sample included 139 hypertensive pregnant women, mean age 32±6 years, 58% of which with chronic high blood pressure history and the remaining with gestational hypertension. Through Chi-square test was found not to be an association between an adequate blood pressure control and the type of hypertension ($p=0.521>\alpha$). The Fisher exact test shows a strong association between hypertension and uncontrolled prescribing nifedipine alone or associated with methyldopa ($p=0.001\alpha$). In the 72 pregnants medicated with methyldopa and in the 10 pregnants medicated with nifedipine, AE occurred in 48.6% and 70% respectively; all who met dual scheme had an AE.

Conclusion: Despite the adequate tension control, more than half of pregnant women (51.1%) with the prescribed medication, according to the protocol previously established, had events. This analysis suggests that hypertension in pregnancy does not depend exclusively on the tension control per se and it looks like to be a multifactorial health condition with a pathogenic mechanism not as yet fully understood. More studies are needed to more effective medical treatment and optimization of pregnancy outcome.

Keywords: Gestational hypertension, Pre-eclampsia, Therapy, Tension control

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Which strategy performs better for the prediction of late PE?

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Introduction: Late PE although being milder is much more frequent. Moreover, there is more and more scientific evidence that its physiopathology is quite different from early PE, less frequent but much more severe. Several approaches have being published for its prediction. Strategies performed at 1st trimester have poor results. 3rd trimester strategies seem to perform little better. However, few studies, most of them published by the group of Nicolaides, have evaluated all three trimesters strategies independently and integrated in a longitudinal strategy model.

Materials and methods: To evaluate which strategy performed better for the prediction of late PE. A model including maternal parameters and Uterine Doppler measurement was created. It was evaluated as an independent model in every trimester of the pregnancy and as an integrated model in a longitudinal strategy. We evaluated maternal parameters such as Maternal Body Mass Index (BMI), Blood pressure (SBP, DBP, MAP) and uterine Doppler Measurement in all three trimesters. We considered Late Preeclampsia when diagnosed after 34 weeks of gestation. We converted Pulsatility Index of Uterine Doppler to MoM values according to Gómez et. al.

Clinical cases and summary results: 1748 singleton pregnant women were included. The incidence of late PE was 1.6% (n=29). The mean maternal age was 34.9 years (SD+/- 4.1) and no differences were found between both groups. Both prevalence for previous PE and IUGR were significantly higher in those patients with late PE (7% versus 0.4% and 6.9 versus 1.4%, p <0.05, respectively). Patients with late PE suffered much more from Chronic Hypertension than those without late PE (10.3% versus 0.5%, p <0.001). No differences were found among parity. In first trimester evaluation, performed at a mean of 12.6 weeks (SD 0.5), patients developing late PE presented significantly higher BMI (25.7 versus 22.9 kg/m2, p <0.05), MAP (82.5 versus 77.7 mmHg, p <0.05) and MoM Uterine Doppler (1.13 versus 0.94, p=0.014). At second trimester, at 21.1 weeks (SD 0.6), patients developing late PE presented significantly higher MAP (83.3 versus 76.3 mmHg, p <0.05) and MoM Uterine Doppler (0.95 versus 0.84, p=0.035). Finally, at third trimester, performed at 32.5 weeks (SD 0.7) patients developing late PE presented significantly higher MAP (92.2 versus 78.9 mmHg, p <0.05) and MoM Uterine Doppler (1.14 versus 0.96, p <0.001). When evaluating all three models independently, third trimester model performed better than the other two. The Sensitivity and Specificity for the third trimester model was 82 and 78% respectively and the AUC was 0.85. When we integrated all three determinations in a longitudinal model, the performance did not improve the one of third trimester model.

Conclusion: Third trimester performs better than 1st or 2nd trimester for the prediction of late PE. The integration of all determinations would not improve its prediction. However, according to our results, the prediction of late PE is nowadays far from being accurate.

Keywords: Late preeclampsia, prediction

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A randomized controlled trial of loading dose only versus standard dose magnesium sulfate seizure prophylaxis in severe pre-eclamptic women

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Introduction: Magnesium sulfate is the drug of choice for prevention of seizures in the pre-eclamptic woman. There is no agreement in the published randomized trials regarding the optimal time to initiate magnesium sulfate, the dose to use (both loading and maintenance) as well as the duration of therapy. The objective of this study is to determine whether magnesium sulfate ($MgSO_4$) prophylaxis is needed for up to 24 hours postpartum in all patients with severe pre-eclampsia for the prevention of seizure. The primary outcome measures were occurrence of seizure in each group. Secondary outcome measures were maternal and neonatal outcome.
Materials and methods: This study is a randomized controlled trial. Total of 60 pregnant women with severe preeclampsia were randomized into standard dose regimen and loading dose only regimen. It was conducted from August 2014 to July 2015 in obstetric department of BP. Koirala Institute of Health Sciences.
Clinical cases and summary results: Out of 30 cases in each group 1(3.3%) patient in standard regimen and 2(6.7%) patient in loading dose only developed seizure. The occurrence of seizure is not significant statistically. In both regimens there was no maternal mortality. Total of 3 patient needed MICU care and 12 patient developed maternal complications. The maternal complications were seizure, Abruptio placentae, acute kidney injury, PPH, HELLP syndrome, hyponatremia and ruptured uterus. $MgSO_4$ toxicities were seen only in standard dose regimen that is in 17 (56.7%) of the patients. The median number of IM injections of $MgSO_4$ received in standard dose regimen was 8 ± 2.176. In standard dose regimen 73.3 percent baby were alive where as in case of loading dose only regimen 93.3 percent of baby were alive after 48 hours of delivery.
Conclusion: Single dose of magnesium sulphate is equally effective as standard dose regimen in terms of seizure prophylaxis in severe pre eclamptic women, with added advantage of reduced maternal toxicity and better neonatal outcome.

Keywords: Severe preeclampsia, $MgSO_4$, loading dose

PRETERM BIRTH/THE PRETERM INFANT – 767

Comparison of partosure (pamg-1) and actim partus (phlgfbp-1) for the prediction of preterm delivery in patients with preterm labor and a short cervix

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Introduction: In the United States 12% of all live births occur preterm. Around 50% of these preterm births are a direct consequence of preterm labor. Literature has shown that preterm birth has a strong influence of perinatal morbidity and mortality. As many as 28% of pregnant patients presenting with signs and symptoms of preterm labor (PTL) are admitted to the hospital [2], but only as few as 5% of these women will deliver within 7 days. Therefore, approximately 85% of patients admitted to the hospital for impending PTL do not deliver within the next 7 days. On one hand, this striking statistic explains the enormous socio-economic and psychosocial burden of PTL on our society.
Materials and methods: Patients were eligible to participate in this prospective cohort study upon admission at a tertiary perinatal center between 22 and 34 6/7 gestational weeks. They were admitted to the High Risk Pregnancy Unit with symptoms or complaints suggesting preterm labor including uterine contractions, intermittent lower abdominal pain, and pelvic pressure at the time of admission. Recruited patients had intact amniotic membranes determined by speculum examination and a cervical dilatation of ≤ 3 cm determined by digital examination. Women were excluded if they had multiple pregnancies, ruptured membranes, antepartum hemorrhage, active labor, cervical cerclage, or suspected chorioamnionitis (defined by fever, abdominal pain, and/or leukocytosis).
Clinical cases & summary results: Average cervical length via transvaginal ultrasound was 24.3 mm. While 38 (67%) patients received tocolytic therapy and 38 (67%) patients received corticosteroids, not all patients who received one received the other. While only 6 (11%) patients delivered spontaneously within 7 days of presentation, 16 (28%) patients delivered spontaneously prior to the completion of the 33rd week of gestation. Table 1 outlines these patient characteristics. In the overall study group (n=57), the PAMG-1 test was positive in 10 (5.7%) patients, while the phIGFBP-1 test was positive in 17 (29.8%) patients. In the group of patients with cervical length <25 mm (n=17), the PAMG-1 test was positive in 7 (41.2%) patients, while the phIGFBP-1 test was positive in 11 (64.7%) patients.
Conclusion: For the prediction of spontaneous preterm delivery within 7 days upon admission, the PAMG-1 test, the phIGFBP-1 test, and cervical length measurement (using a cutoff of 25 mm) displayed a sensitivity (SN) of 83.3%, 83.3%, and 100%, respectively; and a specificity (SP) of 90.2%, 76.5%, and 70.6% ($p<.01$), respectively. The positive predictive value (PPV) was at 50.0%, 29.4%, and 29.4%, respectively; and the negative predictive value (NPV) at 97.9%, 97.5%,

Keywords: Preterm delivery, prediction,the PAMG-1 test,the phIGFBP-1 test

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An influence of interleukin-6 on the risk of preterm labour in patients with excessive BMI

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Presenter: **M. Radoń – Pokracka**

Introduction: The aim of this study was to assess the relationship between levels of interleukin-6 and the prevalence of symptoms of preterm labor in patients with excessive BMI.
Materials and methods: The study group were applied to the data obtained from 60 patients hospitalized in the Department of Obstetrics and Perinatology, University Hospital in Cracow during the period from 1 October 2015. to 31 December 2015. The study was a prospective cohort of pregnant and covered in a singleton pregnancy who have had a BMI greater than or equal to 25. They were created three groups of patients (60): 1. Patients with BMI greater than or equal to 25 who have experienced symptoms of preterm labor (n=20). 2. Patients with BMI less than 25 who showed signs of preterm labor (n=20). 3. Patients with BMI less than 25 who gave birth to a time (n=20). Statistically significant results were $p>0.05$.
Clinical cases & summary results: Age of a patients: 20 – 39, average: 26,5. In 1 group concentrations of interleukin-6: 0,7pg/ml – 8,2 pg/ml; mediana:1,6 pg/ml. In 2 group: 0,5 pg/ml –16,2 pg/ml; mediana: pg/ml. In 3 group: 1,0 pg/ml – 13,8 pg/ml; mediana: 4,2 pg/ml.
Conclusion: Confirmed lower levels of interleukin-6 in patients with excessive BMI group compared to patients with normal BMI. Confirmed lower levels of interleukin-6 in patients with excessive BMI group compared to patients with normal BMI.

Keywords: INTERLEUKIN-6, OBESITY, PRETERM LABOUR

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Phosphorylated insulin-like growth factor binding protein-1 in the prediction of preterm delivery in patients with preterm labor

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Introduction: Objectives: To evaluate the validity of the bedside Phosphorylated insulin - like growth factor binding protein - 1 test (Actim Partus) in the prediction of imminent delivery in 2, 7 and 14 days from the time of sampling, in cases diagnosed with preterm labor.
Materials and methods: Material and methods: Prospective, observational study performed at the University Clinic of Obstetrics and Gynecology in Skopje. 83 pregnant women between 20 0/7 and 36 6/7 weeks of gestation with symptoms of preterm labor, clinically intact amniotic membranes and cervical dilatation $\leq$ 3cm were recruited in the trial. The Actim Partus test was performed and the sampling to delivery time was assessed.
Clinical cases and summary results: Results: The Actim Partus test predicted delivery within 2 days with 80% sensitivity, 78% specificity, 19% positive predicted value and 98% negative predictive value. Test predicted delivery in 7 days with 82% sensitivity, 83% specificity, 43% positive predicted value and 97% negative predictive value. Test predicted delivery in 14 days with 61% sensitivity, 84% specificity, 52% positive predictive value and 89% negative predictive value.
Conclusion A positive Actim Partus test in patients presenting with symptoms of preterm labor, intact membranes, and cervical dilatation $\leq$ 3 cm indicates that the delivery within 7 days is quite probable. A negative result for the Actim Partus test, furthermore, indicates that delivery within 7 days is highly unlikely.

Keywords: ph IGFBP-1, preterm labor, preterm delivery

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A comparison between the phosphorylated insulin-like growth factor binding protein-1 and the cervical length in prediction of sampling to delivery time in patients with preterm labor

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Introduction: To compare the validity of the bedside Phosphorylated insulin-like growth factor binding protein-1 test (Actim Partus) with the cervical length in the prediction of imminent delivery in 7 and 14 days from the time of sampling, in cases diagnosed with preterm labor.
Materials and methods: Prospective, observational study performed at the University Clinic of Obstetrics and Gynecology in Skopje. Eighty-three (83) pregnant women between 20 0/7 and 36 6/7 weeks of gestation with symptoms of preterm labor, clinically intact amniotic membranes and cervical dilatation $\leq$3 cm were recruited in the trial. The Actim Partus test was performed before the cervical length measuring and the sampling to delivery time was assessed.
Clinical cases and summary results: The Actim Partus test predicted delivery within 7 days with 82% sensitivity, 83% specificity, 43% positive predicted value and 97% negative predictive value, whereas CL did it with 56% sensitivity, 71% specificity, 30% positive predictive value and 88% negative predictive value. The Actim Partus test predicted delivery in 14 days with 61% sensitivity, 84% specificity, 52% positive predictive value and 89% negative predictive value and the CL with 53% sensitivity, 73% specificity, 38% positive predictive value and 83% negative predictive value.
Conclusion: A positive Actim Partus test in patients with symptoms of preterm labor, intact membranes, and cervical dilatation $\leq$ 3 cm is an objective and more reliable tool for prediction or exclusion of preterm delivery in both 7 and 14 days from sampling.

Keywords: ph-IGFBP - 1, cervical length, preterm labor, preterm birth

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Continuous amnioinfusion via a subcutaneously implanted port system with pprom and oligo-/anhydramnios <28 + 0 weeks of gestation: an international prospective randomized trial

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Presenter: **Dr. Yuri Naberezhnev**

Introduction: Preterm premature rupture of membranes (PPROM) during the second trimester occurs in 1% of all pregnancies leading to a high neonatal mortality and morbidity rate by causing extreme preterm birth combined with the "fetal inflammatory response syndrome "(FIRS) and thus inducing lung hypoplasia. The evaluation of continuous amnioinfusion therapy joining a 7 day lasting antibiotic treatment with PPROM and oligo-/anhydramnios (SDP = single deepest pocket <2cm) between 22 + 0 until 27 + 6 weeks of gestation compared to the therapy with antibiotics corresponding to the national guidelines (control group) is the objective of this prospective randomized trial.
Materials and methods: 48 patients will take part in this study, divided into an intervention or control goup, each containing 24 women. Entry criteria: Singleton pregnancies, classic PPROM and proven oligo-/anhydramnios between 22 + 0 to 27 + 6 weeks of gestation. Exclusion criteria: fetal chromosomal aberrations, malformations, high PPROM, AIS, premature labour. The comparison of both groups regarding the PPROM-delivery-latency in days represents the primary criterion, the appearance of FIRS is a secondary endpoint of this investigation.The ultrasound-based subcutaneous implantation of the port system is performed in local anaesthesia. A hypotonic amniotic fluid-like solution (100ml/h) is used for permanent amnioinifusion (J Perinat Med 2013;41:657-63). Patient recruitment shall be completed by the end of 2017.
Clinical cases and summary results: An earlier retrospective analysis could show a significant prolongation of the PPROM-delivery-interval for 49 days and a better neonatal outcome without lung hypoplasia or contractures after treatment with continuous amnioinfusion with 2,4 litres a day ("flush-out"). Several physicians from 5 countries have already been taught in the method of port implantation at the Center of Fetal Surgery, University Clinic of Obstetrics and Prenatal Medicine, Martin-Luther-University Halle-Wittenberg.
Conclusion: Flushing-out bacteria and inflammatory products out of the amniotic cavity could extend pregnancy, prevent lung hypoplasia and improve the neontal outcome clearly. This assumption is going to be verified in this study. Sponsoring: Center of Fetal Surgery, University Hospital Halle (Saale) and Russian Science Foundation, Grant- Nr.15-15-00137.

QUALITY AND CARE – 739

Validation of new protocols by in situ simulation (red code)

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Presenter: **Laura Almeida**

Introduction: Postpartum haemorrhage (PPH) is the leading cause of maternal death. In development countries approximately 8% of maternal death is caused by PPH. The measures adopted in many countries to reduce its morbility have mainly focused on prevention. However, when PPH occurs unexpectedly, following certain strategies such as the red code have proven to be positive.
The aim of the study is:

- To validate a care protocol generated from literature reviews before application
- To assess the adequacy of circuits, infrastructure and human resources when there is a new protocol activation

Materials and methods: It had been performed two presentation sessions of the new postpartum haemorrhage protocol for all members of the delivery room team, emphasizing the red code activation (emergency call to quickly get blood products). For the activation of red code, it has been hung algorithms management posters at critical points of obstetric spaces (delivery room, obstetric operating room, obstetric emergencies) and the protocol was sent by email to the obstetric staff. It had been scheduled five in situ simulation sessions and it was noticed the performance of these simulation sessions to all obstetric staff. It has been designated two people who made the record time of critical actions specified in the protocol: It has been made an in situ debriefing with all participants at the end of simulations.
Clinical cases & summary results: It can only be performed four (A, B, C and D) of five (A, B, C, D and E) planned sessions because of the high healthcare pressure. It has been compared the record time for the different simulations sessions. The phone call time activation and out time of blood sample to laboratory and blood bank were similar in four groups. However, the first red cell concentrate (RBCs) time reception was different between teams; being 12 minutes (A), 13 minutes (B), 6 minutes (C) and 6 minutes (D). A and B teams followed the algorithm in the protocol. However, C and D teams had to move to laboratory for the blood sample delivery, as well as for the red cell concentrations and plasma concentration reception because of technical problems with the pneumatic tube.
In debriefings, teams reported improvement aspects for the protocol (lack of role assignment and lack of technical problems anticipation) as well as aspects of their multidisciplinary work perception.
Conclusion: The use of in situ simulation before the implementation of new health care protocol can be useful to facilitate finding previously not valued critical points, allowing make changes before final application. In the case of red code protocol, the use of simulation allowed to change the shipping and collection samples circuit, improving time reception of first RBCs. From this experience, the active participation of the multidisciplinary team can provide point improvement in the proposed protocols.

Keywords: Postpartum haemorrhage, simulation, red code, obstetric team

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The adherence to the postpartum haemorrhage guidelines in South Australia, a retrospective study

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Introduction: Postpartum haemorrhage (PPH) is a major cause of maternal morbidity. PPH is responsible for 25% of the maternal pregnancy related deaths. An increasing trend in PPH has been observed in the past years in a large amount of developed countries. Both for the early recognition and for treatment of PPH, guidelines have been developed to assist healthcare professionals in various clinical situations. It is important that these guidelines are being followed for every patient. Our aim was to evaluate the adherence to the South Australian PPH guideline in two South Australian maternity hospitals, using a set of validated guideline based quality indicators. To see if there is a change in the adherence in the recent years, we wanted to compare the adherence in 2005 to the adherence in 2015.
Materials and methods: We studied women suffering PPH in two maternity hospitals in South-Australia. We evaluated the adherence to the statewide PPH guideline by using previously determined guideline based quality indicators (QI). These QIs were derived from existing literature. We measured the adherence to the guideline per QI, the mean adherence in the total study population and the mean adherence per blood loss category.
Clinical cases and summary results: We studied 561 women suffering PPH, 245 in 2005 and 261 in 2015. The mean adherence to the PPH guideline has significantly improved in 2015 compared to 2005 (70% versus 62%, P value <0.0001). The mean guideline adherence in women suffering PPH with less than 1000mL of blood loss has improved (71% versus 62%, *p* value <0.001). The adherence to the guideline in women with PPH with a blood loss of 1000-2000mL has also improved (70% versus 63%, *p* value 0.003). The adherence to the QIs 'Identify women at high risk of PPH' and 'The determination and adaption of the policy' was 8%. The adherence to the QIs 'To ensure IV access during labour' and 'Provide an active management of the third stage' was as high as 98% and 92% respectively. Considering the adherence to the QIs for the management of PPH, 'Giving 10-15 litres of oxygen by face mask' was less than 20%. Whereas the adherence to 'Inform obstetrician', 'Take blood samples', 'Monitor urine production' and 'Replace volume' was higher than 80% in 2015.
Conclusion: In the management of PPH, guideline adherence significantly improved in the last decade. Considering that the total mean guideline adherence is 70%, there still remains room for improvement.

Keywords: Postpartum haemorrhage, guideline adherence

Table 4: Mean adherence to the validated guideline based quality indicators

	2005 N=245		2015 N=261		
	Number of women	Adherence	Number of women	Adherence	P-value
Total adherence	245	62.1%	261	70.4%	<0.001
Vaginal	140	54.1%	111	60.6%	0.001
CS	105	73.1%	150	77.7%	0.006
=<1000 mL	169	61.8%	187	70.7%	<0.001
Vaginal	97	52.5%	75	59.2%	0.004
CS	72	74.8%	112	78.4%	0.090
1001-2000 mL	69	62.5%	62	70.3%	0.002
Vaginal	37	56.6%	26	62.7%	0.123
CS	32	69.2%	36	75.8%	0.009
>2000 mL	7	67.3%	12	66.7%	0.936
Vaginal	6	65.3%	10	65.6%	0.962
CS	1	79.3%	2	72.4%	0.667

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Preeclampsia and risk of developing bronchopulmonary dysplasia in very preterm neonates

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Introduction: Bronchopulmonary dysplasia (BPD) is still a serious and common complication of prematurity and significantly associated with respiratory morbidity in later life. More insight in true associations is of major importance and can lead to earlier detection and possibly better preventive measurements. It's been hypothesized that both BPD and pre-eclampsia (PE) are associated with dysregulation of angiogenesis and that offsprings of mothers with PE are at risk for developing BPD. However, results of several epidemiological studies are inconclusive. This can probably, at least partly, be explained by adjusting outcome data for intermediates rather than for confounders alone. We assessed if PE is an independent risk factor for development of BPD in very preterm neonates.
Materials and methods: We performed an observational cohort study of infants born between 24 + 0 and 31 + 6 weeks of gestation (*n*=308). BPD was diagnosed at 36 + 0 weeks postmenstrual age (pma) and defined as the need for oxygen (FiO2>0.21) for at least 12 hours per day, for more than 28 days before or at 36 + 0 weeks pma, and subdivided in mild, moderate or severe by strict criteria

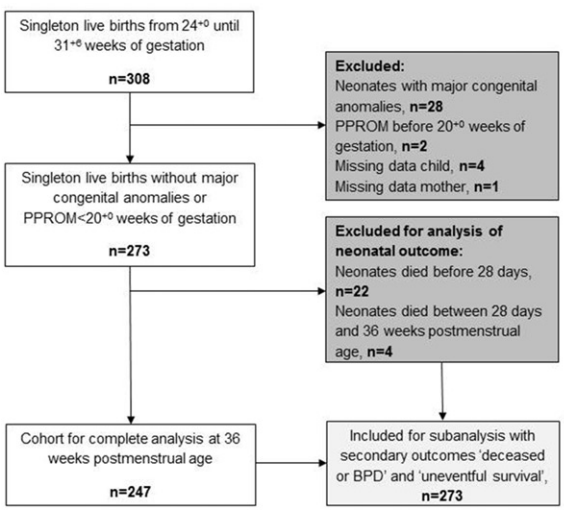

Table 1. Multivariate logistic regression analysis of bronchopulmonary dysplasia (BPD), in mothers with pre-eclampsia or superimposed pre-eclampsia.

Original data n=247

	Crude OR (95% CI)	Adjusted[a] OR (95% CI)	Adjusted[b] OR (95% CI)
No BPD	*Reference*	*Reference*	*Reference*
BPD	1.07 (0.58-1.98)	**4.12 (1.61-10.56)**	1.98 (0.50-7.78)
No or mild BPD	*Reference*	*Reference*	*Reference*
Moderate or severe BPD	1.36 (0.60-3.07)	**4.21 (1.30-13.70)**	0.54 (0.10-3.08)

[a]Adjusted for potential confounders: nulliparity, prolonged pPROM, chronic hypertension, pregnancy induced hypertension gestational age at birth and gender.
[b]Adjusted for confounders[a] and intermediates: antenatal corticosteroids, birthweight Z-score, mode of delivery, acute respiratory distress, invasive ventilation, admission of surfactant, clinical or proven sepsis and treatment of an open ductus of Botalli.

applied with an oxygen reduction test. We performed association analysis with univariate and multivariate logistic regression.
Clinical cases and summary results: After applying our exclusion criteria we report our primary outcome on 247 neonates. development of bpd occurred in 23.9% (n=59) of which 10.9% (n=27) was moderate to severe. we did find significant evidence that PE is associated with bpd, adjusted odds ratio, 95% confidence interval 4.12 (1.61-10.56). However, after adjusting for additional intermediates there were no statistical significant associations anymore. this shows that correctly recognizing true confounders instead of intermediates (which are part of the causal pathway) is of great importance in identifying true associations.
Conclusion: This study shows that PE is an independent risk factor for development of BPD, however the pathogenesis of BPD in offsprings of mothers with PE has to be elucidated in the future.

Keywords: Bronchopulmonary dysplasia, pre-eclampsia, premature, respiratory morbidity

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Assessment of the actual care on postpartum hemorrhage using video images of the third stage

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Presenter: **S de Visser**
Introduction: Incidence of postpartum hemorrhage (PPH) still rises, despite of the development of evidence based guidelines and obstetric emergency skills courses, suggesting an incomplete implementation. Insight into actual care is essential for successful implementation. Studying medical records and using video recordings we assessed adherence to the national PPH guideline and Advance-Trauma-Life-Support (ATLS) -based course instructions for obstetric emergency in high-risk patients and its determinants in The Netherlands.
Materials and methods: A prospective observational multicenter study was performed to assess actual PPH-care with guideline-based quality indicators (QI) for prevention, management and organization of PPH in 16 Dutch hospitals. Data was extracted from high-risk patients' medical records and supplemented with data of prospective video-recordings. Data of the organization of PPH-care was collected using questionnaires filled in by one obstetrician per hospital. We calculated adherence and assessed the determinants at patient and hospital level.
Clinical cases & summary results: Actual care was assessed through medical records of 398 high-risk patients, added with 289 video recordings. As expected, video recordings showed that in general the actual care given was considerably underreported in medical records. Overall, a lack of quality in performance, and lack of performance within the optimal timeframe was observed (fig).
In only 32% the patient was identified as high-risk and appropriate policy documented. In 41% of high-risk women no active management was performed and in 20% blood loss was not objectified. Although guidelines suggest care to be adjusted to both the amount of blood loss and vital signs, in almost 80% the vital signs were not even monitored or monitored not in time. PPH-care in the hospitals was well organized; 15 hospitals had a local PPH protocol, 12 hospitals organized team trainings. Regarding the determinants at patient and hospital level, University Hospital was mostly associated with better adherence especially monitoring heart rate which was significant.
Conclusion: This study showed low adherence to the guideline-based quality indicators, clearly indicating a problem of quality care in The Netherlands. Furthermore, actions taken in the management of PPH were largely untimely performed. Additional video observations proved valuable to pinpoint exactly at which level improvement is needed. One has to develop a tailor-made implementation strategy to improve quality of Dutch PPH-care.

Keywords: Postpartum hemorrhage, quality of care, guideline implementation

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Experience in the use of carbetocin for prevention of major bleeding in pre-eclampsia

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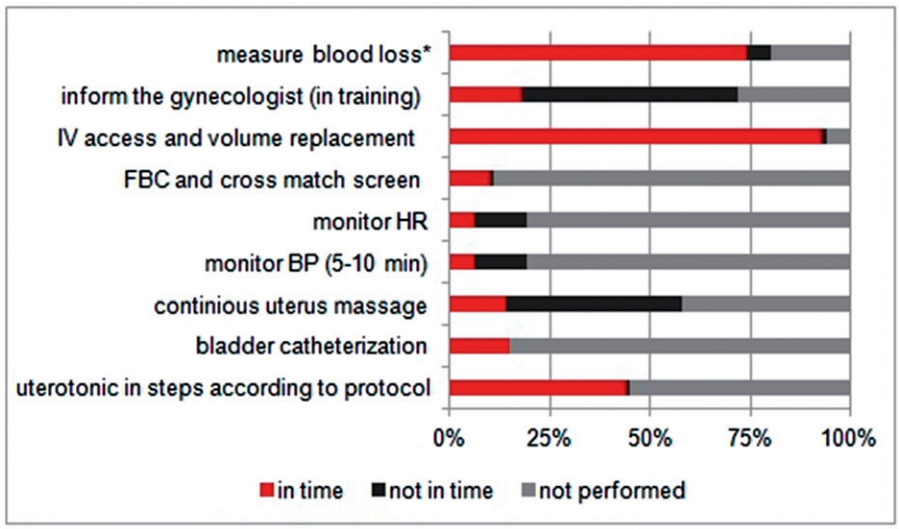
Presenter: **Natalia B.Kuznetsova**
Introduction: Preeclampsia develops in 2-3% of all pregnancies and is a major cause of maternal and perinatal morbidity and mortality. Patients with preeclampsia are at increased risk of postpartum haemorrhage. Oxytocin is recommended by WHO for the prevention of postpartum hemorrhage in caesarean section. According to the Cochrane review, the use of carbetocin for prevention of postpartum hemorrhage reduces the need for a therapeutic doses of uterotonics in comparance with oxytocin. The purpose of this study is to evaluate the effectiveness of carbetocin in the prevention of major bleeding in patients with preeclampsia.
Materials and methods: The study included 133 pregnant women with preeclampsia, delivered at the Perinatal Center (Rostov-on-Don, Russia) in 2015 by cesarean section. Exclusion criteria were multiple pregnancy and large uterine myomas. Patients were divided into 2 groups. I group included 35 women with preeclampsia, whom carbetocin was introduced at the time of cesarean section immediately after the birth of the baby (100 mg intravenously). Group II included 98 patients, who received 5 IU of oxytocin intravenously after extraction of the fetus, followed by 5 units of oxytocin infusion over 2 hours. We assessed the amount of blood loss during cesarean section.
Clinical cases & summary results: The volume of blood loss in patients with preeclampsia who received carbetocin does not exceed the allowable amount in 80% of the cases (28 patients). In 5 women in group I (14.3%), the volume of blood loss was 15-20% of total blood circulating volume, in 2 (5.7%) - 20-30% of total blood circulating volume. At the same time in patients who received oxytocin, blood loss exceeded the limit in 39.8% (39 women), and comprised 15-20% of total blood circulating volume in 21 patients (21.4%), 20-30% - in 14 women (14.3%), and 30-40% of blood circulating volume in 4% (4 patients). Data were analyzed using Fisher's exact test. The difference between the carbetocin group and the oxytocin group on frequency of bleeding in excess of 15% of blood circulating volume was significant ($p = 0.04$).
Conclusion: Use of carbetocin is more effective for the prophylaxis of massive hemorrhage in patients with preeclampsia than use of oxytocin.

Keywords: Carbetocin, oxytocin, preeclampsia, haemorrhage



Timely performances > 500 ml (n=112) **(BP: blood pressure, HR: heart rate)**
**measure blood loss is an action of the preventive indicators (n=293)*

QUALITY AND CARE: NEONATAL – 630

Maternal milk supplementation as part of lactation support intervention improves breast-feeding performance, birth and growth outcomes

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Presenter: **Dieu Huynh**

Introduction: Numerous factors have been identified as being able to influence exclusive breastfeeding. A multi-pronged intervention may be more effective than a single intervention in tackling the multifaceted challenge of suboptimal breastfeeding. This study examined the effects of a lactation support program including daily maternal nutritional supplementation (MNS) on breastfeeding performance.
Materials and methods: 228 singleton first-time Vietnamese mothers aged 20 to 35 years at 26 to 29 weeks of gestation were randomized to the intervention (n=114) receiving 354 mL of MNS daily up to three months postpartum and four breastfeeding education and support sessions given from enrollment to one month postpartum or to the control (n=114) receiving standard pre- and postnatal care. Mothers recorded infant feeding information on a daily basis. Infant breast milk intake was assessed using 24-hour test weighing. Maternal weight, height (baseline only), mid upper arm circumference (MUAC) and dietary intake using a 24-hour food recall were collected at baseline, weeks 4, 8 and 12 postpartum. The infant's weight, length and head circumference (HC) were obtained at birth and during the postnatal period.
Clinical cases & summary results: The intervention sustained a higher rate of exclusive breastfeeding (EBF) over the 12 weeks postpartum with an increased likelihood of maintaining EBF compared with the control (OR: 2.09, 95% CI: 1.06-4.13, p=0.0325), after adjusting for confounding factors. Infant's breast milk intake was significantly higher than in the intervention group among mothers with MUAC at baseline < the median value (p=0.0251). The intervention group had higher birth weights (p=0.0312) and birth HC (p=0.0886), higher weight -for-age (p=0.0636), length-for-age z-score (=0.0690), and HC-for-age (p=0.0183) development over the 12 weeks postnatal period, compared with the control. Mothers in the intervention group were found to have significantly higher consumption of energy, protein and carbohydrate, but had similar weight and BMI values to that of control throughout the study period.
Conclusion: A lactation support program comprising of daily MNS helps improve EBF rates, birth and growth outcomes, as well as increasing breast milk production in mothers with lower nutritional status.

Keywords: Lactation support, maternal milk supplement, exclusive breastfeeding, breast milk intake

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A situational simulation training scheme for medical and nursing staff in neonatal unit

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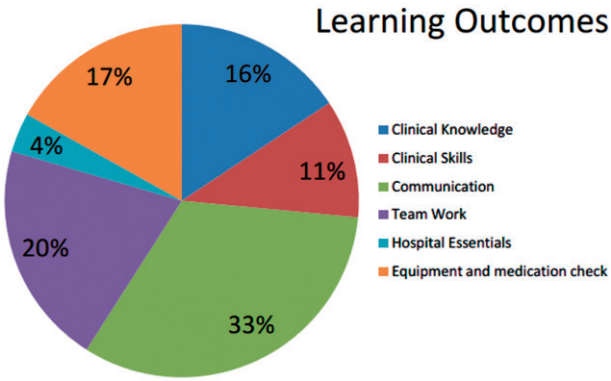
Aim: To investigate how neonatal medical and nursing staff perceive simulation training and how they perceive the educational benefit of such training.
Materials and methods: A neonatal simulation programme aimed at medical and nursing staff in a neonatal unit was introduced and facilitated by a consultant neonatologist. Over a period of 1 year we ran 31 scenarios, in which participants (nurse, doctor, ANNP and others) were assigned to a clinical or observer role, followed by a detailed group debrief. Written feedback was obtained from all participants via anonymised questionnaires featuring Likert like scales for satisfaction (Strongly disagree, Disagree, Neither agree nor disagree, Agree, Strongly agree) and an open text box for self-reporting of the learning outcomes.
Clinical cases and summary results: A total of 84 feedback forms were collected from members of the neonatal multidisciplinary team (some participated more than once). 83.3% agreed or strongly agreed with

the scenarios being enjoyable. 97.6% agreed or strongly agreed with the scenarios being useful. 96.9% agreed or strongly agreed with the discussion being enjoyable and 96.4% agreed or strongly agreed with the discussion being useful. 78.6% agreed or strongly agreed that the scenarios improved practical skills. 89.7% agreed or strongly agreed that the scenarios and discussion improved knowledge base. 84.5% agreed or strongly agreed that the scenarios improved team working skills. The top learning themes reported were communication 33%, team work 20%, equipment and medication check 17%, clinical knowledge 16% and clinical skills 11%.
Conclusion: Simulation training was reported to be enjoyable & valuable.The discussion was generally enjoyed more than the scenarios.Likert-like questions suggested that participants felt most benefit was from improving knowledge but thematic analysis of the open text learning outcomes suggested that human factors skills were the most recognised learning outcomes.Although a high percentage of responders felt that practical skills were improved,the sessions included little or no practical skills training.



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Visit the child in the intensive care unit in a public hospital: development of protocol

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Introduction: Child visitation in Intensive Care Unit (ICU) is a conflicting situation in which the multidisciplinary team bears the responsibility of deciding upon allowing or not the child to visit a relative who is hospitalized. This study aims to create a 2-12-year-old child visitation protocol at Adult and Child Intensive Care Units in public hospitals. Considering the rights of the child, the patient, and the family as well as the dynamics of this hospital unit, child visitation to critical patients will be understood as a step forward in healthcare improvement, in agreement with healthcare policies of the Sistema Único de Saúde (SUS), the Brazilian public healthcare system within the HumanizaSus program guidelines.
Materials and methods: In one year, 17 evaluations of child visitation at adult and child Intensive Care Units, for SUS patients only, were performed. The requirements for visitation were spontaneous and the evaluation of permission or restriction included observation and interview by the researcher with the patient, the child, and the family, in addition to the team's judgment and information collected in the files.
Clinical cases and summary results: From the 17 children evaluated, 13 were allowed entrance and were followed in the visitation. Afterwards, information on their behavior and adverse reactions during the visit was collected with the relatives. The results showed that the visits occurred without incidents or problems. The entrance of the four children who were not allowed was denied by their families.
Conclusion: The protocol was improved throughout the research and has proven adequate in helping on the decision by professionals involved.

Keywords: ICU, humanization in healthcare, patient visitation

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Impact of rapid enteral feeding in very low birth weight infants: saint or sinner?

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Introduction: Enteral feeding strategies in preterm infants have long been subject of controversy. Recent data point to beneficial effects of rapid enteral feeding regimes on neonatal outcome in very low birth weight (VLBW) infants. We investigated the association of rapid advancement of enteral feed volumes with intestinal morbidity in this cohort. Between 2010 and 2011 we established a standardized rapid enteral feeding strategy in our unit.
Materials and methods: This single-centre retrospective cohort study enrolled all inborn VLBW infants between 2008 and 2013 and compared incidence of intestinal morbidity (defined as necrotizing enterocolitis or intestinal perforation) in slowly enterally fed infants in 2008-2010 (10 ml/kg/day increase of milk feeds) to a corresponding cohort of rapidly enterally fed infants in 2011-2013 (20 ml/kg/day increase of milk feeds). Secondary endpoints comprised duration of parenteral nutrition, length of hospital stay and other neonatal outcomes (mortality, rates of late onset sepsis, intraventricular hemorrhage III°-IV°, periventricular leucomalacia and patent ductus arteriosus). Univariate and multivariable logistic and linear regression analysis, respectively, were performed to control for confounding variables.
Clinical cases and summary results: A total of 301 VLBW infants were included in the study. Both groups were similar regarding baseline demographic and perinatal characteristics. In univariate logistic modeling intestinal damage did not significantly differ between the two groups (p=0.25), neither did all-cause mortality nor incidence of late onset sepsis in multivariable logistic modeling. In contrast, length of hospital stay and duration of parenteral nutrition were significantly shorter in the rapid group (hospital stay: -8.35 days, p=0.012 and parenteral nutrition: -7.13 days, p <0.001). Other neonatal outcome parameters (intraventricular hemorrhage III-IV°, periventricular leucomalacia and patent ductus arteriosus) showed no differences.
Conclusion: A standardized rapid enteral feeding regime is safe in VLBW infants and may significantly shorten length of hospital stay and parenteral nutrition in this patient cohort.

Keywords: VLBW infants, rapid enteral feeding, intestinal morbidity

THE PRETERM INFANT - 130

Dopamine and NS in treatment for arterial hypotension in ELBW

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Introduction: Arterial hypotension is a common problem in NICU. The incidence of arterial hypotension is 16-52%. Reduced perfusion of organs such as the brain, kidneys, heart, and gastrointestinal tract may lead to acute dysfunction and be associated with permanent injury. Various therapeutic strategies are used for cardiovascular support, including volume expansion, inotropes, corticosteroids. But the initiating therapy has traditionally been volume expansion. As we know, AH is poorly correlated to blood volume in preterm infants and hypovolemia is a rare reason of AH, especially in extremely preterm newborns. Also the excess volume expansion in condition of PDA can lead to deterioration of respiratory problems. The goal of our study was: To compare two ways of therapy of AH - Dopamine and volume expansion in ELBW.
Materials and methods: Criteria of inclusion were: ELBW + Arterial Hypotension (Mean BP<GA in weeks). Criteria of exclusion were: congenital anomalies, obvious signs of a hypovolemia and shock. Randomization: odd-numbered infants received Dopamin and even-numbered - Normal saline. Intervention: Dopamine starting from 2 μg/kg/min with dose increase until BP became normal (BP≥GA),NS - 10 ml/kg in 30 min. Sometimes one, sometimes two boluses were used, but never more, than two. If NS was inefficient, Dopamine was prescribed. We checked efficiency of therapy (BP normalization (mBP≥GA)) after one hour, Diuresis (before/after intervention, within a day), effective dose of Dopamine (if needed), total dose of Dopamine within a week, total duration of inotrope support. Also we evaluated the heart hemodynamics (CO, EF, SF) and regional hemodynamics in ACA, AR, AMS (Ri, Tamx, Pi, MD), blood sample (pH, lactate, BE, HCO3) and outcomes (PDA, MV duration, BPD, NEC, PVL, mortality before discharge, stay in NICU) 41 newborns were accepted according to the criteria of inclusion, 2 was excluded due to congenital heart diseases.2 groups were founded (18 in NS group, 21 - Dopamine group).
Clinical cases and summary results: After one hour the mean BP was higher than GA in all newborns from Dopamine group (100%) and 38.8% in NS group exhibited the need for Dopamine for BP normalization. There were increasing of the diuresis and ejection fraction in both groups after infusion. The cerebral, renal and mesenterial blood flow were normalized. We found out that in the Dopamine group the cardiac output (CO) didn't increase, but in NS group the CO increased more, than 1.5 times. At the same time the efficiency of Dopamine in normalising the BP was 100%, and efficiency of the isolated volume loading - 61.2%. The effective daily dose of Dopamine (if needed), μg/kg/min was significantly higher in those, who had previously received NS (3.6±0.63 vs 1.85±0.64, p?0.0001) Duration of mechanical ventilation and observing in NICU was more in NS groupe, than in Domamine group (p=0.02 and p=0.03). Children from NS group had the bigger diameter of PDA also (1.6±1.44 vs 2.6 ±1.47, p=0.04).
Conclusion: Dopamine was more effective in BP normalization than isolated NS for ELBW. If Dopamine was required, the dose sufficient for pressure normalization was higher for newborns who had previously received NS. Dopamine increases EF more effectively, but NS increases CO more effectively. Dopamine and NS are equally effective in blood flow normalization in ACA, AR, AMS. The incidence of sPDA and severe BPD were higher in newborns who received NS for AH treatment. The duration of MV and stay in NICU were longer for newborns who received NS for AH treatment. It is not obvious, that we should use volume loading for treatment of arterial hypotension in ELBW without obvious signs of a hypovolemia and shock. Further researches, without volume expansion use are needed.

Keywords: Newborn, ELBW, arterial hypotension, NICU

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Predicting factors of resistance to ibuprofen for treatment of patent ductus arteriosus in preterm infants

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Introduction: In many hospitals, surgical ligation is propose to close the ductus arteriosus after failure of two 3-days courses of ibuprofen. This therapeutic modality often comes after 10 days postnatal age, the time to achieve the initial medical treatment. Some authors believe that this delay aggravates the exposure to harmful effects of ductal shunt which could be avoided by performing surgery earlier, if we could identify the early signs of resistance to ibuprofen.
The aim of this study was to identify predictors of resistance to ibuprofen by analyzing early data from clinical signs and echographic criteria obtained at the time of diagnosis of patent ductus arteriosus.
Materials and methods: Retrospective matched case-control study including preterm infants ≤ 32 gestation weeks (gw) in our NICU betwen 2010 and 2014. Each infant treated by surgical ligation was matched with an other infant randomly selected among those in whom PDA closed after ibuprofen treatment.
Study variables: maternal characteristics, clinical signs, blood gaz composition in the infant at the moment of diagnostic of PDA by echography. Echographic findings and the dates of treatment.
Statistical analysis: Median (interquartile interval) and proportion (95% confidence interval) for description of variables. Logistic regression was performed for identifying the predictive factors of resistant to ibuprofen for PDA treatment and linear correlation for the analysis of quantitative variables.
Clinical cases & summary results: During the period of this study, the closure of ductus arteriosus occurs after medical treatment in 341 infants. In 27 infants, surgical ligation was necessary after PDA failed to close at the end of two 3-days ibuprofen's course. There were no differences between cases and matched-controlled cases for the all variables studied (clinical signs, biological and echographical characteristics). Differencies were found in the correlation analysis describing in the responders a strong relation between the maximal velocity in ductal flow and the mean blood flow velocity in the left pulmonary artery (coeff = 0.20, r2 = 0.40, p<0.01), and with the arterial blood PaCO2 (-0.18, r2=0.3, p<0.05). In contrary, these relationships were lacking in infants nonresponders to ibuprofen.
Conclusion: Direct analysis of clinical and echographic criteria are not informative for discrimination between responders and non responders to ibuprofen. The only characteristics different were the lack of coupling between ductal flow, pulmonary blood flow and PaCO2. These findings suggests disturbances in pulmonary mechanics, alveolar gases's exchanges, ductal wall function and dysfunction in neuro-autonomous pathes. Further studies are needed for the determination of optimal time for surgical ligation.

Keywords: Patent ductus arteriosus, neuro-hemodynamics, preterm infants, ibuprofen

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Late preterm birth has direct and indirect effects on gut microbiota development during the first 6 months of life

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Introduction: Abnormal gut microbiota composition in early infancy has been associated with disease risk in later life. Several environmental factors, which, in addition to immunological immaturity, may negatively affect gut colonization tend to cluster in preterm infants. We aimed to study gut colonization patterns in late preterm and full-term infants during the first 6 months after birth.
Materials and methods: Late preterm (n=43) and full-term infants (n=75) were included in this nested case-control study from ongoing clinical trials within the NAMI (Nutrition, Allergy, Mucosal Immunology and Intestinal Microbiota) Research Program. The subjects were selected based on availability of fecal samples collected immediately following birth, and at 2-4 weeks and 6 months of age. The presence of clinically relevant bifidobacteria was assessed using quantitative PCR. Logistic regression analyses were performed to determine whether the observed differences in gut microbiota composition were attributable to prematurity *per se* or perinatal exposures, which may have a detrimental impact on gut microbiota development.
Clinical cases and summary results: The gut microbiota in full-term infants was characterized by a high level of bifidobacteria while late preterm infants displayed lower levels of bifidobacteria directly after birth (Figure 1). The presence of Bifidobacterium genus in late preterm infants reached the level of full-term infants by the age of 6 months, but differences remained in the presence of specific species. The mode of birth, intrapartum and neonatal antibiotic exposure, and the duration of breastfeeding had a significant effect on gut microbiota development. In a logistic regression model, late preterm birth had an independent impact on intestinal bifidobacteria.
Conclusion: Early intestinal Bifidobaterium microbiota composition differs significantly between late preterm and full-term infants. Environmental factors such as antibiotic exposure are common in late preterm infants and modulate gut colonization but preterm birth also affects gut microbiota development independently. While effective means of preventing preterm birth are desperately needed, the impact of perinatal and neonatal treatment modalities on gut microbiota development should also be assessed.

Keywords: Prematurity, gut microbiota

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Development of intestinal microbiota in very preterm infants

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Presenter: **R. Ambrosino**

Introduction: Fetal gastrointestinal tract has been considered traditionally sterile. Recent studies suggests that fetal intestine may be exposed to many bacteria resulting from the colonization of amniotic fluid. After birth, a rapid process of colonization occurs thanks to the micro-organisms deriving from the mother and the environment.
In very preterm infants (< 32 weeks of GA), this process could be affected by different techniques and treatments conducted in the NICU and influenced by systemic inflammatory processes.
New molecular biology techniques have contributed to identify bacteria that were difficult to observe in traditional growth medium. The aim of our study is to analyze the composition of the intestinal microbiota and the changes that occurs in very preterm infants.
Materials and methods: This is a descriptive study of fecal colonization in stools samples taken from newborns ≤ 32 of GA from a Neonatal Unit, along one year (October 2013-October 2014). 43 newborns were envolved in the study; four stool samples were collected in the first month of life: S1 (meconium < 48h); S2 (7 days old); S3 (15 days old),

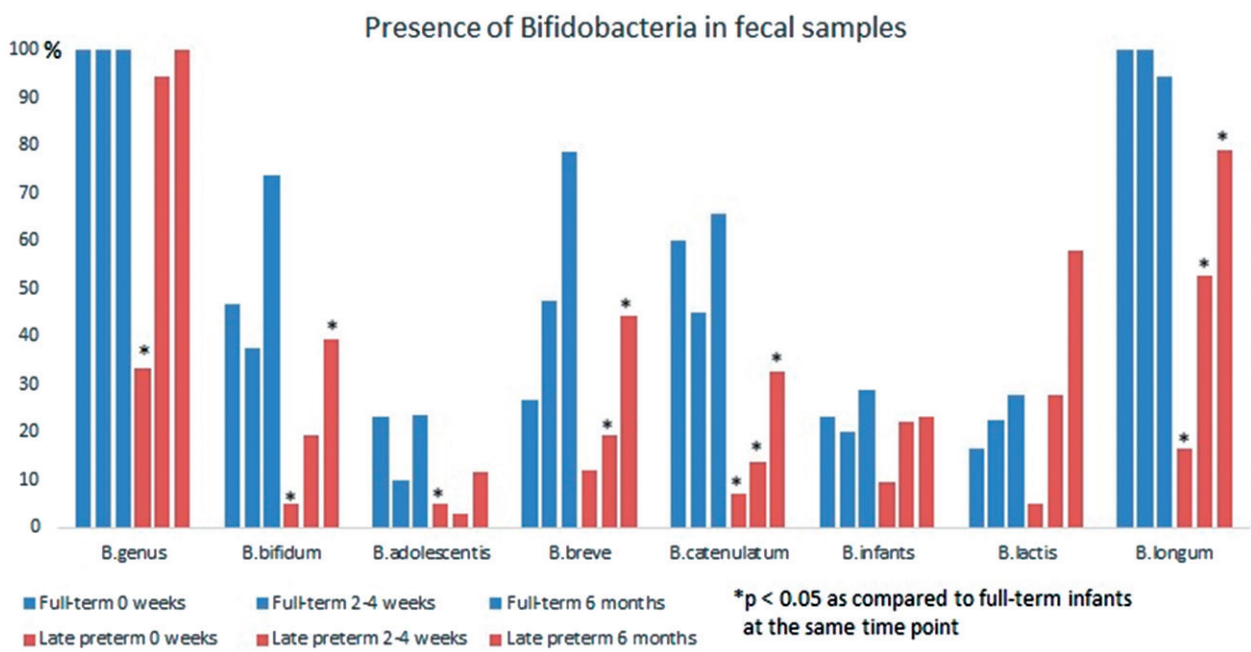

Table 1

	E. coli	Bacteroides	Clostridium	Bifidobacterium	Lactobacillus
S1 (n=38)	4,46 x 10 ^{5}	0	0,39	0	8,18 x 10 ^{2}
S2 (n=34)	1,83 x 10 ^{6}	0	2,58	7,35 x 10 ^{2}	2,59 x 10 ^{4}
S3 (n=36)	2,47 x 10 ^{7}	0	2,96	0	4,61 x 10 ^{4}
S4 (n=27)	2,35 x 10 ^{9}	0	16,3	1,11 x 10 ^{5}	8,77 x 10 ^{5}

Value: p50 CFU/g stools

S4 (30 days old). Five bacterial groups were described using qPCR techniques: Escherichia Coli, Clostridium, Bacteroides, Bifidobacterium and Lactobacillus. Several perinatal and neonatal variables were registered: risk factors of perinatal infection, antibiotics in mother and newborn, type of feeding, development of necrotizing enterocolitis (NEC) or sepsis.
Statistic program SPSS v2.0.
Clinical cases & summary results: In this study were enrolled 43 newborns with an average GA and weight of 29,71 weeks and 1233 g at birth.
(1) Prenatal factors:

- 73.7% of the infants had risk factors for perinatal infection; 39.5% of mothers received antibiotics antepartum and 100% intrapartum.

(2) Postnatal factors

- Type of feeding: most of infants received breast milk, followed by those who received formula and finally those on absolute diet.
- 6.7% received antibiotics at 7 days, 11.4% 15 days, 20.8% 1 month of life.
- Development of NEC and/or sepsis: 6.7% at 7 days, 8.5% at 15 days, 8.3% at 1 month of life.

In first month of life the content in E. coli is higher than other groups (Table 1). A high number of E. coli was observed in newborns who did not receive antibiotic at 15 and 30 days of life, although no significant differences were found (1.80×10×5 vs 1.47×10×9 p=0.07; 1.51×10*6 vs 8.68×10×9 p=0.07). No significant relationship were observed between colonization process,feeding and infection risk factors.
Conclusion: The colonization process of studied bacteria is delayed in preterm babies, except for E. coli. The ab-sence of beneficial bacterial groups (as Bifidobacterium) opens the possibility of implementing nutri-tional strategies to achieve the process of colonization by these beneficial bacteria.

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Association between the P.THR1406ASN polymorphism of the carbamoyl-phosphate synthetase 1 gene and necrotizing Enterocolitis: a prospective Multicenter study

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Presenter: **R. M. Moonen**
Introduction: Carbamoyl-phosphate synthetase 1 (CPS1) is a key enzyme in the de novo intestinal synthesis of the nitric oxide (NO) synthase substrate L-arginine. The CPS1 gene polymorphism p.Thr1406Asn is a C-to-A nucleotide transversion (c.4217C>A) in exon 36, which results in the substitution of asparagine (Asn) for threonine (Thr) in the critical N-acetylglutamate-binding domain of the enzyme. It has been suggested that individuals with the A-allele may have an advantage in terms of NO production, especially under conditions of environmental stress. We reported, in a previous retrospective series of 17 preterm infants with necrotizing enterocolitis (NEC) and 34 controls, that patients with NEC showed an overrepresentation of the C-encoded variant of the p.Thr1406Asn polymorphism.
Materials and methods: In this multicenter prospective study, we investigated the association of the p.Thr1406Asn polymorphism of the CPS1 gene with NEC in 477 preterm infants (36 cases of NEC) from 4 European neonatal intensive care units (Maastricht, Las Palmas de gran Canaria, Mantova, and Milan).
Clinical cases & summary results: Allele and genotype frequencies of the p.Thr1406Asn polymorphism did not significantly differ between the infants with and without NEC. In contrast, the minor A-allele was significantly less frequent in the group of 64 infants with the combined outcome NEC or death before 34 weeks of corrected gestational than in the infants without the outcome (0.198 vs. 0.311, P=0.01). In addition, the dominant [adjusted odds ratio (aOR) 0.51, 95% confidence interval (CI) 0.28 – 0.95)] and the additive genetic model (aOR 0.56, 95% CI 0.32 – 0.92) showed a significant association of the A-allele of the p.Thr1406Asn polymorphism with decreased risk of the combined outcome NEC or death.
Conclusion: Our study showed that the minor A-encoded, Asn variant of the CPS1 p.Thr1406Asn polymorphism protects against the combined outcome NEC or death before 34 weeks of corrected gestational age. This finding provides further evidence that genetic variants of the CPS1 gene may contribute to NEC.

Keywords: Necrotizing enterocolitis, arginine, preterm

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High loading dose of caffeine citrate in preterm infants and the effects on cranial ultrasound findings and neurological outcomes

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Introduction: The aim of this study is to compare outcomes for very preterm infants receiving high and standard loading doses of caffeine citrate, with particular focus on cranial ultrasound findings and neonatal neurological outcomes. A recent small randomised trial has

shown that early high loading doses of caffeine citrate may be associated with cerebellar haemorrhage and neonatal hypertonia. Both high and standard loading doses of caffeine citrate have been used at the Mater Mothers' Hospital Neonatal Unit in recent years, providing the data for this study. This current study aims to assess the safety of higher loading doses of caffeine citrate in very preterm infants.
Materials and methods: This retrospective study included preterm infants inborn at the Mater Mothers' Hospital, Brisbane over a 3 year period (2011-13). Infants included were born at <28 weeks gestation and received a loading dose of caffeine citrate in the first 36 hours of life. The caffeine dose was determined by consultant choice. Two groups were identified with 158 neonates in the high dose cohort receiving a median of 80mg/kg (range 70-101mg/kg) and 60 neonates in the standard dose cohort receiving median of 20mg/kg (range 15-24mg/kg). Both groups received a maintenance dose of caffeine citrate of 20mg/kg/day, until ceased at 34-36 weeks gestational age. Routine cranial ultrasounds, all with mastoid views, were performed together with a neuromotor behavioural assessment (NMBA) prior to discharge.
Clinical cases and summary results: Clinical characteristics were similar between groups. The mean (SD) gestational age was 25.6 (1.1) weeks in the high dose group and 25.8 (1.3) weeks in the standard dose group (p=0.24). Survival rates were 83% in the high dose group and 88% in the standard dose group (p= 0.5). The incidence of cerebellar haemorrhage detected on cranial ultrasound in both groups was low: Cerebellar haemorrhage was identified in 4 (2.5%) infants in the high dose group and 1 (1.7%) infant in the standard dose group (p= 1.0). There were no differences in other cranial ultrasound findings: IVH Grade 1-4 was identified in 26% of the high dose group and 25% in the low dose group (p= 1.0). Total NMBA results were similar between the groups with a mean of 63 (SD 8.6) in the high dose group and 64 (SD 8.4) in the standard dose group (p=0.62). Additionally there was no difference in the neurological subscale of the NMBA between the groups.
Conclusion: Use of early high loading dose caffeine citrate in preterm infants of <28 weeks gestation does not appear to be associated with adverse outcomes with no association with cerebellar haemorrhage or abnormal neonatal neurological outcomes. Long-term follow-up of both groups is required.

Keywords: Preterm, caffeine, cerebellar haemorrhage, neuromotor behavioural assessment

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The use of serum CNS damages markers for assessing the perinatal outcomes of preterm birth

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Introduction: Currently, the incidence of preterm births in the various regions of Russia is 6.3-12.5%, which is comparable with the frequency of premature births in the world. In children with perinatal hypoxia with the absence of gross structural changes in the central nervous system, can form significant neurologic and neuropsychiatric abnormalities, restrictive social adaptation.
Materials and methods: The aim of the study was to identify the characteristics of the course of preterm labor, the assessment of the premature newborn, as well as the definition in the umbilical cord blood levels of NSE, of MBP (myelin basic protein), of S100 protein, and the antibody to nerve growth factor (NGF). The object of our study is based on 96 cases of preterm labor for a term of 22 to 36 weeks of gestation in the maternity clinical hospital named after S. Yudin in Moscow. 30 cases of timely delivery, as a result of which 30 were born full-term infants were included in the control group. In the third stage of labor and intraoperatively during a caesarean section were carried out samplings of umbilical cord blood from women all subgroup comparisons.
Clinical cases and summary results: There was a significant increase in NSE, S-100 protein, MBP in serum as compared with the values in the control group. It is noted that at high concentrations NSE determined at time of birth at 22-25 weeks, indicating a greater depth CNS this group of children (NSE = 150.8). In the umbilical cord blood of babies born at 22-25 weeks duration, in the NSE index is 4.3 times higher than the values of the control group (p <0.001). High concentration of S-100 protein shows significant morphological damage of brain structures in prenatally and during the birth. For a period of 22-25 weeks marker level was 1.9 ng/ml and was significantly higher than the value in the control group to 9.5 times (p <0.001). The control group did not exceed the value of MBP 1.5 ng/ml. With decreasing gestational age at birth increased the concentration of the marker, and in the period of 22-25 weeks was 9.0 ng/mL, which is 6 times higher than the standard values (p <0.001). The mild degree of CNS damages previled in groups with the greater gestational age at birth: in a group of 29-32 of the week - in 14 (53.85%) and in the group of 33-36 weeks - 17 (65.38%). Severe CNS lesions dominated the subgroup 22-25 weeks - 21 (80.77%). Most lesions were of hypoxic-traumatic genesis. When mild CNS damages the value of NSE, S-100 protein, MBP was significantly lower than in the moderate and severe lesions of the CNS, when assessing the level of antibodies to nerve growth factor - the situation is reversed.
Conclusion: The content of CNS damages markers in cord blood depends on the gestational age at delivery, depends on the degree of maturity of the central nervous system and is associated with the severity of CNS lesions in preterm infants.

Keywords: Preterm birth, perinatal outcomes, cerebral lesions, biochemical markers

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Perinatal risk factors and mode of delivery associated with neonatal mortality among very low birth weight infants before 28 weeks of gestation

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Presenter: **F. Soylemez**
Introduction: The optimal obstetric management and the impact of delivery mode on the survival of VLBW infants remain controversial. The improvements in perinatal and neonatal care have led to an increase in cesarean rates to decrease mortality and morbidity for very low birthweight (VLBW) infants. However, increasing cesarean rates also add to maternal morbidity significantly. The optimal mode of delivery of very low birth weight infants is still an obstetric challenge. In this retrospective cohort study, we aimed to investigate the association of perinatal risk factors including mode of delivery with mortality for VLBW infants born before 28 gestational weeks in a tertiary hospital setting.
Materials and methods: Records of liveborn VLBW infants born at <28 gestational weeks (n=92) were retrospectively analyzed. Details of clinical/obstetrical maternal data (Age, parity, chronic diseases,

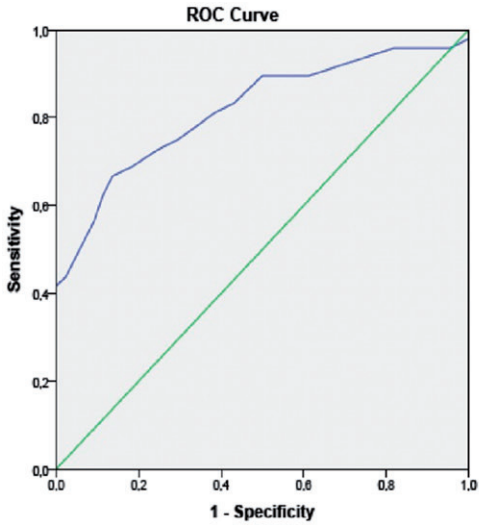

Table: Univariate and multivariate logistic regression analysis results for infant mortality at <28 gestational weeks

Candidate independent risk factors	OR (95% CI)	p
Vaginal delivery	2.385(1.009-5,635)	0.048
Primiparity	3.846(1.091-13.563)	0.036
Gestational week at birth <25 weeks	40.25(6,503-249.107)	0.000
Birthweight <600g 600-900g	231(19.465-2741.4) 28.60(3.548-230,554) 0.952(0.840-20.988)	0.000
Antenatal steroids	4.111(1.529-11.051)	0.005
Magnesium therapy	3.964(1.025-15.331)	0.046
Independent risk factors		
Gestational week at birth <25 weeks	18.352(3.884-86.720)	0.000
Magnesium therapy	3.782(1.263-11.323)	0.017

preeclampsia/eclampsia, premature rupture of membranes, antenatal steroids, tocolytic treatment, antenatal magnesium use, placental abruption, placenta previa, Doppler findings, gestational age at birth, mode of delivery, birthweight, intrauterine growth restriction, multiple pregnancy, fetal presentation, indications and presence of labor prior to cesarean section) and neonatal outcome data were evaluated. ROC analysis was used to determine a cut off gestational week at birth for infant mortality. Uni/multivariate logistic regression models were used to determine the risk factors associated with infant mortality.

Clinical cases & summary results: The median gestational age at birth was 26 weeks (21–276/7 weeks) and the median birthweight was 755g (400–1470g). The cesarean section rate was 59.8%. The overall mortality rate was 52.2% (43.6% for infants born by cesarean section and 64.9% for infants born vaginally, p=0.05). Mortality was significantly higher for infants born at 25 gestational weeks and for infants with a birthweight of 750g. At ROC analysis a cut off of 25.5 weeks was determined with a sensitivity of 66.7% and specificity of 86.4% (AUC 0.818, 95% CI: 0.731–0.905) (Figure 1). On univariate analysis antenatal steroid treatment, gestational week at birth, birthweight, mode of delivery, primigravidity, antenatal steroids, magnesium therapy were found as candidate independent variables for infant mortality. On multivariate analysis gestational week at birth and the absence of or partial antenatal steroid treatment were found as independent risk factors for mortality (Table 1).

Conclusion: Gestational week at birth, birth weight and antenatal steroid therapy are the most important risk factors for mortality in VLBW infants born before 28 gestational weeks. Mode of delivery does not seem to affect infant mortality. Further larger studies are required.

Keywords: Very low birth weight, infant mortality, mode of delivery, perinatal risk factors

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Relationship between preterm birth, neonatal outcomes and low maternal hemoglobin level

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Dept of Obstetrics and Perinatology, University Hospital in Krakow, Krakow, Poland

Presenter: **M. Radon-Pokracka**

Introduction: Antenatal anemia is a common problem in perinatology. In the literature there is still little research about this topic. The objectives of this study were to check the influence of antenatal anemia in pregnant woman during antenatal period on the route of delivery and neonatal outcomes.

Materials and methods: The study included 450 pregnant women who gave birth in Department of Obstetrics and Perinatology UJ CM from January to June 2015. In the study group 90 patients had anemia and 360 women were admitted with appropriate hemoglobin level. Patient groups were randomly assigned. As an antenatal period, the period of seven days before giving birth was defined. Anemia was defined as hemoglobin level <11g/dl in the antenatal period. We analyzed: RBC, hemoglobin levels, hematocrit, MCV, MCH, MCHC. Neonatal outcomes were analyzed based on birth weight, body length, and number of points in the Apgar score. Women's groups did not differ significantly in terms of demographic and socioeconomic factors. To compare groups we used chi square test.

Clinical cases & summary results: The low maternal hemoglobin level in antenatal period increased risk of having a baby with birth weight <2500g more than 4-times (OR 4,6 CI 95% p<0,05), increased risk of having baby with <8 points in Apgar score in first minute of life almost 5-times (OR 4,9 CI 95% p<0,05) and increased risk of birth before 37th week of pregnancy more than 3-times (OR 3,56 CI 95% p<0,05) but had no effect on the route of delivery.

Conclusion: Antenatal maternal anemia is a risk factor for preterm birth, low body weight in newborns and worse neonatal outcomes. The important part of perinatal care is to make more efforts to maintain the proper level of hemoglobin and others red blood cells indices.

Keywords: Anemia, preterm labour, fetal weight

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Impact of socioeconomic environment in cognitive development of five years old children born preterm

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Presenter: **DIRANI Sabine**

Introduction: Prematurity concerns 6.5% of live births in France, of which more than 10,000 are born before 33 weeks of gestation. Mortality has decreased but morbidity is of concern. Preterm infants are at high risk for long-term neurological impairment, especially cognitive. Many neonatal risk factors for lower cognitive development in preterm infants exist as gestational age, low birth weight, male gender or bronchopulmonary dysplasia. Apart from these factors inherent to prematurity, there are also socioeconomic and contextual factors. The aim of this study was to evaluate the impact of the socioeconomic environment on cognitive development of 5 years old severe preterm children born in Normandy.
Materials and methods: Preterm infants born before 33 weeks of gestation, from 1998 to 2010, in our regional University Hospital of Caen were prospectively included in the PREMA32 cohort, after parental consent . This cohort represented our database. Cognitive development (DC) at five years was assessed by neuropsychological tests (K-ABC1 and WIPPSI III after 2007), calculating the composite mental process. The socioeconomic level of parents was defined by the European Deprivation Index (EDI) computed from their addresses.
Clinical cases & summary results: Among the 1354 preterm infants included in the PREMA 32 cohort, 591 received a cognitive assessment at 5 years and had an EDI corresponding to their addresses. Preterm children were divided into five quintiles according to their respective EDI, ranging from the most (Q5) to the less deprived (Q1).
The DC was below 85 (< -1SD) in 12.9% of preterm infants living in the most favored areas versus 37.2% in the most deprived areas. No preterm children had a DC less than 70 (< -2 SD) in less deprived areas while 10.7% of the preterm infants living in the most deprived areas had a DC < -2 SD ($p = 0.005$). Other variables significantly related to the DC were birth weight and parity, inversely associated with DC. Gestational age was not associated to the DC. Children lost to follow-up were twice as much in disadvantaged areas (18.8% versus 38.5%, p=0.006).
Conclusion: Cognitive development at five years in severe preterm infants in Lower Normandy, is significantly correlated with the socioeconomic level of parents, defined by the European Deprivation Index. Identifying this risk factor should lead to a targeted follow-up after discharge from the hospital, with early interventional programs to support maternal care and good maternal-to-child interaction. It may also reduce lost to follow-up children in deprived socio-economic areas.

Keywords: Preterm children, socioeconomic development, cognitive development, European Deprivation Index

TWINS 1 - 734

Monochorionic twins and single intrauterine demise: neurological outcome

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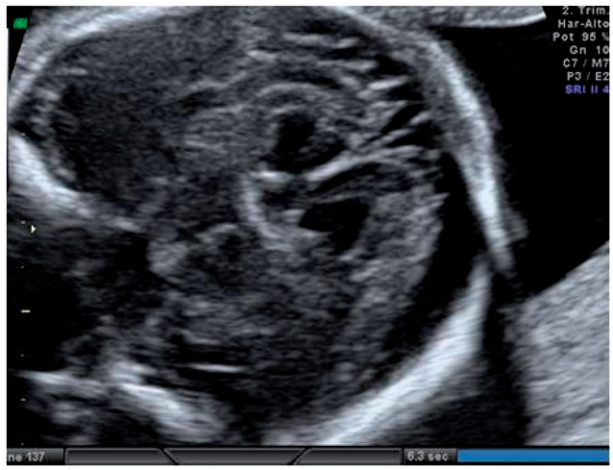
Presenter: **María de la Calle**

Introduction: Objectives: 1. To evaluate the presence of cerebral injury in the survivor twin after intrauterine death of the co-twin in monochorionic pregnancies (MC) comparing spontaneous fetal loss vs fetal demise after therapeutical procedure: fetoscopic selective laser ablation of placental anastomosis or umbilical cord occlusion (UCO). 2. To analyze neurological and developmental outcomes in these children.



Materials and methods: Retrospective study of complicated MC pregnancies by the demise of one twin referred between 2011 and 2015 in our Unit. Ultrasound follow-up (Neurosonography) was made in all cases and MRI of the survivor 4 weeks after intrauterine fetal demise in 17 of the cases. Cerebral ecography after birth and neurological follow-up (assessed at 5 months to 4 years old) were analized in these children.
Clinical cases & summary results: We studied 22 cases with intrauterine death of one twin. 13 of these monochorionic pregnancies were complicated by TTTS, 6 by II-III type sIUGR and 2 cases by discordant malformation. Fetal therapy had been undergone in 16 cases (7 fetoscopic selective laser ablation of placental anastomosis and 8 UCO). There were 6 cases of spontaneous fetal loss. Mean gestational age when co-twin demise occurs was 21 w (16 to 30.2w). Neurological complications were observed in 3 cases: 1- Mild ventriculomegaly (TTTS with fetoscopic selective laser ablation of placental anastomosis. Normal neurological outcome), 2- type III sIUGR with spontaneous death of one twin in week 18 (ventriculomegaly, destructive white matter lesions and microencefaly); parents requested a voluntary interruption of pregnancy in this second case.3- type III sIUGR and spontaneous fetal loss at 30 weeks: surgery was offered but patient refused it; survivor twin suffered from acute exsanguination after co-twin death and urgent cesarean section was performed 1 day after cause severe anemia and intraventricular hemorrhage were suspected. Now this child is 2 years old, presents a normal psychomotor development, but strabismus and hearing loss.
Conclusion: Intrauterine death in one monochorionic twin is associated with increased mortality and morbidity in the surviving co-twin. This is likely to occur as a consequence of exanguination of the survivor just before or at the time of death when its blood pressure drops dramatically. The risk of cerebral damage in the surviving twin is greater when the fetal demise is spontaneous than when it occurs after intrauterine therapy.

Keywords: Fetal loss, monochorionic pregnancies, TTTS, fetoscopic selective laser ablation

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Trial of labor in growth estimated discordant twins

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Introduction: Twin pregnancies are often affected by a growth difference of the infants. Discordant twins are at increased risk for

perinatal morbidity and mortality. In contrast to the majority of publications on adverse outcome in discordant twin pairs (even in relation to the smaller twin within the discordant pair), little is known about mode of delivery in these twins. In general, twins with intrapair birth weight discordance are more commonly delivered by caesarean section (CS). If a trial of labour (TOL) is conducted, the rate of successful vaginal birth is unclear. We therefore studied mode of delivery in discordant twin pregnancies according to size of the first presenting twin.

Materials and methods: This is a retrospective cohort study. All patient charts of twin pregnancies at the University Medical Centre Utrecht (UMCU) delivered between January 2005 and July 2014 were reviewed. All patients with an estimated fetal weight available within (and including) 8 days of delivery were included. Primary outcome measurement was mode of delivery. Secondary outcome concerned adverse outcome related to size of the first presenting twin and mode of delivery. Multivariate logistic regression to identify risk factors that were independently associated with mode of delivery.

Clinical cases and summary results: 304 twin pregnancies were included in this study, of which 63 pregnancies (21%) were affected by birth weight discordancy >20%. In half of these cases the first twin was considered to be the smallest within the twin pair. TOL was attempted in 51% of discordant twin sets compared to 85% in normally grown twins (p <0.01). Seventy-five percent had a successful vaginal delivery. Risk factors for failed TOL were nulliparity, IUGR of either fetus and a discordant larger first child. An elective CS was chosen more often in case the second presenting twin was smaller than its co-twin (63% versus 33%, respectively, p=0.02). The rate of successful trial of labor was also lower if the second twin was smaller than the first presenting twin (67% and 80%, respectively, p=0.02). Neonatal outcome did not differ between the discordant growth group and the control group (26.2% and 22.6% respectively, p=0.40). Within the discordant group neonatal morbidity of one or both children occurred more often in twin pairs with a small twin B compared to twin pairs with a small twin A (34.8% and 16.7% respectively, p=0.02), irrespective of mode of delivery.

Conclusion: Although TOL is less often achieved irrespective of size of the first presenting twin, vaginal delivery seems feasible in growth discordant twin sets. Caution is warranted regarding twin pairs with significant lower estimated fetal weight of twin B as compared to twin A, since these pregnancies have a smaller change of successful vaginal delivery and increased risk of adverse outcome in both children. With selection of patients trial of labor seems feasible in discordantly grown twin sets.

Keywords: Growth discordance, twin, trail of labour

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Is the risk of inrahepatic cholestasis of pregnancy related to body mass index in women pregnant with twins?

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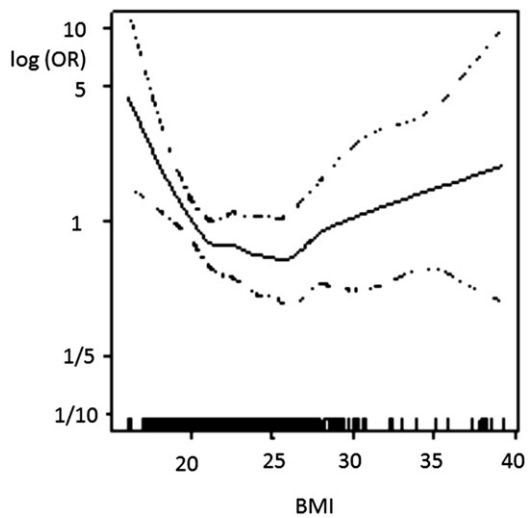
Introduction: Intrahepatic cholestasis of pregnancy (ICP) is a condition related to a high risk of bad neonatal outcome. While troublesome pruritus is a main problem for the mother, stillbirth or intrauterine hypoxia are the most serious complications for the fetus. The risk of pregnancy cholestasis is related to pre-gravid body mass index in singleton pregnancy. The aim of our study was to determine the relation between cholestasis of pregnancy and pre-gravid body mass index (BMI) in twin pregnancy.

Materials and methods: A retrospective cohort study of 542 women at the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw, between 2007 and 2015 was performed. Medical records of patients pregnant with twins, delivering at $\geq$22 gestational weeks were included. Pre-gravid weight was defined as weight before conception (self-reported) or <10 weeks of gestation (measured by a medical assistant.). The cohort was divided into four groups depending on the pre-gravid BMI: underweight (BMI < 18.5 kg/m2), normal weight (18.5 - 24.9 kg/m2), overweight (25 - 29.9 kg/m2) and obese ($\geq$ 30 kg/m2). The study outcome was ICP diagnosed by pruritus and raised serum bile acids (> 10 μmol/L) during the second or third trimester of pregnancy.

Clinical cases and summary results: 49 patients developed ICP (9%). Underweight and obese women were at a higher risk of ICP and overweight patients were at lower risk of ICP than normal weight mothers. There was no linear (p=0.5) but significant U-shaped relation between BMI and ICP (p=0.005). The lowest risk of ICP development was related to BMI of about 25-26 kg/m^2.

Conclusion: Non-linear relation between ICP occurrence and BMI suggests that using homogeneous ICP risks for BMI groups may be incorrect.

Keywords: Twin pregnancy, intrahepatic cholestasis of pregnancy, body mass index



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Obstetrical outcome of spontaneous twins pregnancy versus IVF twins pregnancy

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Introduction: Socioeconomic changes and delayed conception maternal age has led to an increase in the need for assisted reproductive techniques to achieve pregnancy. The use of assisted reproduction techniques entails an increase in multiple gestations. Sin ce the beginning of assisted reproductive techniques, there is a social and scientific concern about the outcome of such pregnancies. The purpose of our study is to compare the obstetric and perinatal

outcome of spontaneous twin pregnancies with twin pregnancies conceived by IVF.
Materials and methods: This is a retrospective study of 456 twin gestations, 319 pregnancies were conceived spontaneously and 137 by in vitro fertilization. They gave birth in our hospital, Complejo Hospitalario de Navarra, between 2012 and 2015. The following variables were compared: threatened abortion rate, rate of evanescent twins, rate preterm labor income and prematurity (gestational age less than 37 weeks). Also we compared: rate of inductions, type of delivery, fetal weight, rate of pathological ph and destinaton of newborn.
Clinical cases and summary results: The average age of patients with spontaneous twin pregnancy was 33.57 years compared with 34.69 years in women with twin pregnancy by IVF, the differences were statistically significant. On the other hand, 81% of pregnant women with spontaneous twin pregnancy were nulliparous versus 93.6% of women with twins by IVF. The differences were also significant. Significant differences were found regarding the threat of abortion rate, 6.8% of spontaneous twins versus 25.6% in twins by IVF. Pregnancy through IVF had a higher rate of evanescent twins (9.3% versus 3.4%). We also found a higher rate of income preterm labor in twins by IVF (29% versus 15%) with statistically significant differences. Higher percentage of births was also found before 37 weeks of gestation in twins by in vitro fertilization (41% versus 30.4%) statistically significant differences. No differences in the rate of induction of delivery were found. Regarding childbirth no difference in the rate of caesarean sections were found, however spontaneous pregnancies had lower instrumental deliveries rate than pregnancies through IVF (16% versus 28%). The mean fetal weights showed no significant differences (2379 gr spontaneous versus 2356 gr versus in IVF twins). Higher rate of pathological pH (pH <7.2) was found in pregnancies by in vitro fertilization (27% versus 19%) with significant differences. Finally, newborns IVF required more frequently admission to the neonatal unit than newborns after spontaneous pregnancy (23% versus 17%).
Conclusion: Twin pregnancies through IVF have worse obstetrical outcomes than spontaneous pregnancies. These differences could be due to the technique but also to the patient profile that uses them. Patients with twin pregnancies through IVF had a higher mean age and higher rate of Nulliparity. Both age and parity can be confounding factors when comparing obstetrical and perinatal outcomes between the two types of pregnancies, since they imply a higher rate of complications in pregnancy.

Keywords: Twin pregnancy, Asissted reproduction technics

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The use of cervical pessary in a spanish population of triplet pregnancies

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Introduction: Preterm birth is the main cause of perinatal morbidity and mortality, especially in multiple pregnancies. In the last years, cervical pessary has been tested as an effective intervention to prevent prematurity in patients with a shortened cervix during pregnancy. Our objective is to describe the outcomes in a Spanish population of patients carrying a cervical pessary during a triplet pregnancy.
Materials and methods: Retrospective observational study of triplet pregnancies followed at the Obstetrics Departments of Hospital Universitari Vall d'Hebron (Barcelona) and Hospital Universitario La Paz (Madrid) from 2009 to 2014. Transvaginal ultrasound scans were periodically performed for evaluation of the cervical length (CL). Patients with CL<25 mm and no uterine contractions were proposed to carry a cervical pessary. We describe the characteristics of this population and the outcomes for the groups with and without pessary.
Clinical cases and summary results: Between 2009 and 2014, there were 70 triplet pregnancies surveyed in either of the two Centers involved in the study. Of them, 24 (34.3%) patients met the criteria and gave their consent for the insertion of a cervical pessary. The mean gestational age for the insertion was 24 weeks (range 20-30). There were no statistical differences between groups for chorionicity, mode of conception, need for admission at the hospital or indication for admission at the hospital. Mean CL was significantly shorter in the pessary group (22.2 mm, 95%CI: 20.5-23.9 versus 33.4 mm, 95%CI: 32.1-34.6). Mean gestational age at birth was 32.2 weeks (95% CI: 31.4-33.1), with no statistical differences between groups. Regarding the indications to end the pregnancy (all of them by cesarean section), there were 25% of patients with preeclampsia or Doppler alterations in the non-carriers group (vs 0% in the carriers group), differences being almost statistically significant (p=0.058).
Conclusion: The prevalence for use of cervical pessary in our triplet pregnancies sample (34.4%) is much higher than that described for twins (5%). Even though there are significant differences for CL between groups (taking into account the potential bias for the presence of the device while making the CL measurements), the gestational age at delivery was the same for both groups. This strongly suggests that cervical pessary is an effective tool to prevent extreme prematurity in triplet pregnancies.

Keywords: Cervical pessary, triplet pregnancies, prematurity

TWINS – 652

Evaluation of the implementation of the dutch national guideline on twin pregnancies and its effects on perinatal outcome of monochorionic twin pregnancies

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Presenter: **Post W. M. or Hack K. E. A.**
Introduction: In 2011, a new guideline on twin pregnancies has been introduced. Herein it is advised to induce labour in uncomplicated monochorionic diamniotic (MCDA) twin pregnancies around 36-37weeks of gestation. The aim of this study was to evaluate the implementation of this guideline by the district hospitals of Utrecht and the subsequent effects on perinatal outcome after introduction of the guideline.
Materials and methods: Methods: All MCDA twin pregnancies of at least 20 weeks of gestation were included retrospectively and the differences between pregnancy outcomes in the period before and after introduction were compared. Prospective risks of mortality and morbidity were calculated by dividing affected cases by total of

ongoing pregnancies at the beginning of a 2weeks gestational age block period. Trends of these determinants were plotted per year and per period before and after the introduction of the guideline.
Clinical cases & summary results: Results: In total 894 MCDA twin pregnancies were included. Overall there were no major differences in characteristics between pregnancies in both time periods besides a higher proportion of women with hypertensive disorders in the period before introduction of the guideline and a higher incidence of (gestational) diabetes in the period after introduction of the guideline. The maximum gestational age after introduction of the new guideline was 37 + 6 weeks. The prospective risk of fetal death ≥ 32 weeks of gestation (per fetus) before and after the introduction was 1.2% and 0.3% respectively (p=0.138); after introduction of the national guideline no avoidable deaths occurred. The incidence of neonatal death and morbidity however showed a reversed trend. Early neonatal death occurred in 0.5% en 1.1% respectively (p=0.264) and neonatal morbidity occurred in 1.6% en 2.5% in the periods before and after the introduction respectively (p=0.257).
Conclusion: The national guideline seems to be well implemented in the local policy of the hospitals of the district of Utrecht which resulted in less fetal deaths. However, there seems to be a correlation with a higher amount of early neonatal death and morbidity. When considering elective delivery of these pregnancies this should be taken into account.

Keywords: MCDA TWINS

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Necrotizing enterocolitis in twin pregnancies: can we find a pathophysiologic key in placental abnormalities?

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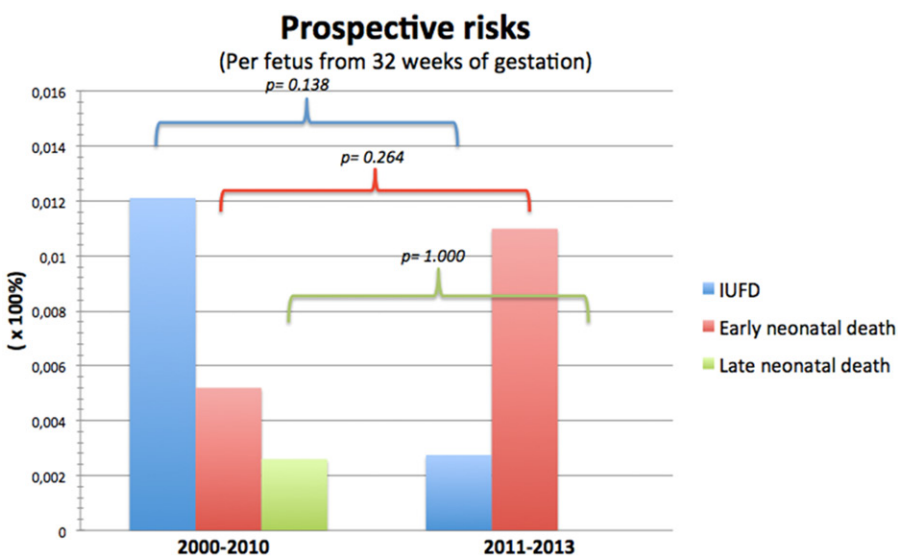
Presenter: **R. R. Aapkes**

Introduction: Necrotizing enterocolitis (NEC) is one of the most common gastrointestinal emergencies in the newborn infant. The exact pathophysiology of NEC remains unknown. It is a disorder manifested by ischemic necrosis of the intestinal mucosa. NEC seems to be more common in monochorionic than dichorionic multiple births, also when corrected for birth weight and term. This suggest a relationship between placental abnormalities occurring in monochorionic twins, such as anastomoses, and the pathophysiology of NEC. In order to understand the pathophysiology and the risk factors for development of NEC, we compared dichorionic and monochorionic pregnancies, ultrasound studies in pregnancy en placental abnormalities.
Materials and methods: Multiple pregnancies delivered in the University Medical Centre, Utrecht (UMCU) (1995-2015)were collected. Monochorionic and dichorionic twins were compared in terms of pregnancy data, mortality en morbidity. For the monochorionic twins placenta pathologic reports and ultrasound data were also collected. In the monochorionic twin group, we compared de differences in placental anastomoses and ultrasound findings between the children with and without NEC.
Clinical cases & summary results: In total 1499 multiples with dichorionic placentation and 464 multiples with monochorionic placentation included, a total of 4006 children. The incidence of NEC was higher in het monochorionic group than in the dichorionic group (3.1% and 1.6% respectively, p=0.011), but after multivariate regression analysis with adjustment for birthweight and gestational age at delivery, this difference was not significant anymore adjusted OR 0.672 95% confidence interval 0.417-1.084). In the monochorionic group, no differences in occurrence of abnormal Doppler studies of the umbilical artery were found between cases with and without NEC. There were also no differences in the presence of abnormal umbilical cord insertions or variety of placental anastomoses. Unbalanced interfetal transfusion through arteriovenous (AV) anastomoses seemed to occur more frequently in NEC cases than in cases without NEC (50% versus 37% respectively, p=0.163).
Conclusion: The increased risk of NEC in monochorionic twins seems to be related to the lower birth weight and gestational age at birth. However, unbalanced interfetal transfusion through AV anastomoses might be related to the higher incidence of NEC in monochorionic twins and needs further investigation.

Keywords: Twins, triplets, multiple birth, ultrasound, monochorionic, Necrotizing enterocolitis, placenta, anastomoses



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The neonatal outcome in twin gestations complicated with selective or non-selective intrauterine growth restriction

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Presenter: **Katarzyna Kosinska-Kaczynska**

Introduction: The incidence of intrauterine growth restriction (IUGR) in twins is significantly higher (15-47%) than in singletons (3-10%), which is associated with elevated risk of neonatal mortality and morbidity in multiple gestations. Intrauterine growth restriction in twin gestations, both monochorionic and dichorionic, may affect one or both fetuses (selective or non-selective IUGR). The aim of the study was to compare the neonatal outcome in twin gestations with selective and non-selective IUGR.

Materials and methods: A retrospective analysis of medical records of 505 patients pregnant with twins, hospitalized in 2005-2015, was made. The surveyed group was divided in four subgroups depending on the number of neonates with IUGR (birth weight <10th percentile) and chorionicity: 1) monochorionic selective IUGR twins (86 neonates), 2) dichorionic selective IUGR twins (170) 3) monochorionic non-selective IUGR twins (28) 4) dichorionic non-selective IUGR twins (34). Neonatal data included gestational age at birth, the 1st and 5th minute Apgar score, neonatal mortality, respiratory support, bronchopulmonary dysplasia, intraventricular hemorrhage, necrotizing enterocolitis, sepsis, congenital infections, length of hospital stay (LOS) and length of Neonatal Intensive Care Unit hospitalization.

Clinical cases & summary results: The total IUGR incidence in the surveyed group was 32.9%. Among them, 81.3% were selective IUGR twins and 18.7% non-selective IUGR twins.

Non-selective IUGR twins were delivered later than selective IUGR twins (delivery at 35.7 vs. 34.8 gestational weeks; p=0.016). Non-selective IUGR twins, regardless of the chorionicity, had increased mortality (OR=4.49; 95%IC 1.87-10.8; p<0.01) and risk of NICU hospitalization (OR=2.11; 95%IC 1.21-3.68; p<0.01). Monochorionic non-selective IUGR twins had higher risk of NICU hospitalization (OR=8.89; 95%IC 3.1-24.8; p<0.001) and congenital infections (OR=4.79; 95%IC 1.7-13.7; p=0.0035).

Conclusion: Twins with non-selective IUGR have worse neonatal outcome than twins with selective IUGR.

Keywords: Twin pregnancy, intrauterine growth restriction

POSTER

ABNORMAL PLACENTATION – 043

Nonlinear analysis of fetal heart rate dynamics in fetuses compromised by asymptomatic partial placental abruption

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Introduction: We analyzed fetal heart rate (FHR) parameters, dynamics, and outcomes in pregnancies with asymptomatic partial placental abruption (PPA) compared with those in normal pregnancies.
Materials and methods: We examined nonstress test (NST) data acquired from 2003 to 2012 at our institution. Normal pregnancies ($n = 170$) and PPA cases ($n = 17$) were matched for gestational age, fetal sex, and mean FHR. NSTs were performed at 33-42 weeks of gestation. FHR parameters obtained from the NST and perinatal outcomes were analyzed using linear methods. Nonlinear indices, including approximate entropy (ApEn), sample entropy (SampEn), short-term and long-term scaling exponents (a1 and a2), and correlation dimension (CD), were used to interpret FHR dynamics and system complexity. The area under a receiver operating characteristic curve (AUC) was used to evaluate the nonlinear indices.
Clinical cases and summary results: There were no significant differences in general characteristics and FHR parameters between the PPA and control groups. However, gestational age at delivery, birth weight, 5-min Apgar scores, ApEn, SampEn, and CD were significantly lower in the PPA group than in the control group ($p < 0.05$). The long-term scaling exponent (a2) and crossover index (a2/a1) of the PPA fetuses were significantly higher than those of the controls ($p < 0.01$). A multiple regression model showed better performance in predicting PPA (AUC, 0.92, sensitivity 82.35%, specificity, 94.12%).
Conclusion: Nonlinear dynamic indices of FHR in asymptomatic PPA were qualitatively different from those in normal pregnancies, whereas the conventional FHR parameters were not significantly different.

Keywords: Approximate entropy, correlation dimension, fetal heart rate, nonlinear dynamic indices, partial placental abruption, sample entropy, short-term and long-term scaling exponents

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Associated factors of blood transfusion for cesarean section in pure placenta previa

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Introduction: The factors associated with blood transfusion during cesarean delivery in placenta previa pregnancies have been previously reported but still unclear. One study found a previous cesarean section, maternal age greater than 34 years and a history of more than one dilatation and curettage to be risk factors associated with blood transfusion during cesarean section in placenta previa pregnancies. Another report found the risk factors for transfusion to be delivery at 32–35 weeks of gestation and cesarean hysterectomy. Due to the conflicting results of these studies and their inclusion of placenta accreta cases, which might be an important confounding factor, the risk factors for blood transfusion during cesarean section in pure placenta previa pregnancies are still needed to be found out. The aim of this study is to determine the risk factors of blood transfusion during cesarean section in pure placenta previa pregnancies, which would aid preoperative planning.
Materials and methods: A case-control study was conducted among 405 pregnant women with pure placenta previa who underwent cesarean delivery between 2004 and 2013. Cases consisted of 135 women who received blood transfusion. Another 270 women who did not receive any blood transfusion were randomly selected and served as controls. Maternal antepartum profiles and obstetric outcomes were compared and analyzed by univariate and multivariate analysis respectively.
Clinical cases and summary results: The results after multivariate analysis show significant independent associated factors of blood transfusion as followed: previous cesarean section (OR 2.30, 95% CI 1.36-3.90), anterior placenta previa (OR 2.30, 95% CI 1.15-4.60), major placenta previa (OR 2.39, 95% CI 1.34-4.22), pre-operative bleeding of more than 250 ml (OR 6.11, 95% CI 2.35-15.90), pre-operative anemia (OR 2.31, 95% CI 1.34-4.00) and emergency cesarean section (OR 2.14, 95% CI 1.08-4.22).
Conclusion: Previous cesarean section, anterior placentation, major placenta previa, pre-operative bleeding of more than 250 ml, pre-operative anemia and emergency cesarean section were the independent factors that increased the risk of blood transfusion during cesarean section in placenta previa.

Keywords: Placenta previa, blood transfusion, cesarean section, associated factors

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Importance of the suspected diagnosis of placenta accreta

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Introduction: Placenta accreta is defined as an abnormal implantation of the placenta, in which the chorionic villi are inserted directly into the myometrium. The incidence of accretism is 3/1000 pregnancies. In the last 30 years the incidence of Placenta accreta has increased threefold due to the large increase in the cesarean rate. There are other risk factors for placenta accreta, which are: previous cesarean section, placenta previa, age >35 years, multiparity, Asherman's syndrome, endometritis or previous curettage, etc. The presence of placenta accreta increases maternal morbidity and mortality due to: risk of massive bleeding and need for transfusions, risk of injury to adjacent organs, etc.
Clinical cases and summary results: We report a case of placenta accreta occurred in our hospital, Complejo Hospitalario de Navarra, in 2015. Patient 41 years old with a history of normal pregnancy and childbirth in 1999. After his first delivery, underwent a curettage due to retention of placental cotyledon. After curettage, the patient had amenorrhea, being diagnosed in 2003 of Asherman's syndrome, which was corrected by hysteroscopy. During 2015 she is pregnant with her second pregnancy. During the course of gestation, the patient is diagnosed occlusive total placenta previa with thinning of the myometrium placental interface on the back side. It requires three hospital admissions for self limited bleeding. In the presence of risk factors and sonographic suspicion, it was decided to schedule a cesarean with subsequent hysterectomy in 37 weeks. The patient had expressed accordance with the intervention. In week 37 we proceeded to carry out the Caesarean section and hysterectomy which passed without major incidents. Histopathology confirmed the diagnosis.
Conclusion: Placenta accreta is a disease that is increasing in incidence. Accretism increases the risk of morbidity and mortality both maternal and fetal. The diagnostic suspicion based on risk factors and echocardiographic signs are essential to anticipate possible complications that may arise.

Keywords: Placenta accreta

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Placenta praevia: frequency, morbidity, mortality and structure of death

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Introduction: Objective: The aim of this study is a retrospective analysis of premature neonatal death of newborns born to mothers with placenta preavia.
Materials and methods: Material and methods: There were analyzed the total number of births in specific period, the incidence of birth of newborns from mothers with Placenta Preavia, mortality of this group of newborns, the gestational age of deceased newborns, the time of death of these newborns, the structure of death according to diagnosis. During the past 3 years (2009–2011) at Special Hospita for Gynecology and Obstetrics, there were 9496 newborns. 9415 were born alive (99.14%), 81 died (0.85%). Out all newborns, 20 or 0.21%, were born from mothers with placenta preavia.
Clinical cases and summary results: Results: The mortality in this group of newborns with placenta praevia is 17.39%. The gestational age of all deceased newborns is less than 33 weeks. During the first 12 hours the percentage of deaths is 50%, from 13–24 hours 25%, from 25–48 12.5% and after 48 hours 12.5%. According to patho-histological analysis that were done on 100% of the deceased newborns, 38.1% form this risk group of newborns died from hyalinomembrane disease as the main cause of death, 14% from intercranial hemorrhage. 42% had as a main cause of death hyalinomembrane disease and intercranial hemorrhage, and 6% fall in the group of rare other causes.
Conclusion: The high percentage of death of these newborns is determined by maturity and adaptability of these newborns.

Keywords: Placenta praevia, newborns, morbidity, mortality

215 (CASE REPORT)

Conservative management of placenta increta - a case report - Belo Horizonte, Minas Gerais, Brazil

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Introduction: Placenta accreta (PA) is characterized by an abdonrmal implantation of the placenta into the uterine wall. There are three different types of accretism, in wich PA is defined as superficial invasion, placenta increta is middle layer invasion and placenta percreta as deep invasion of the myometrium. PA can cause massive hemorrhage leading to maternal morbi-mortality. We will presenta a case report of a 32 years old woman with expectant management of placenta increta and make a review of conservative management of accretism.
Clinical cases and summary results: L.A.S., a 32 year old nullipara, 28 weeks 3 days gestational age from Santo Antônio do Monte, Minas Gerais, Brazil. She had known chronic hypertension with further severe superimposed preeclampsia. She was referred to a high complexity maternity hospital in Belo Horizonte, Minas Gerais, Brazil, on may 19, 2015. Her BP was 160/120mmHg and she had frontal headache. The ultrasonographic evaluation has showed anterior placenta with no signs of invasion, IUGR (EFW 977g - under the 10th percentile) and reverse end-diastolic blood flow in umbilical artery. Magnesium sulfate was initiated, and c-section was performed. Newborn's Apgar score was 6 and 8, and birth weight was 725g. During the surgery placenta increta was diagnosed, as it reached the myometrium. The surgeon was not able to remove it completely, and the placenta was partially left on the uterine wall. Uterus was preserved and the patient remained sable. She was discharged after four weeks of intra hospitalar observation, without any additional

bleeding. Her endovaginal ultrasonography on june 8th showed an heterogeneous endometrium, poorly delimited of 1,9 mm thick and a myometrial heterogenity in the anterior entometrial wall measuring 28x6,7mm. She was followed on our service remained stable and with no infecction after 10 months. Her ultrasound scan made on that period has shown no residual placental-like image inside her uterus, with return to regular menses and negative B-HCG.
Conclusion: Nonsurgical conservative management has been used successfully tomanage some women with placenta accrete, shoing that with a good follow up and strict surveillance, it is possible to avoid a hysterectomy, mainly in patients that desire have future pregnancies.

Keywords: Placenta accreta, placenta increta, conservative management

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The pregnancy outcomes associated with placenta previa and placenta accreta

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Introduction: Placenta previa poses a high risk for massive hemorrhage. This condition increases the risk of maternal and neonatal mortality and morbidity. In cases of placenta previa, the prenatal prediction of sudden bleeding during pregnancy and blood loss during Cesarean section, and the assessment of risk for adherence of the placenta using an ultrasound examination, can improve the perinatal outcome. In women who have had a prior cesarean delivery, placenta previa increases the risk of placenta accreta, risk increases significantly as the number of prior cesarean deliveries increases (from about 10% if they have had one cesarean delivery to >60% if they have had >4).
Materials and methods: The aim of this retrospective cohort study was to evaluate the pregnancy outcomes in patients with placenta previa (PP) and placenta accreta (PA). This was a retrospective study conducted in the Odessa oblast perinatal center during 5 years. A total of 262 pregnancies complicated by placenta previa with ($n = 62 - 2.4\%$) and without ($n = 200$) placenta accreta were reviewed. Maternal and neonatal data were obtained from medical records and the hospital database system.
Clinical cases and summary results: Total number of deliveries during this period is 19.486. The incidence of placenta previa was 1.35%. Mean age of presentation was 29 ± 2.2 yrs. Multigravidae were 61.8% of women, 64.1% presented between 28–34 weeks gestational age. Among them 188 (72%) of women had previous history of surgical intervention. During cesarean delivery 85 (32.4%) patients had bled massively, among them placenta accreta was in 62 patients and placenta increta or percreta in 14 patients, and in 18 patients uterine atony was the cause of massive bleeding. Cesarean hysterectomy was performed in 26 patients and bilateral mass uterine artery ligation with uterine packing in 68 patients. These patients required blood transfusion. Perinatal mortality was 16- 6.1% cases and maternal mortality was nil.
Conclusion: Early diagnosis of placenta previa and accreta and timely intervention with arrangement of blood transfusion, and a good anesthetic, surgical and pediatric team improves maternal and perinatal outcome.

Keywords: Placenta previa, placenta accreta, antepartum and postpartum haemorrhage, maternal mortality, perinatal mortality

482 (CASE REPORT)

Massive obstetric hemorrhage due to placenta increta during second trimester pregnancy termination: a case report

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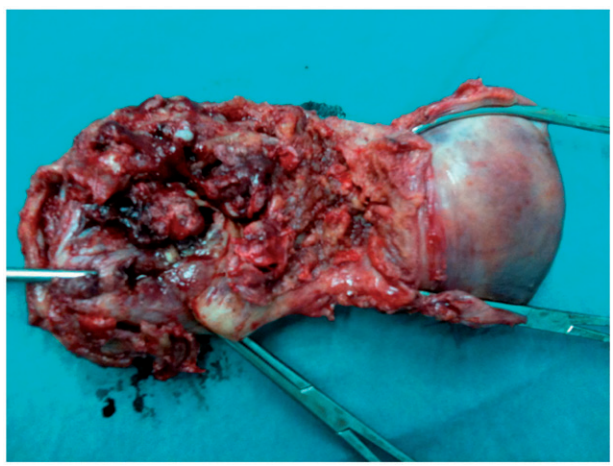
Presenter: **Mustafa Ozturk**

Introduction: In this case report, we aimed to inform about massive hemorrhage due to placenta increata during the abortion process and emphasize the importance of fast decision making in management.
Clinical cases and summary results: An eighteenth week pregnant woman was diagnosed with anhydramnios and absence of fetal heart pulse. Due to massive vaginal bleeding during pregnancy termination procedure, hysterotomy was decided and performed immediately. Failure to achieve bleeding control and detection of placenta increata led to hysterectomy
Conclusion: In the termination procedure of the second trimester pregnancy anomalies of placenta insertion should be thoroughly considered. Morbidity and mortality can be avoided with early diagnosis and fast decision making for management.

Keywords: Induced Abort, Massive Uterine Hemorrhage, Placenta Increata



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Placental abruption as an emerging problem in preterm delivery

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Presenter: **Aleksandar Curkovic**

Introduction: Placental abruption(PA)is one of the most severe complications during pregnancy. In practice it affects 0,5 - 0.7% of all deliveries, our task is to be very vigilant about it occurrence, namely for it high fatality for mother and infant and to see through delivery patients with diagnosed partial and total PA, occurring before 37 gestational weeks (GW). Also we must follow the conditions of the neonates after delivery, comparing the data with the control group, without PA, with delivery before 37GW.
Materials and methods: Test group- 53 patients with PA. 46 of them had CS. Control group-100 patients with preterm labor, without PA. 24 had a CS. All the results were statistically tested.
Clinical cases and summary results: PA had a much higher rate of CS (87.6:24%)-ratio of the duration of hospitalization was 4.1:1, for test group, cost was 5.7 times higher. Deliveries were much shorter in test group, and consumption of blood derivates was 4.0 times higher. Control-neonates had higher Apgar score (8.77:6.83). Control group lost none neonate intrapartum-test had 3. One postpartum hysterectomy in test-control group none. Average gestation:test 34.2 GW, control 35 weeks 6 days.
Conclusion: Test-much higher rate of previous miscarriages, renal failure, hypertension, gestational diabetes and anemia. Age-no influence. Placental insertion was mainly on the front wall-test, control-evenly spread. Previous uterine operations had 19 (35.4%)-test, control-9(9%). Even though it makes up to 0.7% of all deliveries PA is the highest rate killer during delivery, pre or in term - It has to be always on our minds.

Keywords: Placenta, Abruption, Preterm, Delivery, Complications

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Genetic polymorphisms of folate cycle genes and their role in the formation of retrochorial hematoma

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Presenter: **Irina O. Bushtyreva**

Introduction: Due to the relatively high frequency of retrochorial hematoma occurrence (4% -22%) and its adverse effects on pregnancy outcome (the increase of risk of spontaneous abortion above 2.18 times and premature birth - 1.4 times) the search for the risk factors of pregnancy complications still continues. The role of genetic polymorphisms of the folate cycle is also actively studied.
Materials and methods: The study included 245 patients who were examined and treated in the Rostov-on-Don State Perinatal Center from 2011 to 2016. All patients were divided into 2 groups: the first group (I) - 172 patients with retrochorial hematoma detected in gestation of 6 to 12 weeks, the second (control) group (II) -73 patients without retrochorial hematoma. The average age in the group I comprised 30 ± 4.8 years, in the 2d group - 29,4 ± 5,4 years ($r \geq 0{,}05$). The groups were comparable. A genotyping of polymorphisms of folate cycle in the peripheral blood was conducted: MTHFR C677T, MTHFR A1298C, MTR A2756G, MTRR A66 G. Tests for compliance of equilibrium of the Hardy - Weinberg and the identification of associations was carried out by DeFinetti program.
Clinical cases and summary results: Genotype distribution matched the expected balance at Hardy-Weinberg equilibrium in the group with retrochorial hematoma and in the control group for all polymorphic loci of studied genes. In identifying the relationship between genotype and chorionic detachment using the criterion $\chi 2$ significant association was found only for the gene MTHFR A1298C. In carriers of the heterozygous form of the gene MTHFR the risk of retrochorial hematoma fornation increased 1.865 times (OR = 1,865; CI [1,035-3,359], chi2 = 4,36, p = 0.03677). The link was also confirmed in the dominant model, which suggests that the effect on penetrance appears both in homozygous and in heterozygous for an allele 1298C ([AA] [AC + CC]) (OR = 1,738; CI [1,000-3,019], chi2 = 3,88, p = 0.04890). Obtaining this reliable link can prove the fact that this mutation is a risk factor of retrochorial hematoma. In the analysis of polymorphisms of MTHFR C677T, MTR A2756G and MTRR A66G association with retrochorial hematoma was not detected.
Conclusion: In heterozygous form the polymorphism A1298C of the MTHFR gene increases the risk of retrochorial hematoma 1,865 times. This gene mutation leads to a decrease in MTHFR activity, that transforms the dietary (food) folate and synthetic form of folic acid in a biologically active L-methylfolate. Vitamin and mineral complexes that contain folic acid and its active form metafolin can be an effective tool of folate deficiency preventing.

Keywords: *Genetic polymorphisms, folate cycle genes, retrochorial hematoma, metafolin, folic acid, vitamin and mineral complexes*

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The management of placenta praevia and accreta: three cases reported

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Presenter: **JM Xiberta**

Introduction: Placenta accreta, is a rare obstetric condition with the risk of massive intraoperative haemorrhage and urologyc complications. Previous cesarean deliveries is the most important risk factor. Although it is difficult to diagnose placenta accreta antenatally, an accurate diagnosis is one of the most important objectives for the successful management of maternal haemorrhage; and this can be achieved using magnetic resonance imaging and ultrasonography.
In women with a final diagnosis of placenta increta or percreta, antenatal diagnosis was associated with reduced levels of haemorrhage and a reduced need for blood transfusion . Making no attempt to remove any of the placenta prior to hysterectomy is associated with reduced levels of haemorrhage and a reduced need for blood transfusion.
Clinical cases and summary results: We present three cases of placenta praevia and placenta increta or percreta.
In all cases, previous cesarean section was the main risk factor. In cases number 2 and 3, previous diagnosis to delivery of placenta increta or percreta was carried out by ultrasonography and magnetic resonance imaging, and protocols to prevent massive haemorrhage during delivery were established (preoperatory cistoscopy, ureteral stent and bilateral prophylactic occlusion balloon catheters placed in both internal iliac arteries). In case number one, placenta increta wasn't diagnosed antenatally.
In case number one, after delivery, the attempt to remove the placenta was followed by massive haemorrhage. An emergency peripartum hysterectomy was carried out and 16 units of packed red blood cells were transfused. Injury to the bladder was produced and repaired.
In cases number 2 and number 3, after cesarean section, programmed hysterectomies were carried out and in case number 2 5 units of

packed red blood cells were transfused, while in case number 3 only 2 units were needed.
No urological injuries were noticed.
Conclusion: Many cases of placenta accreta, increta, and percreta are currently not diagnosed antenatally, despite the presence of risk factors.
In women with a final diagnosis of placenta increta or percreta, an antenatal diagnosis is associated with reduced levels of haemorrhage and a reduced need for blood transfusion
The use of prophylactic occlusion balloon catheters could reduce the need for transfusion.
Preoperatively cistoscopy and ureterals stents could reduce the risk for urologyc complications.

Keywords: Placenta praevia, increta, percreta, massive haemorrhage

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Uterine rupture due to the placenta percreta in second trimester of pregnancy

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Presenter: **E. Kudela**

Introduction: Placenta percreta presents abnormal implantation of placental villi which invade and penetrate the myometrium. Abnormal placentation including also placenta accreta and increta has become the most common cause of postpartum hysterectomy. In most cases it occurs in the third trimester leading to life-threatening uterine perforation and postpartum bleeding. Spontaneous uterine rupture in the second trimester of pregnancy is an extremely rare complication. High risk factors are previous scars on the uterine myometrium including myomectomies and caesarean sections, dilatation and curettage, advanced maternal age, in vitro fertilization procedure and abnormal placentation.
Clinical cases and summary results: A 27-year old primgravida in 17th week of gestation was admitted to our department with abdominal pain and vomitus lasting twelve hours. She had a history of no previous operation on the uterus and she was diagnosed with tuberous sclerosis four years ago. The ultrasound confirmed a free fluid in small pelvis and a living fetus inside the uterine cavity. An exploratory laparoscopy was indicated that was due to the massive haemoperitoneum converted to laparotomy. The fundus of the uterus filled with placental tissue was completely perforated in length of 7 cm and the fetus was expulsed in the abdominal cavity. The other internal organs were undamaged. We proceeded with the resection of altered myometrium, curettage of uterine cavity and suture of myometrium in two layers. The blood loss was estimated to be 3000 ml. After the surgical procedure the patient was fully compensated and the follow up with bHCG controls until the zero value was advised.
Conclusion: Spontaneous rupture of the uterus due to placenta percreta is one of the most acute obstetrical complications resulting in quick exsanguination and high mortality. Haemoperitoneum and uterine bleeding need an urgent surgical treatment along with postpartum hysterectomy. In this case we decided for conservative treatment with strict follow up of the patient with regular laboratory and ultrasound controls.

Keywords: Placenta percreta, uterine rupture, haemoperitoneum

735 (CASE REPORT)

Successful conservative management of placenta accreta

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I. Mejía Jiménez

Introduction: Placental accretism is a rare, and potential severe complication of pregnancy, that can lead to hemorrhage, puerperal infection and hysterectomy.
The main risk factor is the presence of placenta previa. The frequency of accretism among women with no placenta previa increases as the number of uterine scars do.
Placetal accretism represents a diagnostic challenge during pregnancy, and most of the cases are recognized after a high clinical suspicion (based in patient's clinical history) and indirect signs in ultrasonography.
Although the standard treatment is cesarean section and histerectomy, this compromise patient's fertility.
We present a clinical case of a primigesta with no risk factors, that presented placenta accreta with a succesful outcome after a conservative management.
Clinical cases and summary results: A 38-y-o patient with a history of shortened cervix in the current pregnancy was admitted to our hospital at 28 + 0 GW with an acute preterm labour and metrorrhagia diagnosis. In the US scan it was not possible to rule out any accretism area on the anterior uterine wall and fundus.
We assisted a spontaneous vaginal birth at 30 + 2 GW, being impossible to deliver the placenta with conventional maneuvers. As the bleeding stopped, and the patient had no other children, we decided to follow a conservative approach with the patient's approval, who was aware of the risks implied. We administered broad-spectrum antibiotics and performed a prophylactic uterine arteries embolization. On the 2nd day of puerperium, a temperature peak up to 39°C was registered, so a second embolization and subsequent manual curettage were performed, achieving a succesfull delivery of the whole placenta. Afterwards, no fever was registered, and the patient was dismissed 10 days later with general wellbeing.
Conclusion: Uterine conservation is an option in patients with fertility sparing desire, or when the risk of hemorrhage or other organs lesion would be high if a hysterectomy was performed. It's a posible approach if there's a consensus with an aware patient, considering the possible risks of infection, hemorrhage, later hysterectomy or adverse future obstetric outcomes. Delayed hysteroscopy to take away the remnants of the placenta may be a successful option, but there is limited expierence on this issue.

Keywords: Placenta accreta, uterine arteries embolization

CESAREAN SECTION - 011

Genital injuries in neonates following breech presentation: is early caesarean indicated?

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Introduction: Breech presentation is seen in 3–4% of babies born. Delivering a breech baby through vaginal route is difficult and carries a much higher complication rate than cesarean sections. Breech born babies carry an overall increased risk of maternal morbidity, neonatal mortality, birth asphyxia and birth injuries. Various types of birth injuries to the babies have been reported following breech delivery, but genital injuries are less commonly reported and thus, less anticipated. These injuries can lead to significant short and long-term morbidity in these babies. Keeping high index of suspicion, an early cesarean section could have been an aide in preventing these complications.

Materials and methods: We report here spectrum of genital injuries in 6 neonates (3 males and 3 females), delivered in a tertiary care hospital after prolonged labor.

Clinical cases and summary results: We present here spectrum of genital injuries following breech delivery in six neonates. Table 1 gives comparative details of these cases. Case 1, 2 and 3 were male babies who presented with scrotal and penile swelling with redness and tenderness. Case 1 (Figure 1) and 2 showed no blood flow on Doppler ultrasound and thus were taken for urgent surgical exploration. Both were found to have bilateral blackened and necrotic testis, for which bilateral orchidectomy had to be done (Figure 1, 2a, 2b). Case 3 had similar clinical presentation at birth, with Doppler ultrasound suggestive of epididymitis and normal flow to both the testis. Cases 4, 5 and 6 were female babies who suffered labial injuries after birth. Case 4 had posterior forcehette tear that was repaired immediately after birth (Figure 3). Babies needing surgical exploration were treated with intravenous antibiotics for 10 days, though blood culture was sterile. Rest four babies, who did not require surgical intervention, were given prophylactic amoxicillin clauvillinic acid. All these cases were born after a prolonged period of labour.

Conclusion: Genital injuries following breech delivery is an under reported entity. Considering the grave prognosis of these injuries, a cesarean section should be considered early in breech presentations. This will help in preventing these significantly morbid complication and thus, optimizing the perinatal outcome of breech deliveries.

Keywords: Neonate, breech, genital injury, testicular torsion, labial injury

Table 1. Comparative details of the cases.

Parameter	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Gestation	Term	Term	Term	Term	Term	Term
Parity	3rd	2nd	1st	2nd	1st	1st
Duration of labour	23 hours	24 hours	18 hours	30 hours	20 hours	14 hours
Mode of delivery	Caesarean (indication-breech with obstructed labour)	Caesarean section (indication-previous caesarean with failure of trial of vaginal delivery)	Breech vaginal delivery	Breech vaginal delivery	Caesarean (indication-Primi with breech presentation)	Breech vaginal delivery
Birth wt (kg)	2.9	2.6	2.5	2.2	3.3	2.4
Gender	Male	Male	Male	Female	Female	Female
Genital Examination	Scrotal and penile swelling with reddish discoloration and excoriation of the overlying skin	Scrotal and penile swelling and reddish discoloration of scrotal skin	Scrotal swelling with bluish-reddish discoloration	Labial edema with bleeding per vaginum. Tear of posterior forchette present	Labial edema with bluish discoloration and tenderness.	Hematoma present bilaterally over labia minora
Colour Doppler and ultrasound	Absent blood flow to both testes suggestive of necrotic testes (5 hours)	Decreased blood flow to both testes, left more than right (3 hours)	Normal blood flow to both testes, Features suggestive of bilateral epididymitis.	Not done	Not done	Not done
Co morbid conditions	Birth asphyxia and sepsis	Sepsis	None	None	None	None
Specific Treatment	Surgical exploration; revealed blackened, enlarged and edematous bilateral testes, bilateral orchidectomy done	Surgical exploration, revealed necrotic testes bilaterally, bilateral orchidectomey done	Conservative management	Repair of posterior forchette tear.	Conservative management.	Conservative management.
Supportive treatment	Intravenous Piperacillin and Tazobactem for 10 days	Intravenous Piperacillin and tazobactum	Oral amoxycillin and clauvulinic acid for 5 days	Oral amoxicillin clauvulinic acid for 7 days	Oral amoxicillin and clauvulinc acid for 5 days	Oral amoxicillin and clauvulinc acid for 5 days
Biopsy	Hemorrhagic infarction of the testicular tissue	Infarction of bilateral testicular tissue	-	-	-	-

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Reoperations following cesarean section - risk factors and procedures: single center study

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Introduction: Cesarean section is the most often operation in area of minor pelvis proceed in a young women population. Each operation has a risk of complication: anesthesiological, surgical, microbiological. Reoperation is one of the most challenging procedure in postpartum period. The analysis of indications to this procedure may reduce number of these complications.
Materials and methods: A retrospective study was conducted at the Obstetrics and Perinatology Department in Cracow, between January 2013 and November 2015. During this period 5308 cesarean sections were performed and 28 (0,5%) patients were reoperated. Indications to reoperation and type of surgical procedure were analyzed.
Clinical Cases and Summary Results: In case of primary cesarean section reoperation rate was 0.45% whereas in case of more than one previous cesarean section reoperation rate was 0,7%. Planned cesarean section was followed by reoperation in 0.39%, while emergency cesarean section was complicated in 0.68%. Indications for reoperation were divided into four groups: active bleeding into peritoneal cavity (43%), hematoma (28%), uterine atony (14%) and others (14%). To other's group were included single cases of surgical failure like: massive bleeding from vagina despite medical management, acute appendicitis, dehiscence of wound and intestinal paralysis. In 19 from 20 cases of bleeding into peritoneal cavity there were added sutures and drainage. In one case B-Lynch technique was performer and in one case uterine arteries were occluded. Four patients were qualified to hysterectomy. A group of women who have undergone reoperation did not differ significantly with respect to age, number of previous pregnancies, comorbidities, drug use, and technic of performance caesarean section.
Conclusion: Emergency cesarean section and state after more than one previous cesarean section were important risk factors. The most common cause of reoperation was bleeding, which required the use of additional stitches. Awareness and diligence in securing hemostasis during cesarean section may reduce complication rate.

Keywords: Cesarean section, reoperation, bleeding

033

Uterine cesarean scar proprieties do not depend on period from previous cesarean section: elastin, collagen type VI, alpha smooth muscle actin, smooth muscle myosin heavy chain, endothelial cell marker CD31 immunoexpression in the scarred lower uterin

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Introduction: Cesarean section is the most frequently performed major surgical procedure, and its rate significantly has risen in last few years. In many cases patients are cesareased upon request and subsequent deliveries are also terminated by cesarean, due to a fear, that the uterus is weakened by the previous cesarean section. The process of myometrial wound healing determines the future morphology, functional behavior and risk of uterine scar rupture in subsequent pregnancies. Subsequently the incidence of cesarean scar defects become a problem. Despite wound healing is a normal biological process in the human body, there are multiple factors, that can lead to impaired wound healing. Local factors (oxygenation, infection foreign body, venous sufficiency) directly influence the wound proprieties while systemic factors (age, sex hormones, stress, ischemia, diabetes, obesity, alcoholism, smoking) are the overall health or disease state of the individual that affect the ability to heal. The wound repairing is conditioned by a fibro-proliferative response involving mediators, blood cells and extracellular matrix parenchymal cells . All this process overlaps in three phases: inflammation (onset of injury to days 4–6), tissue formation (days 4–14), tissue maturation and remodeling (week 1 to year 1). There is no evidence to support the theory, that optimal myometrial structure and functional integrity with minimal risk of uterine scar rupture in a subsequent pregnancy are obtained 24 months after cesarean section. We postulate that uterine cesarean scar proprieties in the next pregnancy do not depend on period from previous cesarean section. The aim of the study was to analyze changes of myometrial elastin, collagen type VI, alpha smooth muscle actin, smooth muscle myosin heavy chain, endothelial cell marker CD31 immunohistochemical expression in scarred uteri, depending on interdelivery period in term pregnancies.
Materials and methods: Eighty healthy pregnant women, who underwent previously one cesarean section were analyzed. Depending on period from previous cesarean section, women were divided into three groups: group 1 (12–17 months, n=3), group 2 (18–23 months, n=11), group 3 (more than 24 months, n=66) . During cesarean section, a sample of uterine lower segment was collected and fixed in buffered 4% formalin for immunohistochemistry (IHC) analysis. During a multi-step process, detecting the target antigen with antibodies was performed for identification of elastin, collagen type VI, alpha smooth muscle actin, smooth muscle myosin heavy chain, endothelial cell marker CD31.
Clinical Cases and Summary Results: There were no differences in myometrial immunoconcentration of elastin, collagen type VI, smooth muscle myosin heavy chain, endothelial cell marker CD31 in analyzed groups, which means that uterine cesarean scar proprieties do not depend on interpregnancy interval length period. However, the myometrial immunoconcentration of alpha smooth muscle actin was significantly higher in patients, where cesarean section was

performed in period less than 2 years from previous caesarean, than those who were delivered later.
Conclusion: In conclusion we suggest that uterine cesarean scar proprieties do not depend on period from previous cesarean section, but this suggestion still requires the availability of well controlled clinical studies on the topic of recommendations.

Keywords: Uterine scar, uterine rupture, cesarean section, elastin, collagen type VI, alpha smooth muscle actin, smooth muscle myosin heavy chain, endothelial cell marker CD31

035

Carbetocin in prevention of uterine atony following delivery by cesarean section - Polish multicenter retrospective study of cost and resource utilization

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Introduction: Postpartum hemorrhage (PPH) is not only a traumatic experience for both the patient and medical staff but also a cost-absorbing event for the hospital. The aim of the study was to estimate the resource utilization and costs related to carbetocin use in prevention of uterine atony following delivery by Cesarean section in comparison to standard methods (oxytocin) based on data from three medical centers in Poland.
Materials and methods: This was a multicenter retrospective study based on data from patient medical records. The questionnaire was developed to gather resources used and costs related to the prevention of uterine atony as well as the management of PPH. The questionnaire covered two perspectives: hospital and public payer. Six subpopulations were considered depending on patient characteristics or PPH occurrence.
Clinical cases and summary results: 275 medical records were included into the study: 135 and 140 for carbetocin and oxytocin, respectively. The subpopulations were quite homogenous between centers and treatment arms, which was a premise for pooling the data. Real practice data confirmed that carbetocin was very well tolerated. In five of six considered subpopulations, use of carbetocin instead of oxytocin generated overall savings ranging from 25 to 1500 EUR. The highest savings were observed in a population that experienced severe PPH. According to the study results, the cost of services related to Cesarean delivery, prevention of uterine atony, and PPH management borne by the hospitals was higher than the refund received from a public payer for these medical services. Nevertheless, the loss generated by this underfunding was lower in the carbetocin group versus oxytocin.
Conclusion: Use of carbetocin in uterine atony prevention is safe and generally brings savings to hospitals. The study provides very important information on underestimation of the medical services related to Cesarean delivery and PPH by Polish National Health Fund.

Keywords: Carbetocin, uterine atony, Cesarean delivery, cost and resource utilization

049

Obstetric care at the hospital Estadual da Mãe-Mesquita -RJ - Brazil

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Introduction: The Federal Government decided for the policy of building two big maternities (>5000 births/year each), one for low and medium risk pregnancies: Hospital Estadual da Mãe (Mother's State Hospital) - RJ - Brazil and another for high risk pregnancies: Hospital da Mulher (Women's Hospital) - RJ - Brazil, in Baixada Fluminense, an area with 3 500 000 inhabitants and 11 counties - Rio de Janeiro State - BR.
Materials and methods: The Mother's Hospital has the following infrastructure: reception area (5 offices and 4 observation beds), 12 delivery rooms, the mother's area (for the use of non-pharmacological methods for analgesia during labor) between the delivery rooms, 2 operating theatres (next the delivery rooms, across a hall), 35 double apartments (70 patients), 1 intermediate newborn care (8 beds). The human resources include all specialists necessary to the care: 42 obstetricians, 12 obstetrical nurses, 21 pediatricians, 21 anesthesiologists, extra nurses for supporting, divided in teams 24 hs/7 days and physiotherapist, psychologist, nutrician, social worker, phono audiologist, breast feeding nurse. The method is the Humanizing Delivery Program. The humanized delivery consists of a set of behaviours and procedures that are intended to promote healthy labor and birth, and the prevention of maternal and perinatal morbidity and mortality. The scientific evidence was the basis for the Program for Humanization of Prenatal and Birth (Ministry of Health 2000). However, its implementation is hampered by problems dependent on its actors: the patient (culture), health professionals (training and update) and managers (training and prioritization of resources). The analysis was made with the SigQualis program.
Clinical cases and summary results: Humanized birth ($n = 6688$) resulted in:
1. A low cesarean-section rate (24%, 1605)
2. A low rate of episiotomy (23.95%)
3. Three cases of maternal deaths in 2015
4. Intrapartum fetal death rate 5.6/1000
5. Early neonatal death rate 4.07/1000
6. Early neonatal death rate (2,500 g) 1.97/1000
9. Asphyxia neonatal 11/1000
10. Mother's satisfaction 99%
Conclusion:
1. The results show that it is possible to implement a Humanizing Birth Program.
2. Although the unit is reference for low risk pregnancies, it receives many high risk patients due to a bad reference system.
3. As the unit was planned to be a low risk one it does not have a neonatal intensive care unit (NICU), but just an intermediate care unit
4. The prenatal care in primary care units is of bad quality, so many patients come with problems (preeclampsia/eclampsia and many others)

Keywords: Cesarean sectiion, labor, delivery, perinatal mortality

163 (CASE REPORT)

Pyoderma gangrenosum in the operative wound after caesarean section

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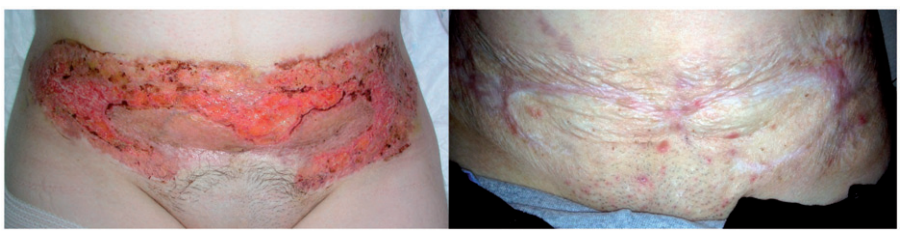
Introduction: Pyoderma gangrenosum is a rare ulcerative cutaneous disease. Diagnosis is based on symptoms, signs, disease progression and elimination of other causes. There are no typical histopathologic or laboratory features. The etiology of the disease is poorly understood. Lesions occur spontaneously, after surgery or after an injury. We present the case of a 23-year old patient with a skin ulcerative lesion after caesarean section. The wound was not healing properly despite standard care, surgical intervention and antibiotic therapy. On 21. postoperative day pyoderma gangrenosum was diagnosed and proper therapy with high doses of corticosteroids was introduced. Early diagnosis and treatment of this disease is crucial in order to limit the spread of the disease and scarring.
Clinical cases and summary results: 23-year old patient was admitted at 33 6/7 weeks of gestation. Emergency caesarean section for suspected abruption of placenta was performed. Perioperatively she received cefazolin 1g i.v. On day 3 Cefuroxim 500 mg/8h p.o. was introduced. On day 7 wound developed periincisional erythema and corner ulcerations. Severe wound pain was present. Ceftriaxone 2g i.v. and Clindamycin 600 mg/8h i.v. were introduced. Inflammation, violaceous coloured wound borders and serohemorrhagic discharge was observed. On day 14 plastic surgeon dehisced the wound. The wound expanded in a butterfly shape with granulation,necrotic tissue and ulcerations at the borders with surrounding erythema. On day 21 pyoderma gangrenosum was diagosed and piperacillin with beta lactamase and methylprednisolone 125 mg i.v./day was started. Topical Diprogenta® gel and Inadine® gaze was used. After 72 hours the wound defect stabilized and the pain diminished.On day 54 patient was discharged with decreasing doses of daily methylprednisolone.
Conclusion: Pyoderma gangrenosum is a rare ulcerative cutaneous disease best diagnosed by dermatologyst. Diagnosis is frequently missed due to the rarity of the disease and is based on symptoms, signs, progression and elimination of other causes. Early diagnosis and treatment is crucial to limit the spread and scarring. Therapy includes high doses of corticosteroids and antibiotics to prevent secundary infection. 8 months after the surgery the wound was completely healed with a large ''parchment paper'' scar.

Keywords: Pyoderma gangrenosum, cesarean section, wound, complication, corticosteroids, cutaneous ulcers



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The impact of cesarean delivery on immediate and short-term outcome of late preterm infants

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Introduction: To evaluate the immediate and short-time outcome of the late preterm infants born after cesarean delivery resulting from a mono fetal pregnancy in a cephalic presentation.
Materials and methods: One-year (2013) mono centric retrospective study, comparing 2 populations of late preterm infants distributed by mode of delivery in neonates born by vaginal birth and by cesarean section. The comparison was made between the neonatal morbidities and the medical assists until the end of the first hospitalization.
Clinical cases and summary results: During the period of the study, 214 neonates were compiled: 132 were born by vaginal delivery and 82 by cesarean section. In this population, regardless the effect of possible confounders, the impact of cesarean delivery was significant on increasing the risk of having an Apgar score lower than 5 at the first minute (ORa = 5.3 $p = 0.008$), developing a neonatal distress syndrome (ORa = 1.41 $p = 0.021$), a transient tachypnea (ORa = 1.96 $p = 0.011$), requiring a neonatal intensive-care-unit admission (ORa = 2.07 $p = 0.001$) and having a length of hospital stay more than 10 days (ORa = 5.76 $p = 0.008$). In the two groups matched by confounders, the newborns resulting from cesarean delivery had required more oxygen therapy and invasive ventilation (p=0.035) and had acquired feeding autonomy later than the others (1.5 days versus 1 day p=0.05)
Conclusion: The choice of delivery mode, in this context, should consider the risks associated with cesarean section.

Keywords: Neonatology, neonate, late prematurity, delivery (procedure), cesarean

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Demographic features and pregnancy outcomes among women who undergone cesarean section without medical indication

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Introduction: To identify demographic features and pregnancy outcome among women who undergone cesarean section without medical indication.
Materials and methods: A retrospective study was conducted including 48 women who gave birth by cesarean section without medical indication (study group), compared to 48 women, randomly selected, who gave birth vaginally (control group). Deliveries occurred between the years 2009 and 2012 in a tertiary medical center. Using a questionnaire and medical records, demographic characteristics and pregnancy outcomes were compared between the two groups.
Clinical cases and summary results: Women who had cesarean section without medical indication are elder than those who delivered vaginaly (34.0 ± 6.2 versus 29.2 ± 5). There was no statistical significance in pregnancy complications (Gestational Diabetes, Hypertension, Intrauterine growth retardation, polyhydramnios, oligohydramnios or vaginal bleeding) between two research groups, accept higher Body mass index (29.4 ± 4.5 versus 26.7 ± 3.5) and longer hospitalization (5.29 ± 1.6 versus 3.42 ± 1.1) in the study group. Likewise, there were no statistical or clinical significance in pregnancy outcomes between the two groups. Vacuum birth in the past rate higher in women who had cesarean section without medical indication compared with women who had vaginal delivery (25% versus 2.1%).
Conclusion: Women who had cesarean section without medical indication are elder, with a high body mass, single or divorced and with a high rate of vacuum births in their past.

Keywords: Cesarean section without medical indication, vaginal delivery, demogrphic characteristics, pregnancy outcomes

	Cesarean delivery N=48	Vaginal delivery N=48	P value
Age (years)	34.0±6.2	29.2±5	<0.001
Gravidity	3.6±2.3	2.75±1.8	NS
Past vacuum delivery	12(25%)	1(2.1%)	0.001
Body mass index	29.4±4.5	26.7±3.5	0.004
Hb (gr/dL)	10.0±1.2	10.8±1.2	0.002
Maternal hospitalization (days)	5.29±1.6	3.42±1.1	<0.001
Neonatal hospitalization (days)	4.31±1.2	3.1±0.8	<0.001

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Relationship between postpartum women's sexual self and their sexual quality of life

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Introduction: Sexuality-related issues concerning the society in terms of the overall health rank the first among health problems which make people unhappy. The postpartum sex life is not addressed adequately within the scope of healthcare services given during pregnancy and after childbirth. Women's sexual self-schema has an effect on sexual intercourse, sexual stimulation, imaginary competence, emotions and sexual experience. Considering that most of the studies conducted in Turkey have focused on sexual dysfunction, this study is thought to contribute to the understanding of sexuality and sexual quality of life by investigating and evaluating the sexual self-schema concept.
Materials and methods: This cross-sectional study was conducted in order to determine the relationship between postpartum women's sexual quality of life and their sexual self-schema. The study sample included 134 women who gave cesarean birth to the obstetrics clinic or outpatient clinic of Cumhuriyet University Health Services Research and Application Hospital between May 5 and November 5, 2014. To collect the study data, the ''Personal Information Form'', ''The Sexual Quality of Life-Female (SQOL-F) questionnaire'' and "Sexual Self-Schema Scale" were used. The data were evaluated in the SPSS (22.0) software package and tabulated through the use of averages, standard deviations, percentages, the two samples t test, the one-way analysis of variance. Statistical significance was examined at the level of $p < 0.05$.
Clinical cases and summary results: The total mean score the participants obtained from the sexual self-schema scale was 133.29 ± 23.8. The mean scores they obtained from the subscales were as follows: 50.23 ± 10.2 from the romantic/passionate subscale, 44.15 ± 11.5 from the embarrassed or conservative subscale and 38.89 ± 6.3 from the open/direct subscale. Their mean score for the Sexual Quality of Life-Female (SQOL-F) questionnaire was 71.97 ± 12.98. There were statistically significant differences between the mean scores the participants obtained from the SQOL-F questionnaire in terms of their socio-demographic and obstetric characteristics such as education, family type, etc. ($p < 0.05$). There were statistically significant differences between the mean scores the participants obtained from the Sexual Self-Schema in terms of the variables such as education, family type, and place of residence ($p < 0.05$). There was a low positive correlation between the participants' sexual quality of life and sexual self-schema.
Conclusion: The participating women's sexual quality of life and perception of sexual-self levels can be said to be moderate. Increased perception of sexual self positively affects sexual quality of life. There was a low, positive correlation between the participants' sexual quality of life and sexual self-schema.

Keywords: Postpartum period, sexual self, sexual quality, women

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Evaluation of complications and risk factors for umbilical cord prolapse, followed by cesarean section

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Introduction: Considering the rarity of umbilical cord prolapse (UCP) and lack of accurate data about the risk factors and health outcomes, we aimed to evaluate cases of cesarean section (CS) due to UCP in order to reduce treatment costs and provide information about the mortality and morbidity associated with this condition.
Materials and methods: Of 35 259 cases of CS performed in four hospitals during 2004–2012, 103 cases of UCP were selected as the case group, on the other hand, 318 cases without UCP were classified as the control group. Information was extracted from patients' records and analyzed by SPSS version 18.
Clinical cases and summary results: Prevalence of UCP was estimated at 0.2%. In the case group, cord prolapse in the active phase of labor was reported 1.4 times (81% versus 57% — p <0.00), engagement 8 times (14% versus 2% — p <0.001), transverse presentation 8 times (6% versus 2% — p <0.002), grand multiparity 3.9 times (4% versus 0 — p <0.001), oligohydramnios 4.7 times (5% versus 0 — p <0.0001, and polyhydramnios 5.9 times (6% versus 0 — p <0.001). UCP was more prevalent in post-term deliveries (p <0.043). One-minute Apgar score <7 was 3 times more prevalent in neonates of the case group (p <0.00). Prepartum vaginal bleeding was 4 times more common in the case group, compared to the control group, also, decreased fetal movement and heart rate drop were more prevalent in the case group. Mortality rate was 5.2% in the case group and 1.7% in the control group. Overall, the control group had a better general health at discharge, compared to the case group.
Conclusion: A statistically significant correlation was detected between UCP and gestational age, active phase of labor, fetal presentation, engagement, parity, and amniotic fluid volume.

Keywords: Complications, CS, risk factors, umbilical cord prolapse

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Differences of post caesarean section treatment based on operation's weekday

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Introduction: It is important to attend the patients in post operation period. The doctor is changing the treatment everyday based on patients' conditions. It is very important to reduce the treatment by days if the section cesarea is uncomplicated. Midwives are very important in the follow up process of uncomplicated section caesarean.
Materials and methods: We included in this study all uncomplicated section caesarean for the period Jan 2012 to Dec 2014 performed in Tirana University "Queen Geraldine" Hospital. This group of operated patients is divided in two subgroups: operated in weekend and operated in weekdays.
Clinical cases and summary results: If we will calculate the intravenous liquids administered in two groups resulted to be increased with 28%. It is very important the difference between two groups in administration of antibiotics that resulted 23 % higher in the group operated in weekend compared with the other group operated in weekdays. Oxytocin administration resulted to be 14 % higher in the weekend group of operated patients. Administration of analgesics is increased by 9 % in weekend groups. The patients satisfaction was much more higher in weekdays compared with weekend because the frequency of midwives visits to the patients is lower in weekends as well as blood pressure measured by midwives is in frequency difference by 48 minutes. The same difference is for fever measure, respiratory frequency and pulse rate. The hospital stay is higher in weekend other than weekdays.
Conclusion: Comparison between two groups operated in weekend and operated in weekdays shows differences in overtreatment and lower attention for patients from their doctors and midwives. Days off influenced directly the consultations of operated patients. The individual treatment cost for the hospital will be increased in weekend compared with weekdays.

Keywords: Cesarean section, post operation treatment, operation's weekday

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Postpartum uterine rupture

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Introduction: Uterine rupture in pregnancy is a rare and often catastrophic complication in obstetrical practice. It occurs when the integrity of the myometrial wall is compromised, and it can occur during the last weeks of pregnancy, labor or delivery. More rarely it can happen postpartum. One of the main predisposing factors for uterine rupture is the scarring of the uterus due to a previous surgery, namely caesarean sections, but also labor augmentation with oxytocin and/or prostaglandins. It can have serious complications not only to the baby (severe hypoxia, fetal demise) but also to the mother — massive postpartum hemorrhage and death. A case report with a uterine rupture after an elective cesarean section is described.
Clinical cases and summary results: A healthy 23 years-old women, G4P3, with 3 previous cesarean sections, is admitted into the infirmary at 27 weeks gestation with a placenta previa and uterine contractions. According to hospital protocol, she remains under surveillance and an elective cesarean section is performed at 34 weeks. Intraoperatory, after placenta delivery, a prophylactic dose of oxytocin is administered. Ten hours after surgery, the patient starts complaining of sharp abdominal pain. At examination, the uterus is contracted, but vaginal blood loss is higher than expected. The pain is resistant to medical therapy and keeps worsening, an ultrasound is performed, showing free fluid in the abdomen. Suspecting a post-operative complication, an emergency exploratory laparotomy is performed — after aspiration of 500 ml of blood, an anterior uterine rupture is noted, 2 cm inferior of the cesarean hysterotomy. Due to the friability of the myometrium, a repair could not be executed and so it was performed a subtotal hysterectomy. Her postoperative condition was stable.
Conclusion: Due to the high increase in the number of cesarean section, associated complications (such as uterine rupture) will occur more. The most common presentation of uterine rupture is intrapartum, but rupture can be diagnosed ante- or postpartum. In the postpartum period, a clinical diagnosis is difficult and a high

index of suspicion is essential. In our patient, the identified risk factors were multiparity, three previous cesarean sections and use of oxytocin.

Keywords: Uterine rupture, multiple cesarean section

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Assessing quality of care for women having caesarean sections in a district general hospital in the UK

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Introduction: Caesarean section is major abdominal procedure. We perform approximately 700 cases per year in our district general hospital which is about 20% of the total births. Like any procedure there are risks and benefits. When it is indicated we need to ensure clinical effectiveness, safety and maximise patient experience. We standardise our perioperative care in comparison to national (NICE clinical guideline132) and local guidelines. We completed an audit cycle regarding our caesarean section perioperative care in 2013 and 2014.
Materials and methods: In this audit and re-audit cycle, 50 cases were collected on two occasions, prospectively covering both emergency and elective caesarean sections over two sets period of 3 months in 2013 and 2014. We assessed following criteria: consenting, administering pre-incision antibiotics, completing a theatre WHO check list, duration of hospital stays, thromboprophylaxis, patient and theatre team debriefing.
Clinical cases and summary results: We noted our good practice of consenting in providing adequate verbal and written information for women's informed choice with 100% compliance to standards. Patients received pre- incision in 95% of elective caesarean section (ELCS) and 93% emergency caesarean sections (EMCS) in 2013. In 2014 100% patient had pre-incision antibiotics. VTE prophylaxis improved from 86% and 89% to 96% and 93% respectively in ELCS and EMCS. Most patients had early post-operative enhanced discharge, only 8–9% patients stayed in the hospital for 3–4 days. A culture of patient debriefing had been gradually developing from only 0 to 5% in 2013 to 55–65% in 2014. Significant improvement was noted in theatre WHO check list completion, from 10% to 96% for ELCS and from 0 to 52% for EMCS. In both the years there was lack of documental evidence of theatre team briefing which obviously needs further attention. Though we tried to avoid verbal consenting, still were happening in up to 12 to 15% of category 1 caesarean sections.
Conclusion: The audits demonstrated that with a dedicated multidisciplinary team approach and commitment it is possible to consistently improve quality of perioperative care for women having caesarean sections. Patient and staff debriefing are gradually becoming part of our routine practice to ensure women are having high satisfaction while going through a stressful life event and that the caring team members also feel well engaged and satisfied for their role and contribution.

Keywords: Caesarean section, quality

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Non-medical factors contributing to the probability of having an unplanned caesarean section

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Introduction: Rising caesarean section (CS) rates can only partially be explained by differences in maternal characteristics and socio-demographic factors. we hypothesized that non-medical factors, times of "changing shifts" and the hours around midnight would lead to different decision making and an increased probability of having a CS. this study was part of a larger study (simple study) on guideline adherence regarding cs care amongst 21 Dutch hospitals.
Materials and methods: Included for this analyses were nulliparous women who had a non-planned CS or vaginal birth with singleton vertex positioned foetus between 37 and 42 weeks gestation age. We analyzed known medical risk factors for cs (bmi, age, length, ethnicity, fetal weight, epidural, induction, non progressive dilatation and labour) and non-medical factors (teaching or non-teaching hospital, 24h availability of micro-blood testing, 24h availability of st-analysis, 24h availability of epidural, 24h availability of anesthesia, operation team in hospital 24h, free after duty, if the hospitals have cs audits and hour of birth). Hour of birth was subcategorized in three groups ("09.00–10.00, 16.00–19.00" and "22.00–01.00" and the remaining hours of the day). All were analyzed using logistic regression.
Clinical cases and summary results: From the original database of 2098 women, 708 women were eligible for inclusion. All the pre-set risk factors for caesarean birth (with exception of ethnicity) significantly contributed to the probability of having a CS. Most non-clinical factors did not contribute to the probability of having a CS. However, in the hours during changing shifts and around midnight, the risk of having a cs is significantly higher, independent of medical risk factors like labour induction, signs of fetal distress or progression.
Conclusion: In this study the non-clinical factors did not contribute to the probability of having a CS, suggesting increased availability of resources does not lower the risk. Nonetheless, time of day seems to have a pronounced effect suggesting delaying or anticipating behavior by individual caregivers. Currently, however, no clear recommendations are available indicating when a CS is required for both unreassuring fetal condition and non-progressing labour.

Keywords: Caesarean section, practice variation, non-clinical factors, decision making

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Risk factors for intolerance to early oral feeding after cesarean section

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Presenter: **H.J. Seol**

Introduction: Cesarean section is one of the most common operations worldwide and the rate is increasing globally. About 37% of pregnant women delivered by cesarean section in Korea in 2012. Early oral feeding after cesarean delivery has been reported to reduce hospital stay and the time to first breastfeeding by promoting the return of bowel function without any additional complications, compared with conventional delayed feeding that withholds a diet until the passage of flatus or stool. Although randomized clinical trials showed no detrimental effect of early oral feeding after cesarean delivery, some women experienced abdominal discomfort sufficient to refuse food. The aim of this study was to analyze the characteristics of women with intolerance to early oral feeding after cesarean delivery.
Materials and methods: A retrospective chart review was performed for women who underwent cesarean section under regional anesthesia by one surgeon (H.J.S) from January 2009 to December 2015. Early oral feeding permitted sips of water within 6 hours post-operatively, followed by liquid food on postoperative day 1 morning. If a liquid diet was tolerated, a regular diet was permitted. If the woman complained of uncomfortable symptoms sufficient to refuse any oral diet, feeding was withheld until the passage of first flatus and return of bowel movements. We classified the subjects into 2 groups according to tolerance to early oral feeding: group 1, the good tolerance group, and group 2, the poor tolerance group. Demographic characteristics and the incidence of postoperative complications were examined.
Clinical cases and summary results: Of 364 women who underwent cesarean section under regional anesthesia during the study period, 293 (80.5%) were prescribed early oral feeding after cesarean. Of those, 277 (94.5%) were in good-tolerance group and 16 (5.5%) in the poor-tolerance group. The most common symptoms in the poor-tolerance group were abdominal distension (12/16) and nausea (6/16). The two groups showed no significant differences in age, parity, gestational age at delivery, operative time, postoperative hemoglobin change, or incidence of preterm delivery, twin pregnancy, and maternal medical disease. Body mass index (BMI) in the poor-tolerance group was higher than that in the good-tolerance group (29.1±6.9 vs. 27.7±4.0, p=0.006), but there was no significant difference in pre-pregnancy BMI between the groups. Indications for cesarean section were not significantly different between the groups (Table 1). There were no postoperative complications in either group.
Conclusion: Most women tolerated early oral feeding after cesarean without any complications. BMI was higher in women in the poor-tolerance group that in those in the good-tolerance group, but no risk factor for poor-tolerance to early oral feeding after cesarean section was identified.

Keywords: Cesarean section; early oral feeding

Table 1. Demographic variables according to tolerance after early oral feeding

	Tolerance (n=277)	Poor tolerance (n=16)	p
Age (yr)	33.0±4.1	32.8±3.7	0.416
BMI (kg/m^2)	27.7±4.0	29.1±6.9	0.006
Pre pregnancy BMI (kg/m^2)	22.3±4.0	23.9±6.5	0.068
Parous	134(51.6)	8(50)	0.551
Gestational age at delivery (wk)	38.4±1.4	38.6±1.2	0.665
Preterm delivery (GA<37wks)	24(8.7)	1(6.3)	0.595
Twin	21(7.6)	1(6.3)	0.658
Complete rooming in care	77(72.2)	10(62.5)	0.282
Hypertension	22(7.9)	0(0)	0.277
Diabetes	19(6.9)	3(18.8)	0.108
Thyroid disease	18(6.5)	1(6.3)	0.727
Repeat cesarean section	121(43.7)	8(50)	0.404
Emergency cesarean section	120(43.3)	8(50)	0.393
Labor	76(27.4)	6(37.5)	0.271
Operative time (min)	45.3±12.1	44.5±18.4	0.389
Hemoglobin change (g/dL)	1.1±1.1	1.2±0.8	0.233
Complication			
Time to first flatus (hr)	27.4±17.9	37.9±21.5	0.024
Wound infection	5(1.8)	1/16 (6.3%)	0.288
Paralytic ileus	0	0	

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Premature delivery-maternal complication in cesarean section

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Presenter: **Aleksandar Curkovic**

Introduction: Premature delivery is one before 37 gestational weeks, with the MC between 28-35 days and accurate date of LMP. In our region it covers period up from 26 gw (or/and body mass of 1000 grams and more) (WHO 2003/07/13.). World population has a rate of 12%, we 5-10% with yearly increase. Deliveries can be vaginal or CS. Complications are frequent, with high risk ratio, both for mother and the neonate.
Materials and methods: Investigate maternal complications, with CS in premature birth, and compare it with control group, Methodology Two groups are formed-test and control. Test-premature CS birth patients in 2009/10.-310 of them. Control-CS term patients, same period, 100 of them. Groups had the same protocol operations, preoperative and postoperative care, according to the status and preexisting conditions. All were statistically tested.
Clinical cases and summary results: Age dispersion and the education level were the same. Test-latent period over 48 hrs with pPROM is significantly larger. Infective agents from urine and cervical smear-very different. Number, severity and outcome of complications is higher in test group. Hospitalization, blood and drug cost much higher in tested. Test-17 reoperations, control-none. Test-two hysterectomies. One fatality in tested, 3 days after reoperation.
Conclusion: CS is a method of choice in some cases, with limitation. Large number, severity and cost of maternal complications. Indications for CS are not always obstetric. Multidisciplinary approach needed in every case. Right decision in right time, adequate pre/postoperative care, operative technique, can lower the bad maternal outcome. Eradication-still very far away.

Keywords: Cesarean section, premature birth, maternal, complications

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Validation of vbac predictive models

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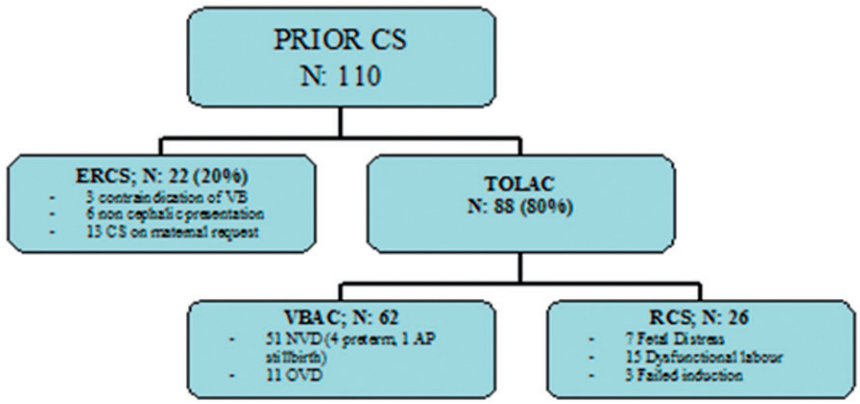
Presenter: **I. Mejía**

Introduction: In the last 2 decades the rates of cesarean section (CS) have seen a steady rise in developed countries without improving perinatal outcomes. A useful strategy addressed to reduce rising CS rates is encouraging women with a prior CS to attempt vaginal birth (VB) instead of elective repeated cesarean section (ERCS) in subsequent pregnancies. A retrospective observational study of the pregnant women with one prior cesarean delivery of 12 de Octubre hospital in the first trimester of 2016, to assess the performance of 3 statistical models already published in predicting successful VB in patients attempting a trial of labor after one previous lower segment cesarean section (TOLAC) in our population.
Materials and methods: Retrospective observational study of women that underwent TOLAC; only singleton, vertex presentation, $\geq$37 weeks GA pregnancies with one previous CS were included. We applied 3 models of prediction of VBAC: The Smith et al.; The Grobman et al.; Troyer and Parisi' model. The models use different parameters to determine the chance of TOLAC success. Smith et al. includes maternal age, height, previous vaginal births, sex of the fetus, GA, and induction of labor. Grobman et al. registers the maternal age, body mass index, ethnicity, prior vaginal delivery, and indication for the prior CS. Troyer and Parisi' model uses a scoring system based on: prior CS indication, prior vaginal delivery; nonreassuring fetal heart tracing on admission; and induction of labor in the current pregnancy.
Clinical cases and summary results: During the 1st trimester of 2016, we had 1040 deliveries, 110 (10,6%) of them in patients with prior CS. Mode of delivery and indications are shown in Image 1. We excluded 5 preterm births (4 VB and 1 CS) and 1 antepartum stillbirth (VB) of our analysis. The characteristics of the study population were: a mean maternal age of 34 years (min: 20, max: 46), mean height 158 cm (min: 147, max: 174), mean weight 68kg (min: 44, max: 100) and mean pregestational BMI of 26 (min:19, max: 38). The mean of birth weight with successful VB was 3.39 kg, (max: 4.13 kg); on the other hand the mean birth weight among the RCS was 3.44kg, (max: 4.26kg). Results of the application of the 3 different models are described in Table 1. Using the Smith model, 15 of our patients(18%) had high risk of CS of whom only 8 required emergency CS. According Grobman et al. 31 (37%) had high risk of CS, of whom 15 required CS. Troyer and Parisi predicted 5 CS (6%), 3 of them (60%) really needed it. There was 1 uterine rupture (in a patient who underwent labor induction) and 3 newborns with 5 min Apgar score $<$7 in the TOLAC group. We had also a perinatal death in a ERCS patient (fetal bradycardia on admission). The predicted rate of successful VBAC (including low and moderate risk) using Smith et al. model was 81%; using Grobman et al. model: 62% and using Troyer and Parisi' model 94%. The most similar to our real rate (70.5%) was Smith model, although the rate of ''false negative'' was near to 50%.
Conclusion: 62 (70,5%) of the 88 patients who underwent TOLAC achieved a successful vaginal delivery. That means a high chance of VBAC with less complications and greater cost effectiveness than ERCS; hence those patients must be counseled to attempt vaginal birth. Even with unfavorable characteristics, TOLAC can be allowed on maternal request.
There's no perfect predictive model, but they can be useful to encourage women who have doubts about the route of delivery after a previous cesarean section.

Keywords: Vaginal birth after cesarean section; trial of labor; predictive models



Smith (a priori predicitive values)			
N=82	**PV**	**CS**	
Smith PV	50	17	**67**
Smith CS	7	8	**15**
	57	25	

Grobman (a priori predictive values)			
N=82	**PV**	**CS**	
Gobman PV	41	10	**51**
Grobman CS	16	15	**31**
	57	25	

Troyer y Parisi (a priori predictive values)			
N=82	**PV**	**CS**	
Troyer PV	55	22	**77**
Troyer CS	2	3	**5**
	57	25	

Our patients	
N=82	
PV	57
CS	25

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Amnion protective cesarean section: an atraumatic mode of delivery for very low birth weight infants

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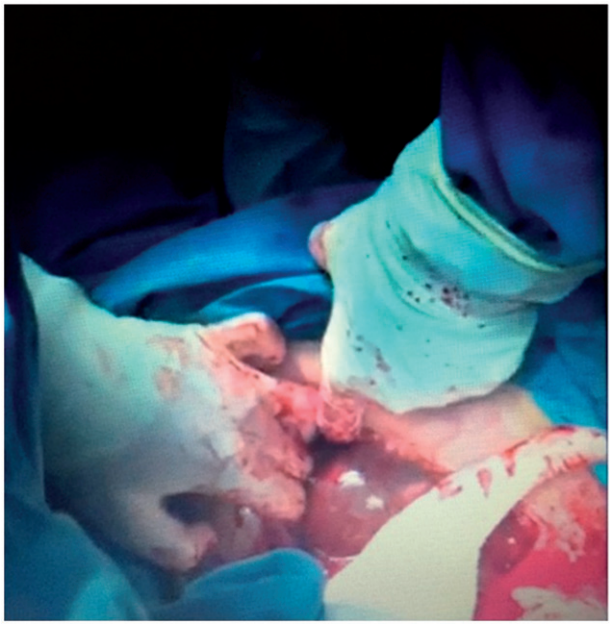
Presenter: **Filiz F. YANIK**

Introduction: Cesarean section (CS) is the preferred mode of delivery for malpresenting preterm very low birth weight (VLBW) neonates in many centers, but this is controversial for the vertex-presenting ones. When there is preterm labor with or without rupture of the membranes, most singleton vertex-presenting VLBW infants are delivered vaginally unless there is evidence of fetal distress. However CS may be preferred in some conditions such as preeclampsia or fetal growth restriction, when delivery is necessary although there is no labor. In such circumstances, amnion protective cesarean section (APCS) may be an option for an atraumatic delivery where the baby is delivered within the intact membranes.
Materials and methods: Between January 2015 and April 2016 inclusive, there were 36 livebirths at or beyond 22 weeks of gestational age weighing less than 1500g in our institution. Out of those 36, 4 babies were delivered by APCS, the outcomes of which were retrospectively evaluated.
Clinical cases and summary results: The 4 pregnancies undergoing APCS were complicated either by severe preeclampsia or severe superimposed preeclampsia. The gestational ages at delivery ranged between 24 and 29 weeks and birth weights ranged between 585 and 1000g, where 2 of the babies were growth restricted. Two babies presented with breech. All of the 4 deliveries were atraumatic with APCS. APGAR scores of the babies were 2,7,9 and 9 at 5 minutes after birth and arterial pH values were 6.55, 7.19, 7.27 and 7.39 respectively. One of them died 2 hours after birth and one other developed pneumothorax on the postpartum 3rd day and died on the postpartum 9th day. The one weighing 585g at birth is alive now on the postpartum 18th day and the one weighing 1000g at birth has been discharged from the neonatal intensive care unit on the postpartum 56th day. These two babies had no evidence of intracranial bleeding or neurologic deficit until now.
Conclusion: APCS may be a good option for the delivery of VLBW infants when there is no labor and membranes are intact but delivery is necessary for fetal or maternal indications.

Keywords: Amnion protective cesarean section, Very low birth weight



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Uterine rupture during trial of labor after cesarea section: our 11 year experience in a single center

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Presenter: **Cesar Cabrera**

Introduction: Uterine rupture is one of the most serious obstetric complications due to its high morbidity and maternal mortality. Most cases in high income countries are associated with an attempted of vaginal birth after a previous cesarean. The aim of the study was to review uterine rupture cases occurred during the last eleven years after a trial of labor, to determine its incidence, risk factors and maternal and fetal results.

Materials and methods: We have conducted a retrospective cohort study between January 2005 and December 2015 in the Department of Obstetrics and Gynecology of the University Hospital Fundación Alcorcón in Madrid Spain. We have included all pregnant women with history of a previous cesarean section and who had not contra-indication for a vaginal delivery. A Trial of labor after cesarean (TOLAC) was offered to this group. A systematic review of the electronical medical records was performed, evaluating the risk factors described in the literature, maternal complications and neonatal outcomes. 1392 women with history of a previous cesarean were attended during this period. 1074 pregnant women attempted a vaginal delivery.

Clinical cases and summary results: 10 uterine rupture (UR) were registered in the TOLAC group, representing an incidence of 0.93%. No UR occurred in those women (318) requesting a repeat Caesarean. The average age was 34.4 years; 8 cases (80%) were non-European. 6 were women in their second pregnancy and 4 cases had history of a previous vaginal delivery. In 100% of cases the period between the first cesarean section and the uterine rupture was greater than 24 months. Four cases (40%) occurred after labor induction, accounting for the 1.17% of all women requiring induction in the TOLAC group. Regarding the perinatal outcomes, we reported a case of neonatal death, no cases with five minutes Apgar score <7, and a case with umbilcal cord pH <7.01. Three patients needed deep resuscitation maneuvers and no infants required admission to the neonatal intensive care unit. Among the related maternal complications, we had an obstetric histerectomy, 2 women need blood transfusion and 2 bladder injuries were repaired.

Conclusion: UR incidence found in our study was similar to that described in the literature. In our series, it did not appear to have a significant influence, the intergenesic period or the antecedent of a prior vaginal delivery. Although been uterine rupture a very serious complication after cesarean delivery, we have recorded good perinatal outcomes with 9 healthy newborn, except one case of

Uterine Rupture Cases	Parity (GPCs)	Management	Uterine Rupture Complications	Newborn Apgar	Umbilical cord pH
1	G3P1Cs1	Cesarean for Non reassuring fetal status (NRFS)	--	9/10	7.13
2	G2Cs1	Cesarean for suspected RU	Obstetric histerectomy, transfusion.	1/8	6.98
3	G3P1Cs1	Cesarean for NRFS	--	9/9	7.19
4	G3Fc1Cs1	Cesarean for suspected RU	Cervical laceration	9/9	7.19
5	G4P2Cs1	Cesarean for NRFS	Uterus laceration	9/10	7.12
6	G2Cs1	Cesarean for suspected RU	Bladder injury	4/9	--
7	G2Cs1	Cesarean for suspected Abruptio	--	9/10	7.22
8	G2Cs1	Cesarean for suspected RU	bleeding, transfusion	0/0/0	Neonatal death
9	G2Cs1	Cesarean for NRFS	Bladder injury	9/10	7.08
10	G2Cs1	Cesarean for NRFS	Uterus laceration	7/9	7.04

neonatal death (in the group of 1392 women). No cases of maternal death occurred.

Keywords: Uterine rupture, cesarean section

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Evaluation of the uterine niche

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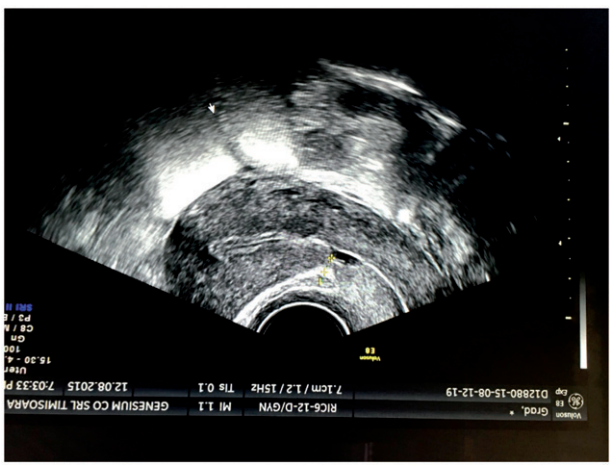
Presenter: **Constantin Olaru**

Introduction: The proportion of delivery through cesarean section has reached over 30% in most countries in the last decade. One of the long-term side-effects is the uterine scar defect (also known as uterine niche or isthmocele) with the following symptoms: dysmenorrhea, intermenstrual bleeding and uterine rupture in a future pregnancy.
Materials and methods: Lately, the interest in evaluating the uterine scar is growing, specifically using ultrasound and hysteroscopy. There are few studies concerning risk factors and presence or severity of the niche, but treatment of the isthmocele is of great interest. Currently it is being analyzed what surgical technique would be best for repairing this defect.
Clinical cases and summary results: We have identified 10 cases of uterine niche after cesarean section, using transvaginal ultrasonography and in 2 cases we performed diagnostic hysteroscopy. In all cases the thickness of the uterine wall at the scar site was 2.5-3 mm.
Conclusion: The study of consequences and benefits of surgery for isthmocele is early stage, and until management conclusions are being established, all cases must be followed-up.

Keywords: Uterine niche, isthmocele, hysteroscopy, vaginal ultrasound



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C- Section on uterine scar - modern trends

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Presenter: **Ina Popescu**

Introduction: We are witness to modern obstetrics, a prophylactic one, in which the c-section is not only a way to prevent dystocia, but also an important - widely used - practice to prevent it (asit is natural). The c-section is becoming the prevalent way of giving birth, gaining the support of the patients and also the obstetricians. This tendency is also a repercussion to an increasing number of uterine scars and also of c-sections performed on uterine scars. In the following articlewe will try to evaluate this occurrence rationally by numbers.
Materials and methods: We gathered data from our birth registers and made up a database of all declared births in the year 2014 in 3 maternities, where the authors work. We proceeded to a statistical analysis of the data together with data from the "Directory of Health Statistics" from the National Heath Institute, National Center of Statistics and Informatics in Public Health, Ministry of Health, Bucharest, 2014.
Clinical cases and summary results: We notice the obvious accelerated rise of the number of c-sections performed in Bucharest from 58.33% in 2009 to 74.52% in 2013. The capital city of Romania being also its largest Academic city has registered something similar to a "liberalization" of performing the c-section, although the total number of births has decreased steadily. The c-section index from our study group (gathered from three maternities in 2014) is 70.10%, of which 20.09% represent uterine scars from the total number of c-sections; and 14.08% represent the uterine scars from the total number of births.
Conclusion: The rate of complications associated with previous uterine scars and the c-section is above the cited levels (we only had one case of morbidly adherent placenta of 2480 births and no cases of uterine rupture associated with previous uterine scars and c-section (400 patients) of the total of 2840 births).

Keywords: C-section, uterine scar

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Subsequent cesarian delivery in adolescents

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Presenter: **R. M. SIMA**

Introduction: Cesarean delivery rate is increasing worldwide lately, supposed to be the result of changes in medical conditions. Cesarean deliveries are categorized as primary or subsequent (ie, after a previous cesarean birth). Cesarean delivery is performed when the clinician and/or patient believe that abdominal delivery is likely to provide a better maternal and/or fetal outcome than vaginal delivery. Indications for cesarean delivery fall into two general categories: "medically/obstetrically indicated" or "on maternal request." The three most common indications for primary cesarean delivery in the United States account for almost 80 percent of these deliveries: failure to progress during labor (35%), nonreassuring fetal status (24%) and fetal malpresentation (19%).
Materials and methods: We performed a retrospective study in "Bucur" Maternity. It included the evaluation of deliveries between 1 January 2015 and 31 December 2015. We focused mostly on Cesarean deliveries. The main idea was to identity the Cesarean sections in adolescents. We focused in this study on a particular condition in adolescent pregnancies with second Cesarean section. We observed

the maternal age, the gestational age of delivery, the maternal pathology or addictive behavior and fetal outcome. The infectious maternal pathology was considered important for our study, as well as drug abuse during pregnancy. We followed the patients in postpartum period regarding uneventful outcome. We noted also ethical aspects related mainly to the age of the women and their socio-economical-educational status.
Clinical cases and summary results: The number of deliveries in our unit in 2015 was 1983 and the number of living new-born was 1996. This difference is justified by twin pregnancies and new-born transfers from other medical units. The total number of Cesarean sections was 1129 (56.93% from total deliveries) with 354 subsequent Cesarean sections (31.35%). The teen pregnancies referred to our hospital was 654 (32.98%) and 325 (28.78%) adolescents delivered by Cesarean section. Among those, 128 (39.38%) were subsequent Cesarean sections. We observed that maternal infectious pathology wasn't more frequent in adolescent mothers than adult women.The maternal abandon occurred more often in adolescent mothers. Drug abuse appeared to be more frequent during pregnancies of teen mothers and it is also a concern. The hospital stay didn't correlate with the adolescent period. Neonatal outcome didn't seem to be influenced by maternal age, the only important factor was the gestational age of delivery.
Conclusion: In 2015 the rate of Cesarean was very high section, most women delivering by C section. The teen pregnancies are a worldwide issue dueing to social, medical, economic and psychological aspects. This is also a social challenge in Romania. In our unit teen pregnancies were finalized mainly by C section which provide and additional risk factor for subsequent C section. Morbidity and mortality among women and new-born is thus seriously increased and also the costs of healthcare.

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Perinatal hysterectomy in later decades: trends and implications

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Presenter: **L. Strat**

Introduction: Perinatal hysterectomy is a drama in obstetrics, as being motivated very often by conditions that represent a life-threatening matter and needing an emergency intervention of a complex medical team. As reported in the literature, the incidence of emergency peripartum hysterectomy varies from 0.25 in 1000 deliveries in Western and Northern Europe countries to 2.5 in 1000 deliveries in USA. In the last three decades, in our territory its incidence raised, due to a lot of changes in this period.
Materials and methods: We analyze the incidence and the motivations of perinatal hysterectomy in our service (which is a wide-territory covering), in an interval of time of 25 years (1991-2015) following the political regime change in Romania. The total number of deliveries was of 82033 cases and the number per year varied narrowly around 3000 (between 2991 and 3516). On the other side, the annual incidence of the cesarean section raised continuously and varied significantly from 16.22% in 1991 to the highest value of 46.63% in 2013.
Clinical cases and summary results: The perinatal hysterectomy had been performed in 85 cases, representing 1.03 in 1000 deliveries. It must be said that the large majority of cases in our study (66 from 85) have been reported after the year 2000, concomitant with an important raise of the cesarean incidence. The main indications for hysterectomy were uterine apoplexy, ruptured uterus after previous c-section, abnormal adherent placenta, uncontrollably hemorrhage due to uterine inertia. We always performed total hysterectomy and, in half of the cases, hypogastric artery ligature. There have been 3 maternal deaths, 11 stillbirths and 9 early neonatal deaths. In our territory, before the year 2000 the incidence of cesarean section was still a decent one, which is no longer the case today. Perinatal hysterectomy was, in those circumstances, a rare operation, even that the medical resources were limited compared with the present time.
Conclusion: Any cesarean section is a risky situation, exposing the woman in the future to the eventuality of emergency hysterectomy. Young doctors must be trained to respect the art of obstetrics, to practice the obstetrical maneuvers, to limit as possible the indication of c-section when not absolutely needed, to remember that anytime an elective c-section may complicate and get to hysterectomy. They should realize that is not sufficient to know to perform a c-section but a hysterectomy in emergency also.

Keywords: Perinatal hysterectomy, emergency hysterectomy, cesarean section

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Deliveries by robson system classification of ceasarean sections and the level of perinatal care in five obstetric hospitals in warsaw

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Presenter: **K. Szamotulska**

Introduction: In Poland, caesarean section (CS) rate is high and it was 42,3% in 2014. The rates do not express expected differentiation by the level of care and they range from 40,7% at the 1st level and 39,1% at the 2nd level to 48.3% at the 3rd level. We conducted a pilot study to better understand the reasons of almost uniform distribution of CS rates by the level of care. We looked for differences in the structure of the populations at risk and risk-group specific CS rates by the level of care.
Materials and methods: Data from 5 Warsaw hospitals (14462 cases, that is 48.4% of all births in Warsaw in 2012) were used. Deliveries were classified according to the level of prenatal care and 10 groups of Robson classification. The relative size of the groups, groups-specific CS rates and their contribution to the overall CS rate were calculated by the level of care. In statistical analysis a chi-square test was used.
Clinical cases and summary results: In studied hospitals, the overall caesarean section rate was 34.6%: 42.4% vs. 29.0% at the tertiary and secondary level, respectively ($p<0.001$). The higher CS rate at the tertiary in comparison to the secondary level results from higher incidence of CS in primiparas (group 1 + 2 together: 38.9% vs 27.3%, $p<0.001$) and multiparas without previous CS (group 3 + 4: 16.3% vs 7.4%, $p<0.001$). Also a higher contribution of preterm deliveries and groups in which CS are especially often performed (groups 5-10: 30.4% vs 16.9%, $p<0.001$) is responsible for the higher CS rate at the tertiary level. High CS rates in groups 5-10 did not differ between the 2nd and the 3rd level of care, except in case of preterm deliveries. The rates in preterm deliveries (group 10) were 47.6 i 37.4% ($p=0.003$), respectively.
Conclusion: The necessary condition for lowering caesarean section rates, is a common language among clinicians. Robson system brings a common platform for auditing CS and making comparative analyses of CS rates between levels of care, hospitals and in time. It should be widely applied in Polish healthcare.

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Birth delivery after successful external cephalic version of breech presentation at term

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Presenter: **Alberto Puertas Prieto**

Introduction: The purpose of this study was to evaluate the rate and indications of birth delivery after a successful external cephalic version (ECV)
Materials and methods: A retrospective study was performed from patients who where delivered in our hospital (Hospital Materno Infantil, Granada) between 2010 and 2016. We revise 137 clinical histories from women who where underwent a ECV and we separate the outcomes in two groups: successful and unsuccessful external cephalic version
Clinical cases and summary results: A total of 132 patients were included in this study. The percentage of successful ECV was 40%. Among successful external cephalic versions, the onset of labor were spontaneous in 33 of the cases, this represent the 63%. The rate of induction deliveries were 37%, the causes of the induction were in most cases (37%) due to a postterm pregnancy, the rest of the labor induction were because of premature rupture of the fetal membranes, meconium-stained amniotic fluid, Bishop score > 7, among others. Patients with successful ECV were more likely to have a successful vaginal delivery, the 64% were normal labor, the 23% were operative deliveries. The rate of cesarean delivery after a successful external cephalic version was 13%. Patients with successful ECV were more likely to have a cesarean delivery cause to fetal distress.
Conclusion: Most of successful ECV conclude in spontaneous and normal deliveries. The main cause to indicate a cesarean delivery in our study is fetal distress, although some studies conclude that the rate of cesarean delivery for dystocia is increased after a successful trial of ECV. We found that patients with a successful ECV have lower rates of cesarean delivery than normal deliveries at term, considering a baseline cesarean delivery rate of 20% in our hospital

Keywords: External cephalic version = ECV

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Delivery rout after cesarean section: our results 2005-2015

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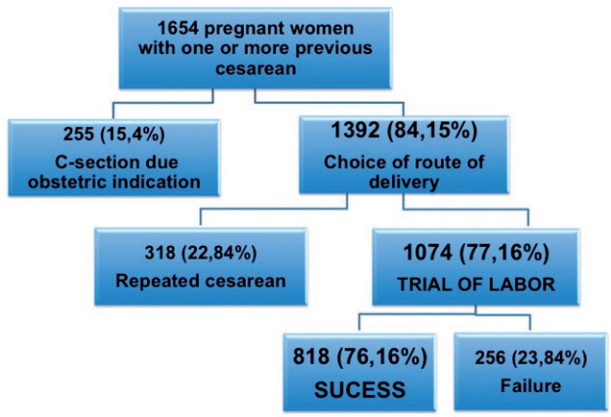
Presenter: **Patricia Crispín-Milart**

Introduction: Caesarean is one of the most common surgeries worldwide, with rates in some countries over 30% of deliveries, therefore the importance of the obstetric future of the patients submitted to a first caesarean. According to Spanish Society of Ginecology and Obstetric guideline, in our center every pregnant woman with a previous cesarean section is offered the choice among trial of vaginal birth or planned cesarean section, in the abscence of any factors against it.
Materials and methods: We analyzed all the women with a previous cesarean section who had birth in University Hospital Fundación Alcorcón in Madrid, Spain between 2005 and 2015. In this study we analyse the wome's choice of delivery route after a previous cesarean section and the resulting route of delivery in women who chose a trial of vaginal birth. Information was collected from medical electrónical records.
Clinical cases and summary results: 21303 births have been attended in our center during 2005-2015; 1654 with history of one or more cesarean sections. 15.4% (255 women) had an obstetric indication to deliver by caesarean (fetal malpresentation, Iterative cesarean section, medical condition, etc.). Subtracting this group, and a small group with fetal malformations, 1392 women were offered the choice between trying a vaginal delivery or a repeat cesarean. In the group of 1392 women, 318 (22,84%) chose planned cesarean section, while 1074 (77,16%) chose trial of vaginal birth. From those who chose trial of labor: 818 (76,16%) had a vaginal birth (122 operative vaginal deliveries) and 256 (23,84%) needed a second cesarean section. Women with a previous cesarean due non-vertex presentation had greater probability of having a vaginal birth, with an 83% success, OR 1,7(1.2-2,5, $p<0,01$). Women with a first cesarean for arrest of dilation or descent had the lowest success with a 70% of vaginal births (OR 0,5 (0,4-0,7) $p<0,05$).
Conclusion: Our statistics are comparable to the literature, which refers 60-80% of vaginal birth resulting of trial of labor after cesarean section. Women who achived VBAC were more likely to be younger, with a parity 3 or more and with a previous cesarean due to fetal malpresentation.

Keywords: Cesarean section, trial of labour



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Perinatal results and maternal morbidity in women with a previous cesarean section

Z. Luengo-Fernández, P. Crispín-Milart, C. León-Rivera, C. Cabrera-Coca, D. Cerdeira-San Miguel, and M.B. Adiego Burgos

Obstetric & Gynecology Department, University Hospital Fundación Alcorcón, Madrid, Spain.

Presenter: **Zenia Luengo-Fernández**

Introduction: The aim of our study was to stablish the differences among the perinatal outcomes and the maternal complications in those women who gave birth by planned cesarean section or trial of vaginal birth after a previous cesarean. We presented our data in a single center during years 2005-2015, after 21303 deliveries attended.

Materials and methods: During this eleven years, 1392 women with a previous cesarean section were offered to choice their route of delivery. 1074 (77,16%) women chose trial of labor after cesarean (TOLAC) and 318 (22,84%) chose a elective repeated cesarean delivery (ERCD). Data about perinatal outcomes (Apgar Score, Umbilical cord pH, neonatal resuscitation maneuvers, ICU admission) and maternal complication (uterine rupture, hysterectomy, transfusion, uterine atony, uterus laceration, wound infection, bladder injury) were obteined. We perfomed an intention to treat analysis.
Clinical cases and summary results: Perinatal Outcomes: 1 neonatal death case occurred in the TOLAC group. 5 minutes Apgar score <7 was more frequent in the TOLAC group (5 cases vs 0 cases). Deep resuscitation maneuvers were more necessary in the TOLAC group (9,49% vs 2,2%, RR 4,6, 95% CI 2-11 p<0,05). No differences in umbilical artery pH < 7,01 (1,67% TOLAC group vs 0,94% in the ERCD group, (RR 1,79, 95% CI 0,5-7,6) neither in pH < 7,10 (RR 1,1, 95% CI 0,5-2,25) were found; nor difference in ICU admisión rates (1 case in each group).
Maternal complications: During the last eleven years, as severe complications in the TOLAC group we have had 10 uterine ruptures (0.93%) and 3 obstetrical hysterectomies (0.27%). No cases occurred in the group of ERCD. Maternal complications are presented in the table. The low rate of maternal complications does not allow statistical analysis.
Conclusion: Although deep neonatal resuscitation maneuvers were more necessary in the TOLAC group, no difference were found in the umbilical cord pH results. Unfortunately, we have to report a neonatal death case after 1074 trials. Severe maternal complications were associated with a a failed trial of labor, but with very low rates. Given the good neonatal outcomes and the very low rates of maternal complications, vaginal delivery after cesarean section is our recommendation for both mother and newborn.

Maternal Complications	TOLAC (N=1074)	ERCD (N=318)
Uterine Rupture	10 (0,93%)	0
Hysterectomy	3 (0,27%)	0
Transfusion	9 (0,83%)	1 (0,31%)
Uterine Atonia	8 (0,74%)	4 (1,2%)
Uterus laceration	32 (2,9%)	4 (1,2%)
Wound Infection	4 (0,37%)	9 (2,7%)
Bladder injury	5 (0,46%)	0

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Myomectomy of a huge myoma in pregnancy and delivery at term

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Presenter: **Verónica Serrano de la Cruz Delgado**

Introduction: Uterine myomes are the most common pelvic tumor in women during their reproductive life. In pregnancy they are associated with preterm birth. Althought there are a lot of different treatments available, during pregnancy our possibilities are really reduced. We report the case of a 31 years old woman who attended our centre due to a giant myoma and 14 + 1 weeks pregnancy.
Materials and methods: We report the case of a pregnant with uterine myomes followed in our centre in 2015.
Clinical cases and summary results: We report the case of a 31 years old woman who attended our centre in September 2015 due to a giant myoma and 14 + 1 weeks pregnancy. The myoma grew quickly growing arriving to mesure 14x14 cm during the pregnancy (she had a normal ultrasound five moths before), and the patient refered pain and breathing difficulties, especially in supine. She did not suffer constipation or urinary problems. Her blood test did not show any anomally. Tumoral markers were negative. We decided the admission of the patient and arranging a laparotomic myomectomy inmediately. The myomectomy was performed without incidents. The pregnacy arrives to term, and then a cesarean was performed, getting a 2750 g newborn. Any dehicence in the myometrium was observed.
Conclusion: A succes pregnancy a term is possible after a laparotomic myomectomy in our centre.

Keywords: Myomectomy, pregnancy

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Why do we run in emergency cesarean sections?

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Introduction: There are a number of obstetric complications in which a ''crash'' emergency cesarean section is necessary to save the fetus or the mother.
Materials and methods: We analyzed prospectively collected singleton maternal and neonatal data of all emergency cesarean deliveries performed in Vall D'Hebron Hospital, Barcelona, from January 1 to December 31, 2015. The objective of the study was to determine the rate and clinical indications for emergency caesarean sections.
Clinical cases and summary results: 240 emergency cesarean sections were performed, representing 8.73% of all deliveries and one in three cesareans. In pregnancies from 24 to 29 weeks of gestation, the main reasons for emergency cesarean sections are: placental abruption (7/20) and non reassuring fetal status in the context of chorioamnionitis (4/20). 188 cesarean sections were performed in pregnancies between 35 and 42 weeks. 68 were women in spontaneous labor (36.17%); and 112 were induction of labor (60.1%). There were 4 cases of umbilical cord prolapse; and 4 cases due to uterine rupture. The main reason for emergency cesarean delivery was fetal distress (95.74%), which includes from suspicious cardiotocography tracing to scalp pH <7.20. Analyzing neonatal weight we identified 31 cases (17.22%) of fetal growth restriction not detected antenatally.
Conclusion: Emergency cesarean section is performed to save the pregnant woman or the fetus at risk. The main indication for emergency cesarean section is fetal distress. Iatrogenic procedures during labor or misdiagnosis of fetal growth restriction, are preventable causes of fetal distress and emergency cesarean section.

Keywords: Emergency, cesarean, section

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What is the threshold blood loss level for postpartum hemorrhage following to cesarean section?

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Introduction: The exact definition of postpartum hemorrhage (PPH) following to cesarean section is not defined yet. The guidelines used different definitions for primary PPH. While the American College of Obstetrician and Gynecologists practice bulletin defines PPH >1000 mL for cesarean delivery, the Royal Australian and New Zealand College of Obstetricians and Gynecologists guideline defines PPH as >500 mL during puerperium and classifies severe PPH as blood loss of >1000 mL. The Royal College of Obstetrician and Gynecologists guideline divides PPH into 3 categories: minor (500 mL to 1 L), moderate major (>1 L to 2 L), or severe major (>2 L).
This study was conducted to analyze cesarean sections to distinguish a threshold blood loss level for defining PPH following to cesarean section.
Materials and methods: A total of 301 low risk pregnancies underwent to cesarean section were enrolled to the study. The estimated blood loss level was calculated based on a standard formula as described by Papovic et al. The patients needed blood transfusion was compared with uncomplicated cases. Further clinical features associated with increased blood loss were assessed by the help of logistic regression analysis.
Clinical cases and summary results: The mean estimated blood loss was found to be around 800cc and 350cc in cases with and without transfusion, respectively. Increased number of gravidity and general anesthesia were found to be associated with increased blood loss and increased odds of having transfusion.
Conclusion: The preliminary results of this study demonstrated that 750 cc, the level of Class I hemorrhage according to American College of Surgeons, could be a threshold level for postpartum hemorrhage following to cesarean section in which minimal physiological changes expected to occur.

Keywords: Blood Loss, Cesarean Section, Postpartum Hemorrhage, Transfusion

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External uterine compression by elastic bandage as a method of hemostasis in severe postpartum hemorrhage

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Introduction: Postpartum hemorrhage due to uterine atony or extensive trauma of birth canal after vaginal or during cesarean delivery leading to hypovolemic shock and coagulopathy is main killer in obstetrical practice. There are steps between active management of third period of labour and hysterectomy as a final step of bleeding cessation. A final result in postpartum hemorrhage strongly depends on to timeliness of the taken measures that should be appropriate to the volume and speed of blood loss. A consequence of delays and incorrect decisions could lead to clinical disaster.
Clinical cases and summary results: External uterine compression by elastic bandage (EUCEB) applied as a step of atonic postpartum hemorrhage in 17 cases, 16 - as a step of surgical hemostasis after Cesarean delivery, in one case after vaginal delivery. Indication for EUCEB was uterine atony and continuation of bleeding despite of uterotonic agents intravascular administration. Starting blood loss volume in EUCEB were from 850 to 1000 ml. EUCEB exposition time varied from 30 to 140 min. In 10 cases EUCEB was the only method of surgical hemostasis. From 7 cases EUCEB application were completed

Table 1: The features of patients

	Transfusion (n=10)	Non-Transfusion (n=291)	P value	Blood loss ≥750 cc (n=28)	Blood loss <750cc (n=273)	P value
Body Mass Index	25.16±5.02	25.36±4.84	.864	25.52±5.52	25.34±4.78	.879
Gravidity	2.3±1.05	2.1±0.9	.632	1.92±0.76	2.23±0.99	.136
Parity	1.30±1.05	1.05±0.78	.378	0.82±0.61	1.08±.085	.103
Systolic Tension	115.70±12.03	124.8±12.7	.028	124.92±16.42	124.51±12.45	.745
Diastolic Tension	70.60±11.98	74.0±8.8	.208	73.78±10.76	74.00±8.75	.495
Pulse Rate	78.4±7.1	79.2±10.6	.760	79.53±11.40	79.14±10.49	.984
Number of Cesarean Sections	2.20±1.03	1.28±0.85	.005			
Gestational Week	36.2±3.4	37.6±1.9	.087	37.8±2.2	37.5±2.0	.674
Preoperative Hematocrit	33.40±4.87	37.30±3.56	.001	38.23±2.83	37.06±3.73	.106
Preoperative Hemoglobin	11.13±1.62	12.4±1.18	.001	12.74±0.94	12.35±1.24	.106
Postoperative Hematocrit	27.22±3.22	34.48±4.02	.000	29.95±2.73	34.72±4.03	.000
Postoperative Hemoglobin	9.07±1.07	11.49±1.34	.000	9.85±0.91	11.57±1.34	.000

by B-Linch suture in 3, bilateral uterine and ovarian arteries ligation in 3 and ligation of arteries iliaca interna in 1. Average final blood loss volume was 1816 ml (930 - 3550). Hysterectomy was not needed in any cases.
Conclusion: External uterine compression by elastic bandage is a simple and inexpensive method of hemostasis in severe postpartum hemorrhage. EUCEB could be only the final method of surgical hemostasis or provide additional time possibilities for appropriate organization of other surgical steps for bleeding cessation.

DIABESITY - 020

Recurrent stillbirth in diabetic pregnancy - are there any lessons to be learned?

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Introduction: Pre-existing diabetes is associated with an almost 5 times increase of stillbirth rate and about 2 times increase of neonatal death rate compared with women who did not have this condition. The rates of stillbirth in women with type 2 diabetes is reported higher than in women with type 1 diabetes and this suggests that other factors such as advanced maternal age, poor social condition, obesity, higher parity could be important as well. Although the insulin treatment in pregnancies with type 1 diabetes has improved the overall outcome, there are still a significant number of stillbirths as well as congenital malformations, birth trauma, neonatal hypoglycemia and respiratory distress syndrome.
Clinical cases and summary results: We report a case of a 23 years old woman, II G II P, addressed to our department with a 32 weeks pregnancy, live fetus in cranial presentation, diabetes mellitus type 1 known for 8 years with ketoacidosis. Her past history revealed a stillbirth at 38 weeks of gestation 3 years ago with a fetus of 4550 grams born by C-section due to fetal-maternal disproportion. Ultrasound scan revealed a live fetus with biometry appropriate for 32 weeks of gestation, normal amniotic fluid index, high thickness anterior wall placenta. No Doppler study was performed. CTG showed fetal tachycardia and reduced variability. It was discussed the opportunity of fetal extraction but, due the critical condition — shortness of breath, high blood pressure, pulse 130/min, blood glucose 405 mg/dL, acidosis, high levels of ketones in urine — the patient was admitted in the intensive therapy unit with specific support treatment. The patient condition gradually improved but unfortunately, the fetus died within this time.
Conclusion: Poor socio-economic status, lack of pregnancy follow-up, bad control of the glucose levels are the main factors for the critical condition at admittance. Severe metabolic impairment associated with a high anesthetic risk requires emergent supportive therapy. As in our case, this therapy proved beneficial for the patient but postponed the obstetrical decision of fetal extraction. It is thus imperative that the diabetic pregnancies should be very carefully monitored by the obstetrician and the diabetologist as well.

Keywords: Diabetes, pregnancy, stillbirth

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Prenatal diagnosis and types of structural congenital malformations in diabetic pregnancy - a tertiary multicentric study

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Introduction: It is widely recognized that the incidence of congenital malformations in pregnancies complicated by Type I-pregestational insulin-dependent diabetes, is 3–4 times greater than in control groups. The study presents prenatal diagnosis data, types and incidence of structural congenital malformations, in pregnant women with diabetes type I.
Materials and methods: The study was conducted in five tertiary-care referral centres, between 2012 and 2016 on a group of 228 pregnant women diagnosed with diabetes type I, aged between 17 and 40. Patients were assessed by: ultrasound in estimating gestational age, first trimester screening, second trimester screening, fetal growth evaluation, third trimester ultrasound and monitoring. Singleton pregnancies only.
Clinical cases and summary results: The most commonly affected systems and organs were cardiac 84 cases (36.84%). musculo-skeletal 33 (14.47%). CNS 21 (9.21%). urogenital 16 (7.01%). facial 9 (3.94%). gastro-intestinal 7 (3.07%). There have been diagnosed other/combined or multiple malformations (single umbilical artery. amniotic band syndrome. polyhydramnios) 58 cases (25.43%).
Conclusion: Cardiac defects are the most common congenital malformations in pregnancies complicated by type I diabetes, the frequency is 3–4 times higher than in non-diabetic pregnancies. Musculo-skeletal, CNS, urogenital and the combined malformations, have significantly increased incidence. Although the data are suggestive and causation can be inferred, the teratogenic mechanism remains unclear. Diabetic embryopathy, involving early morphogenesis defects, having as a pathogenic background maternal glucose variations, remains the main mechanism to explain the increased incidence of malformations. Current therapeutic resources for maternal glycemic control in preconception and especially in the first trimester, bring favorable conditions for prevention and maternal-fetal outcome of this pathology.

Keywords: Cardiac defects, teratogenic, glycemic control

Prenatal diagnosis and types of structural congenital malformations in diabetic pregnancy

Malformation type	Diagnosis	Incidence
Cardiac	Ventricular septal defect	39 (17.10%)
	Atrial septal defect	30 (13.15%)

(*continued*)

Continued

Prenatal diagnosis and types of structural congenital malformations in diabetic pregnancy

Malformation type	Diagnosis	Incidence
	Cardiomyopathy	10 (4.38%)
	Tetralogy of Fallot	3 (1.31%)
	Coarctation	2 (0.87%)
Musculo-skeletal	Limb reduction defects	21 (9.21%)
	Vertebral anomalies	5 (2.19%)
	Clubfoot	4 (1.75%)
	Syndactily	2 (0.87%)
	Polydactily	1 (0.43%)
CNS	Anencephaly	8 (3.50%)
	Neural tube defects	5 (2.19%)
	Hydrocephalus	4 (1.75%)
	Microcephaly	3 (1.31%)
	Holoprosencephaly	1 (0.43%)
Urogenital	Hydronephrosis	6 (2.63%)
	Megalo-urethera	5 (2.19%)
	Renal agenesis	2 (0.87%)
	Hypoplastic genitalia	1 (0.43%)
	Micropenis	1 (0.43%)
	Multicystic dysplasia	1 (0.43%)
Facial	Cleft lip	4 (1.75%)
	Cleft palate	3 (1.31%)
	Eyes - cataract	2 (0.87%)
Gastro-intestinal	Duodenal atresia	4 (1.75%)
	Omphalocele	2 (0.87%)
	Gastroschisis	1 (0.43%)

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The effect of hyperglycemia in pregnancy and gestational diabetes mellitus upon perinatal outcomes: retrospective case control study

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Introduction: This study aimed at determining the effect of hyperglycemia in pregnancy and gestational diabetes mellitus (GDM) upon perinatal outcomes retrospectively.
Materials and methods: The population of the study was composed of women who gave birth at Hitit University Training and Research Hospital between March 2012 and April 2016. In the study, 30 women whose 50gr. and 100 gr. oral glucose tolerance tests were high and who were diagnosed as Gestational Diabetes Mellitus constituted 1st case group, 30 women whose 100gr. oral glucose tolerance tests were within normal limits but 50 oral glucose tolerance tests were high and who were diagnosed as Borderline Gestational Diabetes Mellitus constituted the 2nd case group while another 30 women whose 50 g OGTT results were normal constituted the control group. The data about the study were collected using Descriptive Information Form related to Women and Descriptive Information Form about Perinatal Characteristics. For the assessment of the data, SPSS v 22.0 statistical software program, percentages, arithmetic means and standard deviations, chi-square and Fisher's exact chi-square test and Man Withney U test were employed.
Clinical cases and summary results: In the study there was significant differences between 1st case group and control group in terms of premature membrane rupture, cesarean delivery, preterm labor, forceps assisted vaginal delivery, duration of hospital stay, meconium amniotic fluid, fetal distress, neonatal asphyxia, hospitalization to neonatal intensive care unit, neonatal hypoglycemia and hyper bilirubinemia (p <0.01) whereas a statistically significant difference existed between 2nd case group and control group in terms of cesarean delivery and duration of hospital stay (p <0.01).
Conclusion: It was determined that GDM was correlated with undesirable perinatal outcomes but BGDM did not affect neonatal outcomes except cesarean delivery and duration of hospital stay.

Keywords: Hyperglycemia in pregnancy, gestational diabetes mellitus, perinatal outcomes

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An early-customized low glycaemic-index (GI) diet prevents adverse pregnancy outcomes in overweight/obese women

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Introduction: A high pre-pregnancy BMI is associated with many unfavorable pregnancy outcomes such as gestational diabetes mellitus (GDM) and large for gestational age babies (LGA), pregnancy induced hypertension (PIH) and Preterm Birth (PTB). While lifestyle interventions (diet, physical activity or mixed approach) are effective in reaching an optimal gestational weight gain, they did not shows substantial effects on other clinical outcomes. The aim of the present study is to determine whether an early detailed lifestyle changes program (consisting of a customized caloric restriction and a constant moderate PA) and a close follow-up reduce the incidence of unfavorable maternal/ neonatal outcomes among overweight/obese women.
Materials and methods: This is a case-control study (1:3) included singleton pregnant women with BMI$\geq$25. Cases (95), referred from antenatal clinics in Modena, were enrolled between the 9th - 12th week and advised to follow a low-GI diet of 1700/1800 Kcal/day (for obese/overweight) plus 30 minutes of physical activity at least 3 times/week. A dietitian and a gynecologist, both attendant, counseled women from the enrollment until delivery, with four follow-up visits planned at 16th, 20th, 28th and 36th week of pregnancy over their regular planned visits with by the obstetricians in charge. Controls (275) received just a simple nutritional booklet about a healthy lifestyle, than attended their scheduled visits until delivery by the obstetricians in charge.
Clinical cases and summary results: Gestational weight gain was similar between groups, despite obese women were higher in Cases (67.4%) than in Controls (54.5%, p=0.029). The occurrence of GDM was lower in Cases (21.5%) than in Controls (32.7%, p=0.041). Such reduction remained related with the group of intervention (p=0.00) after correcting for confounders (BMI$\geq$ 30, a family history of diabetes, age $\geq$35 and ethnicity). Controls developed more frequently PIH (11.6%

versus 1.1%, $p = 0.00$). PTB occurred in one Case (medically indicated for severe PIH) and in 28 Controls (10.2%)($p = 0.00$). In the half of them, PTB was spontaneous. Controls showed in respect to controls an higher rate of macrosomia (3.2% versus 11.6%, $p = 0.01$) and LGA babies (10.9% versus 1.1%, $p = 0.00$). Birth weight (3395.5 ± 370 in cases versus 3344.5 ± 592.6 in controls) and incidence of SGA babies (10.5% in cases versus 15.6% in controls) not differed between groups.
Conclusion: The current practice of providing general lifestyle advices to overweight/obese women early in pregnancy through leaflets or directly by providers is not sufficient to reduce the occurrence adverse pregnancy outcomes complications. Such study suggest that a structured, multidisciplinary approach is able to increase the compliance with the healthier lifestyle recommendations in such at risk population

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Challenges of implementation of universal screening for gestational diabetes mellitus in a Singapore tertiary hospital

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Introduction: In Singapore, a targeted (risk based) screening model was used to diagnose gestational diabetes mellitus (GDM) in pregnant women. From 1 January 2016, KK Women's and Children's Hospital (KKH) offered universal (routine) screening to all pregnant women, following the recommendations of local and international studies. It is important to compare the uptake rates and detection rates of GDM based on universal and targeted screening models.
Materials and methods: From 1 January 2016 to 31 January 2016, an estimated 990 women, regardless of their risk factors, were eligible for GDM screening between 24–28 weeks gestation at KKH. GDM was diagnosed using the oral glucose tolerance test (OGTT) which consisted of a fasting glucose measurement followed by 2 hour measurement taken after consuming 75g glucose solution. These results were compared to the 970 pregnant women in January 2015 when a targeted screening model was used.
Clinical cases and summary results: 570 (57.6%) women had OGTT in the universal screening cohort while 434 (44.7%) women were in the targeted screening cohort. The detection rate for GDM in the universal screening group was 9.5% (94 women) based on IADPSG and 10.6% (105 women) based on WHO criteria. 10 out of the 570 women were found to have overt GDM. In the targeted screening group, the detection rate for GDM was 6.5% (63 women) based on IADPSG and 8.7% (84 women) based on WHO criteria.12 out of 434 women were diagnosed with overt GDM.
Conclusion: With the increasing prevalence of Singaporean women at high risk for type 2 diabetes and GDM, the issue of universal screening is becoming increasingly important. Our study showed that universal screening is superior to risk based model as it detected an additional 3% of women with GDM by screening 12.9% more women. Clearly, by improving the uptake rate for universal screening, this will further increase the detection rate and reduce missing cases of GDM.

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The impact of gestational diabetes in pregnant hypertensive women

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Introduction: Women with a history of common pregnancy complications, including fetal growth restriction, preterm delivery (PTD), low birth weight (LBW), hypertensive disorders of pregnancy and gestational diabetes (GD) have increased risk of having cardiovascular disease (CV) throughout life. The objective of this work was to assess hypertensive pregnant women, referenced to hospital consultation in relation to the prevalence of GD and the impact of the occurrence of adverse events (AE) in pregnancy. Adverse events were considered: Low birth weight, Preterm delivery, preeclampsia (PE), fetal (FD), mother (MD) and/or neonatal death (ND).
Materials and methods: Prospective and observational study. Sample: pregnant women with hypertension who performed Ambulatory Blood Pressure Monitoring between January 2007 and June 2015. Pregnant women were excluded if they did not meet hypertension (HT) criteria. The follow-up took place until delivery (262 ± 28 days). Clinical cases and summary results: 139 pregnant, age 32±6 years. Of the 58 pregnant with gestational HT, 10 had GD in the current pregnancy, of 81 with chronic HT, 19 had GD. Statistical analysis of pregnant with/without GD is in the attached table. It was found that had GD in previous pregnancy was statistically significant in terms of AE in current pregnancy (X2: p=0.006). Analyzing the Kaplan-Meier survival curves, newborns with lower average birth weight, had worse survival curves (Log Rank 129.2, $p < 0.001$), pregnant with previous GD versus no previous GD have a higher occurrence of AE during pregnancy (Log Rank 4.5, p=0,033). The GD in the current pregnancy wasn't associated with greater likelihood of AE (Log Rank 0.797, p=0.372). In a multivariate Cox analysis adjusted for potential confounders, the PE and the diastolic blood pressure in consultation were the most predictive of AE in the subgroup without DG - p=0.045 and 0.015, respectively. The reclassification test was carried out to 93.1% of pregnant with GD. Of these, 10.3% fulfilled criteria of Impaired Glucose Tolerance, which gives them an increased CV risk.
Conclusion: The prevalence of gestational diabetes in the sample was 21%. In this sample, the previous gestational diabetes attended with an increased risk of adverse events. 10% of pregnant women with gestational diabetes in the current pregnancy had impaired glucose tolerance after delivery.

Keywords: Gestational diabetes, hypertensive disorders of pregnancy

		GD in current pregnancy		Without GD in current pregnancy		p-value*
n		29		110		-
Average age of pregnant		35,14 ± 4,82 years		30,80 ± 5,45 years		**T: p<0,001**
Pregnancy (n|%)	Nulliparous	6 | 20,7%		49 | 45%		**X^2: p=0,019**
	Multiparous	23 | 79,3%		61 | 55%		
BMI		34,72 ± 7,48 Kg/m^2		30,69 ± 6,80 Kg/m^2		**T: p=0,007**
Hypertension (n|%)	Gestational (42%)	10 | 17,2%		48 | 82,8%		X^2: p=0,374
	Chronic (58%)	19 | 23,8%		62 | 76,2%		
Events (n|%)	LBW	8 | 16% pregnant	2 | 6,9%	42 | 84% pregnant	23 | 20,9%	X^2: p=0,290
	PTD		3 | 10,3%		13 | 11,8%	
	PE		4 | 13,8%		31 | 28,2%	
	FD		0		0	
	MD		0		0	
	ND		1 | 3,4%		0	
Average birth weight		3259,07 ± 610,8 g		2945,06 ± 713,15 g		**T: p=0,034**

Annex: Statistical analysis of subgroups with or without GD in current pregnancy

Legend: GD – Gestational Diabetes; n: Absolute frequency; %: Relative frequency; BMI – Body Mass Índex; LBW – Low birth weight; PTD – Preterm delivery; PE – Preeclampsia; FD – Fetal death; MD – Mother death; ND – Neonatal death. T – T test for independent samples | X^2 – Chi-square test

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Gestational diabetes and pregnancy morbidity and outcome

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Introduction: Gestational diabetes is a form of diabetes that appears during pregnancy and although the disease regresses after birth, leaves its marks on the health of the mother and fetus in the perinatal period and on the long term, while proper treatment could reduce its effects.
Materials and methods: Underlying this paper stands a multicenter study conducted over a period of two years, in which were examined 2,200 pregnant women, aged between 17 and 39 years, of which 43 were diagnosed with gestational diabetes.
Clinical cases and summary results: Gestational diabetes prevalence in the study group was 1.95%. The risk factors most commonly associated gestational diabetes were obesity (27.9%) and pregnancy-induced hypertension (9.3%). Hydramnios was observed in 20.93% of patients with diabetes and oligoamnios in 6.97%. Regarding birth weight, 13.9% of patients had fetuses with macrosomia, but were also found fetuses with intrauterine growth restriction in 4.65% of cases, especially in patients with gestational diabetes associate with hypertension and oligoamnios. Another important aspect is the high rate of premature births, respectively 23.25%. Regarding the method of delivery, 16.27% of births were vaginal and 79% by caesarean section. The indications were due to fetal complications in15,38% of cases, due to maternal complications in 30.7% cases, or due to mixt fetal-maternal causes in proportion of 46.15%.
Conclusion: Gestational diabetes is a pathology that requires a multidisciplinary team and close monitoring of pregnancy due to multiple perinatal complications in order to avoid or reduce them in both short and long-term.

Keywords: Gestational diabetes, perinatal complications, pregnancy outcome

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Multiple organ dysfunctions in offspring of obese mothers — experimental study

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Introduction: Maternal obesity represents a pathology with continuingly rising incidence and prevalence. Pregnancy obesity causes dyslipidemia and oxidative stress during which have major impacts on the fetus development. Our study aims to investigate the systemic effects of the dysfunctional metabolism generated by maternal obesity on the offspring development.

Materials and methods: Ten obese Wistar rats females were started hypercaloric/hyperlipidic diet administered by gavage during pregnancy (group O) while another ten normoponderal rats were fed normocaloric standard diet during pregnancy (group N). At gestation term the rat females were sacrificed and hematoxylin-eosin stained organ (liver, kidney, heart) sections and biochemical measurements on plasma and organ homogenates were done both from mothers and their offspring. Spectrophotometric measurements were performed.
Clinical cases and summary results: In obese pregnant rats versus normoponderal ones, we found higher levels (mg/dl) of plasma cholesterol 74 versus 35 (p <0.05), triglycerides 360 versus 175 ($p<0.01$), enzymatic activity (IU/L) ALT 105 versus 66 ($p<0.05$), AST 190 versus 74 ($p<0.01$), GGT 8.9 versus 3.7 ($p<0.05$), and uric acid 4.5 versus 2.1 ($p<0.05$), and lower levels ($p<0.05$) of albumin and total blood glutathione. On liver homogenate total glutathione and total thiols were lower in group O ($p<0.05$) while lipid peroxidation was higher ($p<0.02$) in comparison to group N. The histopathological aspect determined medium hepathopathy, kidney tubular necrosis and inter- miofibrilar cardiac edema associated with low inflammatory reaction in the newborn rats from group O. Normal aspect for tissues was observed in group N.
Conclusion: Obese pregnant Wistar rat females fed with hipercaloric/hiperlipidic diet during pregnancy presented a dyslipidemic and high oxidative stress status, which caused medium hepathopathy and minor injuries in the kidney and in the heart of their offspring.

Keywords: Pregnancy obesity, organ dysfunction, offspring outcome

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Is it possible to predict the metabolic control and obstetrics outcomes using the pattern of the gtt abnormalities?

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Introduction: Pregnancy is characterized by insulin resistance, mediated primarily by placental secretion of diabetogenic hormones. Gestational diabetes (GD) develops during pregnancy in women whose pancreatic function is insufficient to overcome this insulin resistance. Several adverse outcomes such as hydramnios, macrosomia and perinatal mortality have been associated to GD. In Portugal, the prevalence of GD is 5,8%. The diagnosis is made according to a national consensus program using fasting blood glucose in the first trimester and by performing 75-gram, two-hour oral glucose tolerance test (GTT) at 24-28 weeks of pregnancy. This study was conducted to investigate whether metabolic control and obstetrics outcomes could be predictable using the pattern of the GTT abnormalities.
Materials and methods: We performed a retrospective cohort study of all cases of GD diagnosed on the second trimester with GTT, who were admitted to our facility between 2012 and 2014. The study population was divided in two groups: Group 1-pregnant women with more than one abnormal value in GTT and Group 2-pregnant women with only one abnormal value in GTT. These last one, was subdivided in three subgroups according to which GTT value was abnormal (fasting (subgroup 2A), one hour (subgroup 2B), or two hours(subgroup 2C)). The evaluated outcomes were gestational age of delivery, newborn weight, mode of delivery, preeclampsia, serum HbA1c in the third trimester and insulin needs. Non parametric tests were used to compare numeric variables (Kruskal-Wallis and Mann-Witney) and qui-square for categorical variables.
Clinical cases and summary results: A total of 464 GD pregnancies were followed in our institution during this period, 248 of which (53%) were diagnosed during the 2nd trimester. Of those pregnant women with GD diagnosed using GTT the mean and standard deviation for the numeric variables were: GA at delivery(w) 37,7(25,4); Newborn weight(g) 3106(490); HbA1c in third trimester 5,18(0,35). The rate of hydramnios, need of insulin and vaginal delivery were 4,2%(n=9), 34%(n=91) and 66%(n=147) respectively. Group 1 included 64 patients and group 2 was composed by 184 patients (29 in the subgroup 2A, 64 in the subgourp 2B and 91 in the subgroup 2C). Both groups presented similar values for the studied variables (gestational age delivery, newborn weight, hydramnios, hbA1c in third trimester and need of insulin). Newborn weight (g) was significantly increased in subgroup 2A (3345(436)) in comparison with the other two: (Subgroup 2B: 3140(550); Subgroup 2C: 3115(347)) (p=0,16). No other differences on those subgroups were found.
Conclusion: Improvements in surveillance and diagnosis accuracy resulted in better outcomes in GD. However, the goal of achieving similar outcomes in women with or without GD have not yet been accomplished. In this study, the pattern of the GTT abnormalities did not identified pregnant women with worst metabolic control or adverse outcomes.
These findings highlight the need to search for new tools that support clinicians in recognizing patients prone to poor metabolic control and obstetrics outcomes.

Keywords: Gestational diabetes, Pregnancy, glucose tolerance test, metabolic control

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Patient age'' to be used as a new criteria in dignosing grey scale GDM

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Presenter: **Mustafa Ozturk**

Introduction: The aim of this study is to assign the detection rate of the clinical gestational diabetes mellitus with using American Diabetes Association criteria, and to compare the 130 and 140 g/dL results of the 50g Glucose Challenge Test and 100g Oral Glucose Tolerance Test.
Materials and methods: September 2009 - August 2010, between 24-28 weeks of gestation 211 pregnant women who had 50 g Glucose Challenge Test positive were evaluated retrospectively. 100g Oral Glucose Tolerance Test test results were examined. Pregnant women with positive 50 gr Glucose Challenge Test between 130-139 g/dL(grey scale) (n:62) divided into two groups. Group 1; pregnant women with abnormal GCT under 25 years old (n: 14) and pregnant women with up 25 years aold (n: 48).
Clinical cases and summary results: The prevalence of the gestational diabetes mellitus were all of the patients (130-139 g/dL) were % 16.1 (10/62), In Group 1, the prevalence of the gestational diabetes mellitus were %10 (1/10), in group 2%90 (9/10).
Conclusion: The patients with 50gr Glucose Challenge Test test result is 130-139 mg/dl and >25 years old should be closely follow-up such as gestational diabetes mellitus patients.

Keywords: Gestational Dabetes Mellitus, Age, Grey scale

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Obesity and periodontal diseases in pregnancy: inflammation and antioxidant levels in saliva

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Presenter: **Chiara Mandò**

Introduction: Obesity (OB) is associated with chronic mild inflammation and higher gestational risks. OB is also associated with oxidative stress. Periodontal diseases (PD), i.e gingivitis (G) and periodontitis (P) may also represent a source of low-grade systemic inflammation potentially impairing pregnancy outcomes. We previously showed increased oral inflammation in obese (OB) compared to normal weight (NW) pregnant women. Few studies investigated saliva (S) biomarkers in pregnant women. Here we analyzed C-reactive protein (CRP) concentrations and total antioxidant capacity (TAC) in saliva of pregnant women with different pre-pregnancy BMI, investigating their association with plasma CRP and with PD.
Materials and methods: 59 singleton pregnancies (15 NW, BMI 18-24.9; 44 OB, BMI $\geq$30) were studied at 3rd trimester. 15 obese women had gestational diabetes mellitus (GDM). Periodontal status was assessed by oral clinical examination in 24 OB and 15 NW. P: at least 4 teeth with pockets $\geq$4 mm. G: soft and/or calcified bacterial plaque and/or gingival bleeding in 4 or more teeth. In 36 women (15NW, 21OB - 8 with/13 no GDM) unstimulated S-samples were collected for analysis of CRP (ELISA) and TAC (AntiOxidant Assay). CRP was also measured in 44 (10NW, 34OB -11 with/23 no GDM) plasma samples (ELISA). Clinical and molecular data were compared between groups using independent-sample t-test adjusted by Levene's test. Correlations between values were assessed by Pearson test. Results were considered significant when $p<0.05$.
Clinical cases and summary results: S-CRP levels were significantly related to BMI (p=0.03; R=0.44), with increased content in OB vs NW, reaching significance in OB with GDM (p=0.04). TAC was significantly higher in all OB vs NW (total OB vs NW: p=0.01; OB without GDM vs NW: p=0.04; OB with GDM vs NW: p=0.01) and significantly correlated with S-CRP (p=0.00; R=0.77). Plasma CRP levels were significantly increased in all OB vs NW (total OB vs NW: p=0.00; OB without GDM vs NW: p=0.05; OB with GDM vs NW: p=0.01), correlating with both S-CRP (p=0.00; R=0.65) and TAC (p=0.00; R=0.59). 83.3% OB and 40% NW had PD (P/G). PD in NW did not enhance molecular values, while in OB the presence of PD increased CRP/TAC compared to healthy NW, reaching significance for both S-TAC (p=0.02) and plasma CRP (p=0.018).
Conclusion: Mild inflammation was reported in many OB tissues, but nothing is known on markers in S of OB pregnant women, which represents an effective non-invasive diagnostic tool. CRP increase in OB plasma, marker of systemic inflammation, was confirmed in S. Higher S-TAC suggests the induction of a systemic antioxidant response detectable in OB-S. GDM possibly contributes to these increases. The higher PD frequency in OBvsNW might enhance CRP and compensatory antioxidant defenses in women with both OB-PD

Keywords: Pregnancy, obesity, oral pathology, saliva

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Insulin therapy in prediction glycemic parameters, fetal echography and perinatal outcomes in pregnancies complicated by diabetes mellitus

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Presenter: **Ćurković A**

Introduction: Objective to determinate body mass index (BMI) and hemoglobin A1c (HbA1c) levels, as predictors of insulin therapy (IT), on fetal echography findings and perinatal outcomes in pregnancies were complicated by diabetes mellitus (DM).
Materials and methods: Material and Methods we intended to evaluate the values of BMI and HbA1c levels on fetal interventricular septum (IVS) thickness, atrioventricular inflow E/A velocity ratio and perinatal outcomes. According to IT, we evaluated three groups of 32 patients of gestational DM treated with dietary changes, (GDMA1 group), 27 patients of GDM with IT (GDMA2 group) and 22 patients of type 1 diabetes (T1D group) in the 38th gw.
Clinical cases and summary results: Results In T1D group, we found statistical significant correlation BMI to IVS thickness (p 0.036); HbA1c to IVS thickness as well as mitral E/A velocity ratio (p 0.013 vs. p 0.007). In T1D group, HbA1c showed statistically significant correlation to BW (p 0.037). We determinated statistically significant difference between BMI and neonatal RDS (p 0.027). Statistically significant difference was confirmed between HbA1c level and RDS, as well as ICH in T1DM group (p 0.048 vs. p 0.018). HbA1c was statistically different to RDS in GDMA2 group (p 0.036).
Conclusion: Conclusion in DM and GDM pregnancies, maintaining optimal glucose levels determine fetal echography findings and perinatal outcomes.

Keywords: Diabetes mellitus, gestational diabetes mellitus, fetal echography, perinatal outcomes

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Effect of gestation on the 75g 2-hour OGTT

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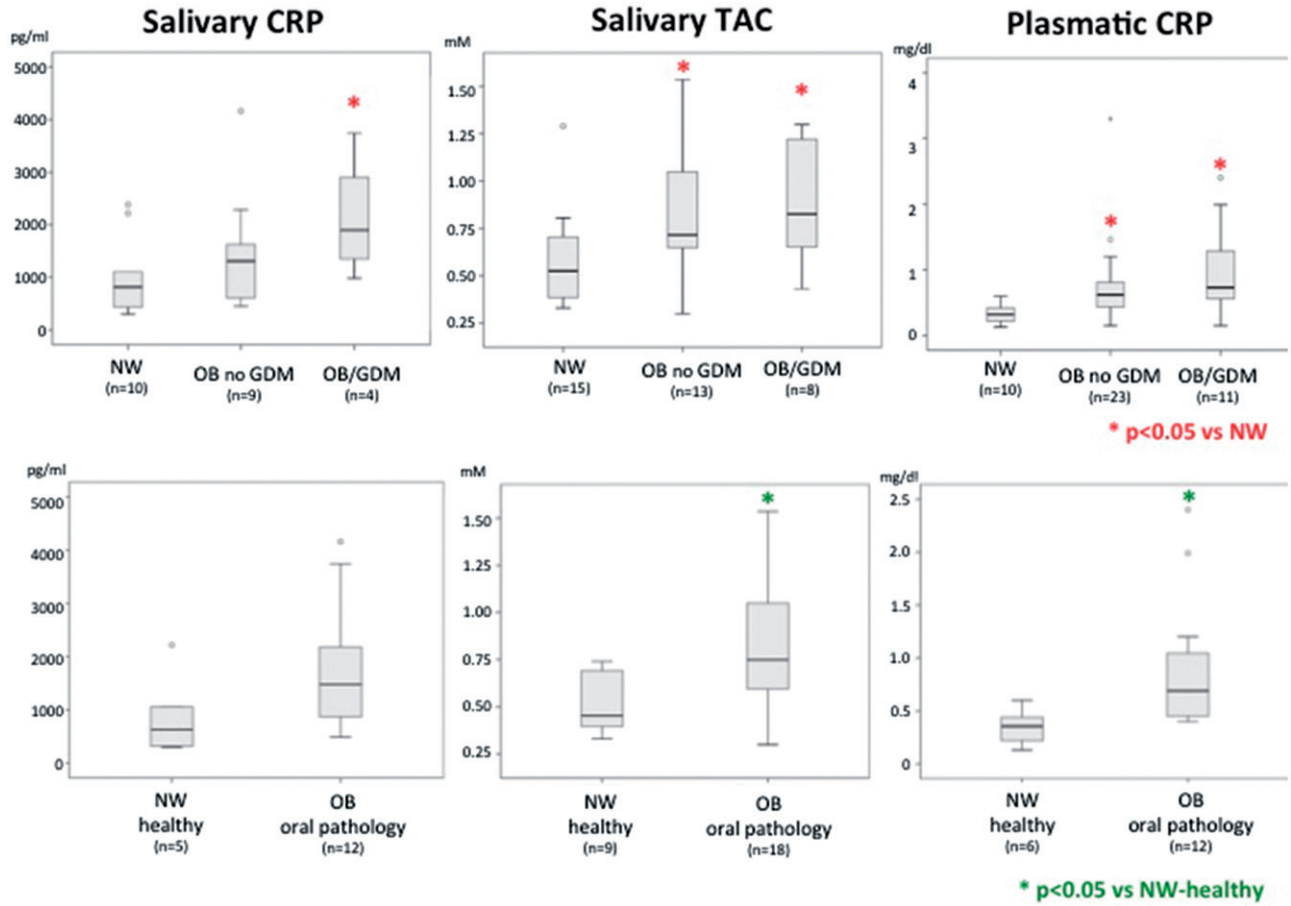
Presenter: **Miira Klemetti**

Introduction: The Finnish Current Care Guideline recommends fasting plasma glucose (PG) $\geq$5.3, 1h PG $\geq$10.0, or 2h PG $\geq$8.6 mmol/l in a 75g oral glucose tolerance test (OGTT) as thresholds for gestational diabetes (GDM) diagnosis in both early (12-16 weeks) and late (24-28 weeks) gestation. Based on the HAPO study, the International



Association of Diabetic Pregnancy Study Groups (IADPSG) recommends GDM diagnosis when the fasting PG value is ≥5.1, 1h value ≥10.0, or 2h value ≥8.5 mmol/l in the 2h 75g OGTT. IADPSG does not currently recommend routine OGTTs before 24 weeks' gestation due to insufficient evidence on the benefits of early OGTTs. In early pregnancy, IADPSG recommends screening of fasting PG at the first antenatal care visit and diagnosis of GDM with values ≥5.1 but <7 mmol/l. However, this method may not effectively identify parturients with impaired glucose tolerance in early pregnancy. No studies have yet determined appropriate OGTT diagnostic thresholds for early pregnancy. We hypothesize that the pathological thresholds for post-glucose-load PG are lower in early than in late pregnancy OGTT due to lower insulin resistance in early pregnancy. The objective of this study was to examine the effect of gestation on OGTT results.
Materials and methods: All women booking for an early-pregnancy ultrasonography at South Karelia Central Hospital and Honkaharju Hospital, in southeastern Finland, were invited to participate during 3/2013-6/2015. 29% of all invited parturients refused and 7% were excluded (e.g. due to diabetes, medications affecting glucose metabolism, or insufficient language skills). All participants (n=665) gave an informed consent. All participants had a 2h 75g OGTT at 12-16 weeks' gestation (OGTT1). Parturients with a normal OGTT1, using the current criteria, had another OGTT at 24-28 weeks (OGTT2). PG was analyzed using a photometric hexokinase method.
Clinical cases and summary results: Using the current diagnostic thresholds, 107/665 (16.1%) of subjects had early GDM based on OGTT1 and were treated accordingly. At OGTT2, 69/496 (13.9%) of participants had late GDM. The mean (SD) fasting PG value was higher and the post-glucose load PG values were lower at OGTT1 than at OGTT2, when the results of patients without early GDM (n=496) were compared [TABLE].
Conclusion: The mean fasting PG values are lower in OGTT at 24-28 weeks' gestation compared to OGTT at 12-16 weeks' gestation, probably due to the increasing uptake of glucose by the placenta as the pregnancy progresses. The post-glucose load values were lower in OGTT at 12-16 weeks' gestation compared to OGTT at 24-28 weeks' gestation, probably due to lower insulin resistance in early pregnancy. Using the current criteria, the GDM frequencies both in early and late gestation were high, which could reflect both the high prevalence of obesity in southeastern Finland as well as genetic predisposition in this population. The results suggest that the same diagnostic thresholds should not be used in early and late pregnancy OGTT. Large prospective population-based studies are needed to determine appropriate diagnostic thresholds for early-pregnancy OGTT.

Keywords: Gestational diabetes, oral-glucose tolerance test

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Pregnancy in obese women: maternal and neonatal outcomes

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Presenter: **S. Paracchini**

Introduction: In the last 35 years, overweight and obesity have shown a growing trend. The WHO classifies overweight and obesity as follows: normal weight (NW, BMI 18.5-24.9 kg/m2), overweight (OW, BMI 25-29.9), class 1-2-3 obesity (OB1-2-3, BMI 30-34.9, 35-39.9, >40). In Italy more than 40% of the population is overweight or obese, and it is considered high-risk. The main aim of this study was to evaluate the influence of the BMI on the pregnancy outcomes, both on the maternal and the neonatal side.
Materials and methods: We designed a retrospective study on data from S. Anna Hospital's database. We included 28.039 singleton at

term pregnancies (gestational age 37-42 weeks) who delivered from January 2011 to December 2015, with pre-pregnancy BMI >18.5 kg/m2. Patients were stratified in 5 BMI classes according to the WHO classification. Moreover, the population was divided in two classes: 15.089 nulliparous (Null) and 12.950 multiparous (Mult). We examined maternal (incidence of gestational diabetes mellitus GDM, pre-eclampsia, induction of labor, cesarean section after failure of the induction) and neonatal (macrosomia >4.000 g, APGAR <7 at 5') endpoints. Odds ratios were calculated with a 95% confidence interval applying Chi-square test to compare each class with the normal weight group.

Clinical cases and summary results: The population was composed of 21.004 NW, 4.898 OW, 1521 OB1, 459 OB2 and 160 OB3. BMI distribution was found significantly different (p value <0.001) between Null and Mult: among Null, 79.09% was NW, 14.96% OW, 4.25% OB1, 1.27% OB2 and 0.42% OB3; among Mult, 70% was NW, 20.39% OW, 6.8% OB1, 2.04% OB2 and 0.74% OB3.

Odds ratios were found statistically significative for

- GDM (Null: OW 2.66, OB1 4.9, OB2 5.03, OB3 9.70; Mult: OW 2.71, OB1 4.43, OB2 7.72, OB3 12.87)
- pre-eclampsia (Null: OW 2.33, OB1 4.68, OB2 4.77, OB3 11.22; Mult: OW 3.78, OB1 4.79, OB2 6.13, OB3 13.08)
- induction of labour (Null: OW 1.41, OB1 2.0, OB2 and OB3 2.0; Mult: OW 1.45, OB1 2.03, OB2 2.2, OB3 2.78)
- cesarean section after failure of the induction (Null: OW 2.04, OB1 3.14, OB2 3.99, OB3 3.76; Mult: OW 1.18, OB1 4.67, OB2 2.43, OB3 10.6)
- macrosomia (Null: OW 1.44, OB1 1.57; Mult: OW 1.69, OB1 1.5, OB2 2.1, OB3 2.76)
- APGAR at 5' <7 (Null: OW 1.77, OB2 3.49; Mult: OW 1.86, OB1 2.34, OB2 2.3, OB3 6.17)

Conclusion: Our study is based on a large case series collected from a 3rd level Center, and confirms that overweight and obesity are relevant risk factors not only for the long term health of women, but also for pregnancy outcomes, both on the maternal and the neonatal side. Moreover, it suggests that in future studies nulliparous and multiparous have to be considered as different populations, with higher risks in multiparous that could be ascribed to higher average age and BMI.

Keywords: Pregnancy outcomes, obesity, overweight

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Effect of maternal diabetes neurobehavioral their offspring

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Presenter: **Gonzalez Gonzalez NL**

Introduction: Diabetes during pregnancy is a well-known risk factor for congenital anomalies in various organ systems, including the nervous system. Thus, it has been observed that infants of diabetic mothers (IDM) are more likely to present deficits of attention, learning and memory may appear, as well as impaired sensorimotor functioning and hyperactivity. This has only been studied at early ages.

Aim: To study the effects of maternal diabetes on the state of anxiety and learning and memory functions related to the hippocampus during adulthood.

Materials and methods: Experimental subjects: We used CD1 mices, (4 months). a.- ODM: offspring of mothers in who diabetes mellitus was induced by administering 250 mg/kg of Streptozotocin, and b.- SHAM: offspring of the mice injected with the vehicle. I light-dark box was sed to measure anxiety behavior of animals. Based on the assumption of natural aversion of mice to brightly lit areas and the preference for closed and small places. A Morris water maze was used to measure spatial learning and memory functions. Mice are required to learn the location, within a circular pool, of a slightly submerged platform (B) invisible to swimming mice (located below the water level, dyed with non-toxic paint), guided by external signals (A)

Clinical cases and summary results:

- ODM showed greater anxiety than SHAM. F (1,32)= 23,80; p<0.001.
- ODM spent less time in the area of ■ the platform than SHAM. F (1,29)= 32,18; p<0.001
- ODM spent more time outside the platform area and less time within the area, compared to SAHM

F (1,28)= 4,20; p<0.05.

ODM did not remember the location of the platform and looked around the tank, rather than focusing on the area where the platform was located as the SHAM did.

Conclusion: The adult mice born to diabetic mothers shown higher anxiety state level and learning and memory difficulties than control mice.

Keywords: Diabetes and pregnancy, offspring, neurobehavioral, anxiety, learning

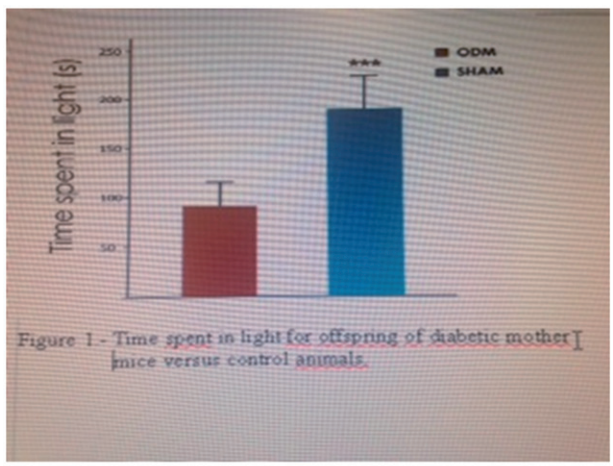

Figure 1 - Time spent in light for offspring of diabetic mother mice versus control animals.

Table 1. Morris Water maze trials.

	Day 1	Day 2	Day 3	Day 4	Day 5
Number of trials	4	4	4	4	1
Time (in seconds) / assay	90"	90"	90"	90"	30"
Platform	Si	Si	Si	Si	No

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Is insulinogenic index test valid for diagnosing gestational diabetes mellitus?

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Presenter: **A. Alkilic**

Introduction: We compaired the insulinogenic indices of pregnant women who had abnormal GCT, with glucose tolerance status after 100g oral glucose tolerance test (OGTT) to evaluate the performance of insulinogenic index (IGI) in predicting GDM and insülin requirement.
Materials and methods: 207 pregnant women attending Ankara University Hospital between March 2014- September 2015 with a GCT >130 mg/dL were included in this study. Women with pregestational diabetes mellitus were excluded. Plasme glucose levels after 100g OGTT and insulinogenic indices were evaluated and insulin requirement of the diabetic pregnant women were also noted.
Clinical cases and summary results: 43 of the 207 pregnant women were diagnosed with GDM according to the Carpenter&Coustan criteria,141 had normal OGTT results and 23 were in the impaired glucose tolerance (IGT) group. Mean values of insulinogenic indices in the groups were as in Table-1. IGI results were lower in GDM group and it was statistically significant (p<0,05). According to the ROC analysis, the cut-off of the IGI for the pregnant women was 0.837 with a spesifity of 63.8% and a sensitivity of 69.8%. 17 women who were diagnosed with GDM were in need of insulin therapy support, 24 women had normal plasma glucose levels with only diet and 2 women needs oral antidiabetic therapy (sulfonamide). There was not an association between the insülin requirement and IGI results (p=0,072).
Conclusion: Insulinogenic index can be used for the diagnosis of GDM. But we need more studies for the prediction of insülin requirement.

Keywords: Gestational diabetes mellitus, insulinogenic index, fasting blood glucose, fasting insulin, oral glucose tolerance test

Table 1: Mean values of the insulinogenic indices according to glucose tolerance status

Insilunogenic Index	N	Mean	St. Dev
Normal OGTT	141	1.722	2.790
GDM	43	0.903	0.915
IGT	23	1.463	1.348

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Using papp-a to predict gestational diabetes

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Presenter: **M. Boia**

Introduction: A low maternal serum concentration of pregnancy-associated plasma protein A (PAPP-A) is associated with adverse perinatal outcomes, namely fetal growth restriction and hypertensive gestational conditions. Recently, it has been suggested by some studies the ability of a low value of PAPP-A to also predict the development of gestational diabetes (GD). This study has been designed to evaluate the relation between the value of PAPP-A in the first trimester screening and the development of GD.
Materials and methods: Retrospective analysis of 610 pregnant women first trimester screening tests performed during 2015 in our hospital, and the development of GD on the same group.Demographic, obstetric and neonatal data was also analyzed. Linear regressions and independent t tests were conducted, using a value of p<0,05 as statistical significance.
Clinical cases and summary results: 610 pregnant women were included in the study. The incidence of GD was 11%. The women with GD were significantly older and had higher BMI. No relation was found concerning smoking habits. There was not a statistical association between the value of PAPP-A and the development of DG, not even after adjustment for multiple variables. There was also not a statistical association between the value of PAPP-A and the fasting blood glucose levels on first or second trimester.
Conclusion: Gestational diabetes is a serious condition, associated with adverse outcomes. The ability of a blood test to predict the development of such condition in the first trimester of pregnancy would allow the implementation of measures to avoid it. Our results were unable to confirm this hypothesis. Further research on this subject is needed.

Keywords: *Gestational diabetes, PAPP-A*

DOCTORS AND MIDWIVES: CARE OR CURE - 015

Comparison of temporal artery thermometry with axillary and rectal thermometry in full term neonates

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Introduction: Measurement of accurate body temperature and detection of both fever and hypothermia is crucial in the diagnosis and management of neonates. Ideal methods for core body temperature measurement are invasive, hence cannot be used in clinical practice. Rectal temperature, closest to core temperature carries its own drawbacks. There is no consensus on the non-invasive method of accurate temperature measurement among neonates. Hence, the present study was conducted to assess the efficacy of temporal artery thermometer in febrile and hypothermic neonates in comparison to axillary thermometer.
Materials and methods: It was a cross-sectional observational study. Study participants included 210 neonates admitted in neonatal intensive care unit of a tertiary care teaching hospital, India divided into three groups of 70 each, namely normothermic, febrile and hypothermic. Temperatures were measured using temporal artery, axillary and rectal thermometers in each patient.
Clinical cases and summary results: Temporal artery temperature showed a good correlation with rectal temperature in normothermic and febrile group with a correlation coefficient of 0.831 and 0.824, respectively, but it did not co-relate well hypothermic neonates (Fig 1). Axillary temperature showed a poor correlation with rectal temperature in all the three groups.
Conclusion: Temporal artery thermometer can accurately predict temperature in febrile and normothermic full term neonates but is not an accurate predictor in hypothermic neonates. Further studies are required before advocating temporal artery thermometry as a replacement of rectal thermometry among this group of population.

Keywords: Rectal thermometry, temporal artery thermometry, axillary thermometry, neonates

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Professional socialization in a sample of iranian midwives practitioner

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Introduction: Professional socialization(PS) is an important requirement of any specialist, particularly in the health system. Socialization is a process in which people learn how to effectively participate in society as a member. PS is the process of accepting professional roles and it is concerned with the individuals' culturalization in the existing patterns in an organization. It is assumed that the process of PS occurs when an individual is studying in an educational context, while it is in progress after graduation and until the time when individuals work in that profession. PS is also affected by the environmental conditions and individual experiences when they become compatible with professional roles. The acquisition of socialization skills is necessary for professional midwives. There is no evidence about the level of professional socialization of midwifery graduates in Iran. This study aimed to determine professional socialization among midwives working in Iran hospitals.
Materials and methods: This descriptive study was conducted on 96 midwives working in the maternity wards in the 12 public hospitals (3 educational hospitals and 9 non-educational) in Khuzestan Province, 2015. The inclusion criteria were holding a bachelor's degree in Midwifery, and a working experience less than three years. Data on their professional socialization were collected using Toit's Professional Socialization Questionnaire composed of 48 items show the extent of their Interesting in midwifery, accepting midwifery, responsibility, and satisfaction.
Clinical cases and summary results: The professional socialization of midwives was 1% at the poor level and 16.7% and 82.3% at the average and high levels, respectively. professional socialization have no significant relationship with age, grade point average, the university, place of work, or years of midwifery practice experience ($p > 0.05$).
Conclusion: The professional socialization of employed midwives have reached a desirable level after three years since their work start-up, and they have obtained necessary clinical and professional skills in performing their midwifery duties. But, there are still 18% of midwives without any professional socialization.

Keywords: Midwives, professional socialization, Iran

Table 1. The professional socialization domains in midwives ($n = 96$).

Levels of professional socialization Professional socialization domains	Poor (<50)	Average (50–75)	High (>75)
Interesting in midwifery	2.1%	19.8%	82.3%
Accepting midwifery	2.1%	13.5%	84.4%
Responsibility	3.1%	12.5%	84.4%
satisfaction	1%	22.9%	76%
Overall	1%	16.7%	82.3%

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Health council is effective to avoid environmental tobacco smoke in the perinatal period

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Introduction: Program "Infància Sense Fum" (Children without smoke) started in 2012 as part of of the Catalonia Public Health Agency Strategies for Prevention and Control of Smoking. In the study "BIBE" * we proved that a brief intervention in primary care consultation was effective in reducing exposure to environmental smoke (second hand smoke) in infants.
Materials and methods: Online training: With an innovative and attractive design, it includes a theoretical and a practical part in the form of outpatient simulation game with clinical cases representing patterned movements that reflect the expression of the faces. Different situations arise in the visits from which professionals have to make choices. According to the decision they make, they receive a return as a feedback. It is a learning process "trial and error". Intervention guide for professionals: We developed a guide in order to formalize and standardize this intervention in the outpatient. Intervention's support materials: Different materials have been made for the Intervention Support as clinic councils to avoid environmental tobacco smoke in childhood.
Clinical cases and summary results: The on-line training demonstrated the effectiveness in regards to better professional knowledges and attitudes as well as patient satisfaction. We have launch 12 editions of it and over 3000 trained professionals have evaluated positively (>90%) the organization, the materials, the methodology, applicability, expectations, etc.
Conclusion: On-line courses eliminate geographical and schedules restrictions, allowing to reach many more professionals. The design is a very important matter: making it attractive and interactive, it improves acceptance and allows us to reach professionals with less interest a priori, raising awareness in doctors and nurses in pediatric health care. Our goal is to continue expanding this training program to more professionals.

Keywords: Primary care, environmental smoke, passive smoking

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Obstetrical care providers' attitude to patients who disagree with medical advice

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Introduction: Obstetricians and midwives are increasingly confronted with pregnant women who either request interventions that are not medically indicated (such as caesarean section on maternal request) or refuse medically indicated interventions such as a hospital birth,

foetal monitoring, oxytocin etcetera. It is currently unknown how providers feel about these requests and refusals and how they manage them.
Materials and methods: Online questionnaires were sent to all Dutch obstetricians and midwives. Reminders were sent after two weeks.
Data were gathered through on online Survey Monkey account and imported into an SPSS database (version 22).
Chi-quare tests were used for 2x2 tables and Mann-Whitney U tests were used for ordinate variables. An ordinate logistic regression model was used to correlate answers with the characteristics of the responders. Opinions on statements were gathered with a 7-point Likert scale.
Clinical cases and summary results: The total response rate was 22%. Two-thirds of those who received one or more requests for caesarean section on maternal demand honoured at least one of these requests, whereas over 40% of those who received a request for less care had denied at least one of these. Some of the reasons given for refusal were fear of a bad outcome and fear of litigation. Over 12% of providers had had at least one patient who wanted to have an unassisted birth (UC) and 8% had been asked to assist during or after an attempted UC. Nine statements were presented to the responders, the most interesting one of which was whether or not they would be willing to ignore a patient's refusal of an intervention in case of foetal distress. Responders were also asked about reporting patients to social services and about how much extra time these patients cost in consultations.
Conclusion: Obstetricians and midwives in the Netherlands are more willing to comply with a request for more care than indicated as opposed to less care than indicated. A surprising number are willing to overrule a competent patient's wishes, which is not allowed by Dutch law.

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Medical and paramedical management of the mother-to-be in belgium: from pregnancy to 3 months after delivery

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Introduction: Evaluation of the health care use from pregnancy to 3 months after delivery (preventive/curative and medical/paramedical) during a 365 days follow-up.
Materials and methods: Descriptive retrospective analysis with real life data of (reimbursed) health care use during 3 specific periods: 9 months of pregnancy, the period of hospitalization for delivery and 3 months follow-up after discharge. Data (from 2012 to 2014) were extracted from administrative databases of the Independent Health Insurance Funds (Mutualités Libres - Onafhankelijke Ziekenfondsen). Reimbursements of all preventive and curative care were included in the analysis.
Clinical cases and summary results: 19,323 women (15–47 years, average: 30.5) gave birth in 2013. Nearly all (99%) births occurred in hospitals or clinics (0.6% and 0.4% took place in a private home or in One Day, respectively). 22% of women had a C-section (14% in 1997). During pregnancy, 98% had an average of 3 blood tests, 76% HIV testing, 88% T. gondii IGG/IGM (4 times on average), 79% CMV IGM/IGG (3 times on average), and 56% Rubella (once), 51% had 5 ultrasounds, 76% had 3.3 prenatal cardiotocographies. On average, pregnant women had 10.6 gynecological consultations, and 49% had prenatal midwife consultations (at home or at the hospital, 3.5 times on average). During hospitalization, 99.9% of deliveries were made by gynecologists, and 95% had midwife assistance, 91% of mothers consulted twice a pediatrician, 94% had one blood test, and 55% had an epidural. During the 3 months follow-up after discharge, 80% consulted a gynecologist, 43% a midwife (3 times on average mainly for promoting and supporting breastfeeding), and 33% a physiotherapist (7 times on average). In general, blood tests were performed routinely but not coherently, the frequency of ultrasounds was higher than the Belgian recommendations (2 according to KCE, CSS and IMA), there was a high proportion of C-sections (15–18% according to WHO) and a low rate of midwife consultations.
Conclusion: We observed important discrepancies between reality "on the field" and official recommendations in Belgium. It is crucial to improve the (quality of) information towards the health care professionals and mothers-to-be in order to reduce the observed discrepancies, to contribute to a better quality of care and use of the available financial resources.

Keywords: Pregnancy, midwife, ultrasounds, surveillance, consultations

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The effects of newborn screening tests education on the knowledge level of mothers

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Introduction: Newborn screening (NBS) is the process of testing newborn infants for certain hormonal, genetic, metabolic, and other disorders. Most screening is done with a simple blood test. In order to enable treatment and life saving interventions for afected newborns, 30 disorders have been identified for routine screening. Screening for hearing impairment is also routinely performed in many facilities as part of the overall newborn screening profile. Early diagnosis and proper treatment can make the diference between long-term impairment and healthy development. AWHONN recommends that NBS programs include the following key elements: parent education. The aim of the study was to determine the effects of newborn screening tests education on the knowledge level of mothers.
Materials and methods: This study has been planned to experimental research which women in-patient Sivas County Hospital during postpartum period in the central district Sivas province, between October-December 2014. This study has been realized with volunteers of totally 464 women in postpartum period (p=0.15, α=0.05, d ± 0.05). The research data were collected using Newborn Screening Tests Information Form. After the women have fulfilled the all forms, there will be an education which used "Guide for Newborn Screening Tests" on the basis of the literature will given to mothers by researchers. And then after this education, the women have fulfilled information test again. SPSS 14.0 was used to determine frequencies, paired t test, one way anove of responses. p <0.05 was applied as a general level of significance.
Clinical cases and summary results: The median age of women enrolled in our study was 27 ± 5.53, 89% women have no job, 44% women graduated from primary school degree, 8.2% women marriaged with relatives. It is found that 43.3% women have no any knowledge about newborn secreening tests and 84% women have some knowledge about newborn secreening tests which obtained by health professinals. Women who have education, before and after newborn screening tests knowledge score's means are found statistically significant (p <0.05). After the education, women's

newborn secreening tests knowledges are increases (8.9–17.2%). Women who have job, before and after newborn screening tests knowledge score's means are found statistically significant ($p < 0.05$). *Conclusion*: Raising the level of mothers' knowledge about newborn screening tests can affect on the early diagnosis and proper treatment can make the difference between long-term impairment and healthy development. Health prefessional should provide to improve the availability of medication and formulas, genetic counseling, medical interventions, communication, education materials, and awareness.

Keywords: Newborn, mothers, newborn screening

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Newborn screening tests: determination of maternal views and participation status in screening programs

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Introduction: Newborn screening (NSB) is a public health program designed to screen infants shortly after birth for a list of conditions that are treatable, but not clinically evident in the newborn period. Some of the conditions included in newborn screening programs are only detectable after irreversible damage has been done, in some cases sudden death is the first manifestation of the disease. Babies that are born in a hospital should be screened before they leave the hospital. Parents should take babies that are not born in a hospital or those that were not screened before leaving the hospital to a hospital or clinic to be checked within a few days (between 3 and 7 days) of birth. This study was planned to determine mothers' views and participation status in screening programs.
Materials and methods: Descriptive study's sample is consisted of 398 women staying in postpartum clinic of a university hospital between November 2015-March 2016 dates. The purpose of the study was explained to women in related clinics, verbal consent was taken. After that women were asked to fill out Personal Information Form and Identification of Maternal Opinions Concerning Newborn Screening Tests Survey. After postpartum discharge, meeting was made with women and they were asked if they resorted to health organizations to get newborn screening tests done after postpartum discharge. The data were evaluated by using SPSS 22.0 program package. The level of statistical significance was accepted as $p < 0.05$.
Clinical cases and summary results: 11.6% of mothers made consanguineous marriages were determined in the study. It was found that 51.4% of mothers' find their information on newborn screening tests partly sufficient. 54.8% of mothers' know that certain diseases may pass to the baby through the mother or father, 56% of them know consanguineous marriage is influential in the emergence of inherited diseases, 51.3% of them know these diseases can cause irreversible brain damage in infants, 48% of them know diagnose can be made with two drops of blood taken from the baby's heel. 46.7% of mothers' are undecided about the relationship between heel blood and nutrition, 48.2% of them are undecided about the best time for the heel blood to be taken. 219 of mothers' were contacted after postpartum discharge. 48.4% of mothers' resorted to health organizations after 1 week postpartum, 65.8% of them said that newborn screening test was performed by midwives, 77.6% of them stated that they were informed about the process.
Conclusion: The success of any screening program requires public participation and awareness. Midwives, nurses, obstetrician and pediatrician should be involved in the education of parents regarding the availability of NBS testing, the benefits of early detection of disorders for which screening is performed, the risks that exist for newborn infants who do not receive screening, the process of screening, and need for follow-up.

Keywords: Newborn, mothers, newborn screening

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The effect of painful processes performed to newborn on parent-infant attachment

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Introduction: Many newborns are obliged to spend the first weeks of life in intensive care unit and they are faced with many painful practises (heel to draw blood, arterial catheters, newborn examination, dressing changes, inserting a gavage tube, injection etc.). Painful interventions are stressful for parents as it is for newborns. Besides physical and mental development of the newborn, the pain also negatively affects emotional development of newborn and the relationship / interaction between infant and parent. However, in the literature the number of studies carried out to determine the effect of pain experienced by newborn on parent-infant interaction is quite limited. The aim of this study is to determine the effect of painful processes performed to newborn on parent-infant attachment.
Materials and methods: The sample is consisted of 354 parents (177 mothers, 177 fathers) whose babies are at newborn clinics of a university hospital between November 2015-March 2016 dates. For the implementation of the study, written permit from Cumhuriyet University Research and Application Hospital and approval from Cumhuriyet University Non-Invasive Clinical Research Ethics Committee were received. Parents were informed about the purpose of the study, verbal consent was taken. After that, from parents Parental Pain Assessment Form, from mothers Maternal Attachment Inventory (MAI) and from fathers Postnatal Paternal-Infant Attachment Questionnaire (PPAQ) were asked to fill out. The data were evaluated by using SPSS 22.0 program package. The level of statistical significance was accepted as $p < 0.05$.
Clinical cases and summary results: Painful processes performed to infants in newborn clinics are listed by parents as establishing vascular access (100%), bloodletting (68.4%), application of injection (62.1%). 74% of parents' thought that baby's crying, 60.5% of them wrinkling the forehead were reactions to the pain. 72.3% of parents' think that making calming sounds, 61.6% of them breastfeeding would be effective in reducing baby's pain sensation. The total average score mothers took from MAI was found to be 83.5 ± 8.7 and the total average score fathers took from PPAQ was found to be 55.6 ± 10.2. In the study, no statistically significant difference was found between maternal age, country of residence, mother's education status, sex of the baby and MAI average scores. However, as the duration of hospitalization increases, mothers' attachment points were found to increase, too ($p < 0.05$). Statistically significant difference was found between the education level of the father, the baby's gender and PPAQ average scores.
Conclusion: Health professionals should develop awareness considering the fact that the pain affects not only physically but also mentally and emotionally. For effective pain management in newborns, there is

a necessity to work with the family and to consider them as part of the team. This approach will contribute to the reinforcement of parenting roles of mothers and fathers, emotional support that newborns needs by parents and establishment and strengthening of the attachment process in an earlier period.

Keywords: Newborn, pain, attechment, parents

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Use of folic acid and knowledge level of pregnant women

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Introduction: While there is no general nutritional supplement with folic asit which prevents the risk of neural tube defect in pregnancy period nowadays, the studies on vitamin supplement in pregnancy period have been performed in recent years. It is also stated that the effects of folic asit can be protective against the risk of growth deficiency and low birth weight. In folic asit deficiency NTD such as anencephaly and spina bifida occurs. The object of the research is to determine the use of folic asit and knowledge levels of pregnant women living in city center in Manisa.
Materials and methods: The research is a descriptive research. 2954 pregnant women living in city center in Manisa constitute the scope of the research. The paradigm of the research was calculated as 384 with 5% margin of error, 50% unknown prevalence in 95% confidence interval in Epi Info 6 program. The research data were collected from two random family health centers. The data were collected by using face-to-face interview method by the researchers. The data collection tool consists of a total of 31 questions. There are questions about sociodemographic information in the first section and there are questions about the use and knowledge of folic acid in the second section. The data analysis was performed with 15.0 statistics program. Numerical percentage distribution was used in the data analysis.
Clinical cases and summary results: It was determined that the average age of the pregnant women was 27.35 ± 5.28 in the scope of the research, 29% of them were primary school graduates and 82.0% of them were housewives and the average marriage age was 21.18 ± 3.74. It was detected that the average gestational week of the pregnant women was 20.12 ± 9.34, the average total number of the pregnant women was 2.43 ± 1.65, and the average number of living children was 1.07 ± 1.40. It was determined that 18.6% of the pregnant women started to use folic acid in pre-pregnancy period and 73.7% of them used folic acid early pregnancy period, and 38.2% of them started to use folic acid upon the advice of the family physician. When we consider the knowledge level of pregnant women about the use of folic acid, 18.0% of them know that folic acid is a group B vitamin, and 37.7% of them accurately know the foods containing folic acid, and %26.5 of them know that neural tube defect can be developed in the case of folic acid deficiency.
Conclusion: It is determined that the most of the pregnant women did not use folic acid in pre-pregnancy period and they did not have sufficient information about folic acid.

Keywords: Folic acid, pregnant, use of folic acid

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Alternatives to vaginal touch during labor

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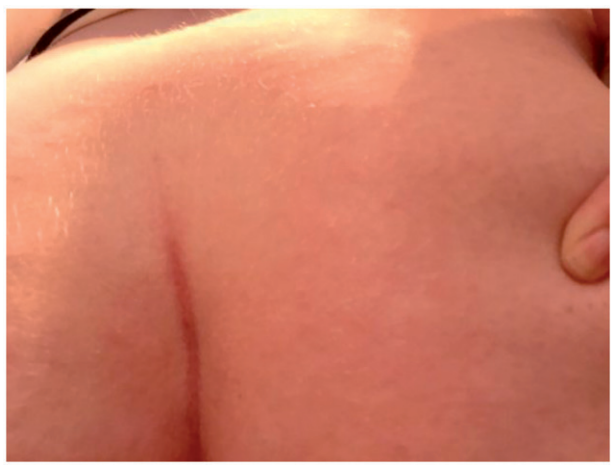
Introduction: The purpose of Vaginal Touch (TV) is to check the evolution of childbirth, entails risk infections, malaise, generating anxiety and morbidity and mortality in poor countries. According to WHO, guide NICE, Cochrane ... the number of TV should be the minimum, recommending its implementation every 4 hours. Alternatives to TV: Purple Line, maternal behavior, dilation of the anal area,breath, groaning, straining, positions, facial sweating, changes in uterine dynamics. The purple line goes from the anus to the coccyx, estimates how many centimeters stretch has the mother. It indicates progression, grows from the anus to the coccyx 10 cm expansion.
Materials and methods: Literature review of their databases of Cochrane, PubMed, Medline, and others.
Clinical cases and summary results:

(1) According to the scientific evidence on TV performed too frequently, and too many professionals during childbirth.
(2) In a study 82% of the women report pain on TV and 68% He reported discomfort during TV. Besides women report insensitivity, little privacy and lack of dignity to be explored.
(3) The effectiveness of the purple line and others advancing signs of dilation if they are observed give us advance information dilation.

Conclusion:

(1) Lack of studies on the effectiveness of the purple line and other signs of advancing dilatation.
(2) If the TV is not a good measure of progress, there is an urgent need for identify and evaluate an alternative measure to ensure the best outcome for mothers and newborns.
(3) The TV should be performed only when necessary, by the same supplier, guaranteeing the right of women to information, respect, dignity and life Private.

Keywords: Perinatal health, Vaginal Touch, Dlibery



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Oral involvement in pregnacy

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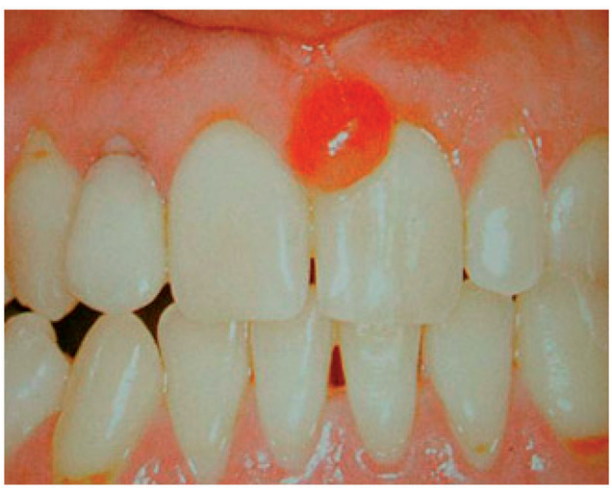
Introduction: Any problem in the health of the pregnant woman can affect the perinatal health. Interest gingival changes in pregnancy is based not so much on its severity, if not his enormous prevalence. According to WHO, tooth decay affects almost 100%, 15–20% of middle-aged adults suffer from periodontal diseases with consequent loss of teeth. Unfavorable socioeconomic conditions influence the onset of periodontal disease. In pregnancy gingivitis prevalence varies between 35 and 100%. During pregnancy increases the susceptibility of gum-related hormonal changes causing vascular changes, cellular, microbiological and immunological. The protocol for monitoring and control pregnancy should include an oral health program for basic health areas.
Materials and methods: Literature review in databases: Cochrane, MEDLINE, PubMed and others.
Clinical cases and summary results: Major dental conditions in the pregnancy: Caries; Acid erosion of teeth; Gingival inflammation (60–70%); Periodontal disease and tooth loss; Epulon gravidum (10%); xerostomia; Ptialism / drooling (rare)
Conclusion: It is important the midwife cares in oral health of pregnant women to adequate education care, including oral health education in health programs of control of the pregnancy.

Keywords: Perinatal health, oral health and pregnancy



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Emotional literacy in terms of a qualified midwife and quality of care

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Presenter: **Büşra CESUR**

Introduction: Becoming aware of our feelings is a skill that needs to be developed rather than an innate property. Our emotions are the most important indicator of who we are, why we do what we do, who we want to be and have a direct impact on our skills. Emotional literacy is the ability of recognizing, understanding own and others' feelings in a healthy way and the ability to respond to these feelings. In addition, emotional literacy can be explained as to use the information that we have about our feelings in shaping our behaviors and in communicating with others by understanding our true feelings.
Materials and methods: Midwifery is one of the professions that is in intensive communication with people and serve people directly. Many midwives feel inadequately prepared for the interpersonal and emotional roles that sometimes occur in their practice. Midwives' levels of emotional literacy must be adequate to recognize, understand the feelings of individuals they care, to understand their problems, to empathize with them and to solve their problems effectively.
Clinical cases and summary results: Studies carried out on students show that students with high emotional literacy skills have better academic achievements, social skills, peer relationships, empathic skills and motivating themselves better. For this reason, curriculum of midwifery education should be organized in such a way that will improve emotional literacy of students' from the educational process.
Conclusion: Thus, the development of emotional literacy skills of midwife candidates' will be ensured. Graduate midwives who are emotionally literate will not only meet the physiological needs but also meet the emotional needs of individuals effectively and in this way they will have contributed to improvement of the quality of midwifery care. This article aims at examining the emotional literacy and its importance in the profession of midwifery.

Keywords: Midwifery profession, midwifery students, emotional literacy

716 (CASE REPORT)

Unusual behaviour related to planned home birth

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Presenter: **R.M. SIMA**

Introduction: The prevalence of planned home birth varies by country. The American College of Nurse Midwives (ACNM) and the American Public Health Association (APHA) has policy statements supporting the practice of planned out-of-hospital birth in select populations of pregnancies. The World Health Organization (WHO) has released a statement indicating women can choose to deliver at home if they have low-risk pregnancies, receive the appropriate level of care, and formulates contingency plans for transfer to a properly-staffed/equipped delivery unit if problems arise. In Romania there is no statement or guideline regarding planned home birth. Lately it was observed a new trend for Romanian patients: some pregnant women who require home birth assistance.
Clinical cases and summary results: We retrospectively evaluated the home births that after delivery were referred to our unit in 2015. It was observed that we had 5 home births from a total number of 1983 births. 4 home births were unplanned. They were incidental situations caused by: long distance between home and hospital (one case), prematurity (2 cases) and homeless (one case). We report the only case that was registered as planned home delivery because it associates an unusual maternal behavior. The patient M.I, 32 years woman, was admitted in our unit in the third period. She had a home

birth assisted by a doula and she gave birth to a 3200 g healthy baby boy. The mother and doula decided to come to hospital because of retained placenta. The placenta delivered naturally immediately after hospitalization. Maternal and neonatal outcome was favorable. The particularity of this case is that the mother wanted to receive the placenta to take it home. Her considerations were cultural and non-medical.
Conclusion: Planned home birth is an isolated situation in our medical unit according to medical charts from 2015. Unplanned home birth has also a low rate among vaginal deliveries. We presented that particular case because the mother had that special wish: to take home the placenta. This is an uncommon situation in our medical units. The woman explained that the placental tissue is for her personal usage (to be eaten), being influenced by foreign similar practices that she have seen on internet.

EPIGENETICS AND METABOLOMICS IN PERINATOLOGY - 053 (CASE REPORT)

Raging vessels: a case report on pregnant young overt diabetic patient with cerebral cavernous malformation presenting as pontine hemorrhage and hepatic hemangioma

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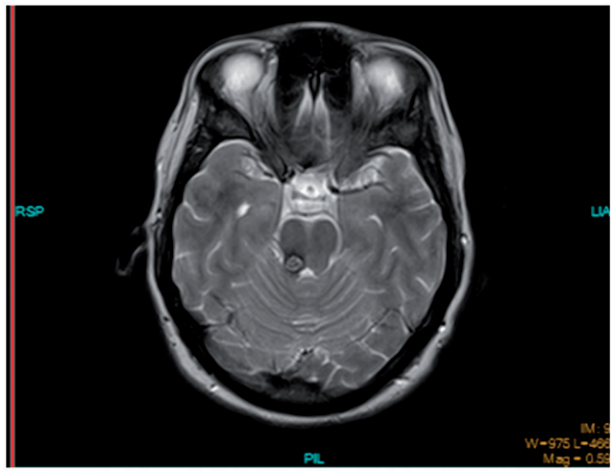
Introduction: A 29-year-old G5P4 (4004) was admitted at 23 weeks and 6 days age of gestation due to left-sided hemiparesis and slurring of speech. Past history reveals three previous admissions for severe anemia requiring multiple blood transfusions and a fourth admission for ligation of esophageal varices with hepatic hemangioma as the cause of portal hypertension. A multidisciplinary team was assembled to manage the neurologically stable patient who underwent caesarean section with bilateral tubal ligation at 35 weeks age of gestation. Magnetic resonance angiography revealed a cavernoma.
Clinical cases and summary results: Review of literature shows that cavernous malformation is rare affecting 0.47% of individuals and increased risk of hemorrhage from cavernous malformation and risk of hemangioma rupture during pregnancy is possibly due to an increase in Vascular Endothelial Growth Factor (VEGF) during placental development. VEGF has also been found to be increased in in Diabetes Mellitus. Cavernous malformation is a rare disease with scant data associating it with pregnancy. Current literature has not reported its occurrence with hepatic hemangioma in a single patient and no data has linked it with Diabetes Mellitus. Currently, there are still no management guidelines regarding cavernous malformation in pregnancy.
Conclusion: Increased levels of VEGF in pregnancy may predispose to developing vascular anomalies such as cavernous malformation but is still rarely encountered in pregnancy. It's occurrence with another vascular malformation, hepatic hemangioma and Diabetes Mellitus where VEGF levels are also increased opens the door for analytical research in this rare clinical presentation.

Keywords: Cerebral cavernous malformation, vascular endothelial growth factor



250 (CASE REPORT)

Do we always propose the same diagnostic for the low gain ponderal in neonates and infants? importance of early delection of metabolopathies

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Introduction: We often find that infants do not gain weight in the first weeks of life. We usually associate it with poor tolerance of artificial feeding, technical problems with breastfeeding or intolerance or allergy to cow's milk proteins. However, we forget other assessments from a difficulty in the assimilation of food.
Clinical cases and summary results: Girl of 15 days was admitted to our hospital with recurrent vomiting, irritability and poor weight gain. Fueled by exclusive breastfeeding. The physical examination revealed little adipose tissue, and profuse sweating. Active. Current weight of 2400 gr. Personal history: controlled pregnancy, vaginal delivery at term. Intrauterine growth restriction with birth weight 2350 g. GBS negative and negative maternal serologies. Family history: systemic lupus erythematosus affects mother. On admission, the following diagnoses are suspected: hypertrophic pyloric stenosis, urinary tract infection, intolerance or allergy to cow's milk proteins, breast milk excess. We request blood count, biochemistry with electrolytes, glucose, urea, and total E imunoglobulin (cow's milk fractions), TSH, venous blood gas and urine sediment with results within normal limits. The abdominal ultrasound scan was normal too. While entering poor tolerance persists puffs, vomiting and poor weight gain so you decide to try hydrolyzed formula achieving excellent oral tolerance. Stresses maintained profuse sweating. In these days, we received the screening of inborn errors of metabolism results practiced in our country with the diagnose suspected of cystic fibrosis. Chlorine test is performed in sweat with a confirmatory result. Start enzyme replacement therapy and protein hydrolyzate feeding keeps improving weight gain and irritability.
Conclusion: In many cases the low weight gain, poor tolerance of milk or an infant irritability are associated with the same basic diagnosis, without considering the possibility of other diseases such as cystic fibrosis or other metabolic disorders. Emphasize the importance of universal screening for inborn errors of metabolism to early diagnosis of these pathologies.

Keywords: Screening, metabolic disorders, cystic fibrosis

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Influence of sexual dimorphism on women blood coagulative system in physiological pregnancy

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Introduction: Sex of the fetus is a genetically determined factor in the formation of certain differences in the functioning of various parts of the functional system "mother-placenta-fetus". It is evident that the sex of fetuses can influence differently on the antenatal period of ontogenesis and have different impact on pregnancy outcomes, including the state of coagulative system.
Materials and methods: Retrospective evaluation of blood coagulation in 259 women with physiological pregnancy in I, II and III trimester with no abnormalities of the blood was conducted. Of these, 116 women had female fetuses (I group), 143 - male fetuses (II group). Sex of the fetus was determined by two-dimensional ultrasound. Hemostasis parameters - hemoglobin, hematocrit, red blood cells, erythrocyte sedimentation rate, fibrinogen, platelets, activated partial thromboplastin time, prothrombin time, thrombin time, prothrombin index, international normalized ratio, soluble complexes of fibrin-monomer were determined using an automatic hematology analyzer.
Clinical cases and summary results: We found that with increasing gestational age the increased activity of coagulative hemostasis was noted in both clinical groups, but the rate of these changes was higher and reached a maximum in II trimester in women with a male fetus, whereas in women with female fetus pace of these changes was less pronounced. D-dimer levels were higher in women with male fetuses (p=0.0478), especially in the II trimester (21%). A significant (p=0.0352) difference in platelet count was revealed in the I trimester: average values were higher (26%) in pregnant women with male fetuses (p=0.0451). In II trimester of pregnancy in women with a male fetus we revealed a tendency to a higher fibrinogen. The average values of thrombin time in women with male fetuses were rising, while in pregnant women with female fetuses these values were lower (within the band of normal) as it approaches delivery date.
Conclusion: In women with male fetuses we revealed higher coagulation readiness in physiological pregnancy, indicating the tension of coagulation system in this variant of sexual dimorphism. Higher levels of D-dimer in pregnant women with a male fetus can also be explained by greater morphological and functional "vulnerability" of uterine-placental complex and by more frequent occurrence of placental insufficiency.

Keywords: Sex of the fetus, pregnancy, blood coagulation

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Plasma metabolic profile in gestational diabetes mellitus

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Introduction: A growing number of metabolomics studies, aimed at uncovering the metabolic signature of type 2-diabetes, focusing on potential biomarkers of altered glucose tolerance and onset of insulin resistance. In the present study, we devised an untargeted metabolomics approach for determination of the metabolic alternations in plasma during GDM.
Materials and methods: The study sample consisted of 64 participants - 36 healthy pregnant women and 28 women with GDM (2-h 75-g OGTT) matched according to week of gestation and age were collected following gestational and postpartum time trajectory (2nd, 3rd trimester of gestation, 1 month and 3months after delivery). An Agilent Technologies 7100 CE system coupled to an Agilent Technologies 6224 Accurate-Mass TOF mass spectrometer system with an electrospray source was used for metabolomics analysis. Comprehensive data mining including data pre-processing, data pre-treatment and data treatment have been applied to the study.
Clinical cases and summary results: A data matrix consisting of 135 metabolic features were evaluated by univariate and multivariate statistical analysis. The metabolic perturbation identified in this study, mainly related to amino acids and carnitine pathways, may provide an important further insight into the molecular pathophysiological mechanism of the onset and progression of GDM.
Conclusion: Metabolomics offers a powerful tool for identification of key metabolites involved in the biological or pathophysiological processes at a molecular level. That, allow for new insight and the elucidation of disease mechanisms, onset and progression.

Keywords: Metabolic profile, GDM

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The effect of cell growth and proliferation factors (EGF/PDGF signaling pathway) on the etio-pathogenesis of intrauterine growth restriction

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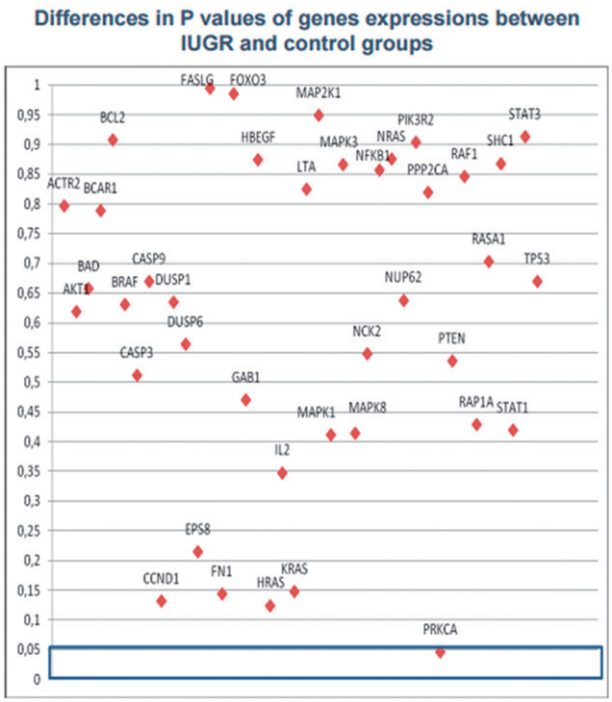
Presenter: **M.A. Ozek**

Introduction: Intrauterine growth restriction (IUGR) is defined as inability of the fetus to gain its growth potential because of various

pathological issues. IUGR is observed in 3-8% of all pregnancies and it is an important reason of fetal morbidity and mortality. One of the most important aims of the antenatal care is to detect fetuses which have insufficient growth. It is highly probable that the subgroups of EGF/PDGF (epidermal growth factor/platelet-derived growth factor) signaling pathway may be involved in the etiopathogenesis of IUGR. For example, it is known that apoptosis (programmed cell death) is the key mechanism in cell homeostasis, cell growth and immune response. Apoptosis plays an integral role in successful placental devolopment.
Materials and methods: In our study, EGF/PDGF signaling pathway gene profile was studied comprehensively with Reverse transcriptase-Polyerse chain reaction(RT-PCR) by using "Human EGF/PDGF Signaling PCR Array" in placentas obtained from 6 women with healthy pregnancies and 6 women with intauterine growth restricted fetuses. The genes related with cell survival and growth; such as apoptosis, cell cycle, cell differentiation cell growth, cell motility, cell proliferation gene groups were studied.
Clinical cases and summary results: The parity, gestational week at delivery, Apgar scores at first and fifth minutes were not significantly different between the IUGR and control groups. However, the women in IUGR group were younger and slimmer. Additionally, AFP values were higher in IUGR group when compared to those of the control group. It seems that PRKCA gene is the only gene which shows a significant expression difference between the IUGR and control groups.
Conclusion: It is highly probable that the expression variations in the genes in pregnancy cause changes onto placental and fetal development by affecting apoptosis and cellular events on different aspects. At the present time, the progressing studies of diseases and gene therapy are individualized. We believe that different genetic origins of IUGR and other diseases of pregnancy for different individuals will be found and individual gene therapies for them will be generated in the near future.

Keywords: Intrauterine growth restriction, egf, pdgf, cell, growth, proliferation



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Perinatal outcomes in fetuses with cystic hygroma

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Introduction: Cystic hygroma is a congenital malformation characterized by the presence of abnormal fluid collection at sites of lymphatic-venous collection within neck, mediastinum, abdomen, and axillary region [1]. It is also defined as a subgroup of lymphangiomas with the cystic variety, and filled with protein-rich fluid [2]. Cystic hygroma is classified as septated and non-septated. The overall incidence of cystic hygroma is approximately 1/1000–6000 births and 1/750 spontaneous abortion [3]. In this study, we aimed to evaluate the gestational and fetal outcomes of fetuses with cystic hygroma.
Materials and methods: We conducted a retrospective study based on a review of medical records of patients who had fetal septated cystic hygroma, diagnosed by ultrasonography in the Ankara University School of Medicine, Department of Obstetrics and Gynecology, between December 2012 and February 2016. Cystic hygroma was defined as an enlarged sonolucency with clearly visible septations extending along the fetal body axis, in contrast to NT, which was described as a nonseptated sonolucent area confined to the fetal neck (Figure 1) [7]. Data about karyotypes of fetuses, and gestational outcomes were collected either from the records of Obstetrics and Gynecology, and Genetics Departments, or from direct phone calls to patients.
Clinical cases and summary results: 4589 singleton pregnancies were enrolled for first and second trimester sonography between December 2012 and February 2016. We observed 18 cases of fetal cystic hygroma among these patients (0.39%). The details of the cases with cystic hygroma were summarized in table 1.
A normal karyotype was revealed in 11 cases (61.1%), whereas 7 cases (38.9%) had abnormal karyotypes. The abnormal karyotypes were: Turner syndrome (45 X0) in 3 (16.7%), trisomy 21 in 2 (11.1%), trisomy 18 in 1 (5.6%) and mosaic Turner syndrome in 1 (5.6%) patient. Sonographic scan revealed associated findings in 7 (38.9%) cases. These findings were: hydrops and pleural effusion (*n*=3, 16.7%), pes equinovarus (*n*=1, 5.6%), pectus carinatum (*n*=1, 5.6%), perimembranous VSD (*n*=1, 5.6%), multicystic dysplastic kidney (*n*=1, 5.6%) and short femur-humerus (*n*=1, 5.6%).
Conclusion: At least half of the cystic hygroma cases were reported to be coexisting with chromosomal abnormalities [8]. If NT measurement was above 2 mm, 60% were related with abnormal karyotype and 1/4 of these cases were detected to have T21. In conclusion, the presence of cystic hygroma carries a high risk for aneuploidy and major structural malformations. Invasive prenatal diagnostic procedures for fetal karyotype analyses and parental counselling about poor perinatal prognosis is mandatory.

Keywords: Cystic, hygroma, perinatal, outcomes, neurologic

FETAL DISEASE - 013

Are term fetuses with isolated single umbilical artery at an increased risk for perinatal mortality?

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Introduction: Single umbilical artery (SUA) has been associated with fetal growth restriction and preterm delivery, and was found to be an independent risk factor for perinatal mortality. We sought to determine whether SUA is an independent risk factor for perinatal mortality in the full-term neonates with normal estimated fetal weight prior to delivery.

Materials and Methods: A population-based study was conducted, including all deliveries occurring between 1993 and 2013, in a tertiary medical center. Pregnancies with and without isolated SUA were compared. Multiple gestations, chromosomal, and structural abnormalities were excluded from the cohort to fit the definition of isolated SUA. Only pregnancies delivered at term with normal EFW evaluated prior to delivery were included in the analysis. Stratified analysis was performed using multiple logistic regression models to evaluate the risk of adverse outcomes and perinatal mortality for isolated SUA fetuses.

Clinical cases and summary results: During the study period, 233,123 deliveries occurred at the Soroka University Medical Center, out of which 786 (0.3%) were diagnosed with isolated SUA. Different pregnancy complications were more common with isolated SUA fetuses including: placenta previa (OR=2.9), placental abruption (OR=3.4), true knot of cord (OR=3.5) and cord prolapse (OR=2.8). Induction of labor and cesarean delivery were also more common in these pregnancies (OR=1.5 and OR=1.9, respectively). Isolated SUA neonates had lower Apgar scores at 1 and 5 minutes (OR=1.8, OR=1.9, respectively) compared to the control group and perinatal mortality rates were higher both antenatally (IUFD, OR=8.1) and postnatally (PPD, OR=6.1). In the multivariable regression model, SUA was found to be independently associated with perinatal mortality.

Conclusion: Isolated SUA appears to be an independent predictor of adverse perinatal outcomes in full-term neonates.

Keywords: Spontaneous preterm labor; nitroglycerin, NO donors, nifedipine, calcium channel blocker, preterm delivery, preterm birth

Table. Multiple logistic regression for prediction of perinatal mortality.

Variable	OR	95% CI	*p* Value
SUA	5.13	3.18–8.26	<0.01
Polyhydramnios	3.14	2.49–3.94	<0.01
Oligohydramnios	4.02	3.07–5.26	<0.01
Placental abruption	32.56	25.22–42.04	<0.01
Cord prolapse	6.43	4.11–10.06	<0.01
True knot of cord	3.46	2.41–4.98	<0.01
NRFHR	2.67	1.95–3.65	<0.01
Vasa previa	6.33	2.48–16.12	<0.01

039

Echocardiographic evaluation of the interatrial communication in the foetuses with hypoplastic left heart syndrome - criteria for the need of *in-utero* catheter intervention

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Introduction: Introduction Intact or very restrictive atrial septum in foetuses with hypoplastic left heart syndrome (HLHS) is a highly lethal combination. It has long been recognized as a predictor of poor outcome despite of early postnatal left atrial decompression and palliative surgery. Echocardiographic evaluation and correlation of the foetal pulmonary venous flow (PVF) with severity of atrial septal restriction (ASR) is the parameter of choice for assessment of need for emergent atrial septostomy in newborns with HLHS. Despite the palliative intervention many of these infants will die from severe persistent pulmonary vascular resistance.

Materials and methods: A retrospective review of echocardiography records of 18 patients with hypoplastic left heart syndrome and restriction at the atrial level born, between 2010 and 2006 was performed. Age at diagnosis was from 16 to 26 gestational weeks (mean 22 ± 4 days). Patients with an intact atrial septum or an interatrial communication less than 2 mm by color Doppler flow mapping on initial postnatal study, or evidence of obstruction to left atrial egress on foetal echocardiogram, were included. Patients were subdivided into two groups based on severity of obstruction.

Clinical cases and summary results: Eighteen patients met inclusion criteria and basing on the degree of obstruction patient were divided in two group: eight have had most severe form of anatomic obstruction (group 1), and 10 had a lesser degree of obstruction (group 2). Thirty-day cumulative survival for all was 68%: 38% for group 1 and 94% for group 2 ($p = 0.001$). All foetuses were prenatally diagnosed and to any fetus prenatal intervention has been done. All fetuses in group 1 and two in group 2 had progression of atrial level restriction from the first foetal study to the first postnatal study. 13 patients (72%) prenatally diagnosed with severe restriction underwent planned caesarean section followed by immediate catheter-based intervention, with 8 survivors (61%). In the absence of cardio surgery services in Kosovo all these have been transferred out for surgical treatment. In four pregnant in-utero transport to tertiary level with cardiosurgery services abroad Kosovo was performed where surgery or balloon intervention was done.

Conclusion: Hypoplastic left heart syndrome with an intact atrial septum is a highly lethal condition despite prenatal diagnosis and immediate intervention at birth. Foetal intervention should be considered for these high-risk foetuses. Prenatal diagnosis did not improve initial hospital survival or cumulative survival for either group

Keywords: Fetal echocardiography, hypoplastic left heart syndrome, baloonatrioseptostomy

048

Trends on the fetal mortality rates, Brazil, 2001–2010

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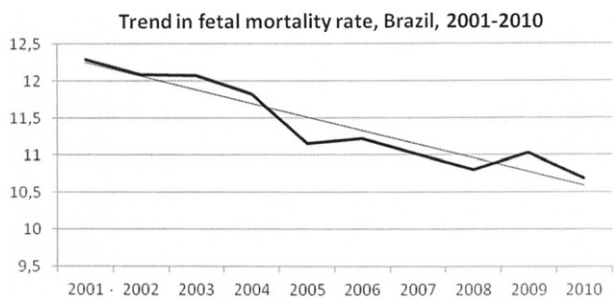
Introduction: Prenatal care with service supply of quality it is essential for gathering satisfactory maternal and perinatal outcomes. Although, in Brazil, the prenatal coverage can be considered universal, the fetal death still is a challenge for policy-health-makers.
Materials and methods: Official sources about live births (Live Births Information System - SINASC) and deaths (Mortality Information System - SIM) have universal coverage in Brazil and were consulted for getting total of live births and fetal deaths, occurred from 2001 to 2010. Microsoft Excel Program™ was used to calculate rates and produce trend graphic. Time series were analyzed using Prais-Winsten regression and the Annual Percent Changing - APC and 95% Confidence Interval (CI), after logarithmic transformation of rates was estimated with the use of STATA Statistical Package™.
Clinical cases and summary results: In Brazil, from 2001 to 2010, 344 492 and 29 789 298 babies were born dead and alive, respectively. The average fetal mortality rate was 11.43 by 1000, ranged from 12.29 by 1000 (2001) to 10.69 by 1000 (2010). Visual inspection (Image) of the ranked rates by year showed reducing trend. Annual Percent Changing was statistically significative with fetal mortality dropped at a yearly rate of 1.59% (95% CI −2.04%, −1.13%)
Conclusion: Although the time series analysis has shown significant decrease in fetal mortality rates, the figures are still high, suggesting that more investments should be prioritized to improve the prenatal care and childbirth in Brazil.

Keywords: Stillborn, mortality, fetus, time series



052 (CASE REPORT)

Rare clinical case of rubela infection diagnosed in neonate period

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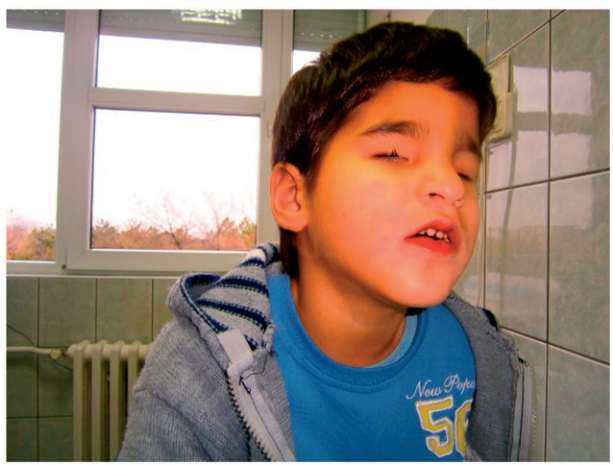
Introduction: Introduction rubela infection occuring for the first time during pregnancy is diagnosed through detecting specific IgM antibodies after mild febrile status followed with skin rash Although rubela causes mild acute infection in adults, it has a devastating impact on the fetus especially if infection occurs in pregnant women in the first 12 weeks of pregnancy or in last 10 weeks Although Rubela infection is mild in children and adults, it is severe in fetus causing intrauterine death or preterm birth with severe congenital abnormalities anophtalmia,microphtalmia,galucoma, congenital heart defect as stenosis of a pulmonalis Congental rubella infection at birth is presenting present as SGA, pallor, jaundice, heaptosplenomegalia,-microcephalia, hypotonia, failure to thrive. After birth, it can be diagnosed either using detection of specific IgM in umbilical blood or by PCR method detecting the virus in newborn tissues The most important is to recognize this infection without knowing anything mothers condition during pregnancy as it is usal at neonatal departments attached to children's hospital. Our case is indicative and convenient for learning because nowadays rubella infections are rare due to immunization Doctors do not recognize this syndrome, do not even think about it, especially when they do not have any contact with the mother or her medical documentation but only deal with neonate.
Clinical cases and summary results: First baby from the first pregnancy, mothers age -13 years living, very low social status, GS 36 weeks, meconial amniotic fluid, aspiration of meconium, BW 2250 gr BL 45 cm/SGA/HC 29/microcephalia/, retro and microgenia, microphtalmia culi bil, heart murmor, palor and jaundice of skin, hypotonia, letargia. Our first diagnose was that preterm baby suffers from sepsis but our lab test showed negative CRP and procalcitoni values, normal level of WBC, anemia and trombocytopenia, direct hyperbilirubinaemia. Ultrasound of brain with calcifications was the first fact that make out diagnose toward congenital intrauterine infection and after gaining positive specific IgM, we were sure that all these signs were due to congenital rubela infection When we have made contact with mother we found out that she was never vaccinated and during this pregnanacy had rash that was meant to be allergic reaction toward food. Mother did not want to keep this child as it was unwanted and due to prognosis for very poor psychomotor development of this child, it was sent to health care centar for social care and has severe mental and motor handicap/original picture/
Conclusion: This case can be very instructive for parents who do not want to give rubela vaccination to their children as antovaccination wave present nowadays in high developed countries because every unvaccineted girl can gain rubella infection during pregnancy and then loose child or give birth to this syndrome.

Keywords: Rubella, congenital infection, neonate



060 (CASE REPORT)

The role of prenatal ultrasound screening for pre-auricular skin tags in foetuses: a case report of goldenhar syndrome

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Introduction: The incidence of external ear malformations in newborns is around 1:8000. Ear abnormalities are important in the diagnosis of a variety of congenital malformations or syndromes in newborns. Ultrasound is considered to be a reliable non-invasive method for the early diagnosis of specific disorders associated with the pregnancy and assessing fetal growth. Research has shown that the highest yield at detecting structural ear abnormalities between 20 and 24 weeks of pregnancy.
Clinical cases and summary results: We report a 28-year-old primigravida patient with stable Graves disease who had a screen negative aneuploidy screen in the first trimester, serology negative with a negative glucose tolerance test. A fetal medicine morphology scan was performed at 19 weeks which revealed presence of bilateral pre-auricular skin tags (2 on the right and 1 on the left). Growth scans were done at 24, 30 and 34 weeks which showed satisfactory interval growth. Genetics was consulted and the diagnosis of oculoauriculo-vertebral syndrome was discussed. A male infant was born at 39 + 3 gestation through spontaneous vaginal birth with Apgars of 9 and 9, weighing at 3.23kg. A paediatrician review at 1 hour of age revealed bilateral multiple pre-auricular skin tags with no obvious external ear anomalies, thin upper lip, high arched palate, beaked nose, small retrognathnia, presence of simian creases in the right and left hand. Cardiovasculatory system was normal. A clinical diagnosis of Goldenhar syndrome (Oculoauricular dysplasia) was made based on the findings. The incidence of Goldenhar Syndrome is about 1 in 3500 to 1 in 26000 live births. Causes are multifactorial consisting of an interaction of between genetics and the environment. It is characterised by the incomplete development of lips, ears, nose, soft palate and mandible, generally on one side of the body. Ten percent of cases occur with defects on both sides of the body. It can also cause incomplete development or entire absence of organs. Patients may also suffer from scoliosis, hearing loss, deafness or blindness unilaterally and sometimes bilaterally, and occasionally granulosa cell tumors in their life.
Conclusion: The ultrasound detection of pre-auricular skin tags in the fetus during the second trimester of pregnancy warrants further investigation and should include referral to genetics to look for any possible association with genetic syndromes. Follow up surveillance may include serial growth scans for fetal wellbeing and postnatal review by a paediatrician to confirm diagnosis.

Keywords: Goldenhar syndrome, oculoauricular dysplasia

070

Intrauterine treatment of fetal hydrops in Rh-immunized women

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Introduction: Fetal and neonatal hemolytic disease results from maternal alloimmunization to red cell antigens, for which mother and fetus are incompatible. The resulting progressive fetal anemia leads, when untreated, to fetal hydrops due to hypoproteinemia and perinatal death in approximately 18% of pregnancies. The best way of treatment of severe fetal anemia is intrauterine blood transfusion.

Keywords: *Objectives*: To evaluate the effects of serial intravascular blood and albumin transfusions on RhD-alloimmunized fetuses with hydrops at the time of the first transfusion by measuring multiple hematological/biochemical blood variables.
Materials and methods: Forty seven singleton pregnancies were referred for management of fetal anemia due to RhD alloimmunization with a total of 133 blood transfusions. Eleven fetuses had hydrops on presentation and several blood with albumin transfusions were performed. Ultrasound and Doppler examinations in MCA were performed before intrauterine transfusions.
Clinical cases and summary results: Intrauterine transfusion was performed in hydropic fetuses at a median gestational age of 26 (95% CI, 21–30) weeks. Median hemoglobin concentration before intrauterine transfusion was 4.0 (95% CI, 2.8–4.7) g/dL. Median general protein concentration before intrauterine transfusion was 2.7 (95% CI, 2.4-3.1) g/dL. Median albumin concentration before intrauterine transfusion was 1.9 (95% CI, 1.5-2.3) g/dL. Hematological and biochemical blood variables improved to normal values after serial blood with albumin transfusions. No signs of hydrops fetalis were diagnosed after 3 to 4 intrauterine transfusions. Median hemoglobin concentration in newborns after intrauterine treatment was 15.0 (95% CI, 12.4-17.2) g/dL ($p<0.05$). Median general protein concentration was 4.9 (95% CI, 4.5-5.5) g/dL ($p<0.05$). Median albumin concentration was 3.4 (95% CI, 2.9-3.6) g/dL ($p<0.05$).
Conclusion: Serial intrauterine blood with albumin transfusions resulted in improvement of hematological and biochemical blood variables and reduction of fetal hydrops syndrome. The reported treatment improved neonatal outcomes: no fetal loss was registered.

Keywords: Rh-alloimmunization, fetal hydrops, intrauterine blood transfusion

071

A case report of prenatal manifestation of Waldman's disease

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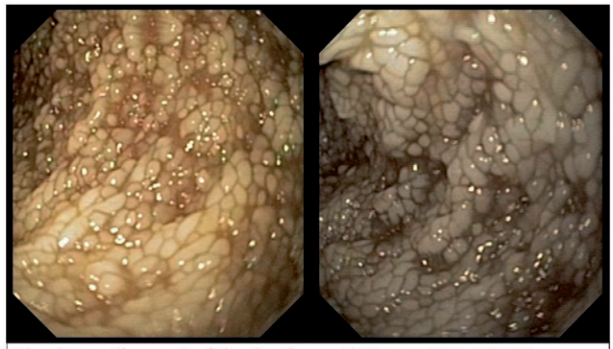
Introduction: Primary intestinal lymphangiectasia (PIL) or Waldmann's disease is a rare protein-losing gastroenteropathy caused by congenital malformation or obstruction of intestinal lymphatic drainage resulting in lymph leakage into the small bowel lumen and responsible for protein-losing enteropathy leading to lymphopenia, hypoalbuminemia and hypogammaglobulinemia. PIL is generally diagnosed before 3 years of age but may be diagnosed in older patients. The main symptom is predominantly bilateral lower limb edema. Edema may be moderate to severe with anasarca and includes pleural effusion, pericarditis or chylous ascites.

Clinical cases and summary results: We reported a case of a 32-year-old woman, gravida 2, para 1, without immune antibodies referred to our department at 23/0 weeks of gestation, presenting an abnormal ultrasound with fetal hydrops (ascites, hydropericardium, hydrothorax, soft tissue edema). She had an acute respiratory disease at 20 weeks of gestation. We performed an amniocentesis and cordocentesis. Normal karyotype was found. Blood sampling revealed hypoproteinemia, hypoalbuminemia, thrombocytopenia, leukopenia. No parovirus B19, nor CMV or other infection agents were found in fetal blood by PCR. Repeated (every 2 weeks) intrauterine intravenous into umbilical vein infusions of human immunoglobulin and Sol. Albumini 20% were performed. But biochemical and hematological blood variables did not change significantly. Male premature infant was born by cesarean section at GA 33 weeks because of PPROM, weight - 3340 g, length - 45 cm, Apgar score at the 1st and 5th minutes was 5/7. Newborn was immediately intubated. In the dynamics patient's condition remained grave due to cardiopulmonary failure, infectious-toxic shock, respiratory distress. The baby was carried maximum therapy including: high-frequency oscillatory ventilation, anti-shock measures, combined antibacterial therapy. Attempts of enteral feeding failed in digestion and weight gain, resulted in increase of polyserositis and aggravation of hypoproteinemia, that required parenteral nutritional correction with infusion of albumin and immunoglobulin. Waldman's disease (primary intestinal lymphangiectasia (PIL) was diagnosed on the basis of a biopsy of the intestinal wall (edema of lymph vessels with lymphangiectasia of duodenal mucosa) and clinical signs (edema of lower extremities, intolerance of enteral feeding), laboratory data (persistent hypoproteinemia and hypoalbuminemia).

Conclusion: Fetal hydrops can develop not only because of immune factors, infectious diseases and other nonimmune factors, but also because of rare disorders caused by congenital malformation or obstruction of intestinal lymphatic drainage. PIL is a rare disorder that should be kept in mind to rigorous follow-up and to avoid difficult complications that can lead to death.

Keywords: Waldman's disease, pregnancy, cordocentesis, intrauterine infusion therapy



The descending part of the duodenum (4,9 mm GIF - N180 Olympus): the edematous aspect of the duodenum mucosa with whitish, swollen villi

134 (CASE REPORT)

A rare case of congenital cystic adenomatoid malformation with hiatal hernia and anal atresia

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Introduction: The aim of the study is to report one rare case of congenital cystic adenomatoid malformation (CCAM) with hiatal hernia and anal atresia in the same patient.

Clinical cases and summary results: Fetal intrathoracic cystic lesions were detected by ultrasonography at the right posterolateral aspect of the heart at 16 weeks in the first pregnancy of a 39-year-old woman. After detailed screening for fetal anomalies and cardiac defects at the 16 weeks scan with normal ultrasound findings and intra-abdominal left-sided stomach bubble confirmed a case of CCAM type 2. The fetal karyotype was normal after amniocentesis following a high-risk screening test for trisomy 21. At 24 weeks' gestation, ultrasound examination demonstrated new onset of fetal abdominal ascites and the amount of ascites decreased on follow-up ultrasonography at 28 weeks' gestation. Intra-abdominal stomach bubble was observed at the posterior aspect of the heart in the thoracic region at 34 weeks' gestation. The male newborn (APGAR 5/8, weight 2480 g) was delivered by cesarean section. After describing anal atresia, hiatal hernia and CCAM on the first neonatal examination surgery of paediatrics consultation was made.

Conclusion: There is no definition of anal atresia, CCAM, and hiatal hernia in the same case in the literature. However, differential diagnosis in patients with CCAM, hiatal hernia and congenital diaphragmatic hernia must be considered particularly via monitoring of small, displaced or absent stomach bubble with unexplained polyhydramnios. Because of normal fetal karyotyping, decreasing ascites levels by 28 weeks and due to lack of other symptoms we designed conservative treatment. Especially when the detected cases of the CCAM Type 2, cardiac, skeletal, urogenital, and gastrointestinal system anomalies should be excluded in such cases.

Keywords: CCAM, Stomach bubble, anal atresia

149

Efficacy and safety of rectal ibuprofen for ductus arteriosus closure in very low birth weight infants

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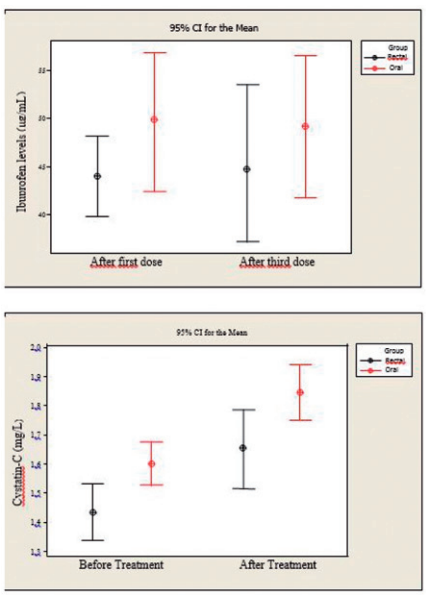
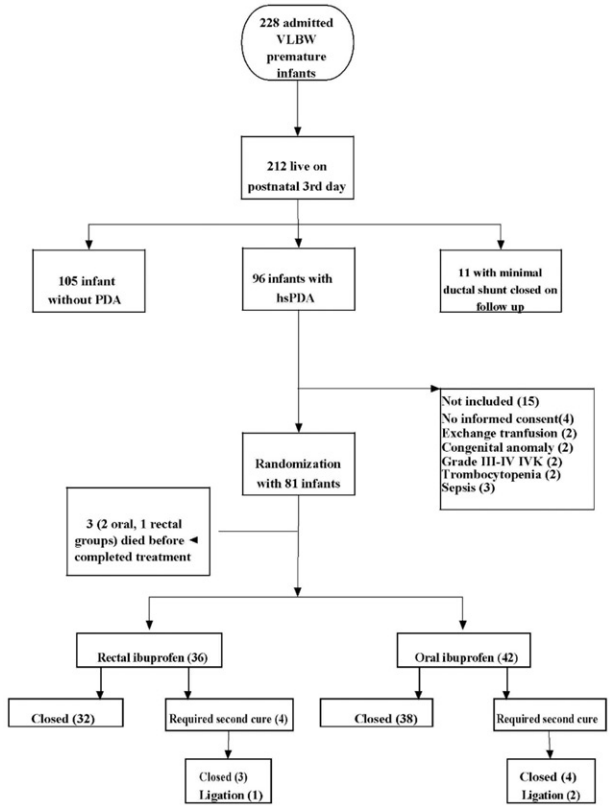
Introduction: To compare rectal ibuprofen with oral ibuprofen for closure of hemodynamically significant patent ductus arteriosus (hsPDA) in very low birth weight (VLBW) preterm infants.
Materials and methods: In a prospective, randomized study, 78 VLBW infants who have hsPDA received either rectal or oral ibuprofen at an initial dose of 10 mg/kg, followed by 5 mg/kg at the second and the third day. The plasma concentration of ibuprofen and renal functions were determined in both groups by high performance liquid chromatography (HPLC) method and cystatin-C (cys-C), respectively.
Clinical cases and summary results: The hsPDA closure rate of the group that received rectal ibuprofen was similar to oral ibuprofen (88.8% versus 85.7%) after the first course of the treatment (p= 0.265). A statistically significant difference was identified between the mean plasma cys-C levels before and after treatment in both the rectal and oral ibuprofen groups ($p = 0.004$, $p < 0.001$ respectively). The mean plasma ibuprofen concentration was similar in both groups after the first dose (rectal 44.06 ± 12.2, oral, 49.71 ± 23.5) and also the third dose (rectal, 44.82 ± 24.2, oral, 49.73 ± 23.9) ($p > 0.05$ for all values).
Conclusion: Rectal ibuprofen is as effective as oral ibuprofen for hsPDA closure in VLBW infants. The rise in the cys-C level with rectal and oral treatment shows that patients with borderline renal function should be evaluated and followed closely.

Keywords: Ibuprofen, rectal, oral, patent ductus arteriosus, preterm





150

A single center experience of cns anomalies or neural tube defects in patients with Jarcho-Levin syndrome

Erdal Peker, Nihat Demir, İsmail Gülşen, Kemal Ağengin, Sultan Kaba, and Oğuz Tuncer

Department of Pediatrics, Division of Neonatology, Yuzuncu Yil University School of Medicine, Van, Turkey

Introduction: Jarcho-Levin Syndrome (JLS) is a genetic disorder characterized by distinct malformations of the ribs and vertebrae, and/or other associated abnormalities such as neural tube defect, Arnold-Chiari malformation, renal and urinary abnormalities, hydrocephalus, congenital cardiac abnormalities, and extremity malformations.
Materials and methods: The study included 12 cases at 37-42 weeks of gestation and diagnosed to have had JLS, Arnold-Chiari malformation and meningmyelocele (MMC).
Clinical cases and summary results: All cases of JLS had Arnold-Chiari type 2 malformation, there was corpus callosum dysgenesis in 6, lumbosacral MMC in 6, lumbal MMC in 3, thoracal MMC in 3, and holoprosencephaly (HPE) in 1 of the cases.
Conclusion: With this paper, we wanted to underline the neurologic abnormalities accompanying JLS and that each of these abnormalities is a component of JLS.

Table 1. Summarizes key clinical data concisely.

Patient no.	Sex	Gestation Age (week)	length (cm)	Weight (gr)	Head circum. (cm)	Primary Diagnosis	Relationship	Prognosis	ANOMALY				
									Costal/Vertebral	CNS	CVS	GUS/Anorektal	Skeleton
1	Female	40	52	3500	50	JLS	NO	Exitus	+/+	LS-MMS + ACM2	ASD	ND	S
2	Female	39	48	3000	40	JLS	First cousin	Live	+/+	LS-MMS + ACM2+HPE	PFO	ND	S+K
3	Male	39	49	3000	39	JLS	NO	Exitus	+/+	LS-MMS + ACM2	ND	ND	S+K+PE
4	Female	40	44	3050	42,5	JLS	Third degree	Live	+/+	T-MMS + ACM2+CCD	PDA+ASD	ND	S+K+PE
5	Male	39	40	2100	38	JLS	Frst cousin	Live	+/+	T-MMS + ACM2	ASD	Unilateral kidney	S+K
6	Male	39	43	2720	37	JLS	NO	Live	+/+	LS-MMS + ACM2+CCD	PFO	ND	ND
7	Female	39	42	2900	35	JLS	Frst cousin	Live	+/+	LS-MMS + ACM2+CCD	ASD+PDA	ND	S+PE
8	Female	39	42	2420	35	JLS	Frst cousin	Exitus	+/-	L-MMS + PC	Dextrocardia+ VSD+ASD	AG	AMK
9	Male	39	39	3270	35,5	JLS	Frst cousin	Live	+/+	L-MMS + ACM2+CCD	PFO	AA	S+K+PE
10	Female	39	46	4300	38	JLS	Frst cousin	Exitus	+/+	T-MMS + ACM2	ND	AA	ND
11	Female	39	42	2500	38	JLS	NO	Live	+/+	LS-MMS + ACM2+CCD	ASD	ND	S+K
12	Male	39	49	3200	45	JLS	NO	Exitus	+/+	L-MMS + ACM2+CCD	PFO	ND	S+K

CNS, Central nervous system**; CVS,** Cardiovascular system; **GUS,** Genitourinary system; **CCD**, Corpus callosum dysgenesis; **JLS,** Jarcho-Levin Syndrome**; L-MMS**, Lumbal meningomyelocele; **T-MSS**, thoracic meningomyelocele; **LS-MMS**, lumbosacral meningomyelocele; **ACM2**, Arnold Chiari type 2 malformation; **HPE**, Holoprosencephaly ; **PFO**, Patent foramen ovale; **ASD**, Atrial septal defect; **VSD**, Ventricular septal defect; **PDA**, Patent ductus arteriosus; **AA**, Anal atresia; **AG**, Ambiguous genitalia; **AMK**, Arthrogryposis multiplex konjenita; **S**, Scoliosis; **K**, kyphosis; **PE**, Pes equinovarus; **PC**, porencephalic cyst; **ND**, Not defined; +, present; -, absent.

Keywords: Jarcho-Levin Syndrome, neural tube defect, Arnold Chiari type 2, newborn

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Nuchal umbilical cord: the myth or real threatening of fetus?

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Introduction: Umbilical cord wrapped around the fetus, its individual parts, and usually around the neck of the fetus is a common complication in pregnant women in term and could be associated with peripartal complications and adverse perinatal outcomes. The possibility of ultrasound detection of nuchal umbilical cord is connected with variety of professional medical problems but also serious alteration and psychological problems in mothers, who are facing the diagnosis of nuchal umbilical cord. A prospective clinical study was conducted to evaluate the validity of ultrasound detection of nuchal umbilcal cord, as well as to evaluate the impact on perinatal morbidity and mortality.
Materials and methods: The study was conducted at the Department of Gynecology of Obstetrics, Jessenius faculty of medicine and University Hospital in Martin. The study was conducted between January 2011 and December 2015. This study enrolled pregnant women who were examined by ultrasound and diagnosed with/ without the nuchal umbilcal cord between 38 and 41 weeks of gestation in the period before the onset of uterine contractions. The detection of nuchal umbilical cord was performed using ultrasound, which was carried out between 14 to 21 days before the expected date ofdelivery by the experienced ultrasonographer, using combination of real-time and 3/4D mode. The result of ultrasound examination was not known to affected pregnant women and their obstetrician.
Clinical cases and summary results: During the 3-year period there was a total of 8132 births, of which 2472 (30.4%)were terminated by caesarean section and 158 by forceps (1.9%). The number of births after 37 week of gestation was 6539 (80.4%). Ultrasound examination of the umbilical cord was performed in a total of 2923 pregnant women (35.9%), while the incidence of nuchal umbilical cord was diagnosed in 521 pregnant women (17.8%). The analysis of data showed that there was no significant difference in the incidence of nuchal umbilical cord in all patients who gave birth after 37 week of gestation (1009 to 15.4%) and in patients in control group. False negative results were obtained in 42 pregnant and false positive results in 24 pregnant women in this group, so that the accuracy of ultrasound was as followed: sensitivity 92.2%, specificity 98.9%, and negative predictive value 98.2%. There was no significant difference between the frequency of vaginal and cesarean births and fetal outcome measured by Apgar scoring system according to the presence of nuchal umbilical cord. In our dataset, there was no perinatal death.
Conclusion: The nuchal umbilical cord is not associated with an increased number of surgical deliveries. The authors found no difference in perinatal morbidity and mortality in the group of patients with a confirmed diagnosis of nuchal umbilical cord compared to the group without it.

Acknowledgments: This work was supported by project ''Virtual and Simulation Tuition as a New Form of Education at JFM CU in Martin'', ITMS: 26110230071, co-funded from EU sources and European Social Fund.

Keywords: nuchal cord, outcome, 3D/4D sonography

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Hydrocephaly – a case report

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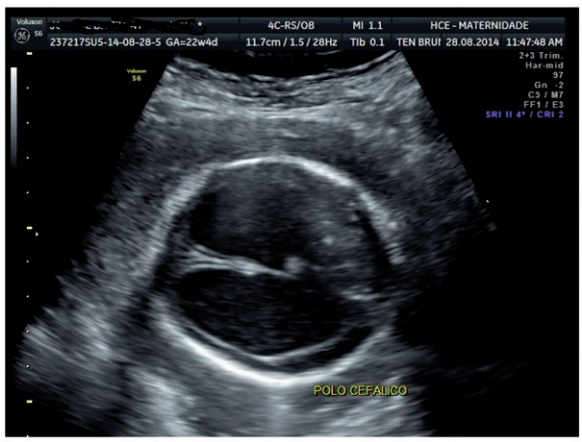
Introduction: The screening of fetal anomalies is an important test to termination of pregnanncy where it is permitted or even to prepare the parents to face the problem. In case of anomalies compatible with survival to prepare facilities to assist the newborn. Hydrocephaly has a prevalence of 3:1000 to 1:2000 pregnancies. It can be caused by

genetic anomalies, infections or trauma. It can be classified in obstructive or non obstructive. The prognosis is as worse as precocious, with the risk of intrauterine death.
Clinical cases and summary results: A woman 28 years, G2 P1, one previous vaginal delivery with a healthy baby. In this pregnancy the hydrocephaly was detected in an exam in the 22th week, without any other anomaly. The tests for infectious disease were negative. As the lesion was precocious it most likely be genetic. The patient had emesis in the 29th week when she was admitted. When she recovered from the emesis, the fetal death was diagnosed. She bedelivered a stillborn in 30th week after the induction of labor. The patient was support by a psychologist and was discharged one day later.
Conclusion: The routine exam in the second trimester is essential to detect fetal anomalies. The Brazilian law does not allow the termination of pregnancy for fetal anomalies, except for anencephaly

Keywords: Hydrocephaly, genetic anomaly, fetal disease, fetal death, ultrasound



200 (CASE REPORT)

Placental abruption: according to a clinical case

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Introduction: Placental abruption consists on partial or complete separation of the placenta that occurs before the delivery of the fetus. Typical clinical manifestations are vaginal bleeding, abdominal pain, uterine rigidity and tenderness, contractions and unsatisfactory cardiotocographic record. Nevertheless, some cases of placental abruption happen to be asymptomatic, and this situation makes the process of diagnosis more difficult. A retroplacental clot is the characteristic ultrasound finding and it strongly supports the clinical diagnosis. The presence of more than half of the placental surface separated, increases the likelihood for acute disseminated intravascular coagulation and fetal death. We present a case of abruption with a fateful ending.
Clinical cases and summary results: 35 year-old primigesta, morbidly obese, asthmatic and smoking 8 cigarettes a day. Normal first trimester screening. Apparently normal morphology in prenatal diagnosis ultrasound with partial occlusive placenta (technical difficulty due to morbid obesity). Control ultrasound was performed 4 weeks later: early intrauterine growth retardation. A comprehensive study was implemented at 33 + 2 weeks of gestation due to the appearance of high blood pressure at home. Preeclampsia was discarded. At 33 + 5 weeks of gestation, the patient came to the emergency referring painless genital bleeding. Exploration: no painful abdomen with normal uterine tone. Closed cervix through which heavy red bleeding came out. Ultrasound examination: cephalic live fetus. Non occlusive, posterior placenta. Despite the normality of urgent blood and urine analysis, and also cardiotocographic record, the patient was hospitalized under observation. Due to persistent bleeding, exploration was repeated and ultrasound scan confirmed stillbirth. Vaginal misoprostol was used to induce labor.
Conclusion: Obstetric haemorrhage is still a potential maternal and fetal morbidity and mortality cause. Genital bleeding during third trimester of gestation may involves different possible diagnoses to bear in mind: placenta previa, placental abruption and vasa previa. Exhaustive fetal monitoring is essential in order to prevent fatal results within a few seconds.

Keywords: Obstetric haemorrhage, placental abruption, stillbirth

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Unusual case of fetal megaduodenum

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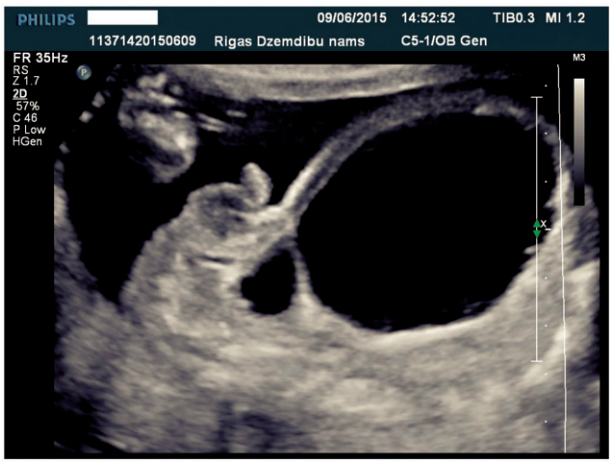
Introduction: At the second trimester USG screening a huge abdominal thin wall, smooth cyst with homogenous, anechogenic content has been detected. Diagnosis of suspected mesenteric cyst was confirmed by MRI. On follow up the cyst's size has been progressively increasing. The fetus did not show signs of compromise except slowly progressing polyhydramnion. At 34 + 5 g.w. after PROM was born a boy with weight 3400 g. and abdominal diameter 45 cm. After the birth the suspected diagnosis of megaduodenum was confirmed on surgery, when duodenal resection was performed. Later on due to feeding problems on re-laparotomy were found newly enlarged duodenum (with thick hipertrophied walls and reverse peristaltic) and intestinal malrotation. Till now six laparotomies were performed and prognosis is still unclear.
Clinical cases and summary results: At the second trimester USG screening at 30 y.o. healthy woman with normal the first trimester combined screening a huge abdominal cyst at male fetus was detected. The cyst was thin wall, smooth, with homogenous, anechogenic content, occupying most part of the abdominal cavity. All other abdominal organs were visible. Amniotic fluids volume was

normal. No chromosomal abnormalities were detected. Diagnosis of suspected mesenteric cyst was later confirmed by MRI. On follow up the cyst's size has been progressively increasing (from 10% till 30% of EBW), AFI has been slowly increasing as well (from normal till 32 cm). Doppler, TTD and lung volume were normal all the time of follow up. At 34 + 5 g.w. after PROM by means of cesarean section was born a boy with weight 3400g., Apgar score 7/8, abdominal diameter 45cm. At birth in course of gastric intubation a big amount of fluid was sucked and new diagnosis of mega-duodenum was confirmed at surgery when huge duodenum was resected.
Conclusion:
(1) Rare diagnoses can be a big problem detecting them prenatally.
(2) Value of MRI in prenatal diagnosis is limited.
(3) Big abdominal masses of fetus can cause problems in the development of intestinal tract.

Keywords: Abdominal mega cyst, mega-duodenum



239 (CASE REPORT)
Severe cystic hygroma and hydrops fetalis in a Turner's syndrome

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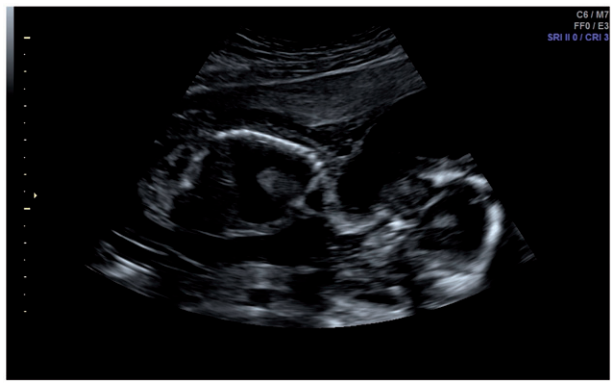
Introduction: Hydrops fetalis is a pathological and excessive fetal fluid accumulation which can express as ascites, pleural effusion, pericardial effusion and/or generalized subcutaneous edema. Nowadays, non-immune etiology is responsible for more than 90% of cases. in which Turner's syndrome is included. On ultrassound, increased nuchal translucency, cystic hygroma and renal and cardiac defects are typical findings. This chromosome abnormality is associated with 50–80% of cystic hygromas, which result from miscommunication between lymphatic and venous system in the neck. The lack of communication can lead to the development of hydrops fetalis. Hydrops fetalis represents a significant fetal compromise and is associated with high rates of perinatal morbidity and mortality.
Clinical cases and summary results: A 18 years old multiparous pregnant with 16 weeks 3 days, without prior surveillance, was diagnosed with an extensive and septated cystic hygroma, associated with large bilateral pleural effusion, polycystic kidneys, abdominal wall edema and oligoamnios, during ultrasound for evaluation of fetal well-being. There was no history of consanguinous marriage, Rh isoimmunization, toxoplasmosis, rubella or syphilis infection or family history of birth defects. The pregnant underwent amniocentesis, which revealed Turner's syndrome (45,X). After explaining the disease and associated fetal morbidity, the couple accepted the medical termination of pregnancy. Pregnancy was terminated at 19 weeks 3 days after induction with 400mcg of vaginal misoprostol. The fetus had a cervical cystic estructure and extensive generalized anasarca. The autopsy may reveal other associated birth defects.
Conclusion: Ultrasound is essential in prenatal detection and diagnosis of cystic hygroma and fetal hydrops. Fetuses with these sonographic markers have increased morbidity. Given the poor prognosis, termination of pregnancy might be considered, especially when it is associated with chromosomal anomalies or other structural abnormalities.



273 (CASE REPORT)
A case of foetal supraventricular tachycardia

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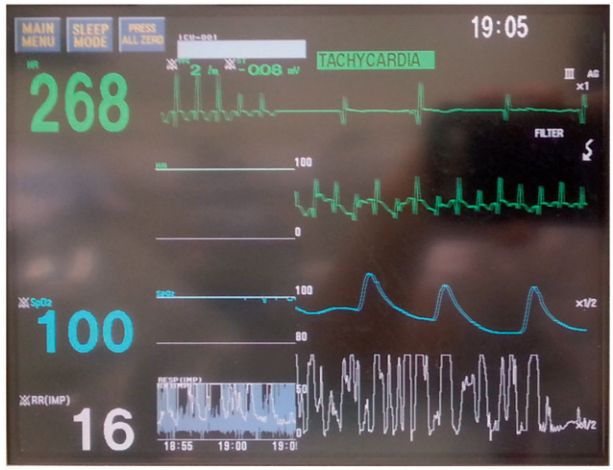
Introduction: Foetal arrhythmias affects 1%-2% of pregnancies. The most common foetal arrhythmias are atrial extra-systoles and supraventricular tachycardia (SVT). Atrial extra-systoles are usually benign and do not need treatment. Foetal SVT is the most common type of foetal tachyarrhythmia. Foetal heart rate can range between 200–300 beats/minute. They are typically detected during auscultation of the foetal heart or by cardiotocography or by an antenatal ultrasound examination. Sustained SVT can cause foetal congestive heart failure leading to non-immune foetal hydrops, prematurity, perinatal morbidity and mortality. Treatment depends upon gestational age at diagnosis and the presence or absence of hydrops fetalis. Options are: no intervention but close monitoring, antiarrhythmic drugs and delivery.
Clinical cases and summary results: A 34 year Caucasian lady, para 1 with previous delivery of an IUGR baby, attended our Breech clinic at 37 weeks gestation to discuss options. Her BMI was 27.There was no consanguinity or family history of congenital disorders. Down's Screening was of low risk. Anatomy scan did not detect any abnormality. Symphysiofundal height was 30 cm at 34/40 weeks. An USS revealed normal foetal growth and a breech presentation. A repeat scan confirmed Breech presentation. Patient refused ECV and requested an elective caesarean section. Foetal heart sound with sonic aid was 244 bpm. Patient was apyrexial. A cardiotocograph was misreading the baseline foetal heart rates at 125 with reduced

variability. USS confirmed foetal tachycardia of 250 beats per minutes. There were no signs of foetal hydrops. Due to persistent foetal tachycardia a Category 1 Caesarean section was performed on that day. The baby girl was pale at birth and needed inflation breaths. Heart rate was 270/minute. Birth weight was 2.36kg. Arterial cord blood pH was 7.19, Base excess was −9.5. Baby was transferred to SCBU. It was diagnosed with SVT and was initially treated with a stat dose of Adenosine 150mg. Heart rate was brought down to 140–150/minute. Later the baby was started on Propranolol. Echocardiogram showed an atrial septal defect, mild mitral regurgitation and mal-alignment of the ventricular septum. After cardiology review it was advised to continue propranolol. Baby's condition was stable.
Conclusion: Sustained SVT needs urgent and appropriate treatment depending upon gestation and signs of foetal hydrops. Our case was at term and due to sustained tachyarrhythmia was dealt with urgent delivery to ensure optimum outcome.

Keywords: Foetal, supraventricular, tachycardia



275 (CASE REPORT)

Paroxysmal tachycardia in one of the fetuses of a twin pregnancy - perinatal management, a case report

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Introduction: Paroxysmal tachycardia is a rare disease in the fetal period. If not properly treated it can lead to cardiac decompensation with serious consequences as fetal and neonatal hydrops.
Clinical cases and summary results: This case report concerns a twin pregnancy. In 23 gestational week (gw) a fetal heart rate (HR) of 250–300 bpm was established in one of the twins, complicated by hydrops, pleural and pericardial effusions. The echocardiography excluded cardiac abnormalities in both fetuses. A sotalol (320mg/day) treatment of the mother was started and resulted in a HR of 120–140 bpm without negative effects for the other twin. The follow up showed a rapid reduction of the heart failure and hydrops, but with a mild intrauterine retardation. Cesarean section was performed in 35gw (Feb 2016), the birth weight of the 1-st twin was 2400g, of the 2-nd - 1600g. The echocardiograpphy confirmed an absence of cardiac abnormalities and closure of the fetal communications. In the first days of life the HR was in the reference range with a sinus rhythm. From D 3 paroxysmal attacks (HR 260–300bpm) were established once a day and were set under control after brief vagal stimulation. From D 12 the paroxysmal rhythm became permanent, i.v. digitalisation was started, but it was difficult to find the adequate dose to suppress the paroxysmal attacks without signs of toxicity. This happened after stabilizing the plasma levels just below the upper reference range. The baby was discharged home with treatment p.o. and dispensarised in the cardiology for follow up.
Conclusion: Paroxysmal tachycardia is often difficult to treat in fetal and neonatal period. The etiology is unknown - often on additional atrio-ventricular wire connection. After starting the cardiotonic therapy monitoring of the serum levels is necessary to set under control the therapy and avoid toxicity.

Keywords: Paroxysmal tachycardia, fetus, newborn infant

292 (CASE REPORT)

Diagnosis and management of pregnancies complicated by fetal supraventricular tachycardia

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Introduction: The purpose of this study is to present the diagnosis and management of pregnancy complicated by fetal supraventricular tachycardia.
Clinical cases and summary results: We present three cases diagnosed with fetal supraventricular tachycardia. Anti-arrhythmic drugs were administered to the mother under close monitoring of maternal and fetal heart rate. All pregnancies progressed to full term, women were delivered, no neonatal complications were observed. Supraventricular tachycardia is diagnosed in 1:10 000 pregnancies. Fetal tachycardia greater than 200 beats per minute leads to decreased filling of the ventricles and decreased cardiac output. When this condition is not diagnosed and treated promptly leads to fetal hydrops and possibly death. The administration of anti-arrhythmic drugs in the mother usually restores normal heart rate.
Conclusion: The fetal supraventricular tachycardia is a rare condition in the general population. Usually occurs at the end of the second or in the third trimester and therefore the diagnosis can be missed. Treatment of fetal tachycardia is usually achieved by the administration of anti-arrhythmic drugs in the mother. If it is not treated, fetal hydrops and death may follow.

Keywords: Fetal tachycardia

323 (CASE REPORT)

Prenatal management of a fetal dyshormonogenetic goiter : a case report and review of the literature

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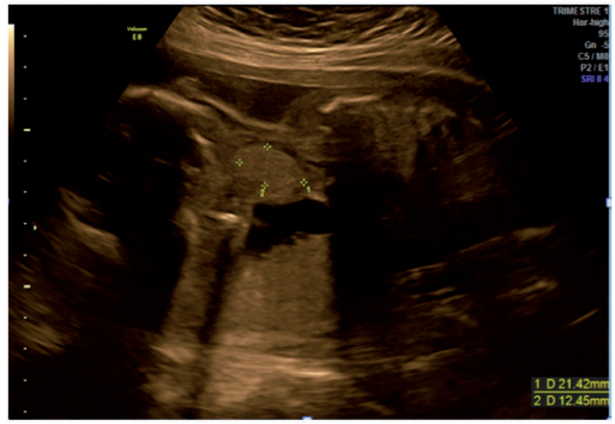
Introduction: Congenital hypothyroidism with a goiter is rare but represents 15% of congenital hypothyroidism, which is the most common curable cause of mental retardation. Both the fetal goiter and hypothyroidism can be associated with severe perinatal morbidity and long term neurologic sequelae. Systematic neonatal screening programs permits early treatment which usually result in normal developmental outcomes. However, degree of neurological damages may persist in some children. Improvements in ultrasound technology have led to an increased and earlier detection of fetal goiters. Several techniques to confirm the diagnosis have been reported, as well as the indications and modalities of an active prenatal therapy. As these are invasive procedures, the risk to benefit ratio has to be questionned.
Clinical cases and summary results: We present a case of a fetal dyshormonogenetic goiter diagnosed at 20 weeks of gestation, in a woman with no past history of thyroid disease. Her thyroid tests were normal, including the absence of auto-antibodies. As the goiter was enlarging, a cordocentesis was performed and confirmed fetal hypothyroidism. Intra-amniotic injections of L-Thyroxine were administered and led to a rapid decrease of the thyroid size. The patient normally delivered a neonate with no palpable goiter or clinical sign of hypothyroidism. However neonatal thyroid tests showed a persistence of biological hypothyroidism. Few cases of dyshormonogenetic goiters have been reported. Ultrasound examination allowed an early diagnosis. The interest of invasive procedures to confirm diagnosis remains controversial when the mother is euthyroid. Plus, in the absence of goiter's complications, indications for prenatal treatment in order to prevent hypothyroidism sequelae are not yet clearly standardized.
Conclusion: This case reports the favorable evolution of a dyshormonogenetic hypothyroid fetal goiter after active prenatal management. Questions regarding modalities of in utero management are still unresolved. It seems that goiter's size and its related complications are the only factor justifying indisputably prenatal therapy. The ultrasound scan is essential to follow the fetus and the evolution is generally favorable. Pluridisciplinary teams would be needed to elaborate clear recommandations.

Keywords: Fetal goiter, intra-amniotic injection, prenatal therapy, hypothyroidism, ultrasonography



325 (CASE REPORT)

Neonatal progressive ischemic changes with gangrene of the right forearm of a term baby

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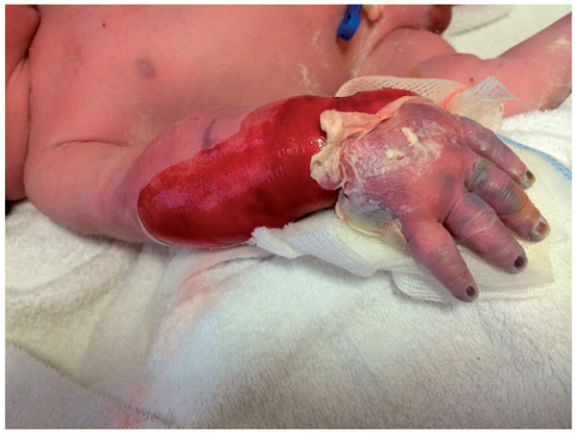
Introduction: AS 31 years old, G1P0. No history of chronic diseases. BMI 31. No gestational diabetes. At 38w2d shepresented respiratory difficulties, cough and fever 38 grade Celsius. Laboratory results were: WBC 11600, RBC 4.600.000, Hgb 13, CPR 5. an antibiotic treatment with ceftriaxone 2g/day was started. After 48 hours the women came back to the hospital with ruptured membranes. The amniotic fluid was transparent. Low intensity contractions were registered in CTG. The baby had vertex presentation. A male fetus was born. The weight was 4060 gr. Apgar score 8/9. No umbilical cord around the neck and the limbs was observed. Immediately cyanosis and edema with a fragile covering skin of the right forearm, hand and fingers was observed. The head, body and other limbs appeared normal.
Clinical cases and summary results: The laboratory exam of the mother same day after c section showed normal biochemical markers and electrolytes. But CPR 5.1, WBC 17700 with neutrophilia, Hgb 13, early morning glucose 17 (that suggested a possible diabetes of pregnancy that was not diagnosed during pregnancy though the baby had normal values of glicemia, hypoalbuminemia, hypoproteinemia. Next day WBC 15000 with neutrophilia, Hgb 10.1, CRP 2.7. After 48 hours WBC 12700 with neutrophilia, Hgb 11.1, CPR 0.4. (almost normal values). Doppler ultrasonography of the proximal part of the right arm and carotid arteries of the baby revealed not any tipical view of arterial thrombosis. The general conditions in the following days were stable, the baby needed no oxygen, he was feeded well by oral route, normal urination and defecation. One week after delivery the parents transferred the baby in Weil Cornel NY hospital for the following treatment. It was impossible to have any kind of medical information about the conditions of the baby, exams, treatment or possible interventions performed. In the present case, gangrene of the right forearm was probably caused by a brachial right arm artery malformation.
Conclusion: It is advisable to rule out deficiencies and/or thrombophilic factors in the coagulation system. It is important to test the parents for various factors. The amputation wasn't performed. The hyperglycemia of the mother after delivery suggests possible glucose intolerance during pregnancy that wasn't diagnosed. The bacterial pulmonary infection of the mother might have influenced in the insufficient placental circulation.

Keywords: Gangrene, ischemia



333

Prenatal MRI features and neurodevelopmental outcome of cavum septum pellucidum abnormalities

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Introduction: The cavum septum pellucidum (CSP) is a fluid-filled cavity found between the leaves of the septum pellucidum. Abnormalities in the CSP detected postnatally are associated with neurodevelopmental delay, mental retardation, and neuropsychiatric disturbances. The growing use of prenatal imaging led to an increase in prenatal detection of CSP abnormalities. A wide CSP detected prenatally was associated with aneuploidy. The aim of the present study is to describe the different abnormalities of the CSP detected prenatally, the clinical prenatal related factors, morphologic characteristics of fetal MRIs, and neurodevelopmental outcome evaluation.
Materials and methods: This is an observational retrospective study of 39 women who were referred for fetal brain MRI due to a CSP abnormality detected in an US examination between 2011 and 2015. Data collected included: prenatal history, MRI features, sonographic follow up, and neurodevelopmental outcome using Vineland II adaptive behavior scale.
Clinical cases and summary results: Most of the cases (34/39) had an abnormal CSP on MRI. They were divided into 4 groups according to the CSP abnormality on MRI: narrow CSP (n=23), wide CSP (n=7), septal agenesis (n=3), and CC agenesis (n=1). Only 4/12 cases that were referred with US diagnosis of absent CSP were confirmed by MRI, the rest had narrow CSP. Follow up was performed in 24 cases with an abnormal CSP and 4 cases with a normal CSP on MRI. All cases had a normal neurodevelopment.
Conclusion: To our knowledge this is the first study that examines the outcome in a narrow and a wide CSP detected prenatally. It appears that there is a spectrum of normal development and closure of the CSP. An abnormal width of the CSP prenatally, without an associated fetal abnormality such as aneuploidy, appears to have a normal outcome. A MRI should be offered when an absence of the CSP is suspected on US to rule out a narrow CSP which carry good prognosis.

Keywords: CSP, fetal imaging, neurodevelopmental outcome, MRI

Affiliated with Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel.
**Both authors contributed equally to this study.*

373 (CASE REPORT)

Prenatal diagnosis of achondroplasia - case report and literature review

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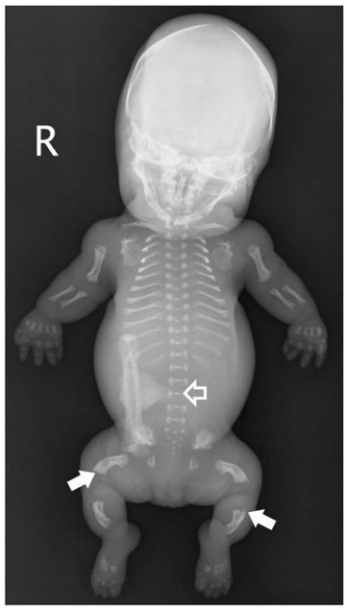
Introduction: Achondroplasia is one of the best-known and most common types of nonlethal skeletal chondrodysplasia (forms of short limb dwarfism). The incidence is about 1:20000. Before the relationship between fibroblast growth factor receptor 3 (FGFR3) gene and this disease was identified, it was hard to differentiate between variant types of chondrodysplasias, such as metatropic dysplasia, Ellis-van Creveld syndrome, or diastrophic dysplasia.
Clinical cases and summary results: A 34-year-old female was presented to our clinic because of short fetal femurs (<2 percentile) on ultrasound scan at 22 weeks. These findings led to diagnosis of achondroplasia, which was confirmed by DNA testing from amniotic fluid. She had nonspecific medical and obstetrical history. The ultrasound scan at 32 weeks of gestational age revealed rhizomelic shortening of the extremities, frontal bossing and the over rounded metaphyseal - epiphyseal interface at the femur ends while connecting to diaphysis, also called "collar hoop" sign. Nowadays, achondroplasia is suspected only after the third trimester due to the late appearance of this disease. These fetuses almost always have a long bone below the third percentile for gestational age but normal size of head and abdominal circumference. Conventional 2D ultrasound alone is extremely challenging for diagnosing achondroplasia. Several case series reports have speculated that the accurate diagnosis rate ranges from 30% to 70%. The "collar hoop" sign at the proximal end of the femur in fetuses with achondroplasia seemed to improve the prenatal diagnosis of achondroplasia.
Conclusion: The gold standard method of diagnosis is DNA testing for mutations of FGFR3 from CVS or amniotic fluid.

Keywords: Achondroplasia, FGFR3 mutation, ultrasound diagnosis



	Major malformations on the FPSS (n=14)	Pathognomonic malformations on the FPSS (n=18)
Autopsy	8 (14) [57%]	10 / 18 [56%]
Diagnosis	No definite diagnosis: 4	Osteogenesis imperfect 5
	Limb body wall or body stalk complex 3	Thanatophoric dysplasia 3
	Amniotic bands syndrome 2	Chondrodysplasia punctata 2
	VACTERL (like) 2	Camponelic dysplasia 1
	Crouzon syndrome 1	Femur-fibula-ulna dysplasia 1
	Trisomy 18 1	Gracile bone dysplasia 1
	OEIS complex 1	Skeletal dysplasia (Jeune) 1
		Caudal regression syndrome 1
		Short rib polydactyly syndrome 1
		Spondylothoracic dysostosis: 1

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When is a post-mortem skeletal survey of the fetus indicated, and when not?

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Introduction: Radiography after fetal or perinatal death has become a routine part of post-mortem diagnostics. However, only a selected subset of these babygrams or fetal post-mortem skeletal surveys (FPSSs) provides useful information. We investigated the indication for a FPSS.
Materials and methods: Inclusion consisted of the routinely made FPSS (2002–2012) in our university hospital in cases of fetal or perinatal death up to 7 days after birth. We categorized the diagnostic value of the FPSS as no, minor, major or pathognomonic. Regression analysis was used to determine the selection criteria for a useful FPSS.
Clinical cases and summary results: 337 FPSS were included. 305 (91%) FPSS showed no or minor skeletal malformations. 14 (4.2%) FPSS had major skeletal malformations. In 18 (5.3%) cases the diagnosis was based on the pathognomonic skeletal malformations on the FPSS. Two cases were false positive after major birth trauma. The presence of multiple skeletal malformations on prenatal ultrasound or at post-mortem external inspection was highly indicative of a diagnostic FPSS ($p < 0.001$).
Conclusion: The majority of the babygrams/FPSS has no contribution to the diagnostic process. Multiple skeletal malformations on prenatal ultrasound or post-mortem external inspection are indicative for a diagnostic FPSS, and this should be the main selection criterion.

Keywords: Fetal, babygram, skeletal survey, postmortem, dysplasia

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Fetus heart rhythm disorders is the problem of modern perinatology

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Introduction: Small anomalies of the fetal heart (SAFH) - account for 33% of all diseases of the cardiovascular system. Fetal arrhythmias - FA (heart rhythm disorders of the fetus - HRDF, fetal dysrhythmia) according to different authors observed in 3–8%. In the structure of infant mortality, component 58–60% of mortality among children under the age of 14, a significant role played by fetal cardiac rhythm (HRDF).
Materials and methods: In general, fatalities FA reach 85%, and a third of them designated by the authors as a syndrome of sudden death of the fetus. The reasons of FA are systemic and autoimmune diseases of the mother, diabetes, inflammatory diseases of the genitourinary system, hypothermia, hypoxia, hypokalemia, SAFH, as well as defects and tumors of the fetal heart, intrauterine infection. Currently no data about the peculiarities of history / pregnancy when the fetus FA and SAFH, not clear their etiology, there is no uniform classification of the FA, no exhaustive clinical and laboratory diagnostic algorithm, there is no single approach to obstetric tactics for FA and SAFH.
Clinical cases and summary results: Supraventricular tachycardia (SVT). Approximately half of all the fetal arrhythmia is supraventricular tachycardia (250 ÷ 300 beats per min). The most common cause of its occurrence are formed additional loci conduction system cells of different parts of the myocardium, manifested in violation of the momentum for re-entry type. Much less (2%) SVT observed anomalies of the heart structure. In 40% of cases of heart failure accompanied by SVT in the fetus. The drug of choice for treatment of CBT is digoxin, while in 40% of cases, complementary therapy with amiodarone, or flekanid or sotalolol. Atrial flutter (TP - 250 ÷ 500 beats per min), often accompanied by atrioventricular block (AVB), is 21% of total FA. In the absence of fetal heart failure digoxin use. In the case of fetal hydrops joined (7% of cases) shows the use of flekanida, procainamide or amiodarone (for efficacy - more than 80%). Non-immune fetal hydrops requires a long-term therapy, and the required thorough dynamic monitoring of the fetal condition. Atrial premature beats (EP), often arising from structural abnormalities of the heart, prognostically favorable and does not require any special adjustment.

Progression of the disease (in the form of sustained ventricular tachycardia, and sometimes more than 200 beats per min). Observed with fetal distress syndrome (combined with a decrease in the basal rate variability) and horionamnionite (with accompanying fever pregnant).
Conclusion: We showed a serious gap in the knowledge of the nature of occurrence of the FA, thus there is no universal classification dysrhythmia fetus without designated single optimal treatment strategy. Further study on the FA should be focused on a detailed study of the etiopathogenesis of "functional" HRDF using modern research methods, which will work out the optimal obstetric tactics and reduce perinatal losses, in particular when the functional arrhythmias.

Keywords: Fetal arrhythmia, perinatal outcomes

464

Epidemiology of congenital heart disease among neonates in a Tunisian neonatal unit of a tertiary care hospital

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Introduction: Congenital heart diseases (CHD) occur during the development of the heart during embryonic life. They have an incidence of 6 to 8 for 1000 live births. Early diagnosis is essential in order to improve prognosis.
Objective: To study the epidemiological and clinical features of CHD in our level 3 universitary maternity, identify the diagnostic difficulties and evaluate the therapeutic opportunities and outcome of our patients.
Materials and methods: Retrospective study including CHD diagnosed prenatally or postnatally among the neonates admitted in our department during the time period between 1 January 2003 and 31 December 2010.
Clinical cases and summary results: During the study, were enrolled 181 neonates with CHD, (overall incidence of 1.91‰). CHD was diagnosed during first 3 days after birth in 54.7% and before the end of first week in 64.1% of cases. Diagnosis was suspected prenatally in only 16 patients (8.8%). 159 patients were symptomatic at birth. Symptoms were mainly: presence of an isolated murmur in 39% of cases, cyanosis associated with a murmur in 23.3% of cases, isolated cyanosis in 17.6% of cases and respiratory distress signs in 9.4% of cases. Cardiac ultrasound allowed diagnosis in 179 patients. Non-cyanotic heart diseases with left-right shunt were the most frequent (45.3%). Cyanotic heart anomalies due to right to left shunt were present in 28.7% of cases. Obstructive heart diseases observed in 19.9% of the cohort, were dominated by coarctation of the aorta (6.07% CC) and right heart obstructions were dominated by pulmonary stenosis (4.97%). Complex heart malformations represented 6.1% of CHD and were dominated by the single ventricle (4.97%). CHD was isolated in 128 cases. Chromosomal anomalies were found in 34 patients. They were dominated by 21Trisomy. A genetic syndrome was present in 5 patients. 85 newborns received medical treatment, 14 underwent interventional catheterization and 36 patients underwent surgery. The outcome was favorable in 43 patients, 71 patients died and 67 were lost follow up.
Conclusion: CHD is a common congenital anomaly. Its incidence varies due to different factors like method of detection by a neonatologist. Improving antenatal diagnosis and the early detection through newborn can improve the outcome.

Keywords: Congenital cardiopathy, epidemiology, newborn

472 (CASE REPORT)

Neonatal pulmonary hemorrhage and hypothyroidism

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Introduction: This is a 2 months old boy, born preterm (35 weeks) by C-section, for pre-eclampsia, product of IVF, transferred to our hospital for tracheostomy. He was born with a good APGAR, with birth weight of 2600g, with normal neonatal screening at birth.
At day 15 of life, baby was found to have cold extremities with decrease PO intake, so he was admitted to a peripheral hospital at day 17 for hypothermia, hypotonia, pallor and dehydration, and found to have peripheral and perioral cyanosis. Patient intubated, and upon suctioning from endotracheal tube, he was found to have fresh blood.
Clinical cases and summary results: Case observation of one patient with abnormal presentation.
Clinical Cases or Summary Results: Labs revealed low Hemoglobin and low platelet count, diagnosed of having septic shock and pulmonary hemorrhage, so he was given ionotropes, hydration, and covered with Amikacin, Cefotaxime, and Ampicillin. Chest XR showed bilateral pulmonary infiltrates. Echocardiography showed PDA with L-R shunt and pulmonary hypertension, so started on Sildenafil. Patient had failure to extubate (Several trial done), so transferred to our ICU for tracheostomy and further workup of pulmonary hemorrhage. Endocrinology workup done for suspected hypothyroidism, TSH was 103 microU/ml, with FT4: 0.43 ng/dl, so patient diagnosed with hypothyroidism, and started on Levothyroxine. Repeat levels in 2 weeks showed TSH 0.47 microU/ml and FT4 2.30 ng/dl, and ultrasound of thyroid showed normal thyroid size, homogenous and normal echo texture, measuring 1, 108cm on right, and 0.80.o,84cm on left. We also ruled out autoimmune hypothyroidism: Anti thyroglobulin Ab (0.58IU/ml) and microsomal Ab (0.22 IU/ml) normal. Neonatal screening repeated on neonatal blood and was normal. Patient was successfully extubated, and discharged home on Levothyroxine, with follow up TSH and FT4 to be done in 2 weeks. Follow up on 2 years period shows improvement and was lost at seen.
Conclusion: We report a case of baby presenting at neonatal period with unusual presentation of hypothermia and pulmonary hemorrhage with normal neonatal screening, diagnosed later with hypothyroidism of unknown etiology (Which might be transient).

Keywords: Neonatal pulmonary hemorrhage, hypothyroidism

474 (CASE REPORT)

Fetal cholelithiasis; diagnosis and prognosis

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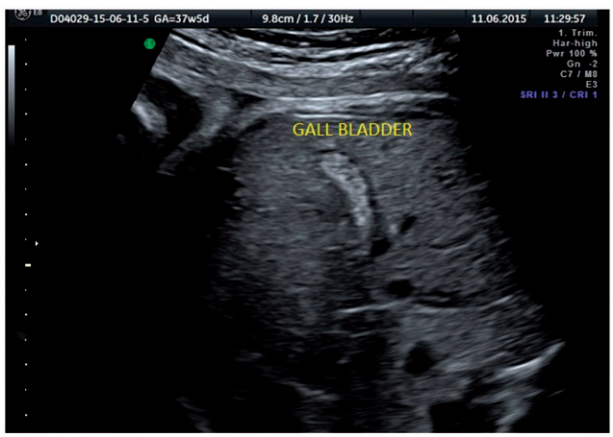
Introduction: Gallbladder can be better identified sonographically after the 20 weeks of gestation(1). However, cholelithiasis can be detected after 30 weeks(2). Although estrogen is charged(1), the etiology has not been fully elucidated. Cholelithiasis is observed three times more frequently in male fetuses (2) and visualized as single, multiple and diffuse foci (1). Although it is speculated that it may be assosiated with the anomalies such as IUGR, tetralogy of Fallot, trisomy 21 and gastroschisis in literature (3), prognosis of the isolated cases is good. Use of ursodeoxycholic acid has been reported to have positive contribution to the prognosis (1). We aim to discuss the importance of imaging the gallbladder, especially in the 3rd trimester through our case.
Clinical cases and summary results: A 24-year-old, primigravida patient was referred to our center with the pre-diagnosis of intrauterine growth retardation (IUGR). Fetal measurements were around 32 weeks of pregnancy in ultrasonographic scan at 37 weeks of gestation. All other fetal wellbeing parameters were normal and multiple echogenic foci were detected at level of fetal liver (Figure 1). In Doppler examination, it was observed that the focus was independent from the portal vein and completely filled the gallbladder. Induction of labor was planned at 38 weeks of gestation with the diagnosis of fetal cholelithiasis and IUGR. Cesarean section was performed due to induction failure and a 2380-gram male infant was born with Apgar scores of 9/9, respectively. At 2 days of age, ''the largest one being 2 mm, multiple echogenicity in the gallbladder lumen'' was observed in the baby's ultrasound scan. The baby was discharged with ursodeoxycholic acid (10 mg/kg/dose) treatment on postpartum 6th day. On follow up, at 1 month of age, the resolution was observed on baby's ultrasound scan and treatment was terminated.
Conclusion: Cholelithiasis is observed at the rate of 0.45 to 1% in the 3rd trimester ultrasound scans(3,4). It is speculated that estrogen may have a role on etiology in literature(1). Cholelithiasis can be visualized in different forms. Liver calcifications, calcified liver masses and meconium peritonitis are observed in differential diagnosis. Prognosis is generally good(2). Detection of gallbladder associated pathologies in the 3rd trimester screening is important in terms of prognosis.

Keywords: Cholelithiasis, gallbladder, ultrasound, 3rd trimestr



522 (CASE REPORT)

Fetal microcephaly and prenatal zika virus infection: a possible relation?

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Presenter: **Adauto Dutra**

Introduction: An epidemic wave of zika virus infection is happening in Brazil and the number of cases of microcephaly was increased in the some time. The purpose of this communication is to alert the several regions of the world that are infested by Aedes aegypti about the possible relation between prenatal infection by zika virus and microcephaly in the fetus, with serious nervous system anatomical alterations.
Clinical cases and summary results: Since October 2015 until April 2016, the Ministry of Health of Brazil registered 7,228 new cases of microcephaly in the country. Of these, 3,710 cases are under diagnostic investigation, 2,320 subjects were discarded as to the diagnosis of microcephaly, 1,198 confirmed cases. Were already recorded 251 deaths and, in 194 cases, laboratory confirmation for the virus zika. In figure 1, a newborn of pregnant with zika virus infection with microcephaly.
Conclusion: A new intrauterine infectious congenital disease is present and needs major investigation.

Keywords: Microcephaly, preganancy, zika virus

525 (CASE REPORT)

Prenatal diagnosis of thanatophoric dysplasia and other diagnostic modalities

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Keywords: Thanatophoric dysplasia, prenatal diagnosis, genetics

Presenter: **D. C. Katlan**

Introduction: Thanatophoric dysplasia (TD) is the most common lethal form of skeletal dysplasia with a prevalence of <1 in 10.000 births. Diagnosis is usually made in second trimester when deformities associated with TD become obvious.
Clinical cases and summary results: A 46-year-old multiparous woman, married to a 56-year-old male, with no living off-spring was referred due to short humerus detected at mid-trimester scan. Sonographic scan performed at our institution during 26th gestational week (GW) revealed extreme rhizomelic shortening of extremities, large biparietal diameter for gestational age, abnormal gyration of occipital lobe, hypoplastic thorax, all of which were suggestive of TD. The couple was counseled about the diagnosis and lethal prognosis of the condition. Upon request of family, pregnancy was terminated at 26th GW and postmortem examination was in accordance with ultrasonography findings. Postmortem radiographs revealed bowed humerus and femur that are characteristic of Type I TD. A skin biopsy was taken from left fetal axilla and fibroblast cultures were made. Sequential genetic analysis of cultured fibroblasts revealed a missense mutation of c.742C>T at Exon 7 of FGFR3 gene, which is a common mutation for TD Type I (Figure). Culturing and sequence analysis were all completed within 2 weeks and couple were counseled for future pregnancies. Recent advances in prenatal diagnosis of TD include use of SNP microarrays for faster turn-over times and use of cell free fetal DNA (cffDNA) for non-invasive screening of TD. SNP microarrays allow for confirmation of diagnosis within a week. Although clinical research is very limited, cffDNA allows for non-invasive confirmation of TD when used in conjunction with ultrasound.
Conclusion: TD is a common skeletal dysplasia with characteristic ultrasound findings. Narrow thoracic circumference and absence of growth in the proximal extremities after first trimester should prompt sonographers to suspect TD.

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Fetal supraventricular tachycardia in a triplet pregnancy

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Presenter: **Andrea Safont**

Introduction: Fetal arrhythmias complicate 1-2% of pregnancies. Supraventricular tachycardia (SVT) is the most common fetal tachycardia (90% of cases). A variety of approaches have been reported to manage fetal SVT: observation alone, delivery and postnatal management, in utero therapy via maternal administration of drugs, and in utero therapy via direct fetal injection. The goal in managing fetuses with tachyarrhythmia is prevention or resolution of hydrops since the mortality rate of fetuses with arrhythmias and hydrops is over 50 percent. Based on its safety profile and efficacy, digoxin is the initial drug of choice, either administered orally or intravenously to the mother or, if unsuccessful, via direct intramuscular fetal injection.
Clinical cases and summary results: We present a case of fetal supraventricular tachycardia in a trichorionic triamniotic pregnancy. Fetal arrhythmia of the third fetus was detected at 31 + 6 weeks of gestation presenting supraventricular tachycardia with 1:1 conduction rate with a fetal heart rate of 260 bpm, with the presence of

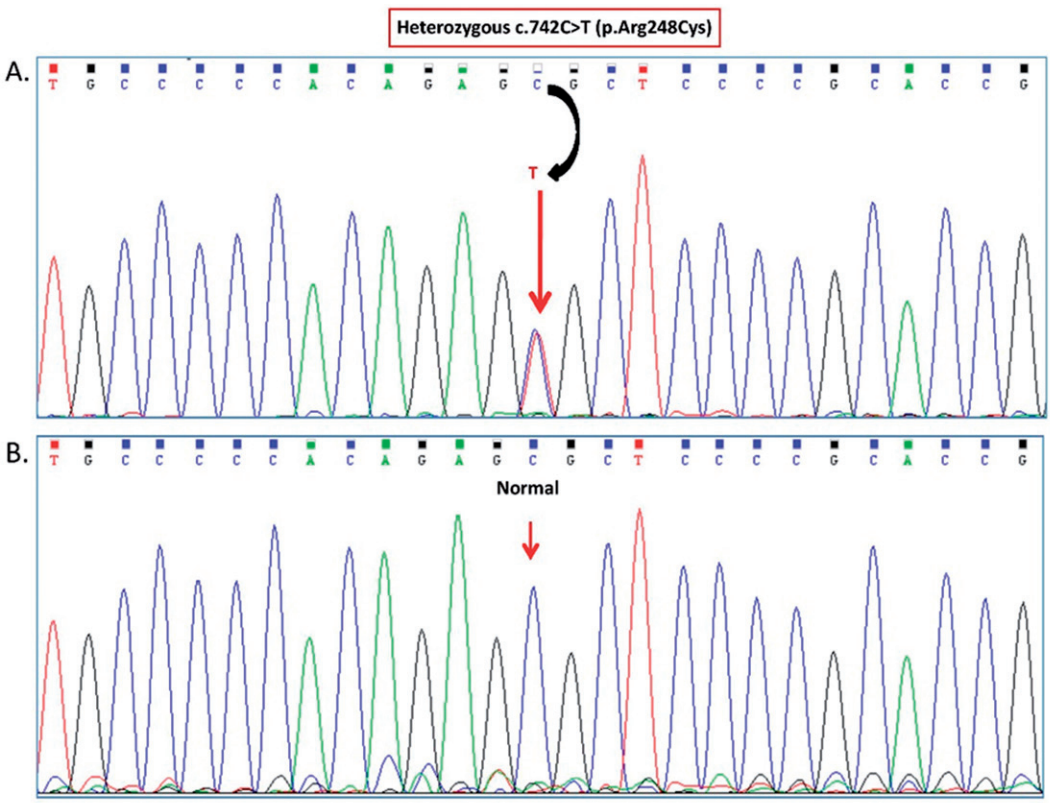

Figure: Electropherogram of the case (A); nomenclature of the mutation is described for NM_000142.4 transcript at DNA level and for NP_000133.1 at protein level. Electropherogram of healthy control presenting the sequence at the same region (B).

hydrops (including ascites, pleural and pericardial effusion). In utero drug therapy was initiated with oral flecainide and digoxine. After 12 hours of treatment digoxin level was 0,9 ng/mL and on ultrasound ascites had increased. Intravenous digoxin therapy was initiated. The mother presented two episodes of palpitation with cardiovascular stability and normal electrocardiogram daily control (except of digital typical downsloping ST depression). After 3 days digoxin level was 1.3 ng/mL and sustained tachycardia remained, so flecainide was increased. After 3 more days of treatment with digoxin levels 1.7, 1.8 and 2.3 ng/mL the third fetus presented intermittent tachycardia around 220 bpm with periods of normal fetal heart rate. Hydrops had been resoluted. At this point (33 + 2 weeks) delivery was indicated via cesarean section. At birth the newborn presented supraventricular tachycardia that reverted with adenosine. Flecainide was indicated as chronic therapy but he presented a bad toleration to it with recurrent paroxysmal supraventricular tachycardia episodes with wide QRS complex. Digoxin was initiated with favorable outcome.
Conclusion: In utero therapy via maternal administration of digoxin and flecainide to treat fetal supraventricular tachycardia with hydrops was effective to resolve hydrops and stabilize the fetus before birth. The two other fetuses tolerated the treatment with no complications as well as the mother. At birth supraventricular tachycardia was treated with adenosine and flecainide for chronic treatment with bad toleration from the patient, so digoxin treatment was initiated with favorable outcome.

Keywords: Fetal supraventricular tachycardia, triplet pregnancy, digoxine, flecainide, hydrops

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Congenitally infected cmv fetuses following first trimester maternal infection: neonatal and short-term outcome

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Presenter: **Sanne Vanwinkel**

Introduction: Objective: To document the course of neonatal and short-term outcome in infants of patients with first trimester primary CMV seroconversion and subsequent amniocentesis. The primary goal was to assess the residual risk of adverse outcome in pregnancies with negative amniocentesis for CMV.
Materials and methods: We conducted a retrospective cohort study on all primary CMV seroconversions discovered in pregnancy from November 2006 to July 2015. Pregnancies were included in cases of seroconversion before 14 weeks of gestation and if subsequent amniocentesis for PCR CMV occurred after 21 weeks of gestation. To retrieve the neonatal and short-term infant outcome, a questionnaire was sent to the patients and the referring physicians. Primary focus was on the auditive, visual, neuromotor and cognitive impairment. The study was approved by the ethical board.
Clinical cases and summary results: The study group included 198 pregnancies. In 44 cases amniocentesis revealed a positive PCR for CMV (early infected group), in 7 cases amniocentesis was negative and neonatal CMV screening appeared positive (late infected group) and 147 children were not CMV infected (control group). CMV infected children appeared significantly more frequently symptomatic at birth. In later life, the prevalence of hearing impairment (12,2%), visual impairment (14,6%), motor deficit (24,4%) and behavioral problems (7,3%) was significantly higher in the early infected group. No late CMV infected children showed short-term symptoms.
Conclusion: Late CMV infected children present mild clinical symptoms at birth. From our results, we conclude that late infected children show significantly less sequelae, although mild audiological, visual en neurodevelopmental sequelae are described in the literature. When amniocentesis after maternal primary CMV infection appears negative, mothers can be reassured, but correct counseling and intensive neurosonographic follow-up remains important.

Keywords: *Congenital CMV infection; CMV; pregnancy; amniocentesis*

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Multiple fetal anomalies with a normal karyotype: a case report

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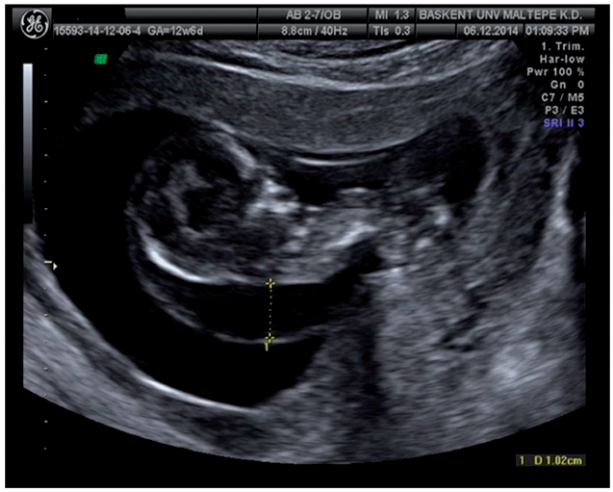
Presenter: **Filiz F. YANIK**

Introduction: Here we report a fetus with a normal karyotype, having multiple congenital anomalies diagnosed in the 1st trimester.
Clinical cases and summary results: A 29-year-old woman, gravida 1, was referred to our clinic for chorionic villus sampling (CVS) due to fetal cystic hygroma, at the 13th week of gestation. The ultrasonographic examination of the fetus was consistent with a cystic hygroma 10 milimeters in thickness behind the neck. The integrity of the vertebral column and abdominal wall was disturbed. Upper and lower extremities were anomalous. CVS was perfomed to exclude aneuploidy. Aneuploidy screening with Quantitative Fluorescence Polymerase Chain Reaction (QF-PCR) was normal. After counseling based on the ultrasonographic findings, the family opted for pregnancy termination at the 14th gestational week. Hypomelia of the right upper extremity and both lower extremities, amelia of the left upper extremity, oligodactily of the toes, scoliosis of the vertebral column, cystic hygroma behind the neck, imperforate anus, ambiguous genitalia, gastroschisis were verified with postpartum autopsy. Karyotype analysis was reported as 46,XX.
Conclusion: First trimester ultrasonography is a valuable tool, not only for aneuploidy screening via evaluation of nuchal translucency, nasal bone, ductus venosus doppler and tricuspid regurgitation, but also for the screening of structural defects. Fetal karyotype may be normal in some cases with multiple fetal anomalies. Chromosomal microarray analysis is a promising method to be used routinely in the future for the evaluation of such cases.

Keywords: Multiple fetal anomalies, First trimester ultrasonography, Chromosomal analysis



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Acute fatty liver of pregnancy; importance of early diagnosis

O. Tosun

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Presenter: **Oktay Tosun**

Introduction: Acute fatty liver of pregnancy (AFLP) is a life-threatening entity observed in the 3rd trimester at a rate of 1/7000-16000(1). Although abnormal β oxidation of fetal fatty acids is blamed, etiology is not fully elucidated(2). AFLP is characterized by microvesiculer steatosis(3). Being primigravida, multiple pregnancies, carrying a male fetus and history of preeclampsia are risk factors(1,4). It begins with nonspecific symptoms such as abdominal pain, nausea, vomiting, jaundice(4). Other liver pathologies excluded, 6 and more Swansea criteria are used for diagnosis(4) although liver biopsy is the gold standard(1). Early diagnosis is important due to complications such as bleeding, liver and renal failure, encephalopathy and death(1). Delivery is the treatment, and cesarean is preferred(1).

Clinical cases and summary results: A 31-year-old, primigravid woman was admitted to the clinic with complaints of nausea, vomiting, fever, and epigastric pain lasting for 2 days at 34 weeks of gestation. The patient had a history of increased risk double test, amniocentesis reported as normal and increased uterine artery resistance the 2nd trimester sonography. 2-weeks retardation in fetal measurements and increased echogenicity on the patient's liver was observed in ultrasound scan of normotensive patient. Patient's laboratory tests were repeated. ''In the liver parenchyma, hyperechoic areas with geographic contours showing patchy style distribution'' was evaluated in favor of hepatosteatosis in radiology consultation. Leukocytosis, increases in aminotransferase and APTT levels were observed in the laboratory findings(Table 1). The patient was evaluated as AFLP after gastroenterology consultations and cesarean section was performed. A female baby weighting 1700 g with Apgar score of 7/8, was delivered. The baby was followed-up in the neonatal intensive care unit, whereas the mother was followed-up at the clinic. The renal system findings of the patient were normal and transfusion of blood products was not required. Laboratory findings showed a trend of improvement from postoperative day 2. The patient and the baby were discharged on postoperative day 14.

Conclusion: Observed in the late 3rd trimester, AFLP is a liver pathology of great importance as it is life-threatening(1). It is rarely seen and etiology is not fully elucidated yet(1). The process beginning with nonspecific symptoms such as nausea and vomiting, can be finalized with a dramatic end such as encephalopathy, multiple organ failure and death (1,4). Therefore, early diagnosis and intervention are important for the avoidance of such complications.

Keywords: Acute fatty liver of pregnancy, 3rd trimestr, fatty acid oxidation disorder

	PREOP D1	OP D	POSTOP D1	POSTOP D2	POSTOP D4	POSTOP D14
WBC (x10^3/uL)	13.3	16.8	12.7	13.8		9.87
HGB (g/dL)	13.9	13.5	13.8	13.1		15.4
HCT (%)	39.9	36.7	38.4	39.3		42.8
PLT (x10/uL)	153	123	111	126		437
GLUCOSE (mg/dL)		85	68	50		76
UREA (mg/dL)	14	11	14	13		19
CREATININ (mg/dL)	0.68	0.68	0.68	0.63		0.75
ALT (U/L)	97	283	307	256	117	32
AST (U/L)	86	244	349	202	52	27
APTT (sec)		46.1	51.6	45.5		
PTZ (sec)		12.8	12.6	11.9		
SPOT URINE TEST:						
PROTEIN:	+	–				
KETONE:	–	++				
Anti HAV IgM (S/CO)		0.18 Negative				
Anti HAV IgG (S/CO)		0.37 Negative				
HBsAg (INDEX)		0.38 Negative				
Anti HBs (IU/mL)		46 Positive				
Anti Hbc IgM (S/CO)		0.03 Negative				
Anti Hbc IgG (S/CO)		0.06 Negative				
Anti HCV (INDEX)		0.56 Negative				
EBV VCA IgM (INDEX)		0.04 Negative				
EBV VCA IgG (INDEX)		1.85 Positive				
Anti CMV IgM (INDEX)		0.13 Negative				
Anti CMV IgG (AU/mL)		>250.0 Positive				
Blood Culture		Negative				
Urine Culture		Negative				

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Coarctation of the aorta in the newborn

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Presenter: **J.Methlouthi**

Introduction: Coarctation of the aorta represents 5-7% of all congenital heart diseases. Early, at best, prenatal diagnosis permits to improve prognosis. The objective of this study is to analyze epidemiological, clinical, therapeutic aspects as well as outcome of the constrictions of the aorta in neonatal period.
Materials and methods: We conducted a descriptive study, enrolling all the patients with constriction of the aorta diagnosed and confirmed in prenatal or neonatal period, over 12 years, in the department of neonataology of Farhat Hached university hospital (Susah).
Clinical cases and summary results: Twenty seven newborns had a constriction of the aorta representing 6.47% of congenital cardiac malformations with an incidence of 0.16% alive births. Diagnosis was suspected in prenatal period in only one case. Clinical features suggestive of a congenital heart disease were mainly circulatory insufficiency features or respiratory symptoms not explained by a pulmonary cause. Cardiac ultrasound allowed making the diagnosis of the constriction in 23 newborns. The preoperative mortality rate was of 35% and was in relation with the cardiac malformation in 71.4% of cases. Twenty neonates survived and underwent surgery. Post operative mortality rate was of 35% with a total mortality of 51.8%. The rate of coarctation relapse among survivors was 30.8%.
Conclusion: Prognosis of the constrictions of the aorta in neonatal period remains reserved in our department. It could be improved thanks to the progress of diagnostic and therapeutic means

Keywords: Newborns, Aorta coarctation, diagnosis, treatment

693 (CLINICAL CASE)

Right congenital diaphragmatic hernia with sac: two unusual features of this defect

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Presenter: **Rodrigues C**

Introduction: Congenital diaphragmatic hernia is a developmental discontinuity of the diaphragm that allows abdominal viscera to herniate into the chest. It is a rare condition that occurs in approximately 1 in 2200 live births.
Herniation usually occurs on the left; right-sided diaphragmatic hernias occur in only 10 to 15% of cases. An estimated 15% of intrapleural hernias are surrounded by a hernia sac, which is composed of parietal pleura and peritoneum. The presence of a sac is associated with a better prognosis than classical CDH.
Clinical cases and summary results: We report a case of a 32 years-old primipara with history of a uterine malformation - complete bicorporeal uterus with double cervix and normal vagina - diagnosed prior to the pregnancy. In the ultrasound carried out at 27 weeks the presence of a congenital diaphragmatic hernia was suspected by the apparent communication between the thoracic and the abdominal cavity and the presence of a homogeneous mass in the right chest. The amniocentesis, at 28 weeks, revealed a normal male karyotype, 46,XY. The MRI showed a bulky right diaphragmatic hernia containing the right lobe of liver. The existence of a hernia sac was suspected by the presence of great amount of fluid. This defect resulted in a left mediastinal shift and marked decrease of right lung volume. Due to the possible need for postpartum surgery the patient was transferred to a tertiary center. She delivered vaginally at 37 weeks, a male with 2860g and Apgar index of 8/9. Reduction of the herniated viscera and closure of the diaphragmatic defect was performed in the seventh day of life and the child has been discharged after one year.
Conclusion: MRI has great value in the evaluation of the type of hernia, the contents of the hernia, and the effect of these contents on adjacent structures. This information is important for prenatal counseling and perinatal planning. Although disease severity in patients with right-sided lesions appears to be more severe as liver herniation, the presence of a hernia sac is considered by many surgeons to be associated with less severe disease, as in this case.

Keywords: Congenital diaphragmatic hernia, MRI, prenatal diagnosis

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Neonatological aspect of congenitalcytomegalovirus infection -clinical study

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Presenter: **Svetlana S. Stefanovic**

Introduction: Timing for diagnosis is one of the most important factors To recognize congenital CMV without previous information about mother's infection is very difficult but yet possible for experienced clinical neonatologist. Clinical signs are very discrete- pale or jaundiced skin color, skin rash, reduced fatt tissue, reduced birth weight and length, mycrocephalia, hepatomegalia,poor feeding, hypotonia, lack of spontaneous motility, lethargic behavior.
Materials and methods: AIM of the study was to find out the most frequent clinical signs that were recognized at first clinical assessment of newborns during 10 years period at our neonatal department.
Clinical cases and summary results: There were 27 neonates with congenital CMV infection, the most characteristic signs were - SGA in 100%, neonatal jaundice (88,88%) and hypotonia (85,18%). The leading clinical problem that induces their hospitalization was poor feeding and poor gaining on weight (74,07%).
Conclusion: It is of great importance to recognize discrete signs of illness as they can lead to proper DD and if congenital CMV is diagnosed,then modern therapeutic approach and follow up together with stimulative treatment can prevent serious neurological problems and psychomotor retardation.

Keywords: Citomegalovirus, pregnancy, fetal and neonatal infection

708 (CASE REPORT)

RH isoimmunization in the second trimester - a case report

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Presenter: **Matilde Martins**

Introduction: Maternal Rh (D) alloimmunization occurs when a woman's immune system is sensitized to fetal Rh(D)-positive red blood cells, stimulating the production of anti-D antibodies. Rh(D) positive fetuses/neonates of these mothers are at risk of developing hemolytic disease of the fetus and newborn, which can be associated with serious morbi-mortality. In the subsequent pregnancies, fetal anemia is usually even more severe and earlier in gestation. Therefore, Rh(D) typing and an antibody screen should be performed at the first prenatal visit. The test most used and accurate for determining antibody titers is the indirect Coombs test. If a critical titer is reached, Doppler velocimetry of middle cerebral artery peak systolic velocity is performed to identify fetuses that may be severely anemic.
Clinical cases and summary results: C.C.S., 33 years old, O Rh (D) negative, was referred at 30 weeks' gestation to our Gestacional Diabetes appointment, and a positive indirect Coombs test at 24 weeks' gestation (1/8) was documented; the indirect Coombs test in the first trimester was negative. It was't identified any sensitizer situation that could explain this result. She had received anti D prophylaxis after an uncomplicated first pregnancy twelve years ago (newborn O Rh (D) positive). The father is B Rh (D) positive. The determination of the fetal Rh(D) type was positive. Serial maternal indirect Coombs titers were done and critical level was reached at 30 + 2 weeks' gestation (>1/16). Middle Cerebral Artery Peak Systolic Velocity (MCA-PSV) Doppler screening was performed once a week till 36 weeks in order to identify signs of fetal anaemia (see table 1).Due to stable MCA-PSV values, cephalic presentation and no other signs of hydrops fetalis, a labor induction will be performed at 38 weeks gestation (10/05/16).
Conclusion: Among the more than 50 different antigens capable of causing maternal alloimmunization and fetal hemolytic disease, the Rhesus (Rh) blood group system is the most common. This case is an example that in patients who have become sensitized, a good screening, a accurate diagnostic and a close follow-up to recognize hemolysis or anemia, have led to a dramatic decrease in perinatal morbidity and mortality rates.

Keywords: Rh isoimmunization; indirect Coombs test; MCA-PSV Doppler

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Abdominal malformations and prenatal ultrasonography

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Presenter: **Artur Beke MD PhD**

Introduction: Showing a prevalence rate of 0.2-0.3%, abdominal and abdominal wall malformations discovered in newborns are regarded relatively rare. The aim of this study is to examine the efficacy of prenatal ultrasound diagnostics in detecting abdominal and abdominal wall malformations.
Materials and methods: In this study, we have processed the prenatal sonographic and postnatal clinical and fetopathological details of 240 abdominal and abdominal wall abnormalities in 216 fetuses with abdominal and abdominal wall anomalies according to EUROCAT recommendations over a 7 years period at the 1st Department of Obstetrics and Gynecology. The patients were divided into three groups; Group I.: prenatal sonography and postnatal/fetopathological examinations yielded fully identical results. Group II.: postnatally or post abortion detected abdominal and abdominal wall changes were partially discovered in prenatal investigations. Group III.: prenatal sonography failed to detect the abdominal and abdominal wall malformations identified in postnatal or fetopathological examinations.
Clinical cases and summary results: Prenatal sonographic diagnosis and postnatal or fetopathological results completely coincided in 60.2%, i.e 130/216 of cases in postnatal or fetopathological examinations in cases of abdominal and abdominal wall abnormalities. In 31/216 cases (14.4%) discovery was partial, while in 55/216 (25.5%) no abdominal or abdominal wall malformations were detected prenatally. Isolated abdominal and abdominal wall abnormalities occurred in 130 cases, in 93 of which (71.5%) the results of prenatal ultrasonography and postnatal or post abortion examinations showed complete coincidence. In 20 cases (15.4%) the discovery was partial, and in 17 cases (13.1%) the diagnoses were different. Abdominal and abdominal wall abnormalities were found to represent part of multiple malformations in a total of 70 cases as follows: prenatal diagnosis and the postnatal/fetopathological findings completely coincided in 28 cases (40%), in 11 cases (15.7%) there was a partial match, and in 31 cases (44.3%) the diagnoses were different. In 16 cases chromosomal aberration was associated with the abdominal and abdominal wall abnormalities, 6 cases of trisomy 18, 6 cases of trisomy 21, and 4 cases of trisomy 13 has occurred.
Conclusion: In approximately half of the cases, postnatally/fetopathologically diagnosed abnormalities coincided with the prenatally discovered fetal abdominal developmental disorders. The results

Table 1: Summary of ultrasound and laboratory findings in chronological order

	01/02/16	15/03/16	18/03/16	07/04/16	14/04/16	22/04/16	28/04/16
GA	24+1	30+2	30+5	33+4	34+4	35+5	36+4
Coombs	1/8	1/128					
EFW(g)			1816	2557	2481	2588	
Percentile			76.7	80	46.7	32.6	
MCA-PSV (cm/sec)			32.4	45.8	53.0	46.0	51.3
MCA-PSV (MoMs)			0.79	0.97	1.08	0.90	0.95

GA: Gestacional Age, EFW: Estimated Fetal Weight, MCA-PSV: Middle Cerebral Artery Peak Systolic Velocity.

have confirmed that ultrasonography plays an important role in diagnosing abdominal malformations but it fails to detect all of the abdominal developmental abnormalities.

Keywords: Abdominal developmental disorders, Prenatal sonographic diagnosis, Efficacy of ultrasound

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Congenital heart desease and genetic

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Presenter: **K. Ben Ameur 2**

Introduction: BACKGROUND AND AIMS
Congenital heart disease (CHD) are the most common type of birth defect and result in significant mortality worldwide. The etiology of the majority of these anomalies remains unknown, but genetic factors are being recognized as playing an increasingly important role.
AIM: To highlight the role of genetic in CHD and to describe the genetic syndrome involving CHD.
Materials and methods: STUDY DESIGN: A 14-year retrospective descriptive study. SETTING, SUBJECTS: We identified newborns with CHD supported in Resuscitation and Intensive Care Unit of Neonatology of Military Hospital of Tunis between 2002 and 2015. MAIN OUTCOMES AND MEASURES: We studied perinatal database, clinical and paraclinical features, especially genetic study.
Clinical cases and summary results: We identified 145 newborns with CHD, 21 (14.45%) were associated with chromosomal abnormalities. It was number abnormalities in 17 of 21 and structure ones in 4 of 21. Trisomy 21 was the most frequent chromosomal anomaly (13/21), followed by Trisomy 18 (4/21). Antenatal diagnosis was performed for eight fetuses. For the others cases, diagnosis was done in the early neonatal period. Atrioventricular septal defects were the most frequent CHD associated with chromosomal abnormalities (7/21), especially with Down syndrome (7/13). We identified two cases of Tetralogy of Fallot associated with Di-George Syndrome (translocation 22 q11), one case of Williams-Beuren syndrome (7q11.13 microdeletion), and one case of polymalformative syndrome with 7q deletion.
Otherwise, CHD was a part of syndromic entity with possible genetic determinism in five cases: Dandy Walker Syndrome (2 cases), VACTERL Syndrome (one), Pierre Robin Syndrome (one case) and a case with nonspecific polymalformative Syndrome. Seven of 21 newborns needed resuscitation with respiratory assistance. Eleven of the 21 newborns dead. CHD and/or severe malformative syndrome was the direct cause of death for ten over eleven newborns.
Conclusion: Antenatal diagnosis is still insufficient in our context, especially for CHD. That may led to the birth of severely, malformed neonates with ethic problem of palliative resuscitation until a clear diagnosis. Genetic counseling is necessary if genetic anomaly is found, but not always easy because of clinical variability of some syndromes.

Keywords: Congenital heart disease, genetic, infant, newborn

758 (CASE REPORT)

Jarcho-Levin syndrome and its association with neural tube defects

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Introduction: Jarcho-Levin syndrome was first described by Jarcho and Levin, in a Puerto Rican family at 1938 (1). It is a congenital disorder consisting of various vertebral formation and segmentation defects (hemivertebrae, vertebral fusion, scoliosis) accompanying to asymmetrical costal/rib anomalies (2). Even though there have been far more than 130 cases reported in the literature until now, in most of the cases, the diagnosis is made post-natally and the prenatal diagnosis has only been rarely reported. Here we report a case of Jarcho-Levin Syndrome in which neural tube defect was the main clinical manifestation rather than classical findings of the syndrome. Along with the case presented here, we would like to discuss the association between neural tube defects and Jarcho-Levin syndrome.
Clinical cases and summary results: A 32-year-old patient presented at 21 weeks of gestation with a diagnosis of neural tube defect. She reported a previous pregnancy resulted in normal infant, delivered vaginally. There was no family history of congenital anomalies, hereditary disease or consanguinity. The sonographic images revealed vertebral disorganization (kyphoscoliosis and shortened spine), throcalumbal meningomyelocele (20 mm), asymmetrical deformed thorax, enlarged lateral ventricles and single umbilical artery. The couple was counselled about the severity of the findings affecting the neural tube and elected termination of the pregnancy. The post-abortion pathologic evaluation of the female fetus revealed pathologic findings indicative of Jarcho-Levin Syndrome as follows: short neck, short spine, short thorax, enlarged thoracic diameter, agenesis of the right kidney. Radiological findings were absence of the ribs on the left side of the thorax and vertebral fusion defects.
Conclusion: We suggest that obstetricians give appropriate attention for correct differential diagnosis even on cases with severe neural tube defects that are incompatible with life and would lead to termination of pregnancies. Jarcho-Levin syndrome should be suspected when prenatal ultrasonographic examination reveals findings of neural tube defects, especially meningomyelocel adjacent to findings of thoracic or costal deformities, in nations originating from Mediterranean basin.

Keywords: Jarcho-Levin syndrome, neural tube defects, meningomyelocele

Table 1: Features of the published cases on the last ten years

Number	Study	Decipline	Cases (n)	G. Week	CVS (n)	GUS (n)	NT (n)	NTD (n)	MC (n)	MMC (n)	HC (n)	CM (n)	SB (n)	SYRM (n)	TC (n)	SC (n)	DMM (n)
1	Alatas et al, 2015*	Pediatrics	28	Pn.				28		26	16	4		4	2	7	
2	Demir et al, 2016*	Pediatrics	12	Pn.	10	4		12		12		11					
3	Dane et al, 2006*	Obstetrics	4	St.				4			2		4				
4	Kauffmann et al, 2003	Obstetrics	1	Ft.		1	1	1					1				
5	Wong et al, 2006	Obstetrics	1	St.	1			0									
6	Yurttutan et al, 2013*	Pediatrics	3	Pn.				3			3						
7	Akhmadshchin & Patopova, 2010	Medical Genetic	1	St.				1			1						
8	Hull et al, 2001	Obstetrics	1	Ft.			1	0									
9	del Río Holgado et al, 2005	Obstetrics	1	St.				0									
10	Dane et al, 2007*	Obstetrics	1	Ft.			0	0					1				
11	Teli et al, 2004	Pediatrics	13	Pn.	3	2		2			2		2				
12	Rai et al, 2015	Pediatrics	1	Pn.				1	1								
13	Geze et al, 2015*	Anesthesiology	1	Pn.				1			1						
14	Martinez Santos et al, 2015	Neurosurgery	1	Pn.				1		1	1				1		
15	Padma & Sundaram, 2015	Nuclear Medicine	1	Pn.		1		0									
16	Anjankar & Subodh	Neurosurgery	1	Pn.				1		1 *							
17	Jain et al, 2015	Anesthesiology	1	Pn.				0									
18	Srinivas et al, 2014	Neurosurgery	1	Pn.				1					1			1	
19	Bhutia et al, 2014	Pediatrics	1	Pn.	1			0									
20	Nagasawa et al, 2014	Pediatrics	1	Pn.	1			0									
21	Sigla et al, 2013	Pediatrics	1	Pn.	1			1					1				
22	Odehouri-Koudou et al, 2013	Pediatrics	1	Pn.				0									
23	Sparrow et al, 2013	Stem Cell Biology	4	Pn.	3			2	1			1	1				
24	Cristoiu et al, 2013	Obstetrics	1	St.				0									
25	Yılmaz et al, 2013*	Neurosurgery	1	Pn.				1								1	
26	Kutuk et al, 2012*	Obstetrics	1	St.				1								1	
27	Ranes et al, 2012	Obstetrics	1	St.				0									
28	Kansal et al, 2011	Neurosurgery	1	Pn.				1					1				1
29	Wang et al, 2011	Pediatrics	5	Pn				0									
30	Basaran et al, 2010	Obstetrics	1	Tt.				0									
31	Onay et al, 2008	Pediatrics	1	Pn.				0									
32	Kulkarni et al, 2006	Pediatrics	2	Pn.				1		1							
33	Vázquez-López et al, 2005	Pediatrics	1	Pn.				0									
34	Rodríguez et al, 2004	Pediatrics	1	Pn.				0									
35	Cornier et al, 2005	Genetics	27	Pn.				0									
36	Etus et al, 2003*	Neurosurgery	1	Pn.				1								1	
37	Bannykh et al, 2003	Pathology	2	St. Ft.		1	1*	0									
38	Tubbs et al, 2002	Cell Biology	1	Tt.				1									
39	Hatakeyama et al, 2003	Pediatrics	1	Pn.	1			1					1				
40	Duran et al, 2001	Pathology	3	Pn.		2		1		1	1	1					
	CM: Chiari malformation, CVS: Cardiovascular system, DMM: Diastematomyelia, GUK: Genitourinary system, G.Week: Gestational week, HC: Hydrocephalus, MC: Meningocele, MMC: Meningomyelocele, *MMC**: Lipo-meningomyelocele, NT: Nuchal Translucency, *NT**: Cystic hygroma, NTD: Neural tube defects, Pn: Postnatal, SB: Spina bifida, SC: Split cord, St: Second trimester, SYRM: Syringomelia, TC: Tethered cord, Tt: Third trimester, study*: Studies conducted on Turkish populations																

FETAL DISEASE - 765

Chromosomal abnormalities in fetuses with an aberrant right subclavian artery

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Introduction: The objective of this study was to assess the frequency of associated chromosomal abnormalities, including Di George syndrome, in fetuses with an aberrant right subclavian artery (ARSA).
Materials and methods: This is a retrospective study. All patients whose fetus had an ARSA diagnosed by ultrasound performed during the 2nd trimester of pregnancy were included.
Clinical cases and summary results: Between March 2008 and April 2016, an ARSA was diagnosed in 44 fetuses. All fetuses underwent amniocentesis (100%). ARSA was an isolated finding in 40/44 cases (90.9%). No chromosomal abnormalities were found in 43/44 fetuses with an isolated or non ARSA (97.8%). One fetus, that had additionally a mild ventriculomegaly had a VOUS, 22q22.1q11.21 deletion.
Conclusion: In our series the presence of ARSA was not associated with a chromosomal abnormality. Thus, this information must be included while counseling for an invasive procedure.

Keywords: ARSA, chromosomal abnormalities, Di George syndrome

FETAL GROWTH RESTRICTION - 021

Fetal growth restriction and neonatal outcome

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Introduction: Modern medical literature is dealing with the problem of neonatal outcome and further psychomotor development, especially of neurocognitive functions in children born as small for their gestational age. Epigenetic studies all over the world reveal almost the same percentage of SGA in similar developed countries. Although good social, economic and medical care is assumed to be at a high level in European countries, the percentage of SGA is about 3–5% in otherwise healthy newborn population. The aim of our study was to investigate neonatal outcome in term newborns with intrauterine growth retardation who were hospitalized at our department. They were coming to our hospital both from delivery rooms and from home, after discharge from Vojvodina, northern province of Serbia, inhabited with 2 million people.
Materials and methods: Prospective study was held in our department during a three month period (Sept- Dec 2016.). IUGR was declined by neonate's antropometric measures toward gestational age, sex and pondural index lower than 2.5 or for SGA between 2.5–3 but with BW under 2700 g and BL under 49 cm eg under 3%. Incidence of IUGR and SGA among our patients was as high as 25%.
Clinical cases and summary results: Their neonatal health problems in the group of IUGR were: pathological jaundice 72%, neonatal infection 20%, severe perinatal hypoxia with Apgare score 3–5 in the first minute of life 8%. SGA group was caracterized with intrauterine infection CMV 8%, hypotuntritia neonati 64%, ultrasound verification of prenatal hypoxemia and/or subarrachnoidal hemorrahge 33%.
Conclusion: It is very important to recognize neonates small for their gestational age and with intrauterine growth retardation at birth and to carefully observe them in the first weeks of life as the consequences of their pathologic nutrition and oxygenation will certainly appear, so it is better to solve the problem as early as possible.

Keywords: Neonates, SGA, IUGR, neonatal outcome

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Disparities in the risks of term small for gestational age birth among immigrant and native women in the republic of Korea

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Introduction: The Republic of Korea (Korea) has experienced a steady increase in the number of births from immigrant women over the last 20 years, accounting for a substantial proportion of total births (4.3%). However, little is known about birth outcomes of immigrant women in Korea.
Materials and methods: This study compared Korean birth data from immigrant and native women, and explored the factors that affected birth of small for gestational age in term infant (SGA) among immigrant women. A total of 68 074 singletons from immigrant women and 1 644 956 singletons from native women during 2010–2013 were examined using the National Birth Registration Database. Adjusted proportions were calculated for the occurrence of SGA, and subgroup analyses were performed according to maternal age, parity, and birth region. The birth outcomes of the immigrant group to a vulnerable group in Korea were compared. Multivariable logistic regression analyses were also used to evaluate the associations of the factors with birth outcomes among immigrant women.
Clinical cases and summary results: Immigrant women exhibited significant higher adjusted proportions for SGA (6.4% versus 5.7%, $p < 0.001$). The results of the stratified analyses revealed that primiparous immigrant women had significantly higher proportions of SGA, compared to native women. Among immigrant women, male infant, maternal ages (over 35), parity (primipara), and economic status of the mother's original country were independently associated with SGA.
Conclusion: This study has provided evidence regarding the disparities in the risks of SGA among immigrant women and native women in Korea. These data will be necessary to develop comprehensive policies that can reduce health disparities and support the successful settlement of immigrants in Korea.

Keywords: Small for gestational age, Intrauterine growth retardation, immigrant, disparity

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Correlation between fetal growth restriction and the maternal inflammatory changes induced by smoking throughout gestation

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Introduction: It is evident that cigarette smoke induces immunologic changes mainly anti-inflammatory properties. During gestation, smoking changes the proportion of lymphocytes and natural killer cells, suggesting that smoking affects several immune parameters. However, there are no data investigating immune changes induced by maternal smoking throughout gestation. In addition, maternal smoking is associated with multiple adverse outcomes icluding fetal growth restriction (FGR), nevertheless the mechanism is still unknown. Therefore, we hypothesize that, cigarette smoke compromises the maternal immune system and hence increases their susceptibility to have growth restricted fetuses.
Materials and methods: Retrospective study was conducted in Hospital Sant Joan de Deu, Spain. Patients were divided into smoking (n=309) and nonsmoking mothers (n=476) with singleton pregnancies. Data of maternal leukocytes and its subtypes both in absolute values and percentages in the three trimesters of gestation and perinatal outcomes were collected.
Clinical cases and summary results: Our results are consistent with the negative correlation between maternal smoking and FGR. We detected consistent increase in leukocytes, neutrophils and lymphocytes (absolute values) among smokers in comparison to nonsmoking mothers throughout gestation. Our analysis has showed an increase in the maternal leukocytes and its subsets both in the smoking mothers and mothers who delivered FGR neonates compared to the control group. In addition, our data showed a rise in the maternal HCT, MCV, leukocytes and lymphocytes (absolute values) in mothers with FGR neonates compared to those with normal fetal growth.
Conclusion: Our data is in consistent with others regarding the ability of cigarette smoke to interfere with the immune system although the mechanism by which cigarette smoke alters immunity is not completely understood. Also, our results suggest that smoking influences the maternal immune system and consequently the physical growth, development of the fetus and the outcome of pregnancy is affected in susceptible mothers.

230 (CASE REPORT)

Selective intrauterine growth restriction in multiple gestation: according to a clinical case

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Introduction: The incidence of multiple gestation has increased as a result of assisted reproductive techniques. It is known that multiple gestations imply an increased risk of both maternal and fetal complications. Some pathologies such as hyperemesis, preeclampsia or gestational diabetes are more likely in this type of gestation. Furthermore, the risk of intrauterine growth restriction, stillbirth and preterm labor is considerably higher than in single pregnancies. We present a case of quadruple gestation and its clinical evolution.
Clinical cases and summary results: 32 year-old woman (G2P0A1) with secondary infertility, who got a quadruple pregnancy after fertility treatment (artificial insemination). After objectifying evanescent twin and performing embryo reduction in week 13, the gestation became diamniotic dichorionic. Normal first trimester screening. A discordance between estimated fetal weights of 29% was observed in 16 weeks ultrasound, rising to 46% in week 19, with normal doppler ultrasound in the first twin and presence of redistribution in the second twin. A complete study and amniocentesis were made because of early onset selective intrauterine growth restriction. Normal morphology of both fetuses in 20 weeks prenatal diagnostic ultrasound. The second twin died at 24 weeks of gestation. The patient was admitted at 28 weeks of gestation for close monitoring of the fetus, affected by intrauterine growth restriction with doppler alteration (absence of diastole in umbilical artery and redistribution). Serial ultrasounds and velocimetries were performed during admission. Fetal lungs were madurated and magnesium sulfate was administered for fetal neuroprotection. Reverse flow in umbilical artery was objectified at 30 + 3 weeks of gestation. That was the indication to end the pregnancy by caesarean section.
Conclusion: Serial ultrasound evaluation of fetal growth, biophysical profile and doppler velocimetry is essential to distinguish between constitutionally small fetuses and those who are affected by intrauterine growth restriction. The second group is associatd with poorer perinatal outcome. Detecting them is clinically relevant as it represents an opportunity for preventing cases of intrauterine fetal death, perinatal brain injury and severe intrapartum fetal distress.

Keywords: Fetal growth restriction, multiple gestation, Doppler

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Trends of low birth weight newborns and its risk factors among timely birth

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Introduction: The main cause of neonatal low birth weight (LBW) is prematurity and intrauterine growth restriction which is a major neonatal health issue. The LBW most often associated with fetal intrauterine growth retardation which is most often from a variety of placental problems, as well as other maternal and newborn health problems.
Objective: To examine trends and assess the risk factors for at-term small for gestational age newborns.
Materials and methods: Data from population-based Medical Birth Register were used. All timely live births (≥37th gestational week (GW)) with low (≤2499g) birth weight (BW) (n=3972) from 2000 to 2013 were included in the data analysis. Low birth weight rates (LBWR) and adjusted OR were calculated. Multiple regression model adjusted for mother age, delivery complications and perinatal period conditions.
Clinical cases and summary results: 17.5% (n=696) were multiple births. The average mothers age is 27.5 years (SD ± 6.3), BW - 2292.5g (SD ± 188.6) and GW - 38.3 (SD ± 1.2). Newborns with LBW more often

from 2nd delivery (SD ± 1.4) and 3rd pregnancy (SD ± 2.2). Average period (2000 - 2013) LBWR is 14.4 per 1000 timely birth (95% CI 13.9 - 15.0). Slight decrease, an average 0.2 cases (p <0.01) per year was observed. The higher odds of LBW was associated with intrauterine growth restriction (ORadj=29.6, 95% CI 26.8-32.8, p<0.001), pre-eclampsia (ORadj=2.1, 95% CI 1.9-2.5, p <0.001), hypertension (ORadj=1.2, 1.1-1.4, p <0.01) and maternal smoking during pregnancy (ORadj=3.0, 95% CI 2.7-3.2, p <0.001). Short-term perinatal outcomes such as birth defects (ORadj=1.4, 95% CI 1.2-1.6, p <0.001) and certain conditions originating in the perinatal period (ORadj=7.4, 95% CI 6.9-8.0, p <0.001) were observed for LBW newborns.
Conclusion: It is necessary to identify pregnant women with risk factors such as preeclampsia, hypertension, smoking during pregnancy and others to decrease the condition of small for gestational age. Special attention must be given to health education to change knowledge and attitude of antenatal care importance and maternal smoking during pregnancy.

Keywords: Low birth weight, intrauterine growth restriction, risk factors

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The role of gestational age and fetal weight in perinatal outcomes among IUGR preterm fetuses

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Introduction: Intrauterine growth restriction is a major factor of perinatal morbidity and mortality. If IUGR fetuses are preterm, timing delivery is the most challenging process, from one side to avoid the complications from iatrogenic prematurity, and the other side avoiding complications of hypoxia and acidosis from placental dysfunction. Our aim was to assess the role of gestational age and weight at delivery of IUGR preterm fetuses with placental dysfunction and providing data for perinatal outcome regarding this population, helping clinicians and parents for better timing delivery at our Institution.
Materials and methods: Prospective observational study, during years 2010–2014 in University Hopsital of Obstetric-Gynecology "Koco Gliozheni", in pregnant women with unique fetus, between 26.0wGA-36.6wGA, with intact membranes, Estimated Fetal Weigh in ultrasound < p. 10th, and at least one abnormal Arterial Doppler up to three days before delivery: Umbilical Artery: DUPI > p.95th, AEDF(intermittent), REDF, Mean cerebral Artery MCAPI < p.5th, IC p < p.5th. After delivery, we collected data about Adverse Perinatal Outcome as a complex outcome of perinatal mortality and severe morbidity: HIV (intraventricual hemorrhage), LP (periventricular leucomalacia), EN (necrotizing enterocolitis), BD (bronchopulmonary dysplasia), sepsis.
Clinical cases and summary results: Our study included 91 cases. For all the subjects: Mean Gestational Age during diagnosis was 33wGA ± 2.1, Estimated Ultrasound Mean Fetal Weight was 1471g ± 368, Mean Gestational Age during delivery was: 33.0wGA ± 2.1, Mean Neonatal Weight was:1477g ± 360. Mean Gestational Age with Perinatal Favorable Outcome resulted 33.7wGA ± 1.8, Mean Neonatal Weight with Favorable Outcome resulted 1591g ± 298, Mean Gestational Age with Adverse Perinatal Outcome resulted 31.8wGA ± 2.0, Mean Neonatal Weight with Adverse Perinatal Outcome resulted 1257g ± 370. Perinatal deaths resulted around 11%. Deaths and Severe Morbidity resulted significantly related to Gestational Age (LR 1.18 up to 2.82, p = 0.001) and Fetal Weight (LR 181 486.6, p = 0.001). According to Caplan Meier Analysis, at our Institution, for gestational age below to 31wGA, findings conferred an 31-fold increased risk of adverse perinatal outcome, OR 31 (95% CI, 30.1-31.8, p < 0.0001).
Conclusion: Perinatal outcome in preterm IUGR fetuses, is related significantly with gestational age and weight at delivery.

Keywords: Arterial Doppler, IUGR, preterm fetuses

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Value of cerebroplacentar ratio in fetal surveillance

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Introduction: The value of cerebroplacental ratio (CPR), or index, in the prediction of fetal distress is a theme extensively researched nowadays. The degrees of fetal blood flow redistribution is quantifiable through the ratio between medium cerebral artery flow (pulsatility index or resistance index) and umbilical artery flow (pulsatility index or resistance index) also known as cerebroplacental ratio.
Materials and methods: After researching the PubMed, Uptodate si Wiley databases and analyzing the relevant clinical studies and rewievs we chose to take into consideration only the results of the clinical studies from 2014–2015. We conducted a retrospective cohort study over a period of 2 years (2014–2015) by enrolling cases from Saint Pantelimon Emergency Hospital.
Clinical cases and summary results: Recent studies show that CPR can be used in order to predict negative fetal outcomes as placental insufficiency and fetal hypoxia - being able to identify fetal growth restriction, regardless of fetal size. Still, there are studies that show that CPR is a poor indicator for negative fetal outcomes and is not to be used a screening method. During the last 2 years 224 cases of decreased CPR have been diagnosed in our hospital. Among these, a number of 58 (25,89%) newborns were considered SGA or suffering from IUGR while 136 (60,71%) newborns were AGA. Outcomes concerning this group are as following: in 98 (43,75%) cases Apgar scores </= 7, 50 (22,32%) newborns needed prolonged treatment and were hospitalized for more than 15 days while 38 (16,96%) newborns needed special care and were admitted into NICU, 6 (2,67%) newborns died during hospitalization.
Conclusion: Even though there are extensive studies on the matter of the CPR value as an indicator of fetal and neonatal prognostic, result are yet controversial, suggesting the need for further, wider studies.

Keywords: Fetal growth restriction, cerebroplacentar ratio, fetal morbidity

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Risk factors of IUGR in a level III maternity center from Romania

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Introduction: Intrauterine growth restriction (IUGR) represents a major and silent cause of various morbidity and mortality for the fetal and neonatal population and it is defined as a fetal failure to achieve its ideal potential of growth. The objectives of this study were to determine the incidence and morbidity of IUGR infants, to identify risk factors and complications and to differentiate IUGR from small for gestational age (SGA) infants.
Materials and methods: This is a retrospective study on 326 SGA infants of which 252 with SGA with history of IUGR and 58 with SGA without history of IUGR, as ascertained by placement on Lubchenco's intrauterine growth charts. The following parameters were evaluated: gestational age, birth weight, length, head circumference, weight index, risk factors, complications and outcome during hospitalization.
Clinical cases and summary results: The incidence of IUGR during two years (2013–2014) was 15.74%. The newborns with IUGR had a mean gestational age of 36.52 weeks (26–42w) and a body weight on average 1961.94 grams (500–2700g). The newborns had conflicting anthropometric parameters when placed on Lubchenco's growth charts. Risk factors were identified as maternal in 72% of newborns, fetal in 21% and placental in 13% of cases. Only the maternal risk factors can be consider for IUGR. The hematologic and metabolic complications were the most frequent and gestational age is a significant influence on the occurrence of complications.
Conclusion: There are significant difficulties in placing IUGR newborns on classical growth charts. Specific growth curves are necessary for individual countries.

Keywords: IUGR, intrauterine growth restriction, SGA, small for gestational age, risk factors

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Peculiarities of angiogenic factors and cytokines in the physiological and complicated pregnancy, depending on the sex of the fetus

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Introduction: Objective. To study the peculiarities of angiogenic factors and cytokines system in women in the dynamics of physiological and complicated pregnancy in dependence on fetal sex.
Materials and methods: We studied 390 women with physiological pregnancy (group 1), including 203 women with a male fetus and 187 with female fetuses, and 345 women with placental insufficiency and fetal growth retardation (group 2), including 176 women with male fetuses and 169 pregnant women with female fetuses. We determined the levels of vascular endothelial growth factor-A (VEGF - A), epidermal growth factor (EGF) , placental growth factor (PGF), endothelin-1 (ET-1) , tumor necrosis factor-α (TNF -α), and interleukin (IL-1, IL-6 , IL-10, IL-12) in blood serum with the help of ELISA method in II and III trimester of gestation.
Clinical cases and summary results: We recorded higher levels of angiogenic factors (VEGF-A, EGF, PGF, ET-1) and cytokines (TNF-α, IL-1, IL-10, IL-12) in pregnant women with female fetuses in the II and III trimester of both physiological and complicated pregnancy. There is a certain ratio of the absolute levels of VEGF-A, EGF, PGF, ET-1, TNF-α, IL-1, IL-6, IL-10, IL-12 for each trimester in the dynamics of physiological and complicated pregnancy, depending on the fetus sex.
Conclusion: We determined significant differences in the parameters of endothelial factors and cytokines in pregnant women with male and female fetuses both with physiological and complicated pregnancies, indicating on different ways of initiation and regulation of these systems, determined by fetus sex.

Keywords: Fetus sex, pregnanacy, angiogenic factors, cytokines

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Peculiarities of blood coagulation in pregnant women depending on the sex of the fetus

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Introduction: The study of coagulation system disturbances in pregnant women remains relevant because of its pathogenetic ''involvement'' in placental insufficiency formation. The fetal gender is a genetically determined factor, which influences the character of gestation and the outcome of labor. However, peculiarities of women's coagulation system depending on the fetal gender still remain unexplored.
Materials and methods: To study peculiarities of the hemostasis system we examined 360 pregnant women with physiological pregnancy: 187 pregnant women with male fetuses and 173 pregnant women with female fetuses. Thrombin time, prothrombin time, prothrombin index, international normalized ratio and activated partial thromboplastin time were estimated, soluble fibrin monomer complexes, fibrinogen, clotting time, D-dimer level, platelet count and hematocrit volume were determined. Women at the age from 18 to 27, who were pregnant and gave birth for the first time, who had uncomplicated gestation and no extragenital pathologies, were included in the study.
Clinical cases and summary results: In dependence on the term of gestation, some components of the hemostasis were very active in mothers of boys: statistically significant higher values of D-dimer in case of male fetuses (32.9% and 48.5% higher), prothrombin time in the 1, 2 and 3 trimesters (10.2%, 2.8% and 8.8% higher correspondingly) and platelets in the 3 trimester (6.6% higher). According to the results of the correlation analysis it was revealed that in mothers of male fetuses the interconnections between the prothrombin and thrombin time, the level of fibrinogen became stronger, while in mothers of girls the inverse relationship was determined. The most favourable outcomes of labor and normal state of newly born babies were 1.8 times more often in mothers of girls, while mothers of boys had birth difficulty in a larger number of cases (44%). A larger number of the newly born babies belonging to the male gender (6.9%) had low indices according to the Apgar score as compared with the alternative gender (3.8%).
Conclusion: The higher activity and the integration of vascular-thrombocytic and plasmatic components of the hemostasis system increasing over time in the mothers of boys makes it possible to

consider that male fetal gender as an additional risk factor of dysfunctional disturbance in the coagulation system in the 2nd and 3rd trimesters of pregnancy.

Keywords: Pregnancy, sex of the fetus, hemostasis system

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Early predictors of fetal growth retardation syndrome

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Introduction: The fetal growth retardation (IUGR) has the largest share in the structure of causes of perinatal morbidity and mortality, reaching 40%, and reproductive losses and costs of complex treatment of children with IUGR, cause considerable social and economic damage.
Materials and methods: To study the prediction of FGRPatients and methods: a prospective analysis of pregnancy in 150 women with the syndrome of fetal growth retardation (IUGR). As markers of FGR used vascular endothelial growth factor (VEGF) and its receptor - VEGF-R. In patients with FGR II level of VEGF in the blood significantly higher compared with uncomplicated pregnancy: at time of 16–22 weeks - on 90.5%, from 23 to 36 weeks has been a sharp increase in VEGF levels.
Clinical cases and summary results: In the third trimester of VEGF concentration reaches its maximum value and exceeds the physiological indicators at 193.1%. In severe FGR VEGF levels in the blood at 16–22 weeks 209.3%, and 23–29 weeks - 246.7% at physiological above. In the third trimester, the rate of increasing the level of VEGF FGR III level is significantly reduced in terms of 30–36 weeks. It as 50% higher than the physiological values, but it is 2 times lower than the FGR II degree in the same period. When FGR III level, critical and severe fetal hypoxia, there is a tendency to a decrease in VEGF levels. Thus, determination of VEGF in women with FGR may be the earliest marker of fetal hypoxia and severe FGR: values $\geq 67.12 \pm 6.5$ pg / ml at 16–22 weeks and 121 pg/ml at 23–29 weeks, show at the risk of the critical state of the fetus with a sensitivity of 83%, specificity 95%. In the study of VEGF-R1 was a high sensitivity to pathological processes in the placental system: its level rose several times in pregnancy and the subsequent development of preeclampsia and FGR. In patients with FGR II degree increase in VEGF-R1 has noted with 16–22 weeks. - 36.8%, and the term of 23–29 weeks - by 196.1%. In the III trimester at FGR II level of VEGF-R1 reaches values 320% higher than those obtained with uncomplicated pregnancies. VEGF-R1 concentration at FGR severe already on the term of 16–22 weeks was 316.5% higher. At 23–29 weeks the average level of VEGF-R1 has increased and reached maximum values.
Conclusion: Thus, it becomes evident the important role of determining the VEGF-R1 to predict FGR development. According to the results of our study, the values of VEGF-R1 $\geq 7.0 \pm 0.7$ ng/ml at 23–29 weeks indicate a high risk of FGR Article II, values of VEGF-R1 $\geq 9.48 \pm 0.8$ ng/ml at 16–22 weeks and 11.1 ± 1.34 ng/ml in 23–29 weeks indicate a high risk of severe IUGR with a sensitivity of 81%, specificity - 97%.

Keywords: Inrauterine growth retardation, vascular endothelial growth factor

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Vitamin D and intrauterine growth restriction

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Introduction: IUGR is defined as the pathological inhibition of intrauterine fetal growth and the failure of the fetus to achieve its growth potential. Fetal growth is known to be an important predictor of pregnancy outcome. Research in this area is trying to find predictive parameters, which would lead to a better management of the condition. One of the biochemical predictive markers is vitamin D in maternal serum. Vitamin D deficiency also associated with an increased risk for preeclampsia and IUGR.
Materials and methods: We studied 92 pregnant women with data on vitamin D (25(OH)D) in first trimester. Then we estimated birth weight in this cohort. We analyzed the relationship of vitamin D and birth weight. Data analysis was performed with «Microsoft Excel» (2011) and Factor-Nauka-Meditsina
Clinical cases and summary results: The median plasma vitamin D level among patients with IUGR was 33.14% less than those patients who exhibited normal growth at delivery (IUGR 19.37 ± 1.75 ng/mL versus normal 28.973 ± 2.15 ng/mL, p=0.002). Infant birth weight with low level of vitamin D was 2502.74 ± 31.74 g versus normal 3524.21 ± 109.82 g (p=0.001). Infant birth leight with low level of vitamin D was 47.77 ± 0.26 cm versus normal 52.37 ± 0.43 cm (p=0.001). Level maternal serum vitamin D in first trimester of pregnancy is a high risk for IUGR. Our results also suggest that insufficient vitamin D was associated with reduced fetal growth.
Conclusion: We found that insufficient vitamin D status had an adverse influence on other measures of fetal growth (birth weight and length). But vitamin D status hadn't the insufficient predictive value alone. In further studies we tried to improve the prediction of IUGR by combining Doppler indices with biochemical and clinical parameters.

Keywords: Fetal growth restriction, Vitamin D

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Changes in antenatal doppler hemodynamics and clinical consequences of altered brain - pilot study

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Introduction: Preterm fetuses with early IUGR have a higher probability of in utero death, a true (veritable) recognition of antenatal fetal growth restrictions help prevent or decrease neonatal mortality and morbidity
Materials and methods: The study will include all infants with early IUGR born $\leq$32 weeks of gestation, with changes on umbilical artery, middle cerebral artery and ductus venous and clinical consequences of altered brain hemodynamics (Doppler on anterior cerebral artery and pericaloas artery and cerebral oxygenation indices obtained by INVOS).

Clinical cases and summary results: A prospective study initiated since January 2016 - aims to track the time of extraction of a premature IUGR with gestational age ≤32 weeks considering changes in antenatal doppler on umbilical artery, middle cerebral artery and ductus venous following immediate consequences on this category of newborns.
Conclusion: Cerebral hemodynamics changes can persist after birth which involves a different attitude on the monitoring and clinical management of brain PM with IUGR compared to premature without IUGR.

Keywords: IUGR, doppler, premature

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Arterial doppler in iugr preterm fetuses, data regarding an observation study in uhog ''Koco Gliozheni''

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Presenter: **Enkeleda Prifti**

Introduction: Our objective of this study was describing multivessel Doppler of UA and MCA in preterm hypotrof fetuses, in correlation to Perinatal Adverse short Outcome. We also intended to provide data for the perinatal outcome at our Institution as Third Level of Care, in order to offer an integrated management of IUGR preterm fetuses, according to the level of NICU.
Materials and methods: Prospective observational study, 2010 - 2014, in pregnant women with unique fetus, between 26-37wGA, with intact membranes, with Estimated Fetal Weigh in ultrasound <p.10th, and at least one abnormal Arterial Doppler up to three days before delivery: DUPI >p.95th, AEDF(intermittent), REDF, MCAPI <p.5th; ICP <p.5th. After delivery, we collected data about Adverse Perinatal Outcome as a complex of perinatal deaths and severe morbidity: Intraventricular Hemorrhage (HIV), Periventricular Leucomalacia PVL, necrotizing enterocolitis NEC, bronchodisplasia BD, sepsis S.
Clinical cases and summary results: Our study included 91 cases. Regarding to Doppler parameters: AEDF, DUPI >p.95th, MCAPI <p.5th, there were not significant changes in presence according to groups of wGA (26-366/7wGA). There is a predominance of presence of REDF in early groups of wGA: {28-29wGA, 30-31wGA, (p=0.001)}; while ICP <p.5th being more present after 34wGA (p=0.01).
Regarding Perinatal Outcome, the absence of End Diastolic Flow in UA (AEDF +REDF), was significantly associated with Adverse Outcome OR 4.18, 95%CI (1.44-12.7)}, with REDF related more significantly (p 0.0001). Although, a positive correlation of presence of MCAPI <p.5th with Adverse Outcome, we didn't find it significant {OR=2.13, 95% CI (0.73-6.77)}. Also we didn't find any correlation between presence ICP < p.5th and Adverse Perinatal Outcome {OR = 0.5, 95%CI (0.18-1.4)}.
Conclusion: In IUGR preterm fetuses, the absence of end diastolic flow (AEDF+REDF) was significantly associated with adverse outcome. Clinical managing of preterm hypotrof fetuses, must integrate Doppler evaluation with fetal wellbeing tests, and timing delivery must be according to the level of local Intensive Care Unit.

Keywords: Arterial Doppler, IUGR, preterm

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The role of modification of cholesterol of amniotic fluid in the development of fetal hypotrophy as a factor of the ''strategy of survival''

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Presenter: **V.A. Linde**

Introduction: Objective. Studying the role of changes in cholesterol of amniotic fluid (AF) in the development of the fetal growth restriction (FGR) with the account of a transport function of α-fetoprotein (AFP).
Materials and methods: In 34 women, whose pregnancy was complicated by the FGR in weeks 28-35 and in 19 women with the physiological pregnancy the content of free cholesterol, LDL cholesterol (LDL-C), HDL cholesterol (HDL-C), AFP in AF obtained in the first period was determined using kits by Randox (Germany).
Clinical cases and summary results: The obtained results indicate a sharp decrease in the content of free cholesterol in AF (by 2.24 times) and of AFP by 2 times as well as an increase of LDL-C by 1.5 times and HDL-C by 3 times as compared with the control values.
The revealed changes in the content of free cholesterol, LDL-C and HDL-C in AF make it possible to consider the levels of lipid-carrying molecules and protein that form active receptor absorption of fatty by cells to be the adaptive ones. The increase of LDL-C reduces the fluidity of plasma membrane of cells changing the function of integral proteins in it. The decrease in the transport of cholesterol by AFP is a factor, which retards embryonic cytokinesis that causes the FGR. If LDL perform solely a transport function for cholesterol, delivering it to peripheral cells to form a membrane, HDL transfer a larger quantity of different components of shells, which apparently allows maintaining a certain level of the formation of tissues of the developing fetus.
Conclusion: Changes in the content of free cholesterol, LDL-C and HDL-C in AF and in the metabolism of AFP, which ensures the modification of transport of free cholesterol to a fetus, is a kind of a regulation mechanism of the cholesterol metabolism by fetus as a factor of the ''strategy of survival''.
The revealed peculiarities of the change of lipid components make it possible to control and to influence certain stages of embryogenesis with the purpose of prevention of the FGR.

Keywords: Fetal growth restriction, amniotic fluid, cholesterol, α-fetoprotein

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Association between perinatal smoking exposure, maternal peripheral leukocytes subpopulation' changes throughout gestation and low birth weight infants

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Presenter: **Sally Sabra**

Introduction: Perinatal maternal tobacco exposure is a well-known major risk factor of fetal growth restriction. However, the exact mechanism is still unknown. During gestation, few studies noted changes in the proportion of lymphocytes in the peripheral blood of smoking mothers in the second trimester. Nevertheless, there are no data investigating changes in the leucocyte subpopulations in maternal peripheral blood induced by tobacco exposure throughout pregnancy in correlation with neonatal birth weight.Objectives: To evaluate the perinatal smoking exposure influence on leukocyte subpopulations' changes in the maternal peripheral blood and its correlation with intrauterine fetal growth.
Materials and methods: Retrospective study was conducted in Hospital Sant Joan de Deu, University of Barcelona. Patients were divided into three groups depending on smoking status and neonatal birth weight; appropriate for gestational age (AGA) nonsmokers versus low birth weight (LBW) smokers and nonsmokers. Data from maternal peripheral blood analysis including leukocytes and its subtypes both percentages and absolute values in the three trimesters of gestation were collected.
Clinical cases and summary results: Our data have shown significant increase in the maternal peripheral major leukocyte subpopulation' among the LBW smoker group throughout gestation. Also, we detected a significant increase in leucocytes, neutrophils, eosinophils and lymphocytes absolute values throughout gestation among the LBW smokers on comparison to the AGA nonsmoking group.
Conclusion: Our data reinforce the strong association between maternal tobacco exposure and LBW, however; our novel results suggest a correlation between the triad: maternal smoking, LBW and peripheral maternal immune cells. The maternal inflammatory changes noted in the first trimester throughout gestation suggest a prior maternal immune system triggering.

Keywords: Maternal Smoking, peripheral leukocytes, low birth weight infants

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Antenatal ultrasound monitoring and prediction of perinatal outcomes in the early and late onset of fetal growth retardation

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Presenter: **I. Safonova**

Introduction: To differentiate late onset FGR and SGA fetus is a common but challenging clinical task for fetal-maternal medicine specialists. The objective of the study was to explore the value of ultrasound (US) fetal biometry and Doppler monitoring in the diagnosis of early and late forms of intrauterine growth retardation (IGR) and small for gestational age (SGA) fetus, as well as in predicting perinatal outcome.
Materials and methods: We studied the results of Doppler monitoring and clinical perinatal catamnesis of 204 fetuses, which had estimated weight (EW) at the antenatal stage below the 10th centile, and 100 fetuses with the EW above the 10th centile. Fetuses with EW below the 10th centile were subdivided into two subgroups: 141 - with diagnosis established for the first time before 34 GW, and 63 - diagnosed after this term. Only singleton pregnancies participated in the study. Doppler monitoring included assessment of umbilical artery, uterine arteries and fetal middle cerebral artery flow. Postnatal results were classified as follows: adverse general postnatal outcome (GPO) meant perinatal or infant death; adverse clinical postnatal outcome (CPO) meant severe neonatal morbidity.
Clinical cases and summary results: Adverse GPO and CPO in group with EW below 10th centile occurred 11.7 times more often than in group with normal gestational fetometry ($p=0.02$). Postnatal outcome in fetuses with EW below 10th centile diagnosed after 34 GW had a wide variability - from extremely unfavorable GPO and CPO up to constitutionally low weight at full clinical wellbeing. Rate of true IGR and adverse GPO was higher in subgroup where low EW was diagnosed before 34 GW, than in cases, first diagnosed after 34 GW ($p<0.05$). In studied cohort fetal weight percentile estimation allowed to diagnose true early IGR with an accuracy of 71% and true late IGR with an accuracy of 45%. True late IGR was confirmed in 24/63 (38.1%) of fetuses with EW below the 10th centile after 34 GW. The best quality of true early IGR diagnosis (area under ROC-curve 0.9902) was observed with application of integrated US monitoring, and the worst one (the area under ROC- curve 0.4012) with only percentile fetometry assessment after 34 GW.
Conclusion: Differential diagnosis between true late IGR and SGA is extremely difficult. In early onset IGR the prediction of perinatal outcome may be based on estimated fetal weight evaluation and Doppler monitoring, whereas in late onset form of IGR the prediction of perinatal risk degree on the basis of both US fetometry and Doppler monitoring can be considered as uncertain.

Keywords: Pregnancy, fetus, ultrasound, fetal growth retardation, perinatal outcome

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Diagnosis of preeclampsia by decresed fetal movements

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Presenter: **Maitane Urtasun**

Introduction: Preeclampsia is a multi-system disorder characterized by the new onset of hypertension, proteinuria or end-organ dysfunction after 20 weeks in a previously normotensive woman. They are at increased risk for maternal-fetal mortality and morbidity. The incidence is 4.6%. Abnormalities in the development of the placental vasculature can result in placental underperfusion, hypoxia and ischemia. It may lead to release of circulating antiangiogenic factors that can cause maternal systemic endothelial dysfunction resulting in the clinical manifestations, and fetal growth restriction and oligohydramnios. The definitive treatment is delivery to prevent complications, timing of delivery is based upon gestational age, the severity of preeclampsia, and maternal and fetal condition.
Clinical cases and summary results: A 29 + 3 weeks pregnant arrived at the emergency room by decreased fetal movements during the last four days. The fetus was diagnosed with intrauterine growth restriction and the patient presented high levels of blood presure, so income was decided to study FGR and preeclampsia. Study of infections and thrombofilias was performed. We diagnosed a severe preeclampsia, and iniciated treatment with oral nifedipine, thanks to she stayed normotense. We stablished daily fetal monitoring by serial ultrasound velocimetries. At week 31 + 3 had an unsatisfactory fetal monitor and an ultrasound with redistribution, so urgent caesarean section was decided, with neuroprofilaxis. A 1,040gr girl was born, with artery pH 7.16 and Apgar 9/10. She entered in neonatology service with good clinical evolution, being discharged with 48 days and 2135 gr. The mother has satisfactory evolution too.
Conclusion: Serial ultrasound evaluation of fetal growth, behavior, and Doppler velocimetry represent the elements of fetal assessment. The goal is to identify fetuses at highest risk of in utero demise and neonatal morbidity and thus may benefit from preterm delivery. Doppler velocimetry of the umbilical artery is recomended for monitoring pregnancies with suspected growth restriction. Delivery prompted by abnormal Doppler ultrasonography reduces perinatal death.

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Effects of docosahexaenoic acid supplementation on doppler flow parameters and birthweight in pregnancies affected by growth restriction

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Presenter: **M. Radon-Pokracka**

Introduction: There is strong evidence that omega-3 fatty acids have a beneficial effect on human body. The most crucial docosahexaenoic acid (DHA) is a component of cell membranes. It is well established for now that its prenatal supplementation has a great influence on proper development of nervous system, perinatal outcomes and mental functions in early childhood. The results of recent studies conducted in groups of adults suffering from cardiovascular diseases suggest that its supplementation plays a role in secondary prevention of heart diseases and strokes.
Our aim was to investigate whether prenatal DHA supplementation affects: fetal weight gain, vascular flow improvement expressed in Doppler ultrasound parameters, mode and time of delivery in pregnancies complicated by growth restriction.
Materials and methods: This is a retrospective study of a 78 singleton pregnancies complicated with intrauterine growth restriction hospitalized in Department of Obstetrics and Perinatology Jagiellonian University between I and IX 2014. 35 women were administered DHA (DHAgroup) at the minimum dose of 500mg and 43 were not (0group). Ultrasound examinations were performed to measure estimated body weight (EFW), pulsatility index for umbilical artery (PI UA), mid-cerebral artery (PI MCA) and cerebro-placental ratio (CPR) on admission and after 7 days in both groups.
Clinical cases and summary results: There were no statistically significant differences in patients' age, gestational age, fertility rate, frequency of comorbidities, medications intake, mode of delivery and indications to cesarean section (CC) between two groups, although women in DHAgroup more likely underwent CC (82,86% vs 74,42%, $p>0,05$) and delivery was 4 days earlier (pw 36 + 6 vs. 37 + 3, $p>0,05$). In DHA group EFW increase after 7 days was higher (117g vs 98g) and correlated with gestational age at birth more strongly ($p<0,05$). In DHAgroup changes in PI UA and PI MCA increase CPR value moderately and strongly ($p<0,05$), there was no such strong correlation in 0group. In DHA group CPR increase is bigger when primary CPR is lower ($p<0,05$) and it is not happening to 0group.
Conclusion: In pregnancies complicated with growth restriction DHA supplementation increases CPR via its influence on blood flow in umbilical artery resulting in moderate decrease of PI UA value. EFW is statistically higher when correlated with gestational age at birth. DHA intake doesn't affect mode or time of delivery and has no side effects.

Keywords: Docosahexaenoic acid, fetal weight,cerebro-placental ratio

FIRST TRIMESTER SCREENING AND PREVENTION STRATEGIE - 059 (CASE REPORT)

The role of prenatal ultrasound in diagnosing craniosynostosis, Crouzon syndrome: a case report

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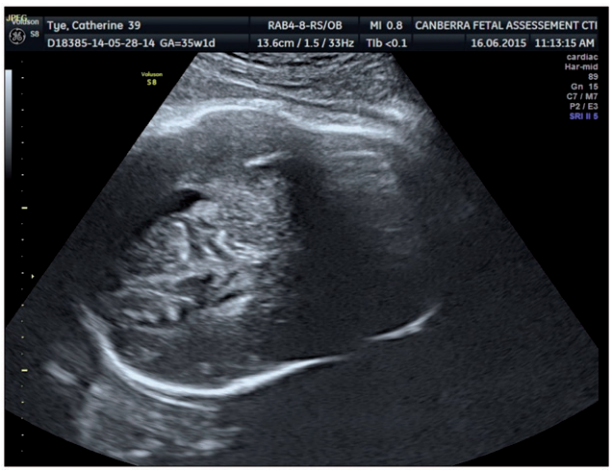
Introduction: Crouzon syndrome, one of the best known of many craniofacial syndromes, is an autosomal dominant disorder characterized by craniosynostosis, prominent eyes, and midfacial hypoplasia due to abnormal development and premature fusion of the skull. This is attributed to mutations in the fibroblast growth factor receptor 2 gene (FGFR2). Crouzon syndrome is one of the rarest condition affecting 16 in 1 000 000 newborns, however it is the most common craniosynostosis syndrome.
Clinical cases and summary results: We report a 39 year old woman, G3P1, with a previous history of termination of pregnancy for a trisomy 18 fetus, a previous first trimester miscarriage and a normal birth of a 2 year old child. She underwent first trimester screening

which was low risk and had a normal 20 week fetal morphology survey. A third trimester ultrasound was performed at 35 weeks for evaluation for fetal growth which identified severe craniosynostosis. The features included frontal bossing, scaphocephaly and cloverleaf skull appearance, possibly associated with genetic/syndromic disorders. Following counselling with maternal fetal medicine and craniofacial surgeon, who discussed implications of findings for the fetus, a decision was made to terminate the pregnancy. This was approved by the termination review committee. A stillborn was delivered at 35 + 6 weeks gestation for medical interruption of pregnancy. Postmortem genetic examination has shown that the fetus had an FGFR3 Ala391 Glu mutation which is characteristic of Crouzon Syndrome. The frequency of Crouzon syndrome is approximately 1 in 25,000 births. Although transmission is through autosomal dominance, 30–60% of cases are from parents without a family history. It is important to make a differential diagnosis with similar cranioencephalics characteristics like Carpenter, Apert, Pfeiffer and other syndromes. Prenatal suspicion of Crouzon syndrome needs to be referred to geneticist and a paediatric craniofacial surgeon to plan for the remainder of the pregnancy.
Conclusion: Craniosynostosis is very rare and has a bad prognosis for fetus. Genetic testing is required to exclude any genetic conditions or syndromes. The importance of prenatal surveillance is important in detecting any presence of any associated structural abnormalities.

Keywords: Crouton syndrome, craniosynostosis



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Early preeclampsia screening - evaluation of the factors that influence increased risk

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Introduction: Preeclampsia is a very variable heterogeneous syndrome of unknown etiology that affects about 4.6% of all pregnancies. It is the major maternal and perinatal morbidity being associated with long-term complications either to the mother or to the child. The preeclampsia screening aims to identify as soon as possible the group of pregnant women at high risk of enabling the prophylactic administration of acetylsalicylic acid low dose, increased monitoring of pregnancy and early diagnosis of the disease signs.
Materials and methods: Prospective study which included pregnant women who underwent to first trimester ultrasound, between January and December 2015, and which was calculated the risk of early pre-eclampsia based on maternal characteristics, biophysical, sonographic and biochemical markers. The aim of the study is to compare the group characteristics with increased risk with other pregnant women.
Clinical cases and summary results: The sample comprised 610 pregnant women submitted to screening of preeclampsia, mean age of 29.9 years. The estimate of early risk of preeclampsia demonstrated increasingly in 39 pregnant women, 13 for early preeclampsia risk calculation >1/100, 17 major risk factor and 9 by conjugation of minor factors. The analysis of the two groups for carrying out the t test for independent samples showed statistically significant differences for the following variables: age (p= 0.028), body mass index (p= 0.001), systolic blood pressure ($p < 0.001$) and pressure diastolic blood pressure (p= 0.011), No significant differences in PAPP-A values and IPmAU were found.
Conclusion: The first trimester preeclampsia screening allows early identification of a pregnancy at high risk for preeclampsia, particularly taking into account the particular characteristics of this population, increasing the likelihood of a better prognosis for pregnancy.

Keywords: First trimester preeclampsia screening

EARLY PREECLAMPSIA SCREENING - EVALUATION OF THE FACTORS THAT INFLUENCE INCREASED RISK

Ana Correia, Maria Bóia, Sofia Pedrosa, Fátima Leitão, Rosa Neto, Maria Almeida, Sara Neto

	Risk				p
	0		1		
	Mean	Standard Deviation	Mean	Standard Deviation	
Age	29.84	5.48	31.85	6.09	**0,028**
BMI	24.33	4.61	28.44	6.95	**0,001**
PAPP-A (MoMs)	1.09	0.65	1.02	0.67	0,535
PAS	106.76	9.69	113.30	12.41	**0,000**
PAD	67.14	7.61	71.65	10.08	**0,011**
IPmAU	1.79	5.61	1.75	0.73	0,973

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Screening of pregnant women in the first trimester: risk factors for preterm delivery

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Introduction: Etiology of preterm delivery is very complex and still unknown. There are numerous risk factors related with possible initiation of preterm contractions and preterm delivery. Some of important factors are used these days in screening of pregnant women who are in risk of preterm delivery.

Keywords: *Aim of the study*: Aim of this study was to determine how life style, life habits and laboratory markers of infection which are

monitored during pregnancy, can be used in screening of pregnant women for occurrence of preterm delivery.
Materials and methods: Study is conducted in Clinical centre of Vojvodina, Department of Gynecology and Obstetrics in Novi Sad. Protocol was approved by Ethical board of Medical Faculty, University of Novi Sad and Ethical board of Clinical centre of Vojvodina (Novi Sad). Study concluded total 100 pregnant women gestational age between 11 and 14 weeks of gestation (WG) which are recieved on Clinic for conducton of screening test on chromosomal abnormalities of fetus. All pregnant women agreed to participate in research by signing written consent. Pregnant women are divided in two groups: study group (n=60) and control group (n=40). All women were followed up till the end of pregnancy with special reference to the week of pregnancy completion and delivery method.
Clinical cases and summary results: Pregnant women of study group were average age 33.4, while women of control group were age 29.3 which is statistically significant difference (p <0.0046). Both groups had same number of smokers in study group (49%), and in control group (35.34%), however this period of smoking (values are expressed in years) was statistically significantly higher in study group 11.8 ± 4.2 in correlation to the control group 8.2 ± 5.13, (p <0.04). Also, statistically higher number of pregnant women of study group lives in the city 74% in correlation to the pregnant women of control group 36% (p <0.03). As for laboratory markers, values of CRP and fibrinogen were higher in study group, while the values of leukocytes were approximately equal in both groups.
Conclusion: Results of research points to the importance of choice and following of risk factors for ocuurrence of preterm delivery to be implented in first trimester and they include general maternal factors among which are emphasized bad habits and monitoring of parameters of infection.

Keywords: First trimester screening, risk factors, preterm delivery

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QF-PCR as a rapid technique for routine prenatal diagnosis of fetal aneuploidies

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Introduction: The most common chromosomal abnormalities identified at birth are aneuploidies of chromosome 21, 18, 13, X and Y. Prenatal diagnosis of fetal aneuploidies is routinely done by traditional cytogenetic culture, a major drawback of this technique is the long period of time required to reach a diagnosis. In this study we evaluated the QF-PCR as a rapid technique for prenatal diagnosis of common aneuploidies
Materials and methods: This work was carried out on Sixty amniotic fluid samples taken from patients with one or more of the following indications: Advanced maternal age (3 case), abnormal biochemical markers (6 cases), abnormal ultrasound (12 cases) or previous history of abnormal child (39 cases). Each sample was tested by QF-PCR and traditional cytogenetic. Aneuploidy screenings were performed amplifying four STRs on chromosomes 21, 18, 13, two pseudoautosomal,one X linked, as well as the AMXY and SRY, markers were distributed in two multiplex QFPCR assays (S1 and S2) in order to reduce the risk of sample mishandling.
Clinical cases and summary results: All the QF-PCR results were successful, while there was two culture failures, only one of them was repeated. No discrepancy was seen between the results of both techniques. Fifty six samples showed normal patterns, three sample showed trisomy 21, successfully detected by both techniques and one sample showed normal pattern by QF-PCR but could not be compared to the cytogenetics due to culture failure, the pregnancy outcome of this case was a normal baby.
Conclusion: Our study concluded that QF-PCR is a reliable technique for prenatal diagnosis of the common chromosomal aneuploidies. It has the advantages over the cytogenetic culture of being faster with the results appearing within 24–48 hours, simpler, doesn't need a highly qualified staff, less prone to failure and more cost effective.

Keywords: QF-PCR, chromosomal aneuploidies, prenatal diagnosis

212 (CASE REPORT)

Early ultrasound screening for fetal malformations in the second pregnancy after combined modality treatment for hodgkin's disease: a case report

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Introduction: Therapeutic progress in HD has led to a high rate of cure, but at the expense of some side effects. Abnormalities reported so far are: cardiac toxicity, pulmonary toxicity, endocrinal failure, second cancers and congenital malformations. Although several studies reported in the literature showed no or slightly increased risk of congenital abnormalities among newborns of women previously treated for Hodgkin's disease compared with the general population, abnormalities do occur and sometimes they are very odd and difficult.

Keywords: *Materials and method*: We report a case of female patient, 25 years old, Macedonian, presented with Hodgkin's disease, subtype nodular sclerosis, stage IIIA. The patient received chemotherapy according to ABVD protocol-6 cycles. Thereafter she received mantle field radiation with 3600 cGy. She was followed for the next 36 months and than she become pregnant.

Keywords: *Clinical Cases of Summary Results*: Ultrasound confirmed a normal fetus in first pregnancy during controls. A normal female baby was born with Caesarean Section at term. Clinical assessment in the follow-up period showed normal development. Also the mother was assessed regularly and was free of disease. The next pregnancy occurred 87 months after completion of treatment. At 13th gestational week ultrasound assessment revealed malformations and induced abortion was suggest.
A male fetus with malformations on the head such as proboscis, cyclopia and omphalocele on the front abdominal wall containing liver and small bowels was found. After induced abortion the autopsy report from the Institute of Pathology was: male fetus with malformations on the head like proboscis and cyclopia (one eye beneath proboscis), and omphalocele on the frontal abdominal wall containing liver and small bowels. Other findings were normal. The patient has been followed-up regularly until now. She is disease free, with no more pregnancies.
Conclusion: We consider this case important in bringing the potential late side-effect that should be alert for the risk of congenital abnormalities in newborns of women previously treated for Hodgkin's

disease, especially with combined modality treatment, and should check for them during pregnancy, at birth, in early childhood or in adulthood. Treatment with chemotherapy, radiation therapy or both may have adverse effects on germ cell survival, fertility and health and congenital abnormalities.

Keywords: Ultrasound screening, congenital abnormalities, Hodgkin's disease

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Iodine replacement in pregnancy, is it necessary?

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Introduction: To assess iodine status in early pregnancy and its correlation with maternal TSH levels.
Materials and methods: This was a hospital-based, noninterventional, retrospective, cross-sectional, cohort study. A total of 440 pregnant women were recruited between June 2015 and November 2015 in their first trimester visit. All of the patients were using iodised salt. Urinary iodine concentration (UIC) and thyroid function were assessed at first trimester visit. UIC was measured using colorimetric method based on Sandell-Kolthoff reaction. Thyroid hormones and TSH and T4 were measured by chemiluminescence immunoassays.
Clinical cases and summary results: In the pregnant women providing a urine sample UIC was below 150 μg/l in 86% of the women. The mean UIC was 82,23 (1–450) μg/l, indicating insufficient iodine intake. The mean TSH level was 1,5 (0,01–14,74) and mean T4 levels was 13,99 (7.09–23,7). 12.7% had subclinical hypothyroidism or isolated hypothyroxinaemia based on serum TSH and FT4 levels.
Conclusion: Our study shows that iodine deficiency (ID) is a serious problem among pregnant women in Ankara despite of mandatory iodine salt use. It is known that iodine supplementation enhances neurodevelopment scores and psychomotor performance. We suggest that iodine should be a part of routine laboratory evaluation at the first prenatal visit iodine because it is most important in early pregnancy. Pregnant women with ID should receive 100–200 μg/d of I-containing supplements in addition to iodised salt.

Keywords: Iodine deficiency, TSH, T4

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The fetal hepatic artery flow at the first trimester scan and fetal growth

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Introduction: The objective of the study was to compare fetal hepatic flow at the 1st trimester scan and establish a possible marker for abnormal fetal growth.
Materials and methods: Methods: 346 patients that attended the Outpatient Clinic in The 1st Department of Obstetrics and Gynecology of the Medical University of Warsaw had a 1st trimester ultrasound scan with the assessment of the risk of chromosomal abnormalities according to the Fetal Medicine Foundation. During the scan the nuchal translucency, nasal bone, flow across the tricuspid valve and the flow across the ductus venosus were assessed. An additional marker - the flow across the hepatic artery - was also assessed.
Clinical cases and summary results: Results: Out of the 346 patients, the outcomes of 241 were obtained. The patients were divided into three groups: 1 - the first group included babies that were below the 11 percentile (n-23), 2 - the second group included babies between 11 and 89, 3 (n-188) - the third group included babies above the 89th percentile (n-30). The PSV of the hepatic artery for the 1st, 2nd and 3rd group was 10.92, 10.35 and 10.1 respectively. The PI of the hepatic artery for the 1st, 2nd and 3rd group was 2.29, 2.36 and 2.46 respectively. The differences were not statistically significant.
Conclusion: Hepatic artery flow does not seem to be a marker for abnormal fetal growth.

Keywords: Hepatic artery flow, feral growth, first trimester screening

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Perspectives, preferences and needs regarding early prediction of preeclampsia in dutch pregnant women: a qualitative study

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Presenter: **N.Crombag**

Introduction: In the Netherlands only quarter of women take part in first-trimester combined testing. As risk identification is an essential element of antenatal care and research on its improvement is ongoing it was of our interest to investigate attitudes of Dutch pregnant women with regards to innovations in prenatal screening. In particular, preeclampsia screening. Prediction models may improve risk selection by early identification and leaves room for preventive measures, but potential drawbacks and ethical concerns are related to the false positive and false negative results.
Therefore the aim of this study was to explore Dutch pregnant women's perceptions, preferences and needs regarding the prediction models for first-trimester screening for preeclampsia.
Materials and methods: To explore pregnant women's perception, preferences and needs, ten focus groups (of which five with primiparous and five with multiparous women) were conducted(n=45). Six focus groups were conducted in urban regions and four in rural regions. All focus group discussions were audio taped and content analysed.
Clinical cases and summary results: Women in this study had a positive attitude towards first trimester screening for preeclampsia using prediction models. Reassurance when determined as low-risk was a

major need for using the test. Self-monitoring, early recognition and intensive monitoring were considered benefits of the prediction model in case of a high-risk. Women acknowledged that high-risk determination could cause (unnecessary) anxiety, but it was expected that personal and professional interventions would level out this anxiety.
Conclusion: Women in this study had positive attitudes towards preeclampsia screening. Self-monitoring, together with increased alertness of healthcare professionals, would enable them to take active actions to potentially improve pregnancy outcomes. Therefore, identification of women at high-risk offers opportunities for prevention, early recognition and treatment. This differs greatly from the attitude on Down syndrome screening in the Netherlands.

Keywords: Preeclampsia screening, prenatal screening

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First trimester fetal morfology

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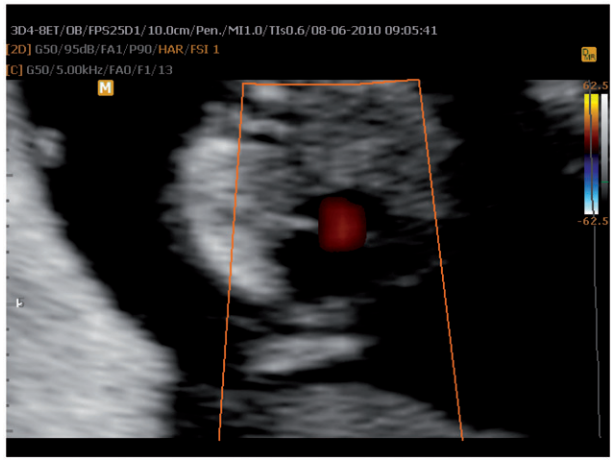
Presenter: **Pavle Dimcev**

Introduction: First Trimester screening for chromosomal abnormalities is widespread tool for early detection problems in fetal well being.
But not only for chromosomal abnormalities, advanced ultrasound machines allows, almost complete evaluation of fetal morphology till 14 week of gestation.
Moreover, huge part of the anomaly scan in 20 weeks is moved at First Trimester
Materials and methods: Our data is presenting period between January 2011 and December 2015 .In this period in our hospital 1786 patients were examined. The average gestational age was 12.3(11.3 - 13.6). Singleton pregnancies were 1532, twins 254. Average maternal age, 31.4, over 35 years of age 360 patient.
Clinical cases and summary results: In last few years we are trying to incorporate in First Trimester ultrasound examination all recommendations published in ISUOG White Journal, published in February 2013, (ISUOG Practice Guidelines: performance of first-trimester fetal ultrasound scan).
This work is presenting anomalies that we have found in last five years as a part of First Trimester Screening.
In this period we detected: 2 AV defect of the hearth (both were Down,s) 2 megacistis, 1 holoprosencephaly (Tr. 18), 1 omfalocellae, 3 anancephaly, 1 spina bifida with abnormal plsterior fossa(abnormal IT)
Conclusion: Despite modest number of patient, this data is trying to present current state of practice in Macedonia according First Trimester Screening.
These should be first published work in Macedonia which are trying to meet modern principles of FTS (ISUOG fetal ultrasound Practice Guidelines: performance of first-trimester scan).

Keywords: FTS, nuchal, abnormalities



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Hyperemesis gravidarum is related to urinary iodine excretion?

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Presenter: **Batuhan Turgay**

Introduction: The aim of this study to identify the effect of iodine status on hyperemesis gravidarum.
Materials and methods: This retrospective cohort study was undertaken in Ankara University Hospital, Ankara, July 1, 2015 and February 1,2016. Urinary concentrations of iodine were measured at the initial obstetrical visit. Iodine status was measured using colorimetric method based on Sandell-Kolthoff reaction. 437 pregnant women who visited Ankara University Hospital consecutively were included study. Hyperemesis gravidarum was estimated with clinical symptoms and ketonuria.
Clinical cases and summary results: Among 437 eligible women, 11.2% was diagnosed as hyperemesis gravidarum. 40 (9.1%) of the patients was hospitalized. In the first trimester, 380 women had lower urinary iodine excretion (< 150 μg/l) which indicates iodine deficiency. In our population, the rate of hyperemesis gravidarum was 9.5% in iodine deficiency group and %22.8 in iodine sufficient group. The rate of hyperemesis gravidarum was statistically significantly lower in women with iodine deficieny ($P<0,05$).
Conclusion: Urinary iodine excretion was inversly correlated with hyperemesis gravidarum in pregnancy in our study. Future prospective studies are needed to investigate the relationship.

Keywords: Urinary iodine excretion, hyperemesis gravidarum

INDUCTION OF LABOUR - 061

Induction of labour- is it influenced by fetal gender?

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Introduction: According to the World Health Organisation more than 25% of all pregnant women will undergo an induction of labour, with the percentage rising up to 40% in some developed countries. This study was designed to explore the effect of the fetal gender on the success of labour induction done for all indications and to investigate whether other factors might affect the outcome of the induction process.
Materials and methods: This was a retrospective study of women having had an induction of labour at the largest public maternity hospital located in Athens Greece for the study period of January-December 2012. Data concerning the socio-demographic status of women, antenatal and intrapartum complications, the outcome of the induced labour and neonatal data were all recorded. Ethical approval was granted for the purposes of the study from the hospital's Ethical Committee. Multivariable analysis was used in order to determine independently associated factors with the likelihood for caesarean section (CS).
Clinical cases and summary results: We identified 360 women having had induced labour over the 1-year study period with a mean age of 30.0 years (SD=5.4 years). In the total sample, 33.1% had a CS delivery, 8.9% had an instrumental vaginal delivery and 57.9% had a normal vaginal delivery. The maternal characteristics were similar in the two sub-groups of women according to the fetal gender. Also, the mean gestational age and the presence of antenatal complications were not associated with fetal sex. We found a significantly greater rate of CS delivery women having delivered in male infants in comparison to those with female infants (39.4% versus 25.5%, $p = 0.006$). The birth weight was significantly greater in male neonates as compared to female neonates (p=0.033). After adjusting for several confounding factors, multiple logistic regression analysis showed that the fetal gender was independently associated with the odds of CS delivery and determined that there was an almost two-fold increased risk in the case of male neonates [OR 2.04 (1.11–3.76) $p = 0.022$].
Conclusion: We have shown that the male fetal gender is an independent risk factor that affects the success rates of induced labour. This finding should be taken into consideration by the health professionals when planning to induce labour.

Keywords: Induction of labour, fetal gender

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Failure of cervical ripening following PGE2 vaginal insert - what to do next?

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Introduction: Failure of cervical ripening following sustained-release PGE2 vaginal insert is a common clinical challenge. Yet, what is the optimum method of induction of labor after failure of PGE2 is uncertain. The aim of this study was to determine success rate of induction of labor using Foley transcervical balloon (FTB) versus second treatment with PGE2 vaginal insert, following failure of cervical ripening with vaginal insert.
Materials and methods: A retrospective cohort study of all pregnant women admitted to a single tertiary care center between June 2012 to October 2014 for induction of labor. Inclusion criteria included gestational age >24 weeks, cephalic presentation, intact membranes, and an unfavorable cervix (Bishop score <6). Foley catheter was left for 12 hours if not expelled spontaneously. PGE2 was left for 24 hours if there was no commencement of labor. Successful induction is defined as a vaginal delivery within 24 to 48 hours of induction of labor. Second line treatment after failure of first PGE2 vaginal insert was left for physician discretion. Non-parametric statistics, as well as regression were used for analysis.
Clinical cases and summary results: During the study period 1162 women were admitted for induction of labor with either FTB (852, 73.3%) or PGE2 vaginal insert (310 26.7%). Failure (non-delivered after 24 hours) was reported in 322 (37.8%) in the FTB versus 162 (52.2%) in the PGE2 group (p <0.001). Regression analysis revealed that earlier gestational week (p=0.04) and the use of PGE2 (p=0.001) were associated with higher failure rate. Among 162 patients treated with PGE2 as first line and did not deliver after 24 hours, 14 had spontaneous rupture of membranes, 15 had stripping and 42 were in still in active labor however didn't yet deliver. The remainder 91(56%) patients with PGE2 failure, were allocated to either second trial of PGE2 treatment (n= 58, 63.7%) or FTB (n=33, 36.3%). Failure rate was higher in the PGE2 (43/58, 74%) than in the FTB group (20/33, 60.6%) however these findings were not statistically significant (p=0.23). There was a trend towards shorter insertion-to-delivery interval with FTB compared to PGE2 (p=0.07).
Conclusion: Despite a statistical trend, induction of labor with Foley transcervical balloon was not superior to second dose of PGE2 vaginal insert for induction of labor following failure of cervical ripening with PGE2 vaginal insert. This finding may be helpful for patients and physicians alike.

Keywords: PGE2, Foley transcervical balloon, induction of labor

Table 1. Regression Analysis FTB versus PGE2.

		95% CI		
		Lower	Upper	*p*
Age	1.01	0.99	1.04	0.29
BMI	1.04	1.01	1.07	1.01
Parity	0.61	0.53	0.71	0.00
Pregnancy Week	0.90	0.99	1.85	0.03
Group	1.98	1.49	2.63	0.00

BMI = Body Mass Index

Table 2. Regression analysis - failure compared to success in PGE2 induction of labor.

		95%CI		
	Exp *B*	Lower	Upper	*p*
Age	1.01	0.96	1.06	0.6
Parity	0.72	0.53	0.98	0.04
PV	0.76	0.47	1.23	0.26
Effacement	0.99	0.98	1.01	0.47

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Castor oil for induction of labour: a retrospective study

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Introduction: Pharmacological labour induction with prostaglandins gel, oxytocin infusion and mechanical methods, such as membrane sweeping, amniotomy and trans cervical Foley balloon are associated to fetal and maternal complications and more frequent operative delivery and caesarean section (CS). Often the midwives recommended near term the assumption of Castor Oil in order to avoid or reduce pharmacological labour induction. A national survey of herbal preparations reported that Castor Oil was prescribed by 93% of 500 American College of Nurse-midwives interviewed. The United States Food and Drug Administration categorized Castor Oil as a 'generally recognized safe and effective over-the-counter laxative'. However the mechanisms underlying the pharmacological effects of ricinoleic acid remain elusive, in particular its effect on initiating labour is not well understood. The aim of the present study is to investigate safety and efficacy of Castor Oil to induce labour in a sample of women referred by a midwife-led unit.
Materials and methods: A retrospective observational case control study was conducted over five years, (February 2009 - February 2014) at the midwife-led unit of the University Hospital of Modena. Such unit, opened in 2006, offered care to women carrying a single, uneventful pregnancy classified at low-risk according to NICE guidelines on intra-partum care. The inclusion criteria for Castor Oil assumption were: gestational age of 39–41 weeks, premature rupture of membranes (PROM) between 12 and 18 hours, absence of spontaneous labour over 41 + 4 weeks of gestation or amniotic fluid index $\leq$4, Bishop Score lower than 4. The exclusion criteria were: onset of sporadic uterine activity, application of non pharmacological methods as coitus, nipple stimulation, laxatives, other herbal preparations or acupuncture in the last 24 hours. Forty women meeting the inclusion criteria were invited to assume 60 ml of Castor Oil and then compared to 40 women showing same characteristics which received no intervention and considered as Control group (C). Antenatal follow-up was offered similarly in both groups. Data were collected and analyzed with IBM SPSS Statistics software v19.0. Chi-squared was used to compare categorical variables. For age and gestational age at delivery comparisons we used Student t-test. All data are reported as mean ± standard deviation or number with % in brackets. P value less than 0.05 was considered as threshold for statistical significance.
Clinical cases and summary results: Gestational age at delivery was lower in Castor Oil respect to Control group (287.8 ± 6.0 vs CG 298.8 ± 3.9, p=0.08). In Castor Oil group 19 women experienced a spontaneous onset of labour within 24 hours of assumption (47.5%), the remnantes were planned to received pharmacological induction. Therefore, pharmacological labour induction was required for 18 women in Castor Oil (45%) and for 36 in Control group (p<0.001). Prostaglandins was the most frequent method used. No significant differences were found in oxytocin augmentation between the groups. Operative deliveries occurred in 11 cases in Castor Oil (27%) vs 17 cases in Control group (42.5%) (p<0.02*). Caesarean section also was significantly lower in Castor Oil than in controls (8 vs 15 cases, p<0.03). As far the side effects is concerned 4 women assuming Castor Oil referred not severe nausea and diarrohea No fetal or neonatal adverse events were observed.
Conclusion: Accordingly with previous studies also our report suggest that Castor Oil assumption after the 39 week of gestation was able to favour spontaneous onset of labor without maternal and fetal/neonatal side effects. In the half of the women treated the labour onset within 24 hours. Moreover, the group of women submitted to pharmacological induction because of failure of Castor Oil effect experienced a lower rate of operative delivery and caesarean section. Even if further studies are needed in order to clarify the optimal time, dosage of Castor Oil administration and mechanism underlying its effects on uterine activity, we purpose such method as a non-pharmacological approach to labour induction also in view of the strong association between prostaglandins and oxytocin administration and operative delivery and caesarean section.

Keywords: Non-pharmacological labour induction, castor oil

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PGE2 cervix ripening in patients with previous caesarean birth. Is it safe? Is it worth?

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Introduction: The use of PGE2 is initially contraindicated in patients with prior caesarean delivery. Nevertheless is a common method of cervix ripening in term labour induction. The obstetric results (caesarean rate) and complications are evaluated in this study, comparing patients with and without previous caesarean section.
Materials and methods: Descriptive study that includes the cases with term labour induction with vaginal PGE2. The use of PGE2 to ripening the cervix is indicated in Bishop under 6. The obstetric outcome and complications have been compared between the patients with or without previous caesarean, and into that group between the patients with or whithout previous vaginal delivery.
Clinical cases and summary results: 100 patients required labour induction with vaginal PGE2 in our hospital during 2015 (11.6%). The caesarean rate in this gruop was 24%. In the previous caesarean delivery group the caesarean rate was 38.46%. In the previous caesarean group without previous vaginal delivery the caesarean rate was 55.5%. A only mayor injury was reported during a caesarean in the last group (bladder injury). None was reported during the labour or vaginal birth. The time lapse between the PGE2 insertion and the birth was similar in both groups.
Conclusion: The use of PGE2 is initially contraindicated (technical sheetdata) in patients with previous caesarean section. The study results show that it is safe. On the contrary, the caesarean rate in

patients with previous caesarean section without a prior vaginal birth is 55.5%. Is it a good result? Should we program an elective caesarean in these cases? To perform a clinical decision we need to know the current evidence in addition to our own results.

Keywords: PGE2, previous caesarean, labour induction

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Induction of labour, two years of experience at faro's hospital

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Presenter: **Fernanda Vilela**

Introduction: Induction of labour is a common practice and one of the most important obstetric interventions. It is undertaken when continuing with pregnancy is associated with more maternal and fetal risks than delivery. Furthermore before induction of labour we have to weight the risks of fetal prematurity.
Induction of labour is associated with higher maternal and fetal risks. Therefore, it is important to establish specific indications for this intervention. The success of induction of labour depends on many factors namely maternal parity and bishop score. According to WHO the incidence of labour induction is rising. In developed countries the proportion of term induction of labour can be as high as one in four deliveries.
Materials and methods: This retrospective study evaluates the indications and methods of induction of labour and the main obstetric outcomes at Faro's Hospital during 2013 and 2014. The data was analysed in Excell and SPSSvs 10.
Clinical cases and summary results: This study verified that 23,3% (n=1035) of the deliveries were induced. Nulliparous women (65,5%) had higher rates of dystocic deliver (51,7%, $p<0,05$), namely c-section (76,9%, $p<0,05$). The percentage of women with previous c-section was 22,1%.
The main indications for induction of labour were prolonged pregnancy (33,86%), premature rupture of membranes (16,7%), diabetes (10,8%), oligoamnios (8,2%), fetal growth restriction (8%) and hypertensive disorders (6,2%). Vaginal prostaglandins were the most used method of induction. There was no relationship between the method of induction and mode of delivery or newborn outcome. We verified 56,2% eutocic deliveries eutocic, 29,6% c-sections (similar to the total rate at our hospital) and 14,19% vaginal instrumented births. In this study we demonstrated that woman with previous c-section had higher rates of distocic delivery (67,5%, $p<0,05$) however the cesarean rate was similar (p7 at 98,7% of the newborn.
Conclusion: Labour induction is a common obstetric intervention associated with risks for mother and fetus, At this study we verified that almost 23,3% of the deliveries in our hospital are induced. The literature describes higher c-section rates associated with induction of labour but our study demonstrated no difference. In obstetric care is essential to evaluate the indications, methods and mode of delivery from induction of labour to improve medical approach and outcomes.

Keywords: Induction, labour, delivery

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A slow, customized induction of labor using vaginal dinoprostone and misoprostol

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Presenter: **A. Laoreti**

Introduction: The goal of labor induction is to achieve vaginal delivery in the setting of various conditions that may adversely affect maternal-fetal well-being. Labor induction has increased in recent years with a concomitant rise in CS rates. Recently, nomograms for individualized counseling of women with antepartum risk factors, new algorithms for management of induced labor and new formulations, such as misoprostol vaginal insert, have been introduced to improve the response to the cervical ripening and finally the CS rate. However, studies generally do not consider the possibility that longer times are necessary in specific conditions. Here we present a case of customized labor induction in which we reviewed the concept of failure and we continued the process using dinoprostone and misprosostol.
Clinical cases and summary results: A 28 years old white woman, primigravida, overweight (pregestational BMI=28.4) was hospitalized at 39.3 wks of gestation for planned labor induction due to gestational hypertension in good pharmacological compensation. Fetal growth was normal at regular ultrasound scans. Obstetric evaluation evidenced a Bishop Score (BS)=2 and a cervical ripening was preferred, using Dinoprostone vaginal insert. 24 h later, whereas the BS unchanged, it was administered a second dose of dinoprostone. 52 h later, the BS was unchanged, and induction of labor continued with i.v. oxytocin, starting at a rate of 8 mU/min and adjusting every 30-40 minutes, with a maximum infusion rate of 36 mU/min. The infusion with oxytocin was carried out for 9 h, without any response in terms of uterine contractions, and modifications of BS. After this period, considering the good maternal and fetal conditions, the induction process was temporary interrupted. 96 h later, we restarted labor induction using misoprostol vaginal insert. 21 h after the placement of misoprostol, a spontaneous rupture of membranes and the beginning of labor occurred. It was performed epidural analgesia. The labor continued regularly, resulting in a vaginal birth of a male newborn, weighing 3420 g in good general condition. Overall, vaginal delivery occurred 124 h after the start of induction. Mother and child were discharged on third day postpartum.
Conclusion: Our case presents a model of slow labor induction, suggesting the possibility of proceeding with customized induction mode, in order to reduce induction failure and, in turn, CS rate. To our knowledge, this is the first case in which dinoprostone and misoprostol are associated in a sequential process of induction of labor. Further trials are needed to assess whether this choice may be particularly useful in specific subgroups at increased risk of induction failure.

Keywords: Induction of labor, dinoprostone, misoprostol, induction failure

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Misoprostol vaginal insert compared with misoprostol oral for induction of labour

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Presenter: **Katharina Redling**

Introduction: Misoprostol in an administration of 50μg orally is recommended for induction of labor (IOL) in women with an unfavourable cervix, although not licensed for this indication. In September 2014 the 200μg Misoprostol vaginal insert (Misodel®) was launched in Switzerland and is licensed for induction. Our aim was to compare the efficacy and safety of Misoprostol vaginal insert and oral Misoprostol.
Materials and methods: We retrospectively identified 100 patients who have been induced with Misodel (VI) and compared them with 100 patients, induced with Misoprostol oral (O) (50μg every 4-6 h, max. 200μg). Primary outcome were time until delivery, secondary outcome the mode of delivery, occurrence of polysystoly, and neonatal adverse outcome. We included women with a singleton term pregnancy over 36 + 0 weeks of gestation, a Bishop Score $\leq$4 and a BMI $\leq$50kg/m2.
The study has been approved by the local ethical committee (EKNZ).
Clinical cases and summary results: Both groups were similar regarding age of the mother (VI 31.10y ± 5.56, O 31.16y ± 5.45), BMI (VI 30.39kg/m2 ± 5.41, O 30.12kg/m2 ± 5.92), gestational age at the beginning of the induction (VI 40.4w ±1.3w, O 40.4 w ± 1.07w).
Time from the beginning of induction to delivery was significantly shorter in the VI group (20.86 h ± 19.93h) compared to the O group (49.91 h ± 41.6h, $p<0.001$). Mode of delivery overall was not significantly different, but more Cesarean sections for failure of induction were performed in the O group (15 vs 4). Polysystoly occurred significantly more often in the Misodel group (VI 22.4%, O 4.7%, $p<0.001$).
APGAR score, umbilical cord blood pH and transfer to neonatal care unit were not statistically significant. We observed a lesser estimated blood loss in the oral Misoprostol group (VI 606ml ± 478ml, O 470ml ± 206ml, $p<0.001$).
Patients with polysystoly in the VI group had a significantly shorter time of insertion (7.18h vs 9.71h, p=0.001) and a shorter time until delivery (16.02h vs 22.27h, p=0.04) compared to the patients without polysystoly in the VI group. Maternal BMI, Bishop Score, fetal birthweight, and fetal outcome were not statistically significant.
Conclusion: In our selected cohort we could confirm the effectiveness of Misodel for IOL. Time to delivery was reduced by more than half from 50 to 21h. However, there was a higher rate of polysystoly in the Misodel group without an adverse neonatal outcome. Larger observational trials are necessary to confirm these data. According to our experience the selection of patients is very important as well as proper surveillance during IOL in order to choose the right moment to remove the vaginal insert.

Keywords: Induction of labour, Misoprostol, Misodel

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Induction of labour: a theorical cost evaluation of a new protocol

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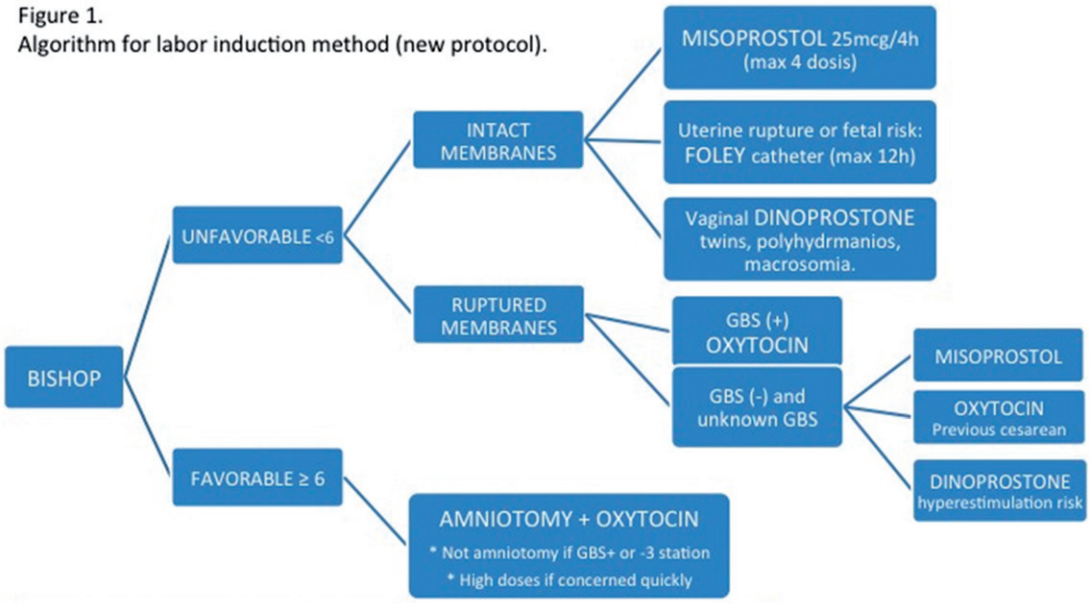
Presenter: **Zhenia Luengo**

Introduction: Induction of labour is the technique to stimulate uterine contractions leading to delivery before the spontaneous onset of this. We can do the induction of laboUr with or without cervical ripening, which is the use of pharmacological agents, mechanical or other agents to soften, efface and dilate the cervix. An induction is considered appropriate if: This is according to the wishes and the autonomous consent of the mother. The indication should be compelling, informed, discussed (methods, risks, success rate) and documented consent. Optimizes the fetal-maternal outcomes (including psychological well-being). It is accepted when the risks of continuing the pregnancy to the mother or fetus, exceeds the risks of induction. It is based on scientific evidence and is cost-effective.
Materials and methods: Until 2014, labor inductions in our center were performed with dinoprostone vaginal devices and oxytocin. Based on the evidence available, our new protocol, introduced by the end of 2015, contemplates the use of pharmacological and mechanical agents, taking into account the history patient, the admitting diagnosis and BISHOP, considering the rupture of membranes and the presence of streptococcus group B. The algorithm used to choice the method of induction is summarized in Figure 1. To implement the new protocol, a cost evaluation was conducted. We determined to each patient, for whom labor induction was indicated during 2014, which would be their method under the new protocol. From this, we calculated a theoretical cost and performed a comparative evaluation respect real 2014 spendings.
Clinical cases and summary results: During 2014, 1521 births were attended in our hospital, of which 400 had indication for delivery before onset of labor (26.3%). The most frequent indications for labor induction were prelabour rupture of membranes (136 at term and 9 preterm cases) and post-term pregnancy, which represent 71.5% of all inductions. The unit prices of the different methods correspond to the cost of hospital pharmacy, misoprostol: 13 euros (4 tablets of 25mcg); vaginal dinoprostone: 44.51euros; Foley catheter: 19.8euros and oxytocin (infusion of 30 mIU/h for 18 hours): 1.59euros. For the cost evaluation, we made for each method the calculation with the highest dose according to our protocol. The indications for labor induction, induction method, and the real and theoretical cost according to each protocol are shown in Table 1. Once we had done the comparing of the two protocols costs, the use of the new protocol involves an overall theoretical savings of 68% (12,026.67 Euros).
Conclusion: Labor inductions involve a workload for delivery rooms, an increase in medical interventions and an increase in hospitalization costs. The indication should optimize fetal-maternal results, be based on scientific evidence and be cost-effective. The correct use, based on current evidence, of various methods for induction of labour, individualizing the treatment for each patient, may involve a significant saving in hospital costs.

Keywords: Cost evaluation, misoprostol, induction of labour

Figure 1.
Algorithm for labor induction method (new protocol).



Risk of hyperestimulation:
- Overdistention risk:
  - ✓ Uterine rupture: previous cesarean delivery, grand multiparirty (≥4 previous births)
  - ✓ Others: macrosomia (>4kg)) polyhydramios (AFI > 25), twin pregnancy.
- Fetal risk: Fetal grown restriction, severe preeclampsia, Oligohydramnios (SDP<2), GA <34w.

Preterm with unknown GBS: Penicillin prophylaxis

		INDUCTION 2014				METHOD ACCORDING NEW PROTOCOL					
INDICATION (N=400)	**N**	**E2**	**Oxytoc**	**Previous CS**	**Cost**	**PG E1**	**Foley**	**E2**	**Oxytoc**	**Theoretical cost**	**SAVING**
PROM	145	144	1	10	6411,03	100	0	0	45	1371,55	5039,48
Post term pregnancy	141	141		12	6275,91	116	12	13	0	2324,23	3951,68
Oligohydramnios	37	37		4	1646,87	0	35	0	2	696,18	950,69
Fetal growth restriction	17	17		0	756,67	0	17	0	0	336,6	420,07
Hypertensive disorders of preg. (5 severe PE)	27	27		2	1201,77	18	8	1	0	436,91	764,86
Maternal pathology	9	8	1	0	357,67	9	0	0	0	117	240,67
Intrahepatic cholestasis of preg	6	6		0	267,06	6	0	0	0	78	189,06
Elective induction	12	12		1	534,12	10	1	1	0	194,31	339,81
Twin pregnancy at term	1	1		0	44,51	0	0	1	0	44,51	0
Chorioamnionitis	1	1		0	44,51	1	0	0	0	13	31,51
Nonreassuring antepartum FHR test	4	4		0	178,04	0	4	0	0	79,2	98,84
	400	398	2	29	17718,1					5691,49	**12026,67**

E2 = Dinoprostone. Oxytoc = oxytocine. PG E1 = misoprostol.

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Predictors of success of the mechanical cervical ripening with foley catheter in patients with previous cesarean delivery and postterm pregnancy

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Presenter: **C. Sánchez Ajenjo**

Introduction: Elective transverse cesarean section (TCS) remains as the main way in most of the Spanish public hospitals to end the gestation in patients with a previous cesarean delivery (PCD) and postterm gestation without cervical modifications for fear of breakage of the uterine scar. The usual methods with prostaglandins analogs have a breakage rate of 5-10%. The main objective of this study is to assess the efficacy of the mechanical cervical ripening with Foley Catheter (FC) in patients with PCD and postterm gestation who want a vaginal delivery (VD), by the analyses of the variables which can affect to it.

Materials and methods: Inclusion criteria: Single gestation, gestational age>40 + 6, cephalic presentation and a PCD>18 months; signed informed consent of VD after TCS. 41 cases enrolled in 2

years. Bishop Index (BI): 2.4±1.5; Previous Cervical Length: 30.17mm±6.65mm. PCD reasons: Non-Progressive Delivery, Failed Induction or Cephalopelvic Disproportion in 18/41 (43,9%); other causes in 23/41 (56,1%). We used a Latex FC FR18 (Covidien®). Vaginal and cervix disinfection, catheter insertion and inflation with sterilized water (40-50ml) under ultrasound guidance. Fixation to the inner thigh without tension. A 2h Cardiotocographic Trace and other after 6h. Evaluation after 12h, if BI<7, catheter is maintained until 24h. Comparative study and a Logistic Regression with analyzed variables for achieving or not VD.
Clinical cases and summary results: 73,2% of 41 patients (30) had achieved labor after cervical ripening and subsequent use of oxytocin. 19 (46,34%) patients had ended their pregnancy through VD and 22 (53,66%) through TCS. Comparative study of the 2 populations (VD Vs TCS), we didn't find significant differences in any of the variables: age (TCS 33.86 ± 3.57; VD 32.63 ± 4.69); BI difference (6.15 ± 2.11; rank 1-10), Neonatal Weight (TCS 3405 ± 431g; VD 3272 ± 668g); previous TCS reason (Non-Progressive Labor/Failed Induction/Cephalopelvic Disproportion Vs Others (Odds Ratio= 1.14 IC 95% (0.3-3.95)). With a Logistic Regression any of the variable were included in the equation. About incidences, we didn't register hyperdynamic o hypertonic uterus, fetal cardiac frequency alterations, bleeding nor infection signs. The all neonates' Apgar and pH were normal in all cases.
Conclusion: Mechanical cervix ripening with Foley Catheter in patients with previous TCS and GPE is successful in half of the cases. We don't have any variable which can predict the ripening result.
We didn't register any maternal, fetal or neonatal complication.

Keywords: Mechanical, Cervix, Ripening, Foley, Catheter, Previous Cesarean Section, Induction, Labor, Gestation in Progress of Extension

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Herbal medicine today: clinical and research issues

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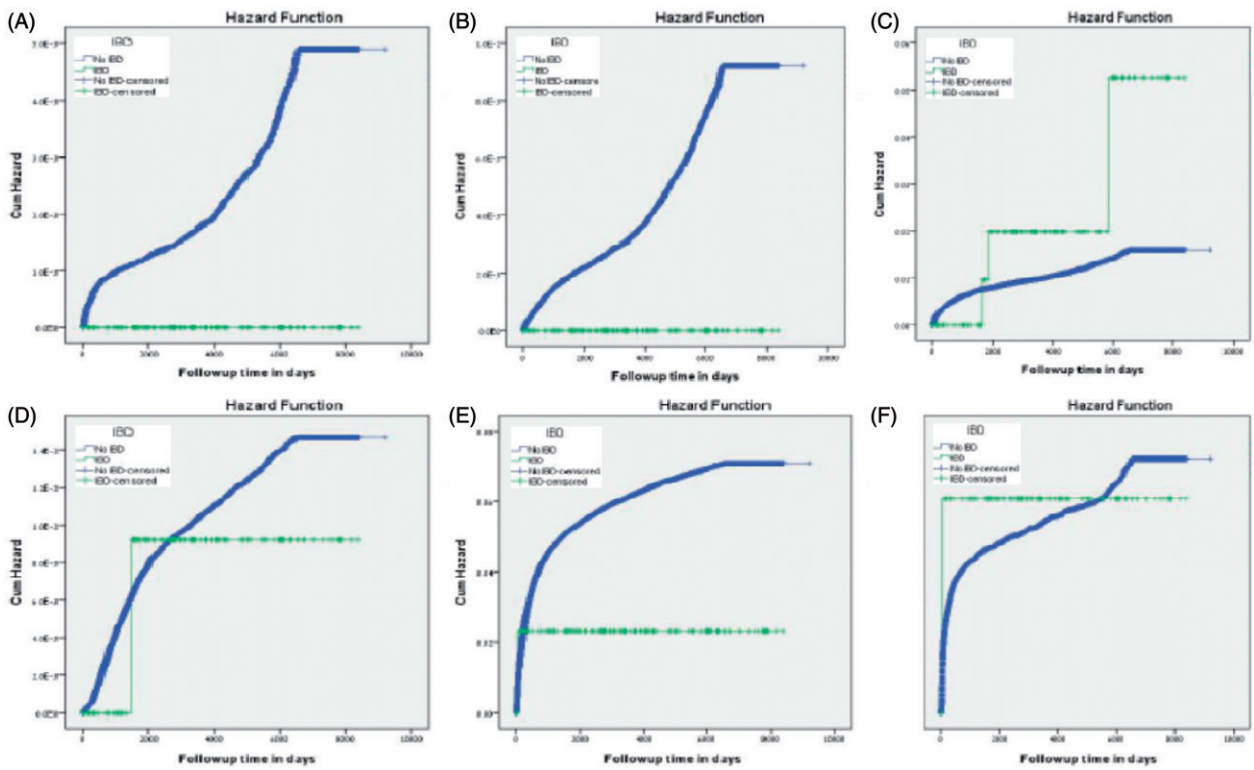
Introduction: My Organization runs a Medical Pharmacy College in India by the name of MAK College Of Pharmacy (http://www.mak-pharmacollege.com/Collaborating company Biotechnica-pharma)
Our research demonstrates that our indigenous medicines that are made by 1000 years old Herbal and Ayurvedic practice find remedies for Asthma, Tuberculosis, Cancer and various other ailments. Herbal medicine is the use of medicinal plants for prevention and treatment of diseases: it ranges from traditional and popular medicines of every country to the use of standardized and titrated herbal extracts. Generally cultural rootedness enduring and widespread use in a Traditional Medical System may indicate safety, but not efficacy of treatments, especially in herbal medicine where tradition is almost completely based on remedies containing active principles at very low and ultra low concentrations, or relying on magical-energetic principles. In the age of globalization, assessing the 'transferability' of treatments between different cultures is not a relevant goal for clinical research, but the assessment of efficacy and safety should be based on the regular patterns of mainstream clinical medicine
Materials and methods: The other black box of herbal-based treatments is the lack of definite and complete information about the composition of extracts. Herbal derived remedies need a powerful and deep assessment of their pharmacological qualities and safety that actually can be realized by new biologic technologies like pharmacogenomic, metabolomic and microarray mythology. Because of the large and growing use of natural derived substances in all over the world, it is not wise to rely also on the tradition or supposed millenarian beliefs; explanatory and pragmatic studies are useful and should be considered complementary in the acquisition of reliable data both for health caregiver and patients.
Clinical cases and summary results: The other black box of herbal-based treatments is the lack of information about the composition of the remedy. Herbs are natural products and their chemical composition varies depending on several factors, such as botanical species, used chemotypes, the anatomical part of the plant used (seed, flower, root, leaf, and so on) and also storage, sun, humidity, type of ground, time of harvest, geographic area; and merchandized products containing on the label the same product varying in their content and concentrations of chemical constituents from batch to batch; and even the same manufacturer can merchandize in different periods products



containing different substances although standardized to achieve a high pharmaceutical quality. This variability can result in significant differences in pharmacological activity: involving both pharmacodynamic and pharmacokinetic issues. Adverse and side effects is another open problem, because in citizens still prevail the respect for everything that is natural tout court, more as a cultural-fashion-based choice than thinking that the patient is introducing in his/her body chemical substances of vegetal origin; not knowing that salicylic glucosides and lactonic sesquiterpenes of many Compositae are often responsible of allergic reactions; that some constituents of plants are cancerogenic like safrole, bergapten and pyrrolizidines alkaloids.
Conclusion: Herbal-derived remedies need a powerful and deep assessment of their pharmacological qualities and safety issues due to the large and growing use of natural-derived substances all over the world, which cannot rely only on the tradition or supposed millenarian beliefs; explanatory and pragmatic studies are useful and complementary in the acquisition of reliable data both for health caregiver and patients. Evidence-based medicine (EBM) was first conceived by Archibald Cochrane as a cultural and methodological approach to clinical practice to make decisions; based on clinical expertise and the most intimate knowledge of the individual patient's clinical situations, it de-emphasizes unsystematic clinical experience as ground for medical decision-making, and stresses the rigorous analysis of evidence from clinical research. An important problematic of EBM is the difficulty to be easily applied in everyday practice.

Keywords: Evidence-based medicine, explanatory trials, herbal medicine, mainstream medicine, physiotherapy, pragmatic trials, traditional medical system, traditional medicine.

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Comparison of the sensitivity and the specificity of two genes in the diagnosis of maternal anogenital tract colonization by group b Streptococcus

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Introduction: Sepsis by group B streptococcus (GBS) is the leading cause of neonatal death. A simple screnning method of maternal colonization with high sensitivity and specificity is important to allow maternal treatment and decrease neonatal transmition during labor. The aim of this study is to compare the sensitivity and the specificity of 2 methods for the detection of maternal GBS colonization: real time polymerase chain reaction (RT-PCR) with sip gene and conventional PCR with atr gene.
Materials and methods: We conducted a cross-sectional study to evaluate maternal colonization by group B streptococcus of 264 anorectal samples collected from pregnant women between 35 and 37 weeks of gestation. We performed culture in Todd-Hewitt medium (reference standard), RT-PCR with sip gene (primer 1 ATC CTG AGA CAA CCC TGA CA and primer 2 TTG CTG CTG TTT CTA TTT TCA), and conventional PCR with atr gene (primer 1 CAA CGA TTC TCT CAG CTT TGT AAR and primer 2 TAA GAA ATC TCT TGT GCG GAT TTC).
Clinical cases and summary results: The prevalence observed was 27.6% when screened by culture, 38.2% by RT-PCR with sip gene and 31.0% by PCR with atr gene. There was a statistically significant difference between the methods ($p < 0.001$). Of the 195 negative samples tested by culture, 28 were positive for both genes and 6 were positive for at least 1 gene. The sensitivity and specificity of the RT-PCR with sip gene was 90.4% (CI 0.817–0.953) and 82.1 (CI 0.760-0.869). For PCR with atr gene, the sensitivity and specificity was 71.6% (CI 0.605-0.806) and 84.2% (CI 0.784-0.887), respectively.
Conclusion: RT-PCR with sip gene had a higher sensitivity than conventional PCR with atr gene. The difference between the 2 methods may be due to the evaluation of 2 different genetic targets. The higher prevalence found with RT-PCR and conventional PCR than with culture suggest the possibility of false positive results. However such result can represent the finding of non-hemolytic strains, colonization by few colonies or the fact that the molecular technics are true-positive and culture is false-negative.

Keywords: *Streptococcus agalactea*, group B streptococcus, pregnancy

139 (CASE REPORT)

Congenital rubella infection - a case study

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Introduction: Rubella infection occurring for the first time during pregnancy is diagnosed through detecting specific IgM antibodies after mild febrile status followed by skin rash. Although rubella causes a mild acute infection in adults, if it occurs during pregnancy, especially in the first 12 or last 10 weeks it can cause intrauterine death or preterm birth with severe congenital abnormalities, anophtalmia, microphtalmia, galucoma, congenital heart defect. Congenital rubella infection at birth presents itself as SGA, pallor, jaundice, heaptosplenomegalia, microcephalia, hypotonia, failure to thrive. After birth, it can be diagnosed either by detecting specific IgM in umbilical blood or by the PCR method. The most intriguing fact is the ability to recognize this infection even if without any knowledge about the mother's condition during pregnancy, as it is frequently the case at neonatal departments in children's hospitals. Our case is indicative and convenient for learning because nowadays rubella infections are rare due to immunization, so doctors do not recognize this syndrome, especially when they do not have any contact with the mother or her medical documentation.
Clinical cases and summary results: First baby from the first pregnancy, mother (age 13), very low social status, GS 36 weeks, meconial amniotic fluid, aspiration of meconium, BW 2250gr BL 45cm/SGA/HC 29/microcephalia/, retro and microgenia, microphtalmia culi bil, heart murmor, palor and jaundice of skin, hypotonia, letargia. Our first diagnose was that the preterm baby suffers from sepsis, but our lab test showed negative CRP and procalcitonin values, normal level of WBC, anemia and thrombocytopenia, direct hyperbilirubinemia. Ultrasound of brain with calcifications was the first clue toward diagnosing congenital intrauterine infection and after gaining positive specific IgM, we were sure that all these signs were due to congenital rubella infection. The mother was never vaccinated and had rash during this pregnancy that was thought of as an allergic reaction towards food. The mother didn't want to keep the child as it was unwanted and due to the prognosis of a very poor psychomotor development, it was sent to a health care center for social care.

Conclusion: This case can be very instructive for parents who do not want to give rubella vaccination to their children as an anti-vaccination wave is present nowadays in high developed countries because every unvaccinated girl can have a rubella infection during pregnancy and then lose her child or give birth to this syndrome.

Keywords: Rubella, infection, congenital, syndrome

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Redominant *Lactobacillus* species types of vaginal microbiota in pregnant korean women, quantification of the five lactobacillus species and two anaerobes

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Introduction: The vaginal microbiota is thought to consist of a community with predominant Lactobacillus species that prevent genital tract infections. *Lactobacillus* species of vaginal microbiota may depend on many conditions such as pregnancy, vaginal infection, race, and other factors. The five Lactobacillus species, including *L. crispatus*, *L. jensenii*, *L. iners*, *L. gasseri*, and *L. vaginalis*, have been commonly reported. However, to date, there has been no study on pregnant Korean women.Therefore, by quantifying five *Lactobacillus* species, and two anaerobes using qPCR in pregnant Korean women, we attempted to identify the predominant *Lactobacillus* species types (LSTs) of vaginal microbiota.
Materials and methods: One hundred sixty-eight Korean pregnant women under antenatal care at Eulji University Hospital and local clinics were enrolled in the prospective cohort study during pregnancy (10-14 wks). Vaginal samples were collected with Eswab for the qPCR and stored in a −80 °C freezer. Quantitative polymerase chain reaction was performed for five Lactobacillus species, and two anaerobes. To analyze relative abundance, a heat map was created using the Cluster program and Tree View program of Eisen Lab. Six pattern were found. By analyzing quantifications of five Lactobacillus species, and two anaerobes according to six patterns, we tried to identify predominant Lactobacillus species types.
Clinical cases and summary results: L. crispatus and *L. iners* were most commonly found in Korean pregnant women, followed by *L. gasseri* and *L. jensenii*, *L. vaginalis* was nearly absent. By comparing quantifications of five *Lactobacillus* species, and two anaerobes among six patterns, pattern 1 to 4 were classified as LST 1 to 4. The *L. crispatus* predominant group(pattern 1) was classified as LST 1, *L. iners* predominant group (pattern 2) was classified as LST 2, *L. gasseri* predominant group (pattern 3) was classified as LST 3, and *L. jensenii* predominant group (pattern 4) was classified as LST 4. Pattern 5 and 6 showed that they had no predominant *L. species* with predominant anaerobes. Quantification of G. vaginalis and A. vaginae had no statistical significance between 2 groups (p value = 0.026, 0.699). Therefore, 2 groups were classified as LST 5. Five types (4 predominant Lactobacillus species types and a predominant anaerobe type without predominant Lactobacillus species) were classified.
Conclusion: Five predominant *Lactobacillus* species types were identified in the vaginal microbiota of Korean pregnant women. *L. crispatus* and *L. iners* predominant types comprised a large proportion.

Keywords: *Lactobacillus crispatus* predominant type, *Lactobacillus iners* predominant type, Korean women, pregnant women, vaginal microbiota

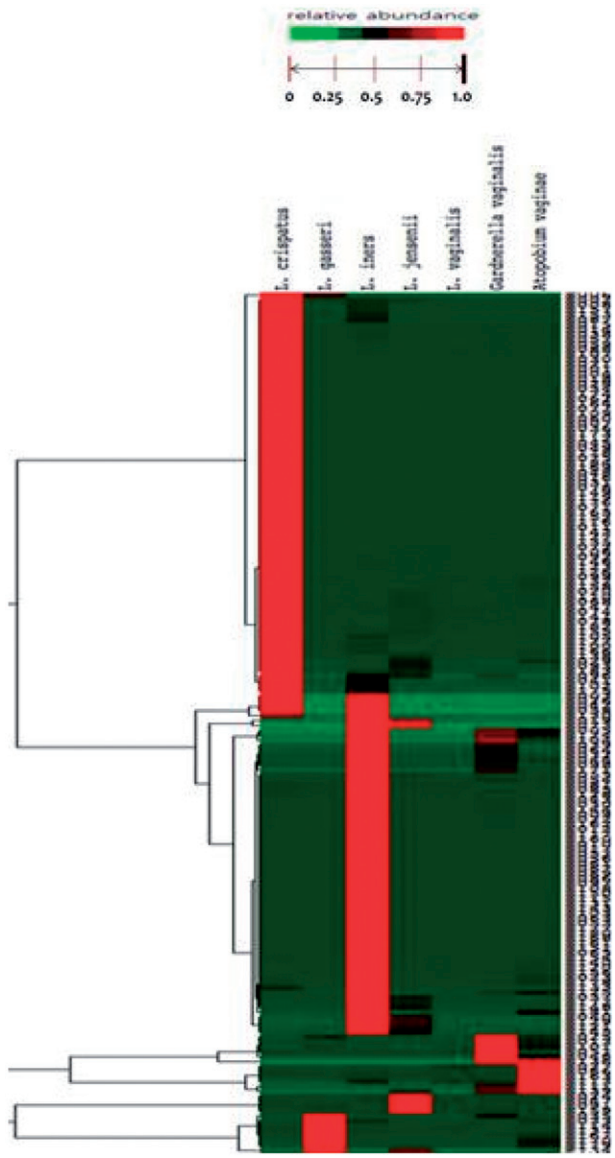

Table 3. Classification of the *Lactobacillus species* type (LST) by the predominant *Lactobacillus species* in vaginal microbiotas.

Pattern	Predominant species	Number of subject	Percentage (%)	LST
1	*L. crispatus*	78	46.4	1
2	*L. iners*	67	39.9	2
3	*L. gasseri*	7	4.2	3
4	*L. jensenii*	4	2.4	4
5	*G. vaginalis*	6	3.6	5
6	*A. vaginae*	6	3.6	5

L., Lactobacillus; G., Gardnerella; A., Atopobium

157 (CASE REPORT)

A rare case of spinal intramedullary tuberculoma in pregnancy

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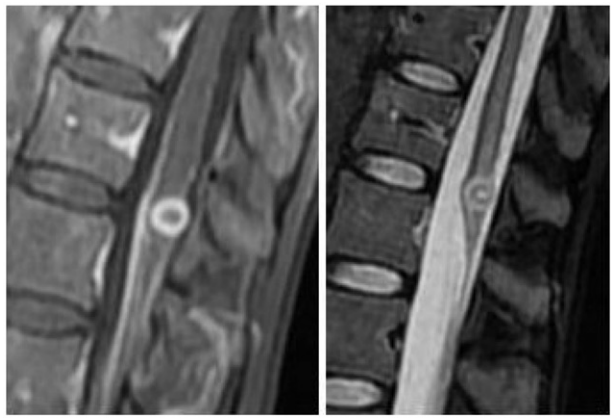
Introduction: Tuberculosis is a chronic infectious disease caused by Mycobacterium tuberculosis and characterized by the formation of granuloma and rarely of abscess in the infected tissue. Spinal intramedullary tuberculoma is a rare disease usually associated with pulmonary tuberculosis. Common clinical manifestations include variable lower extremity motor and sensory loss, bladder and bowel dysfunction and constitutional symptoms. Typical MRI characteristics are hypo or isointense to spinal cord in T1-weighted sequence with signs of focal cord expansion and heterogeneous intensity on T2 usually with central hypointensity and peripheral hyperintensity, but occasionally with central hyperintensity and peripheral hypointense ring (target sign) depending on the phase of the tuberculoma.
Clinical cases and summary results: A 34-year-old woman, gravida 3, para 2, was admitted at 30 weeks of pregnancy with progressive symmetric weakness and hypoesthesia of lower limbs for 3 weeks and weight loss of 7 kg. After 2 days she developed fever and urinary retention. M tuberculosis was positive in liquor PCR. Sputum test was negative as well as HIV test. Thoracic CT scan demonstrated active miliary tuberculosis. Thoracic MRI showed enlargement of the conus medullaris at T11-T12 level and the presence of a nodular lesion measuring 9 mm, isointense at T1-weighted sequence and with target sign appearance at T2. Cranial MRI identified 3 nodular lesions located in the right frontal lobe. She developed hepatotoxicity with antituberculous chemotherapy that required modification of the treatment. The fetus developed IUGR and oligohydramnios. Her labor was induced at 38 weeks of gestation. She gave birth to a healthy baby with 2245g, Apgar score 7 and 9. She had a progressive improvement of her neurologic deficit.
Conclusion: The recognition of extrapulmonay tuberculosis in pregnancy may be delayed because the clinical manifestations are insidious and may be confused with symptoms of pregnancy. Spinal intramedullary tuberculoma has a good prognosis when diagnosed and treated at an early stage but neurologic sequelae may remain.



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Diagnosis and management of neonatal urinary tract infections

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Introduction: Objective: To describe clinical findings, imaging results and management of neonates diagnosed with urinary tract infection (UTI).
Materials and methods: Medical records were reviewed for infants diagnosed with UTI in a single neonatal intensive care unit (NICU) in Tunisia over a 6-year period.
Clinical cases and summary results: Thirty nine infants were diagnosed with UTI. Ultrasound screening in pregnancy revealed fetal urinary abnormalities in 8 cases and 2 babies were premies. Mean age at diagnosis was 9.1 ± 8.8 days. Sex- ratio was 2.9. Fever was the most frequent symptom (64.1%) followed by jaundice (10.3%). In 12.8% UTI was done within investigation of an urinary tract malformations. CRP was positive in 46.1% of cases. Escherichia coli (25.6%) and Klebsiella pneumoniae (5%) were the most common isolated organisms. One patient had sepsis with the same bacteria. Ultrasonography showed urinary tract abnormality in 35.9% of patients. Hydronephrosis was the most frequent one (75.6%). A third generation cephalosporin and an aminoglycoside was the antibiotherapy used in 82% of patients.
Conclusion: Urinary tract infection is one of the most common causes of infection in newborns. A prompt diagnosis and treatment is of extreme importance to reduce the risk of renal scarring.

Keywords: Neonates, Urinary tract infection, antibiotherapy

317

Sensitivity of real-time polymerase chain reaction in the diagnosis of colonization by group B *Streptococcus* during labor: preliminary results

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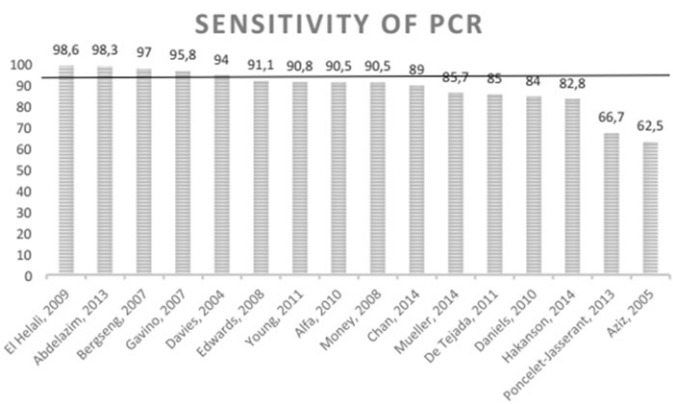
Introduction: Sepsis by group B streptococcus (GBS) is the leading cause of neonatal death. Because colonization is intermittent and over 60% of deaths occurs in newborns of pregnant women with negative screening, diagnostic methods used in the bedside may decrease neonatal transmission, allowing the selection of patients for antibiotic use. The objective of this review is to determine the sensitivity of real time polymerase chain reaction (RT-PCR) in the diagnosis of maternal colonization by GBS in the anogenital tract of laboring women.
Materials and methods: We performed a systematic review according to the Cochrane Library review protocol and Strome-ID. Studies in English language were searched in MEDLINE, PubMed, Cochrane, LILACS and Scielo without date restriction. We included papers that used RT-PCR and culture collected from the anogenital tract of laboring women as the reference standard. Two indepent reviewers selected 333 studies, evaluated data and assessed quality acording to the criteria previously defined for inclusion and exclusion.
Clinical cases and summary results: 14 studies were included (total of 6870 laboring women). We found a sensitivity of 88.3%.
Conclusion: The sensitivity of 88.3%, despite close is lower than recommended by the Centers for Disease Control and Prevention to be accepted as a screening method. New diagnostic methods or improvement in methods evaluated are needed.

Keywords: *Streptococcus* agalactiae, PCR



320 (CASE REPORT)

Rare picc line complication, placed in the umbilical vessel

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Introduction: This is a case report of a dysmature baby girl born at 33 weeks, weighing 1050 g (-4 D.S.), with an initially favorable clinical course without any signs of infection. The pregnancy of the G2P1 mother is complicated by pre-eclampsia and fetal growth retardation. Because of prematurity and extreme dysmaturity, PICC line use is needed. The picc line is placed initially by the umbilical vessel up to diaphragmatic level, the position controlled by an X-ray. On D6, the X-ray shows the catheter in a lower position directed to the right lobe of the liver.
Clinical cases and summary results: On D6, the baby presents apneic spells with inflammatory syndrome and low platelet count. She is transfered to a third level NICU after receiving first antibiotics. The PICC line is taken out. The ultrasound shows an anechogenic formation with irregular contours in the right lobe of the liver corresponding to an abcess in the segment VIII. On D8, deterioration with development of RDS and more severe inflammatory syndrome. Treatment consists of antibiotics, initial fluid replacement therapy, several platelet transfusions, endotracheal intubation and mechanical ventilation (D8-D14) and a right laparotomy (D8) with a punction and aspiration of the abcess. The bacteriological cultures show Staphylococcus epidermidis in both the blood culture done by the catheter and in the perioperatory aspirate of the abcess. Progressive recovery after the laparotomy, the antibiotic treatment stopped on D22 and the baby is discharged on D25. The size of the lesion diminishes without any complications.
Conclusion: This case report shows a rare complication of a picc line in a secondary false position in the umbilical vessel causing a septicemia and liver abcess due to Staphylococcus epidermidis. It illustrates the importance of the follow-up of the position of central lines.The use of picc line in the umbilical vessel should be very carefully controlled.

Keywords: PICC line, complication hepatic abcess

328 (CASE REPORT)

A preventable reason of mortality in neonatal period: congenital Rubella syndrome

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Introduction: Rubella is one of the most teratogenic intrauterine viral infections. The commonest findings are heart defects, cataracts, low birth weight, hepatosplenomegaly and microcephaly.1 Universal screening and follow-up of vaccination for women at childbearing age is highly recommended.
Clinical cases and summary results: A 37 week term male baby was born with prenatal oligohydramnios and intrauterin growth arrest. Mother was not immunised with Measeles-Mumps-Rubella (MMR) and serology for Toxoplasma-Rubella-Cytomegalovirus-Herpes (TORCH) was screened at 8th week of gestation. Both Rubella Ig M and Ig G were negative. There was no history of fever or rash during

pregnancy, but the mother had aseptic arthritis during gestation. Positive findings on physical examination were low birth weight (1785 grams <10th percentile), height was 40 cm (<10th percentile), head circumference was 29 cm.
Conclusion: In conclusion, unlike CMV and HSV infections, CRS is a preventable reason of mortality and morbidity in newborns. So screening and vaccination strategies against Rubella for women at childbearing age should be considered.

Keywords: Congenital Rubella

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Clinical and epidemiological profile of patients with chorioamnionitis

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Introduction: Chorioamnionitis, is a pregnancy infection, causes different fetal and maternal symptoms. Streptococcus agalactiae present in the normal vaginal microflora of some women, favouring its abnormal multiplication during pregnancy, causing perinatal morbidity and mortality. Objective. Describe the clinical and epidemiological profile of the patients with diagnosis of clinical chorioanmionitis.
Materials and methods: Descriptive, cross-sectional study. The population was patients with diagnosis of clinical chorioanmionitis. The information was taken from the medical records. The research was approved by the Ethics Committee. We used the program SPSS ® version 17.0 (SPSS Inc, Chicago, Illinois, USA) for the information analysis, descriptive statistics were used.
Clinical cases and summary results: 78 patients in total with clinical chorioamnionitis, with a mean age of 26.3 ± 5, 8 years old, the 69.2% primigravid women. 2.6% of women had positive culture for Streptococcus agalactiae in urine sample during current pregnancy and 30.7% had received some kind of antibiotics during current pregnancy. The 57.7% had 37 to 40 weeks of gestation in the current pregnancy it was calculated more frequently by ultrasound (66.7% in first quarter, 11.5% in the second and 1.9% in the third). In a 60.3% way of termination of pregnancy was vaginal and a 35.9 percent were caesarean section. Among the women in the study, a 30.8% had premature rupture of membranes.
Conclusion: The chorioamnionitis continues to be an important cause of antibiotic use during pregnancy or labour and the decision to do a caesarean, with highest percentage in pregnancies-preterm and preterm premature rupture of membranes.

Keywords: Chorioamnionitis, *Streptococcus* agalactiae, pregnancy complications, infectious

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Pattern of neonatal sepsis in Dubai hospital

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Introduction: In spite of advances in neonatal intensive care practice, neonatal sepsis remains one of the major cause of mortality and morbidity in the neonatal population. More than half of neonates admitted to neonatal intensive care units (NICUs) carry a diagnosis of suspected sepsis. The gold standard for diagnosis of Neonatal sepsis is positive blood culture, which is positive in only 50-80% at best, however negative blood culture does not rule out the disease. Objective of this study is to get an overview of the burden of bacterial sepsis in the newborn population in NICU Dubai hospital. The focus was concentrated mainly on the pathogens mostly implicated, incidence of early and late onset sepsis and meningitis, antibiotics sensitivity patterns, associated mortality and morbidity.
Materials and methods: The present study is retrospective observational study done in tertiary referral center NICU in Dubai hospital, UAE. All the neonates with positive blood culture enroll in this study. The study conducted over the period of 36 months from January 2013 to December 2015. Data collection was done for the incidence in different weight and gestational age groups, pattern of pathogens, age of onset, associated mortality, percentage of meningitis in culture positive neonates and drug susceptibility pattern. Statistical analysis was performed by calculating the number and mean from the total number of NICU admissions during the 36 months of study period.
Clinical cases and summary results: Between January 2013 to December 2016, 1247 babies admitted in our NICU. 123 infants had one or more episodes of blood culture proven sepsis. The sepsis rate was 9.8 % during this period. Out of 123 blood culture positive cases 25 (20%) were term while 98 (80%) were preterms. The incidence of sepsis is more in babies below 30 weeks (70%) .The mean age at time of sepsis is 14 days and mean birth weight is 1300 grams. Late onset sepsis was 69% while 31% were early onset sepsis. Majority of sepsis was caused by Gram positive organisms (63.4%). Among Gram positive organisms, Staphylococcus epidermidis was the most common pathogen while GBS incidence was minimum. Gram negative organism accounted for 28.45% of sepsis and Klebsiella pneumonia (65.7%)was most common pathogen.18.6% of sepsis were caused by ESBL Klebsiella pneumonia and E Coli. 7.3% of sepsis are caused by Candida species with 70% of them by Albican. CSF analysis done in 32 cases and 4 cases of meningitis were confirmed by positive culture. One case was caused by multidrug resistant Flavobacterium Indologenes. The identifiable risk factor in this extreme preterm twin included precipitous delivery in the bathroom. The case fatality rate of sepsis among VLBW infants was 7.3%. Infants with EOS had a much higher fatality rate than those who had LOS (15% versus 3.5%).ESBL Klebseila Pneumonae was the prominent pathogen among fatal EOS. Majority of sepsis caused by ESBL organism were sensitive to Meropenem.
Conclusion: The sepsis rate in our unit is 9.8%) and the sepsis related mortality rate was 7.3%.Only 5 cases of GBS reported during study period and all are early onset. One case of Meningitis was caused by flavobacterium indologenes, a rare and unusual organism. ESBL and fungal sepsis incidence were 18.6% and 7.35 %respectively. Majority of organisms showed resistance to commonly used antibiotics. In resource poor countries, however, the availability of alternative antibiotics is limited. There is need for studies looking at simple and sustainable interventions to reduce the burden of neonatal infection. Possible strategies to be considered might include intrapartum antibiotic prophylaxis, implementation of simple infection control methods such as hand washing and promotion of clean deliveries, restriction of antibiotics use, and rationalization of admission to and discharges from neonatal units.

Keywords: EOS (Early onset sepsis),LOS(Low onset sepsis), meningitis, ESBL(Extended Spectrum Betalactamase)GBS (Group B Streptococcus)

360 (CASE REPORT)

Detection of *M. pneumoniae* DNA in cerebrospinal fluid (CSF) in a neonate with an acute bilateral stroke: a coincidental event or causal relationship?

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Introduction: While neurological complications of Mycoplasma (M.) pneumoniae infection (e.g.: meningitis, encephalitis, myelitis, cerebellar syndrome) are well described in children and adults, the role of M. pneumonia infection in neonates is less defined, especially in the pathogenesis of perinatal stroke.
Clinical cases and summary results: A boy was born at 40 weeks of gestational age by caesarean section after an unremarkable pregnancy with an Apgar Index of 9/10/10. At the first day of life he had several generalized tonic-clonic seizures, which could be managed with an anticonvulsant therapy (phenobarbital). The neurological examination and the EEG were normal. MR images showed a large bilateral infarction in the right and left middle cerebral artery (MCA) territory. MR angiography was normal. M. pneumonia DNA was detected in CSF by positive polymerase chain reaction. CSF leucocytes count was 17/μl, glucose level 43 mg/dl, protein level 215 mg/dl and erythrocyte count 6,930/μl. The serum titer of antibodies to M. pneumoniae was not elevated. Other causes of neonatal stroke (e.g. cardiac embolism, vascular risk factors, carotid artery dissection, thrombostasis or metabolic abnormalities) were not evident. Systemic inflammation parameters were normal. After the detection of M. pneumonia DNA in the CSF a clarithromycin therapy was initiated for 21 days. On discharge from the hospital after 28 days, the patient had no clinical irregularities. At a follow up 3 months later, the boy was well-being with normal statomotoric development so far. To date, only in a few cases stroke due to *M. pneumoniae* infection has been reported with or without CSF pleocytosis. To the best of our knowledge, this association has not been described so far in a neonate.
Conclusion: Although the cause of the stroke remains unclear in this newborn, central nervous system infection with *M. pneumonia* has to be considered as a possible cause of neonatal stroke. Future targeted search to M. pneumoniae in CSF of newborn with strokes could help to find out, whether our observation is a coincidental event or a causal relationship.

Keywords: Stroke, newborn, Mycoplasma

385 (CASE REPORT)

Secondary pseudohypoaldosteronism type 1

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Introduction: Pseudohypoaldosteronism type 1 (PHA1) is a rare disorder caused by aldosterone resistance with subsequent defective transepitelial sodium transport. Affected patients develop severe salt loss, hyponatremic dehydration and hyperkaliemia. Increased plasma aldosteron levels are found. Primary PHA1 is a hereditary disease caused by mutations in mineralocorticoids receptor gene while underlying pathogenesis of secondary PHA1 is still unclear. Secondary PHA1 is transient, usually presents in first tree months and is most often associated with urinary tract infection (UTI) and/or urinary tract malformations. Treatment of UTI completely reverses all biochemical abnormalities in majority of patients. We present our patient with secondary PHA1 due to urinary tract infection and obstructive uropathy.
Clinical cases and summary results: The male patient was born at term after an uneventful pregnancy with a birth weight of 4200 grams. He presented at 4 weeks of age with a two-week history of poor feeding, and failure to thrive. At admission his weight was 10 g below his birth weight. His initial blood chemistries showed marked hyponatremia and hyperkalemia, urea was elevated. Creatinine was normal (Table 1) as were parameters of infection. He received intensive intravenous rehydration with gradual correction of serum sodium. We started an empiric antibiotic therapy for UTI as his urinalysis showed pyuria. Urine culture revealed 1M colonies/cc of Escherichia coli. His blood cultures remained sterile. Renal ultrasound (US) showed moderate bilateral dilatation of renal pelvis with hyperechogenic debris. Serum sodium, potassium and urea levels normalized within a few days of therapy, he started to breastfeed normally. Plasma aldosterone obtained at the 5th day after admission was elevated (Table 1), 17 OH progesteron was normal. One month after dismissal his aldosterone levels were normal, he gained more than 1200 g. At 4 months his renal US and US voiding cystourethrography were completely normal.
Conclusion: Severe hyponatremic dehydration with hyperkalemia is a severe condition in neonatal period that requires prompt treatment. Our patient presented with salt wasting crisis requiring aggressive fluid therapy. Investigations revealed UTI with bilateral dilatation of collecting system and markedly elevated aldosterone level. Successful therapy lead to resolution of all electrolyte and hormonal abnormalities. Clinical course and laboratory results were consistent with secondary form of PHA type 1.

Keywords: Neonate, aldosteron, electrolyte disbalance, uroinfection

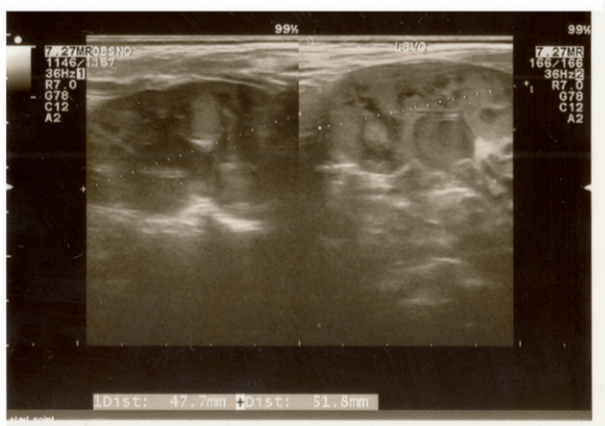

Table 1: The biochemical data of the patient.

	The day of the admission	5th day of the hospitalisation	One month later
Serum sodium (132–142 mmol/L)	120	132	135
Serum potassium (4–6.4 mmol/L)	7,3	5,0	5,0
Serum urea (1,1-4,3 mmol/L)	8,3	2,2	2,3
Serum creatinine (18-35 umol/L)	26	19	14
Serum aldosterone (0,47-4,27 nmol/L)		67,6	1

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Role of polymorphism of genes of TNF-A in miscarriage of infectious genesis

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Introduction: Medical and social significance of the problem of abortion, its impact on women's reproductive health puts scientific and clinical research in this area in a number of the most important tasks of modern medicine. In recent years, urogenital infection is a major trigger of early reproductive losses. According to modern concepts the stages of implantation and development to pregnancy are cytokine-dependent processes, and the level of gene expression of cytokines depends on the allelic variant of a gene in the genotype.TNF-α is an important regulatory molecule, which mediates the inflammatory response and is involved in the process of uterine contraction.

Keywords: *Objectives*: Analysis of the frequency distribution of genotypes 308G/A and 238G/A gene of TNF-a in miscarriage and urogenital infections.
Materials and methods: Were examined in 67 pregnant women. Gruppe I (n=48) comprised pregnant women with miscarriage in the first trimester and verified urogenital infection. The control group consisted of 19 patients with physiological pregnancy. The definition of allelic variants of the genes TNF-α was performed using PCR and subsequent restriction analysis of test-systems for molecular-genetic analysis developed by Gosniigenetika (Russia).
Clinical cases and summary results: In the study of polymorphism 308G/A gene TNF-α revealed that in group I compared with control group, the frequency of genotype G/A was met significantly more often (p <0.01), and genotype G/G gene TNF-α was significantly less (p <0.01). In addition, it was found that in group I the frequency of allele A was significantly higher than in the control group (χ^2=10.96 when p=0.002). The odds ratio is statistically significant at the 5% level because the confidence interval does not include 1 (OR=0.15, CL=0.05-0.45, OR=0.20, CL=0.07-0.54). There were no significant differences in the distribution frequency of the polymorphism 238G/A gene TNF-α between the patients I and the control group. Polymorphism of genes encoding expression of TNF-α may lead to increased production of proinflammatory cytokines, differentiation towards Th1, are unfavorable for pregnancy.
Conclusion: Therefore, the studies of genes controlling intercellular interactions during pregnancy makes it possible to determine the nature of the response of the immune response and its intensity. In carriers of the allele A of a gene TNF-α the risk of miscarriage in urogenital infection is higher, and the G/G genotype is protective, which contributes to more favorable course of pregnancy. Polymorphism 308G/A gene TNF-α may be genetic markers of the risk of miscarriage in urogenital infections.

Keywords: Miscarriage, infections, TNF-α

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Respiratory viruses in neonates

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Introduction: The burden of respiratory viruses in neonates has not been clearly studied in our country. The aim of this study was to determine the overall distribution of respiratory viruses in Neonatal Intensive Care Unit (NICU) hospitalized neonates with acute lower respiratory tract infections (ALRI).
Materials and methods: From January to December 2015 69 individuals younger than one month old were hospitalized with ALRI in our unit. All these cases were included in the present study. Viruses were identified with the molecular test FTD Respiratory pathogens 21 (Fast-Track Diagnostics), a multiplex reverse transcription polymerase chain reaction (RT-PCR). Only nasopharyngeal aspirates were used as sample. This protocol included a culture for the commonly associated bacterial pathogens.
Clinical cases and summary results: The 46.38% (32/69) of the samples were negative. The 53.62% (37/69) of neonates had positive results for at least one viral type, among them RSV A/B, Rhinovirus and Enterovirus were the most common infections with a 14.49% (10/69) , 13.04% (9/69) and 10.14% (7/69) respectively. The 83.78% (31/37) were informed as monoinfection, with only one of the target viruses. The 66.68% (4/6) of the co-infections had VRS A/B as the main pathogen. Only the 4.41% (3/68) of the cases showed positive result for the bacterial culture with a negative RT-PCR. The 41.18% (28/68) were positive for the RT-PCR and negative for the culture. Moraxella catarrhalis and Haemophilus influenzae were present in the 45.45 % (5/11) and 27.27% (3/11) respectively.
Conclusion: RSV A/B and Rhinovirus were the most common viral etiology in neonates with lower respiratory tract infections. The early detection of a viral respiratory tract infection could be useful to reduce the use of antibiotics. New molecular assays based on (RT-PCR) are now being used for clinical practice. These tests can provide faster results, even in hours after sample collection. Molecular techniques can confirm a suspected infection of viral origin.

Keywords: NICU, ALRI, FTD, RT-PCR

405

Evaluation of factors associated with the occurrence of sepsis in infants of very low birth weight in a neonatal intensive care unit in cyprus

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Introduction: Neonatal septicemia is one of the major causes of morbidity and mortality in very low birth weight (VLBW) infants.

Aim: To investigate the incidence, causes, predictors, and outcomes of septicemia in a neonatal intensive care unit in Cyprus in a cohort of very low birth weight infants.
Materials and methods: A retrospective study of all infants with birth weight of $\leq$1.500 g who were admitted in a neonatal intensive care unit in Cyprus in June 2011- June 2012 was performed. Data on the maternal prenatal history, delivery and neonatal course, including detailed information on episodes of microbiologically verified septicemia were collected on predefined forms.
Clinical cases and summary results: Of the 89 infants of very low birth weight, who were hospitalized in the NICU during that period 21 septicemia episodes occurred for 17 infants (19%). Staphylococcus coagulase negative was the main pathogen (76.1%) isolated from the positive blood cultures. Neonates with blood-culture proven sepsis were lower gestational age and birth weight than the others and with an increased rate of chorioamnionitis during the pregnancy. 75% of the VLBW newborns with sepsis were ventilated during their hospitalization in the NICU and in 82.4% of those had inserted central venous vascular catheters The mean duration of hospitalization in septic infants was 74.8 days.
Conclusion: In this study, the prevalence of sepsis in neonates VLBW admitted in a NICU in Cyprus was very low, as septicemia occurred for 19% of the infants. Major risk factors were the chorioamnionitis and the presence of central vascular catheters. The main pathogen of neonatal sepsis in the unit was the staphylococcus coagulase-negative.

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Identification of bacterial pathogens and their antimicrobial susceptibility of culture proven early onset neonatal sepsis

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Introduction: Neonatal sepsis remains one of the leading causes of neonatal mortality and long term morbidity among term and preterm infants. The aim of this study was to calculate the incidence of bacterial pathogens of EONS and their antibiotic susceptibility to commonly used antibiotics.
Materials and methods: This study was conducted at NICU of Al Rahba hospital in UAE, from Jan 2011 to Jun 2013. EONS was defined as isolation of a bacterial pathogen from blood culture drawn within 7 days of birth. A total of 175 neonates were included from all gestational age with suspected sepsis, either on clinical presentation, history of prolonged rupture of membranes (more than 18 hours), or suspected chorioamnionitis. Neonates with gross congenital anomalies were excluded from the study. Empirical antibiotic treatment with Ampicillin and Gentamicin was started as a first line. Demographic data, clinical manifestation, microbial pathogens and their antibiotic susceptibility were collected and analyzed.
Clinical cases and summary results: A total of 29% (51 out of 175) high risk newborns had culture proven sepsis with an incidence of 13.7 per 1000 live births. The mean age of neonates at time of presentation was 2.3 $\pm$ 4.0 days and mean age at admission was 0-2 days. 70 % of infants presented within the first 48 hours of life. The most common organisms isolated were Streptococcus agalactiae (68%, 9.1 per 1000 live births) followed by Escherichia coli (17%, 2.4 per 1000 live births), CONS (9%) and others (6%) (such as Klebsiella, Pseudomonas, Enterococci). All of GBS isolates were sensitive to Ampicillin. Among E. coli isolates, 1 out of 9 (11.1 %) was resistant to Ampicillin and Gentamicin. No increase in the incidence of EONS caused by Ampicillin resistant E. coli following intrapartum antibiotic prophylaxis was observed. The most common clinical presentation was respiratory distress which was presented in 110 (63%) patients followed by poor feeding in 80 (46%), lethargy in 55 (31%), apnea in 43 (25%), hypothermia in 32 (18%), jaundice in 26 (15%), and shock in 5 (3%) patients. No neonatal death due to early onset sepsis occurred in this study.
Conclusion: In our study GBS was the commonest organism of EONS, and had shown good sensitivity to Ampicillin. The combination of Ampicillin and Gentamicin was effective against all strains for GBS and most strains of E. coli. Based on our data Ampicillin and Gentamicin combination should remain to be the first choice of empiric antibiotic treatment for EONS. Periodic evaluation helps in implementation of a rational empirical treatment strategy and limit antibiotics resistance.

Keywords: Newborn, early onset sepsis, antimicrobial sensitivity

426

Lotus birth: simply a placenta ritual or a dangerous choice in the childbirth experience? A case description and considerations from the neonatologist's point of view

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Introduction: Considerations around the placenta in childbirth experience has been since ancient Greek medicine. Among different cultures until us spiritual and ancestral elements are available in the midwifery practice-oriented or birth unassisted choice. Women included in the home-birth setting, that in many cases had birthed in hospital previously, haven't a preexisting protocol in the placenta management so they need to make a decision about placenta destination. On the other hand, placenta as an integral part of the birthing experience culminate in placenta rituals including placenta burial, placentophagy and lotus birth.
Materials and methods: The lotus birth practice consists in missed severance of the umbilical cord after the birth of baby then wrapping the placenta in a breathable cotton piece kept near the newborn until the cord dries and breaks on it own. In spite medical disposal this practice tributes to placenta spiritual significance as something belonging to the baby and to the birthing mother, contrary to any evidence of medical benefit for the newborn.
Clinical cases and summary results: A male baby of 2850 gr at 41 wks was hospitalized in our NICU Division after 30 hrs from home-birth. Mother, without appearance of risk factors during pregnancy, independently opted for lotus-birth after two previous hospital birth. At admission we found: hyporeactivity and hypotonia, severe hypoglycemia, cyanosis, ARDS signs, dehydration. Umbilical cord was unexcided and still kept on with placenta. For all these reasons the baby was intubed then assisted in SIMV mode. After umbilical cord cutting, umbilical vein was withdrawn and rapidly started antibiotic (amoxicillin/clavulanate) and fluid administration. Hypoglycemia was restored by repeated 10% glucose i.v. bolus. Cause high total bilirubin and hematocrit (about 70%) exchange transfusion was moreover carried out. During the following days we admistered a second antibiotic (gentamicin) and fresh frozen plasma respectively for sepsis and impaired hemocoagulation. Finally after 20 days of

hospitalization, most of them because relapsing hypoglycemia, the baby returned to home whitout none damage reported.
Conclusion: We can conclude that if the placenta represents a key site of spiritual meaning for some birthing women, none ritual practice seems to be sufficiently safe without a real preventive fully informed campaign that explains benefits (few) and risks (many) implied in this particular birth choise.

Keywords: Placenta, home birth, childbirth, lotus birth

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Neonatal vertical transmitted tuberculosis in a couple of preterm twins

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Introduction: Tuberculosis remains an unresolved health global problem as such still recognized by WHO. Some forms that differ from the classic pulmonary expression are poorly object of attention and underestimated on general people. Congenital infection by vertical transmission is a rare modality reported for only 358 cases until 1995 and another 18 cases from 2001 to 2005. This form is responsible of high mortality (over 60%) and morbidity in neonatal period. Clinical findings in newborn often are non specific including distress and sepsis-related aspects. Must be remembered that tuberculosis in pregnancy is responsible of recurrent abortions, stillbirths, PROM and preterm labour. Guidelines for management of borns from infected mothers represent still a controversial issue.
Materials and methods: Key points in diagnosis making remain Cantwell's criteria and finding of Mycobacteria by examination of the placenta (tuberculosis must be considered in the differential diagnosis of all cases of acute chorioamnionitis). Infection in the foetus can be transmitted from the maternal circulation through the placenta or by aspiration and swallowing of infected amniotic fluid during the perinatal period. Treatment with isoniazid, rifampicin, ethambutol and kanamycin (or amikacin) for the first two months of life, then followed by isoniazid and rifampicin usually represents initial pharmacological therapy.
Clinical cases and summary results: We present our case consisting in two 27 wks preterm twins (birth weight 950 gr and 980 gr) from mother in treatment for miliary tuberculosis. Mother's anamnesis revealed a long infertility story ended whit a medical induced pregnancy needing of steroid therapy before and during gestational period. At birth both babies presented severe RDS treated whit mechanical ventilation (SIMV) and surfactant. Fluids, inotropes, fresh frozen plasma, amoxicillin/clavulanate where the first pharmacological approach, integrated by isoniazid in second day of life. In the following period we can isolate Mycobacterium tuberculosis by gastric aspirate in only one child, cerebrospinal fluid specimens resulted negative. After informed parental consent we began in the first week whole specific therapy (isoniazid, rifampicin, ethambutol and pyrazinamide) still in course. Unfortunately, examination of the placenta resulted prevented from its early fixation process. At the moment we are following therapy and all the other needs (the same of every other VLBW preterm) attending to patients' assistance and follow-up.
Conclusion: Congenital tuberculosis in newborn infants by mother suffering from the same illness remains a rare diagnosis and, consequently, non entirely at golden standard above all for loss of attention towards an overlooked disease and for a difficult diagnosis making. Likewise, guidelines for treatment of the newborn delivered to infected mothers result variable and without uniform consensus. Nevertheless high mortality rate remains to indicate need to forward progress in knowledge of this diseas.

Keywords: Congenital tuberculosis, newborn, preterm

466 (CASE REPORT)

CMV transmission in seropozitive pregnancy caused worse effects than expected

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Introduction: Congenital CMV infection risk is only about %1 in infants born to mothers who have circulating CMV antibodies. Preexisting maternal antibody to CMV is the most important protective factor against congenital CMV infection. Generally , congenital infection due to recurrent maternal infection are less severe
Clinical cases and summary results: The pregnant women referred for consultation because of possible CMV infection at 5 weeks 4 days. The obstetrical history of the mother is gravida 1, para 0, abortus 1. The mother was apparently immunocompetent and had no clinical symptoms due to CMV infection. We have tested CMV IgG, CMV IgM and CMV IgG avidity. The results were CMV IgG pozitive, CMV IgM negative and high IgG avidity. Family was given information based on these results. The same pregnant women was admitted to our perinatal medicine department with symptoms of fetal distress at 37 weeks and 4 days. Cesarean delivery was performed immediately, because of nonreassuring fetal status. Baby was born with 1800 gr birthweight, APGAR score:6 within 5 minutes of birth and required admission to neonatal intensive care unit. Clinical findings in the symptomatic neonate were petechia, purpura, small size for gestational age and also laboratory findings included thrombocytopenia. The infant died from severe end-organ disease 3 days later. Diagnosis of congenital infection was based on the detection of CMV DNA in fetal tissue biopsy by polymerase chain reaction.
Conclusion: Although most infants are asymptomatic at birth due to recurrent maternal infection, nonprimary CMV infection caused mortality in our case. Counselling and management of CMV seropozitive pregnant women is a complex issue. Because lack of interventions to chance prognosis, screening of CMV infection seems to be not appropriate.

Keywords: CMV, pregnant women

468 (CASE REPORT)

Recent parvovirus b19 infection in late pregnancy

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Introduction: A 28-year-old (G4 P3) was admitted in labor to the delivery room at the Department of Obstetrics and Gynecology, Merkur University Hospital, Zagreb, Croatia, at 39 + 2 weeks of pregnancy. Initial cardiotocography showed fetal bradycardia (60 beats per minute). Ultrasound showed bilateral fetal pleural effusion. Meconium-stained amniotic fluid was noted during amniotomy, leading to emergency cesarean delivery. A pale, edematous, and stiff fetus with rigid tissue (weight 4150 g; length 52 cm) and no vital functions was delivered. In the pleural effusion, 3870 copies of parvovirus B19 (B19V) per mL were detected via real-time polymerase chain reaction. Blood tests for TORCH infections were negative. Maternal serum was also negative for B19V IgG and IgM.
Clinical cases and summary results: B19V usually causes a mild, self-limiting, and exanthematous disease in childhood and intrauterine fetal death in pregnant women with primary infection.Infection usually takes place through respiratory droplets but the virus can also be transmitted by blood and vertically from mother to fetus. Transmission to the fetus occurs in one- third to one-half of cases of maternal infection, with a 10% risk of adverse fetal outcome. Infection risk decreases with advancing gestational age. In the first trimester, B19V causes spontaneous abortion in approximately 30% of cases; in the second trimester, non-immune fetal hydrops and/or fetal death occurs in 12% of cases; in the third trimester, fetal death occurs in approximately 7% of cases. The highest rate of fetal hydrops is seen if maternal infection occurs between 17and 24 weeks of gestation. In cases of maternal infection, viremia peaks approximately 1 week after infection. Vertical transmission occurs 1-3 weeks after maternal infection, which indicates that fetal infection occurs during the maternal peak viral load. The interval between B19V infection and development of fetal hydrops commonly ranges from 2 to 6 weeks. B19V IgM antibodies become detectable in maternal serum 7-10 days after infection. Levels peak at 10-14 days and decrease within 2-3 months. The level of IgG antibodies increases more slowly and plateaus 4 weeks post-infection. The serologic window?when levels of B19V IgG and IgM are still negative is 7 days.
Conclusion: B19V can cause late intrauterine death, and potential maternal cases must be carefully evaluated to optimize fetal outcome.

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Clinical course and diagnosis respiratory syncytial viral infection in newborns

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Introduction: Respiratory infections in infants - an actual problem of modern perinatal medicine in Ukraine. Respiratory syncytial virus (RS-virus) infection is a major cause of perinatal and infant mortality the leading cause of lower respiratory tract in infants and young children. RS virus infection are manifests primarily as bronchiolitis and/or viral pneumonia.
Materials and methods: 50 preterm infants with clinical manifestations of bronchiolitis or pneumonia were examined in RS markers of infection by immunochromatographic rapid trial of the nasopharynx. Half of the children surveyed were found RS antigen.
Clinical cases and summary results: We have established risk factors: premature birth, Down syndrome, congenital heart defect, bronchopulmonary dysplasia, multiple pregnancy, congenital immunodeficiency, lack of breastfeeding.The peak incidence accounted for the winter. The risk of infection was inversely proportional of gestational age.
In infants with RS-viral infection observed the following symptoms: fever, cough; cold; wheezing and wheezing; retraction, cyanosis, shortness of breath, reduced hydration, sleep apnea, sepsis. Radiography of the chest reveals emphysematous changes in the lung fields. There have been pockets of focal atelectasis and/or infiltration of the lungs.
Laboratory methods: serological - determination of specific antibodies titer in paired blood serum; used for retrospective diagnosis; virological - is the most accurate, but requires 3–7 days; rapid diagnosis of viral antigen - the fastest; should be used as a screening method for children with risk factors.
Conclusion: The clinical course of RS-virus infection in newborns is fairly nonspecific. For a quick and accurate diagnosis must be guided by objective data, instrumental and laboratory examination methods with mandatory consideration of risk factors RS viral infection in newborns. Immunochromatographic rapid test is a quick and accessible method for diagnosing RSV in children. Early diagnosis will allow the maximum applied early stages of infection prevention and efficient treatment of sick newborns.

Keywords: RS viral infection, newborns

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A chance turning out foetal hydrops as single finding of unsuspected primary syphilis infection in a young pregnant woman

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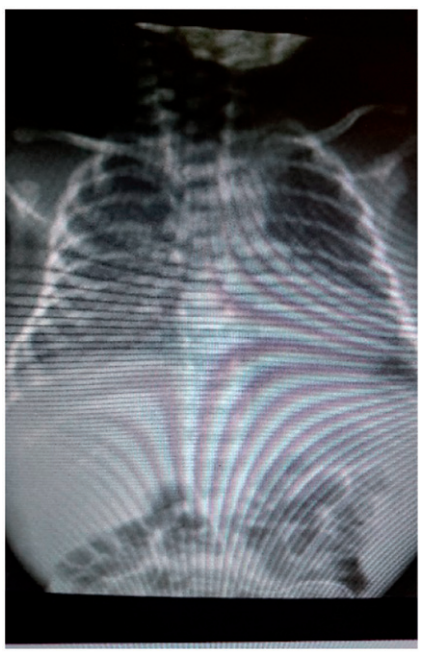
Presenter: **N. Todisco**

Introduction: The congenital syphilis rate, declined in the late 1990s, has risen somewhat and CDC has reported a recent increase to 10.1 cases per 100.000 live births in 2008 (incidence rate being 8.2 cases per 100.000 live births in 2005) due to lack in prenatal mother's health care (none screening for syphilis often are assessed during pregnancy). Transmission of congenital infection occurs, most frequently, to transplacental diffusion at any stage of pregnancy and more likely it becomes in case of mother's primary or secondary syphilis (until 100%). If not recognized congenital syphilis may result in stillbirth (30-40% of all cases), non immune hydrops, preterm delivery.
Materials and methods: Treponemal infection assessment include more specific but also more expensive FTA-ABS and TP-HA test that poorly correlates with disease-activity (remaining positive for life) and therefore not indicated for screening. Non treponemal VDRL reaction, which measures anti-cardiolipin antibodies, gives quantitative results and can represent an helpful disease-activity indicator and useful during screening and follow-up phases. Screening tests for syphilis

should be performed in all pregnant women at first prenatal visit and at 28-32th gestational week. Because neurosyphilis may occur at any disease stage, tests should be done also on cerebrospinal fluid. Finally IgM test by immunoblot or ELISA assay in newborn is indicated in case of congenital infection.
Clinical cases and summary results: We describe the case of a VLBW 30 wks preterm male baby who born by cesarean section in urgency cause unaspected hydrops diagnosed in course of an occasional US scan. None screening for syphilis was previously carried out in the mother, an apparent healthy young pregnant of 20 yrs at her first pregnancy. At birth was found: low weight (1250 gr); severe RDS and non immune hydrops with significant hepatomegaly (figure) so needing of primary reanimation and early IPPV ventilation with surfactant replacement. Fluids, glucose, inotropes, and antibiotics followed as starting rescue and stabilization therapy, integrated by infusion of platelets and blood cells coexisting severe anemia and thrombocytopenia. During followed days, infectious panel revealed positive VDRL and FTA-ABS and afterwards IgG and IgM positive treponemal immunoblot assay. Therapy including G-Penicillin at 50.000 units/kg every 4 hours for 10 days was administered, itself followed by a subsequent cycle of Mycafungin (4 mg/kg for day for 20 days) cause a systemic candidiasis central catheter and antibiotic therapy related. Finally, at 58th day of life and weighting 2150 gr, our patient was discharged and addressed to follow-up for transient mild direct-hyperbilirubinemia due to hepatic involvement during fetal life. Parents were also treated with G-Penicillin healthy resulting when followed-up.
Conclusion: Non immune-type hydrops from infectious disease happens in about 8% of all cases, including in this rate various congenital infectious origin. In case of sexually transmitted spirochetal agents illness sometimes may result totally undiagnosed because unsuspected, expecially in a silent pregnancy as above described. This condition represents a severe risk factor for foetal survival itself and, at the same, for mother's health moreover affecting for the future fertility of the couple.

Keywords: Congenital syphilis, prematurity, neonatal hydrops



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Prevention of hiv vertical transmission in a tertiary care hospital in Portugal

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Presenter: **Sérgio Alves**

Introduction: Pediatric human immunodeficiency virus (HIV) infection is a worldwide issue, associated with premature mortality and morbidity. Extensive research and established guidelines have contributed to reduce vertical transmission (VT), which is now a rare occurrence in Portugal. However antiretroviral therapy (ART) use during pregnancy has generated several questions regarding fetal toxicity. This study aims to describe the practices of prenatal and postnatal care in reducing HIV VT and to study adverse outcomes in newborn's follow-up in a tertiary care Hospital.
Materials and methods: We retrospectively reviewed data on all patients born to HIV infected mothers between 2004 and 2015 in Centro Hospitalar Vila Nova de Gaia/Espinho and analyze multiple variables including prematurity, low birth weight (LBW), HIV vertical transmission and long-term neurodevelopment and growth.
Clinical cases and summary results: A total of 83 patients born to 71 women were included. Median gestational age at delivery was 39 weeks, with 18.3% prematurity documented. We recorded statistically significant differences between rates of prematurity in mothers who smoked (RR 3.7, p=0.04), consumed alcohol (RR 10.5, p=0.03) or drugs (RR 3.7, p=0.04) during pregnancy. LBW was identified in 24% of births. Viral load, maternal ART and co-infections were not associated with increased risk of prematurity or LBW. Perinatal death occurred in 1 case of extreme prematurity. Optimal compliance regarding neonatal prophylaxis with ART was obtained in all patients. All infants were exclusively formula-fed. VT occurred in one case, with no prenatal vigilance, accounting for an overall VT rate of 1.2%. Neurodevelopment delay at 18 months was reported in 12% of cases, with higher risk related to younger maternal age (p=0,017) and alcohol exposure (p=0,045). Referral to child protection organizations occurred in 12% of the patients.
Conclusion: An adequate prenatal, perinatal and infant care can reduce HIV vertical transmission rate to almost zero. In our study, adverse outcomes seemed to be related with an unfavorable social environment rather than with the use of ART in pregnancy and infancy. These findings highlight the importance of a close clinical and psychological follow-up of HIV infected mothers in order to prevent not only HIV vertical transmission but also other undesirable events like prematurity or LBW.

Keywords: HIV, Vertical Transmission, Prematurity, Low birth weight

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Two cases of hydrops fetalis caused by parvovirus b19 with different perinatal outcomes

Presenter: Marina Artsiusheuskaya

Introduction: Hydrops fetalis is a serious condition which can cause perinatal morbidity and mortality and is defined as the accumulation

of abnormal fluid in different fetal compartments. Parvovirus B19 is the most important infectious cause of nonimmune fetal hydrops (NIFH). The main problem in parvovirus' NIFH is timely diagnosis that allows providing treatment measures and decrease perinatal mortality. There is no official registration of parvovirus infection in Belarus although its laboratory diagnosis for patients with rash and fever was organized in the National laboratory for measles and rubella. Recently serological and molecular testing for the cases of NIFG has also started in this laboratory. We present two cases of NIFH caused by parvovirus B19 with favorable and unfavorable outcomes.
Clinical cases and summary results: A 29-year-old woman, gravida 1, para 0, first and second screening's results were normal. At the 25 weeks of gestation she had flu-like symptoms with arthralgia. The fetal ultrasound at 28 weeks of gestation showed ascites, hydropericardium, hydrothorax and tissue edema. Parvovirus B19 DNA and specific IgM were revealed in mother's serum. Because of increasing of fetal disorders, at 31 weeks of gestation a female infant was delivered by cesarean section. She suffered from anemia, asphyxia, respiratory distress syndrome, pneumonia. Single transfusion of packed red blood cells and treatment of ventilatory disorders were successful. Hypoplasia of tooth enamel was found with no other abnormalities up till 3 years of age.
A 25-year-old woman, gravida 1, para 0, first and second ultrasound screening's results were normal. She had a mild flu-like symptoms without fever at 26 weeks of gestation. In two weeks fetal movements disappeared and ultrasound examination confirmed antenatal fetal death. At autopsy swelling of placenta, anemia of fetal internals and excessive fluid accumulation in the peritoneal and pleural cavities were revealed. Parvovirus B19 DNA was detected in women serum and autopsy of the placenta and fetus internals.

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Chorioamnionitis by meningococcus

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Presenter: **Maitane Urtasun**

Introduction: The incidence of intramniotic infection is 2-4%, main risk factors: prolonged labor or membrane rupture, multiple vaginal examinations, nulliparity, previous IAI, meconium, internal monitoring, genital tract pathogens. Diagnosis criteria: maternal fever >38°C plus one: maternal leukocytosis, maternal or fetal tachycardia, uterine tenderness or foul odor of the amniotic fluid. Maternal complications: labor abnormalities, uterine atony, postpartum hemorrhage, endometritis, sepsis, coagulopathy and respiratory distress syndrome. Fetal outcomes: death, asphyxia, neonatal sepsis, septic shock, pneumonia, meningitis, intraventricular hemorrhage, cerebral damage. Broad spectrum parenteral antibiotics should be given as soon as posible, but can only be considered cured after delivery.
Clinical cases and summary results: A pregnant of 36 + 2 weeks came to our emergency department by fever without focus to two days. The examination was normal 126/60, 3$\bar{9}$ C. The cardiotocographic monitoring had a tachycardia and early decelerations with non painful contrctions. In the blood analysis: leukocytosis with left shift, elevated CRP and negative procalcitonin. We collected urine and blood cultures. Because of the suspicion of chorioamnionitis, we start antibiotic therapy with ampicillin and gentamicin and end the pregnancy with oxytocin. With antipyretics fever and tachycardia improve. We indicated an urgent cesarean section because of variable decelerations with pH of 7,21. A girl was born, with artery pH 7.23, and Apgar 6/10. A positive blood culture for Neisseria meningitidis was noticed in postpartum. We started antibiotic treatment with cefotaxime followed by ciprofloxacin. Prophylaxis was established, to her husband, son and newborn. After four days she went home with good evolution.
Conclusion: The main preventive strategy to intramniotic infection is administration of antibiotics to women with PPROM. Neisseria meningitidis is the leading cause of bacterial meningitis, with a mortality rate of 15% without antibiotics treatment. The clinical manifestations can be quite varied, from transient fever and bacteremia to fulminant disease. There are three syndromes: meningitis alone, meningitis with meningococcemia, and meningococcemia without clinical evidence of meningitis.

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Placental cryptococcus infection: a rare cause of second trimester loss in a woman without immuncompromise

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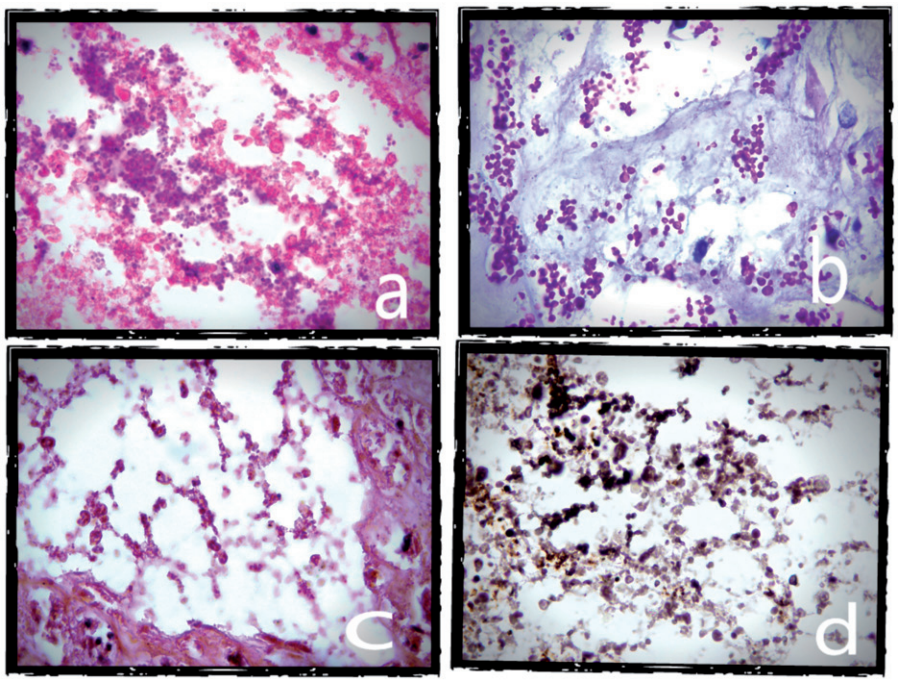
Presenter: **Mine Kiseli**

Introduction: Placental infections have been implicated in 10-25% of second trimester pregnancy losses. Many infectious agents such as bacteria, spirochetes, protozoa, viruses and fungi have been reported as possible causes. Bacterial infections are most commonly encountered in etiology whereas fungi are rarely reported. Candida species are more frequently reported in placental fungal infections which are associated with intrauterine device or immune supression. Cryptococcal infection of the placenta is a very rare pathologic entity. To our knowledge there are three cases of cryptococcal placental infection and fetal loss reported up today, where two of these cases were immunocompromised. Here we present the second case of placental cryptococcus infection and fetal loss without immunocompromise.
Clinical cases and summary results: Thirty-year-old woman at 17 weeks of gestation (G5P4), admitted to the hospital with nausea and vomiting. The ultrasonography reveaed 17 weeks of live fetus with echogenities in the amniotic fluid. Her history revealed three vaginal births and one cesearean section. On third day of admission, vaginal bleeding started. Thereafter, a test (Placental Alpha Microglobulin-1 protein) was performed to confirm amniotic fluid leakage. Termination was decided at the 12th day of the follow-up with the family's consent due to clinical chorioamnionitis. Macroscopic evaluation of the terminated fetus was normal. Placental tissue was 10 cm in diameter and disc shaped where histopathology showed presence of active chronic chorioamnionitis and large necrotic areas in the decidual tissues. On the necrotic decidual areas, multiple spherical shaped (5-10 micron in diameter, narrow based and encapsulated) microscopic colonies of encapsulated budding yeasts morphologically consistent with Cryptococcus sp were seen. These yeasts were positive with Mucicarmine, Gomori Methenamine Silver (GMS) and Periodic Acid Schiff + Alcian Blue (PAS+ AB) stains (Figure 1).
Conclusion: Cryptococcosis, an opportunistic infection, causes cutaneous, pulmonary or meningitis, especially in immune suppressed patients. Pregnant women also might have tendency for this rare infection, as pregnancy is a state of subtle immunosuppression. In conclusion, we present an uncommon case of a pregnant woman without any other immunocompromising conditions whose initial



manifestation of cryptococcosis was preterm prelabor rupture of membranes and chorioamnionitis.

Keywords: Cryptococcus, placental infection, pregnancy loss, fungi

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Relationship of bacterial vaginosis with pregnancy loss before 24th week of gestation

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Presenter: **Kornelija Trajkova**

Introduction: Bacterial vaginosis (BV) is extremely prevalent vaginal condition among pregnant women. It has been related to many complications of pregnancy including preterm labor and delivery, premature rupture of the membranes, spontaneous abortion and pregnancy loss (PL). The early pregnancy loss is the most common complication of early pregnancy with rate of 10-20%. Beside the chromosomal abnormalities as the most common risk factor, maternal risk factors include genital infections and BV. The objetive was to analyze the correlation of screening tests for BV as well as microbiologically proven Gardnerella vaginalis (GV) with PL before 24th week of gestation.
Materials and methods: A study of 72 women with pregnancy before 24th gestational week, divided in two groups: 36 women with PL versus 36 women with normal pregnancy. All women were screened for BV: vaginal secretion analysis using Amsel criteria, measurement of vaginal pH (cut off value of 4.5) and amine test with 10%KOH. Vaginal and cervical swabs were taken for microbiological analysis using Nugent score.
Clinical cases and summary results: Among 36 women from each group, normal finding is registered in 12 versus 22 in the control group; positive swabs and/or screening tests in 24 versus 14 (p=0,020); disturbed vaginal pH in 21 versus 10 (p=0.010) and positive KOH test in 10 of the first group. GV was isolated in 10 versus 2 women (p=0,024).
Conclusion: The signs of BV were more frequently registered among women with PL. Disturbance of the vaginal mulleu and BV may play causative roles in spontaneous abortion and PL. Beside many conducted studies, the role of BV in pregnancy is still not clearly defined. Since these are easily preventable risk factors, the additional researches may be of great assistance for prevention of this unwanted pregnancy outcome. These are preliminary results from the ongoing study with a larger number of participants.

Keywords: Pregnancy loss, bacterial vaginosis, vaginal pH, Gardnerella vaginalis

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Bullous impetigo in a level III neonatal intensive care unit

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Presenter: **Jacinta Fonseca**

Introduction: Bullous impetigo (BI) commonly affects neonates but can also occur in older children and adults. It is caused by toxin-producing Staphylococcus aureus and is a localized form of Staphylococcal Scalded Skin Syndrome. BI often presents during the first 2 weeks of life with flaccid, transparent, sub corneal bullae, which may be single or clustered. Systemic symptoms are rare. The diagnosis is usually clinical. There is no standard treatment for impetigo. Uncomplicated impetigo needs only topical antibiotics and cleaning the affected area. Systemic therapy should be considered for those with more extensive or systemic disease. The purpose of this study was to describe the clinical features of BI in neonates.

Materials and methods: Retrospective study of the clinical files of newborn admitted in a level-3 neonatal intensive care unit (NICU) between January 2000 and December 2015, with a diagnosis of BI.
Clinical cases and summary results: BI was diagnosed in 47 newborns admitted to NICU; 57.4% (n=27) female. The delivery was vaginal in 59.6% (n=28); 21.2% (n=10) were born in another institution and 10.6% (n=5) had previous neonatology admittance. The median age of the appearance of the lesions was 6 (IQR 5-9.5) days of life and the median age of admittance to the NICU was 9 (IQR 6.5-11.5) days of life; 74.5% (n=35) had multiple lesions; None of the newborns presented systemic symptoms or a positive septic screen; 97.9% (n=46) underwent systemic antibiotic treatment and 85.1% (n=40) underwent an initial course of intravenous antibiotic; the median number of intravenous treatment was 2 (IQR 1-4) days. Topical treatment was administered on 68.1% (n=32). The median number of lenght of stay was 4 (IQR 3-5) days and the total systemic antibiotic treatment time was 10 (IQR 10-10) days. On follow-up no complications were reported.
Conclusion: In our review no newborn presented disseminated lesions, signs of systemic disease or a positive septic screen. Therefore, the topical antibiotic treatment alone in an out-patient regime could have been the first line of treatment, with reappraisal of the newborns in an appointment shortly afterwards. Admittance and systemic antibiotic treatment should be reserved for newborns that present more extensive lesions or systemic manifestations, as described in the literature.

Keywords: Bullous impetigo, newborn, treatment

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Perinatal infections by eikenella corrodens: highlighting the merits of placental swab culture through case analysis and a literature review

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Presenter: **Dr Aisling Garvey**

Introduction: Ekinella corrodens (E corrodens) is a gram negative rod which is known to be associated with human gastrointestinal and respiratory tracts. Case reports have described an association of E corrodens infection and obstetric complications such as preterm labour, chorioamnionitis and cases of early neonatal mortality. We describe a case of E corrodens in-utero foetal infection detected by a positive placental swab culture influencing antimicrobial management of an extremely low birth weight (ELBW) baby with clinical features of sepsis soon after birth.
Clinical cases and summary results: A baby girl born was at 24 + 6, by emergency LSCS due to preterm breech in labour and her mother had a previous foetal loss at 21/40 gestation associated with acute, severe chorioamnionitis. She conceived approximately one month after the above described event. On the day after delivery in the current pregnancy, mother became unwell with CRP reaching 310 mg/L. Baby had clinical features suggesting sepsis, a septic work up was performed and was commenced on IV Benzylpenicillin and Gentamicin. Her initial CRP was 25 mg/L and subsequently rose to 87 mg/L within 24 hours. Lumbar puncture and CSF studies were conducted and Cefotaxime was added to her antibiotic regimen. On the third day placental swab culture results revealed E corrodens++ (sensitive to Cephalosporins) on both the foetal and maternal surfaces of the placenta. Her blood and CSF cultures were negative. She received a total of 10 days Benzylpenicillin and 7 days Cefotaxime and subsequent clinical course was uneventful.
Conclusion: E corrodens is a rare cause of early-onset neonatal sepsis. Our patient presented with culture negative sepsis following preterm delivery at 24 + 6 weeks gestation and the successful outcome was supported by the timely placental swab culture report and appropriate antibiotic use. Published literature of perinatal and neonatal E corrodens infections is reviewed and the choices available to enhance the identification of causative agents for early neonatal sepsis discussed.

Keywords: Eikenella corrodens; neonatal sepsis; placental swab; perinatal infections; chorioamnionitis

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Nosocomial sepsis in VLWB. an epidemiological study from the ''Grupo de Hospitales Castrillo''

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Presenter: **B. Fernandez Colomer**

Introduction: Nosocomial sepsis (NS) is a serious problem in very low birth weight babies (VLBWB) and a leading cause of neonatal morbidity and mortality. Their high frequency is related to the immaturity host defenses, frequent exposure to invasive diagnostic and treatment procedures and prolonged hospital stay of these babies.
Objetive: to assess the epidemiology of nosocomial sepsis (Late-onset sepsis) in very low birth weight babies (VLBWB) in our country (Spain).
Materials and methods: From 2006 the neonatal services of 40 acute-care teaching hospitals in Spain (''Grupo de Hospitales Castrillo'') carries out a prospective surveillance of the epidemiology of nosocomial sepsis in VLBWB. We present the results from 2006 to 2014.
Clinical cases and summary results: There were 5,082 episodes of NS among 17,009 admissions (29.9%) in the study period, with 11.3 episodes per 1,000 patient days. Between 2006 and 2014 the incidence decrease from 30.3% to 26.4%. 3,270 of 5,082 NS (64.3%) were caused by Gram-positive bacteria with S. epidermidis (48.3%) as the most common gram-positive isolated. Gram-negative bacilli were responsible of 28.4% of cases with Klebsiella spp (10.5%) as the most common isolated pathogen. Candidemia occurred in 365 cases (7.2%) with a significant decline during the study period from 10.8 to 4.1%. C. albicans (3.0%) and C. parapsilosis (2.6%) were the most common Candida species. Four o more risk factors were present in 90.8% of cases. Catheter-related sepsis occurred in 42.2% of cases. The mortality rate was 9.2% with significant differences among Gram-positives (3.3%), Gram-negatives (20.1%) and Candida (19.6%). The most common combination of initial empirical antibiotic therapy was vancomycin-amikacin (37.7%). Median length of antibiotic therapy was 10.0 days (10 for gram-positive, 11 for Gram-negative and 21 for Candida spp).
Conclusion: 1) In our country, the incidence of NS in VLBW is high, but similar to other series reported.
2) Gram-positive are the most common pathogens isolated; S. epidermidis caused 48.3% of NS
3) The incidence of Candidemia showed a significant decline during the study period.

4) Catheter related sepsis occurred in 42% of cases.
5) Gram-negative bacilli were responsible for 61% of deaths.

Keywords: Nosocomial sepsis, Late-onser sepsis, VLBWB

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Intra-amniotic infection with candida albicans in a patient presenting with cervical insufficiency

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Presenter: **SH Yang**

Introduction: Intra-amniotic infection (IAI) is a major cause of significant maternal and fetal morbidity and mortality and is recognized as an important etiologic factor for preterm delivery. Although Candida albicans(CA) is frequently recovered from the vagina during pregnancy, it rarely creates chorioamnionitis and IAI. We present a case of IAI caused by CA presenting cervical insufficiency and treated by liposomal amphotericin B.
Clinical cases and summary results: A 40-year-old multigravida was referred at 21 weeks' gestation for management of cervical insufficiency Emergent cerclage was performed successfully. At initial amniocentesis, amniotic fluid (AF) WBC count was 0/μl. A few days later, it was reported that CA was recovered. The patient wanted to continue the pregnancy and liposomal amphotericin B started to be administered. Serial amniocentesis was conducted weekly and AF WBC counts were 950, 20, and 2/μl, respectively. AF culture was negative since 3rd amniocentesis. After two consecutive negative results in AF culture, antifungal agents were stopped. On 27 + 3 weeks, emergent cesarean section was performed due to clinical chorioamnionitis and previous history of cesarean delivery. A 1,200-gm male infant was delivered but expired at two days of age because of severe respiratory distress and sepsis. Cord blood culture at birth was positive for E.coli and placental pathology revealed severe acute chorioamnionitis and funisitis.
Conclusion: The present case showed that despite negative culture results for fungi after antifungal agent treatment, another pathogen such as bacteria could ascend into amniotic cavity via weakened membranes. In such situation as IAI with fungi in previable period, physicians may offer either termination of pregnancy or close surveillance for IAI with not only the initially detected pathogen but also various those which were not recovered from initially retrieved AF.

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Role of single nucleotide polymorphisms of the interleukin genes on the development of perinatal infections among newborns

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Presenter: **Nailya Rahimova**

Introduction: Congenital infection pathology among newborns is one of the most complex and important medical and social problems in modern pediatrics and neonatology. According to some authors, fetal infections are developed in 27.4-36.6% of live-born children and newborns infection pathology is the primary cause in mortality patterns, causing between 11 and 45% of deaths.
The aim of this study is detection of association of SNPson the promoter regions of Interleukin-6 (IL-6), Interleukin-10 (IL-10) and Interleukin-18 (IL-18) genes with prenatal infections in newborns, as well as to establish the interrelation of the allelic gene variants with their production levels.
Materials and methods: In order to determine the effect of nucleotide polymorphisms on IL-6, IL-10 and IL-18 genes 50 newborns with congenital infection were investigated by verified enzyme immunoassay analysis and polymerase chain reaction. Screened group included 76 newborns without any sign of infection. Measurement of IL-6, IL-10, IL-18 proteins was performed by standard method of solid phase (''sandwich'' option) of the EIA (enzyme immunoassay) using diagnostic test kits by Vektor-Brest (Novosibirsk). IL-6, IL-10 and IL-18 genes polymorphisms (at -174, -572, -597; -819,-592 and -656, -137, +105 positions, respectivily) were detected by PCR amplification and restriction analysis(PCR-RFLP).
Clinical cases and summary results: The role of nucleotide polymorphism, located in promotor regions of IL6, IL-10 and IL18 genes, in the genesis of infectious diseases in newborns was determined as a result of the completed research. Direct correlation between allele variants of IL6, IL-10 and IL18 genes and production of these cytokines is of particular interest. Predictable increase in cytokine production in infected newborns confirms functional significance of point mutations in the genesis of perinatal infections. In other words, cytokine gene polymorphism signifies susceptibility to various types of infections at the time shaping up individual cytokine profile and varying the level of expression of final proteins. Generated data enable us to use the results of measurement of IL6, IL-10 and IL18 gene polymorphism as a predicator of congenital infections.
Conclusion: The increase in the frequency of occurrence of G allele in the promoter region of the gene IL-6 at -174, -572 positions of IL-10 gene in positions -819, -592 and IL-18 at -656 position and nucleotide substitution in other positions revealed in IL-6, IL-10, IL-18 genes indicates the importance of point mutations in the development of intrauterine infections.

Keywords: *Interleukin-6 gene Polymorphism, Interleukin-10 gene Polymorphism, Interleukin-18 Gene Polymorphism, Single Nucleotide Polymorphisms, Perinatal infections, newborns*

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Fetal ultrasound findings in zika infection. Preliminary report in a colombian selected population

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Presenter: **JOSE SANIN-BLAIR**

Introduction: There is an increasing epidemiologic, clinical and pathologic evidence between Zika virus infection during pregnancy

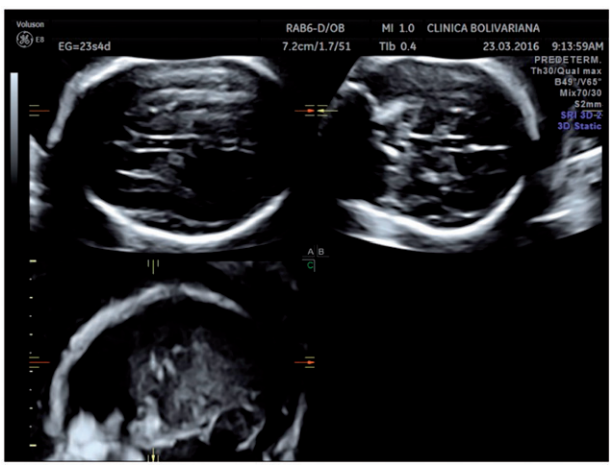
and adverse pregnancy and birth outcomes, including microcephaly, placental insufficiency and brain abnormalities. Multiple studies are underway to estimate the risk of Zika virus in pregnancy, but it is important to recognize that microcephaly caused by viral destruction of brain tissue is likely to be part of a spectrum of neurological damage and the frequency of malformations may underestimate the proportion of cases affected. The objective of this preliminary report was to report the frequency of abnormal fetal ultrasound findings and describe the abnormal findings in a selected population with proven Zika infection in different trimesters of pregnancy

Materials and methods: This was a descriptive prospective study based on three reference fetal medicine units of two cities in Colombia (Sincelejo and Medellin). All the patients have confirmed Zika infection in differents gestational ages and went for detailed ultrasound and Doppler exam and follow up. In cases with suspected anomalies, Amnio for Zika PCR was done and ultrasound re-evaluation at least for two examiners effected.

Clinical cases and summary results: 74 pregnant women's with Zika infection were followed or referred at the centers with a media of 25 gestational weeks at first detailed ultrasound. Median age was 23 years. Most of the patients had a Zika infection in the first trimester (52/74). Abnormal central nervous system findings were found in 6 patients, Zika PCR in amniotic fluid was detected in all cases. In these 6 cases, 5 of them had the infection in the first trimester of pregnancy and 1 at 21 weeks of gestational age. Periventricular calcifications, lissencephaly, and subependymal cysts were common findings in all cases. Microcephaly (<3SD) was also a common finding between 26 and 30 weeks of pregnancy. No cases of persistent oligoamnios, persistent fetal Doppler alterations or fetal anemia was founded.

Conclusion: In these selected population, Zika infection in the first trimester was associated with severe central nervous system abnormalities detected later in pregnancy. Use of Doppler to detect placental insufficiency was not helpful in this population, but our Zika cases in the third trimester were limited

Keywords: Zika, ultrasound, Doppler



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HIV pregnant women management. 11 years experience in clinical hospital ''Prof. Dr. Panait Sarbu''

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Presenter: **Alina Popescu**

Introduction: Since 1992, Clinical Hospital of Obstetrics and Gynecology ''Prof. Dr. Panait Sîrbu'' Bucharest was the medical unit to consult, record and monitoring pregnancies, births and miscarriages associated with transmited diseases- including HIV positive patients- from Bucharest and surrounding counties. The hospital had the necessary professional expertise and hospital networks. In time, within the ''Prof. Dr. Panait Sârbu'' Clinic, we had systematized and implemented obstetrics protocol for prevention of HIV prevention of vertical transmission's infection.

Materials and methods: The aim of this protocol was to decrease HIV vertical transmission rate from 30-35%, value from year 2000, to 2-3% which represent European developed countries rate. Starting from the primordial objective to decrease mother-to-child vertical transmission rate, we established the cesarean section as the method of delivery for all HIV positive women, at 37-38 weeks, on intact membranes, outside labor. The result: it was a significant decrease of the number of HIV positive babies.

Clinical cases and summary results: Between 2007-2011 the results were most encouraging, with a 0 rate of vertical HIV transmission through cesarean section, and an 23.63% transmission HIV for vaginal deliveries.

Conclusion: Attentive monitoring of pregnancies and colaboration with Infectious Diseases specialist, caesarean section deliveries, complex antiretroviral therapy for both mother and child and weaning were main means through which a spectacular decrease in HIV vertical transmission had been achieved.

Keywords: HIV infection, cesarean section, antiretroviral therapy (ART), weaning

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Incidence of hospitalization for acute respiratory syncytial virus bronchiolitis in the first year of age in a third level hospital. Have the preterm infants more risk?

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Presenter: **R. Martín Masot**

Introduction: Respiratory syncytial virus (RSV) has consistently been noted to be the most important cause of lower respiratory tract illness and bronchiolitis in infants under one year of age. These infections may be severe in selected high-risk populations: Preterm infants with or without chronic lung disease. Acute bronchiolitis is the main cause of hospitalization in children under one year of age. This study aimed to evaluate in a Spanish cohort the rate of hospitalization for RSV bronchiolitis in children under one year of age stratified according gestational age at birth. The secondary aim was to determinate the incidence and risk factors of severe bronchiolitis induced by RSV during the first year of life.

Materials and methods: Descriptive study of retrospective cohort. The study population was the newborn in a Spanish third level hospital for 2013 to 2015, stratified according gestational age (preterm and term) cross math with a cohort of infants under one year of age hospitalized for RSV bronchiolitis in that years. The infants were selected after revision of the hospital discharge codes with a primary diagnosis of RSV bronchiolitis or RSV infections. We collected the following data: demographic and epidemiologic, underlying conditions, comorbidities, diagnostic tests, treatments, invasive and non-

invasive mechanical ventilation and outcomes of disease severity parameters: Intensive care unit admission, length of stay and mortality.
Clinical cases and summary results: Between 2013 to2015, 10.603 infants were born. 8%(861)were premature infants (<37wga), of these, 67%(582) were late preterm (34-36 + 6wga), 12%(102) born between 32-33 + 6wga and 10%(91) born before 28wga. In that years, 376 infants under one year of age were hospitalized due RSV acute bronchiolitis, from them, 91% were term infants and 8,2% were preterm infants. (Table 1) Compared the RSV bronchiolitis hospitalization in preterm infants with term infants, there were no statiscally significant difference (p=0,92). Attend the rate of RSV bronchiolitis hospitalization in late preterm infants compared with preterm infants <34wga, there were no statiscally significant (p=0,23). Regarding length of stay, preterm infants had longer hospital stays compared with term infants. There was statiscally significant (P=0,04). The admission to Intensive care unit and the needed of mechanical ventilation due to severe RSV bronchiolitis there were no statiscally significant between preterm and term infant.
Conclusion: Respiratory Syncytial Virus acute bronchiolitis is a common cause of hospitalization in preterm and term infants along the first year of age. The rate of hospitalization were similar in preterm and term infants. There were no difference in rate of hospitalization between late preterm infants and very preterm infants. The length of stay were longer in preterm infants.

Keywords: Respiratory Syncytial Virus, Bronchiolitis, preterm infant, hospitalization

RSV Hospitalization Preterm Infants Vs Term Infants			
	RSV Hospitalization	Not Hospitalization	
Preterm Infants	31 (3,1%)	830	P= 0,928
Term Infants	341 (3,5%)	9397	
RSV Hospitalization Late preterm Infans (34-36+6)Vs Very preterm Infants (<34 WGA)			
	RSV Hospitalization	Not Hospitalization	
Preterm 34-36^{+6}	24 (4%)	558	P= 0,233
Preterm <34 WGA	7 (2,5%)	272	
Length of stay due to RSV hospitalization (average days)			
Preterm Infants	5,17		
Term Infants	8,4		P= 0,04

757 (CASE REPORT)

Regression of infectious-suspected brain lesion in a premature infant during treatment of invasive candida infection with echinocandins

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Introduction: Neonatal candidiasis in critically ill premature infants is associated with significant morbidity and mortality. Hematogenous Candida meningoencephalitis (HCME) may contribute to a poorer neurologic outcome. Imaging and cerebrospinal fluid (CSF) parameters are not sufficiently sensistive diagnostic tests to be reliable. We report the case of a patient with cerebral lesion highly suggestive of HCME given the context of candida sepsis.
Clinical cases and summary results: A male infant was born at 26 weeks with a birthweight of 920 g. Tracheal ventilation was necessary. Broad-spectrum antibiotic with third-generation cephalosporin was administered due to suspected bacterial infection. At 1 day of life (DOL), cranial ultrasonography (CUS) was performed and showed echogenicity and cystic lesion in the left parietal periventricular white matter. At 4 days, the infant presented intestinal perforation and signs of sepsis. Ileostomy was necessary. Due to a suspicion of candida infection, cultures from central and non-sterile body sites were taken and fluconazole therapy was initiated at 4 DOL. Serum BDG increased to 5,230 pg/ml (normal <80 pg/ml). A Candida albicans species was rapidly isolated from ascitic fluid puncture, urine, blood culture and in all samples from non-sterile sites. Renal ultrasound and echocardiography were normal, but ocular examination revealing hyalitis. CUS at 10 day showed increased echogenicity with moderate ventricular dilatation. At the same time, EEG was abnormally discontinuous. On day 18, serum BDG was still very high (>5,230 pg/ml). Lumbar puncture was then performed and revealed 203 leukocytes, protein: 1.22 g/l, glucose: 1.4 mmol/l and chloride: 124 mmol/l; CSF BDG level 1247 pg/ml. Treatment with micafungin was then prescribed. On day 35, serum BDG decreased significantly and CUS showed regression of brain lesion. EEG had returned to normal. All cultures were negative. The hospital outcome was favorable.
Conclusion: We reported here, regression of brain lesions during treatment of neonatal candidiasis with mycafungin. The very severe and extensive white matter lesions observed on the initial CUS suggested very early onset of infection, possibly in utero. After antifungal therapy with mycafungine, these lesions had regressed. To improve the prognosis, the initial antifungal therapy strategy when HCME is suspected should include a fungicidal molecule such as liposomal amphotericin B or echinocandins.

Keywords: HCME, premature infant, echinocandins, beta-D-glucans

INTRAPARTUM SURVEILLANCE - 024

Does the morphological classification of the decelerations on the ctg trace matter? Analysis of 500 cases

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Introduction: Cardiotocograph (CTG) guidelines produced by the National Institute of Health and Care Excellence (NICE) in the UK classifies atypical (or 'non-reassuring') variable and late decelerations as 'abnormal features' and recommends intervention if these decelerations persist for 50% of uterine contractions over the preceding 30 minute period. However, variable and late decelerations represent a fetal baro and chemo-receptor reflex mechanisms to compensate for ongoing intrapartum mechanical (i.e. umbilical cord compression) and/or hypoxic (i.e. utero-placental insufficiency) to protect the fetal myocardium by a reflex reduction in the myocardial workload as to preserve its energy balance. Our objective was to to determine the association between 'variable' and 'late' decelerations and the perinatal outcomes (i.e. Apgar Scores, Umbilical cord arterial pH at birth and admission to the neonatal unit, in the presence of a stable baseline fetal heart rate and reassuring variability.
Materials and methods: A retrospective analysis of 500 CTG traces was carried out and the perinatal outcomes in the presence of 'variable' and 'late' decelerations were determined in the presence of a stable baseline fetal heart rate and reassuring variability after obtaining approval from the Research and Audit Office. Perinatal outcomes (umbilcial arterial cord pH, Apgar Scores and admission to the neonatal unit) were determined.
Clinical cases and summary results: Compared with the group with no decelerations, presence of variable or late decelerations on the CTG Trace was not associated with poor perinatal outcomes (Apgar Score

<5 at 1 and 5 minutes, cord arterial pH of <7.0 or admission to neonatal unit) if the baseline fetal heart rate and variability were normal. Poor perinatal outcomes were observed only when variable and late decelerations were associated with a reduced baseline variability.
Conclusion: Our study confirms that presence of late and variable deceleration in the a stable baseline fetal heart rate and reassuring variability on the CTG trace is associated with normal umbilical arterial pH at birth and good perinatal outcomes. Therefore, additional tests of fetal wellbeing such as fetal scalp blood sampling (pH or lactate) is not indicated in the presence of a stable baseline fetal heart rate and reassuring variability. Clinicians need to take action to relieve the ongoing stress to the fetus by intrauterine resuscitation to negate the need for fetal baro- or chemo-receptor response to reduce the workload of the myocardium.

Keywords: Cardiotocograph, baseline variability, perinatal outcomes

025

Is the fetal 'catecholamine response' to evolving intrapartum hypoxia really harmful?

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Introduction: Catecholamine response is an essential aspect of physiological response to a gradually evolving intrapartum hypoxic stress. Catecholamines help to increase the circulation to the placenta and to the vital organs via fetal tachycardia and peripheral vasoconstriction to increase systemic blood pressure to increase the pressure head. In addition, catecholamines help in the re-distribution of the oxygenated blood from the non-essential organs to central organs so as to protect the central organs (brain, heart and adrenal glands) from hypoxic and ischaemic injury as well as provide energy substrate through glycogenolysis.
Our Objective was to determine the relationship between fetal catecholamine response (i.e. evolving fetal tachycardia) and perinatal outcomes.
Materials and methods: A retrospective analysis of 500 CTG traces with a progressive increase in the baseline fetal heart rate in response to a gradually evolving hypoxia (i.e. with preceding variable or late decelerations) was determined after obtaining permission from the local Research and Audit Office. Perinatal outcomes in fetuses with catecholamine response was compared with fetuses with no catecholamine response of evolving intrapartum hypoxic stress.
Clinical cases and summary results: In the presence of evolving baseline tachycardia (i.e. >10% increase from the initial heart rate), both 1 minute and 5 minute Apgar scores were significantly lower but the umbilical arterial pH at birth was normal. A greater tachycardic response was seen amongst babies of higher birth weight possibly reflecting larger adrenal glands. Similarly, there was a significant increase in the incidence of 'late decelerations' (poor placental function) without tachycardia (stronger vagal tone) amongst fetuses > 41 weeks. Overall, tachycardia lasting for more than 20 minutes was associated with a lower 1 minute and 5-minute Apgar scores.
Conclusion: Increased likelihood of lower Apgar Scores at 1 minute and 5 minutes when the tachycardic response persisted for more than 20 minutes was most likely due to the catecholamine induced re-distribution of oxygenated blood from fetal muscles, skin and lungs, leading to pale skin, poor muscle tone and poor respiratory effort at birth leading to lower Apgar Scores. Our results show that even in the presence of a catecholamine surge (i.e. increase in the baseline fetal heart rate in response to repetitive variable or late decelerations), there was no cases of metabolic acidosis at term or neonatal admissions, if the baseline variability was maintained.

Keywords: Catecholamine response, fetal tachycardia, cardiotocograph, evolving hypoxia

028

In term, uncomplicated pregnancies, can intrapartum fetal compromise be predicted by the cerebroplacental ratio (CPR): a prospective observational cohort study

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Introduction: We aim to investigate the predictive value of the cerebroplacental ratio (CPR) doppler flow evaluation in the last month of pregnancy, during routine prenatal follow-up, in identifying fetuses at risk of intrapartum compromise.
Materials and methods: In a prospective multicentre cohort study over a 1-year period, 400 consecutive term pregnancies will be included in both a secondary and tertiary referral center. The umbilical artery pulsatility index, middle cerebral artery pulsatility index and CPR will be recorded during routine prenatal follow-up at 36, 38, 40 and beyond weeks of gestational age.
Doppler parameters will be converted to centiles, adjusting for gestational age. Labor will be managed according to local protocols, while the data of the doppler examinations remain blinded for the obstetricians, and intrapartum and neonatal outcomes will be recorded.
Clinical cases and summary results: We aim to present the interim results of this study (started in october 2015) after the first 8 months of inclusion. The association between low CPR ratio's and the need for instrumental or operative delivery for fetal compromise durante partu will be statistically analysed.
Conclusion: We hypothesize that fetuses with a low CPR would be at increased risk of compromise during labor, leading to the probability of a high risk labor and delivery, necessitating additional monitoring and supervising of labor by experienced obstetricians.

Keywords: Cerebroplacental ratio, doppler, intrapartum fetal compromise

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The length of active phase and second-stage labor

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Introduction: The labor is managed based on the labor curve and the phases of labor, which were first described by Friedman in 1954. This study aims to use the partograph among the Turkish women to (a) assess birth curves, (b) define the phase duration of the labor, and (c) identify the factors that affect the labor.
Materials and methods: This study was used a retrospectively descriptive and cross-sectional survey design. The partographic records and files of 496 women, who had vaginal birth in singleton with vertex presentation were examined.
Clinical cases and summary results: The mean duration for active phase is 6.44 ± 3.84h and 4.37 ± 3.43h in nulliparous and multiparous women. This study demonstrated that the duration of active phase had lasted significantly longer than the Friedman's study. The nulliparous length of the second stage labor was higher in Turkish women than the multiparous women in the Friedman's study. However, the multiparous length of the second stage was not significantly different than the Friedman's group. Also, the nulliparous length of the second stage lasted significantly longer for the infants with a length >50 cm than the infants with a length ≤49cm. Last, the study demonstrated that the longer gestational age among the nulliparous women was an effective variable for the significantly prolonged (1.29 times longer) active phase.
Conclusion: This study has provided valuable information about the normal length of labor in Turkish women. In Turkish women, the active phase of labor lasts longer than the broadly accepted duration.

Keywords: Active phase, second stage, labor, partograph, Turkish women, vaginal birth

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A novel non-invasive technology for contraction monitoring in parturient women - can it replace invasive intrauterine pressure catheter?

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Introduction: Monitoring of uterine wall activity using tocometry is occasionally cumbersome due to maternal obesity or technical difficulties. Currently, the only available alternative, the invasive intrauterine pressure catheter monitor (IUPC) cannot be used in patient with intact membranes and is associated with several complications and side effects. Lately, a new noninvasive device, electrohysterography (EHG), that measures the electrical activity of the uterine muscle, was introduced as an alternative for the determination of contractions (Nemo Healthcare's, PUREtrace). The aim of this study was to determine the validity and safety of this novel technology.
Materials and methods: A prospective preliminary study including ten parturient women in first or second phase of labor. Uterine activity was determine in each participants by both IUPC and EHG. Monitoring was held until the time of delivery of the fetus. Exclusion criteria included non-vertex presentation, skin disease. To evaluate the uterine contraction detectability of the different noninvasive methods in comparison to IUP the contractions consistency index (CCI) was calculated.
Clinical cases and summary results: Ten women were included in the analysis: 4 nulliparous and 3 multiparous women. The average gestational age was 38.2 weeks. All patients were treated with pitocin after insertion of IUPC and had epidural analgesia. Seven women had spontaneous vaginal delivery, 2 had vacuum extraction due to NRFM and one woman had an urgent Cesarean delivery due to non reassuring fetal monitoring and was diagnosed with uterine rupture. Interestingly, in this case both IUPC and EHG showed no uterine activity. In 3 women the EHG registration was not interpretable due to the lack of experience of the operating team. All 6 remaining women had CCI above 0.92 and 4 of them above 0.96 suggesting closely approximation to that calculated from the intrauterine pressure catheter signal.
Conclusion: Electrohysterography may provide noninvasive and safe means of assessing uterine contractions, comparable with IUPC. Optimal training of the operating team will allow better assessment of its accuracy and might lead to less invasive procedures in delivery room, minimizing potential complications.

Keywords: Tocometry, Intrauterine Pressure Catheter, Electrohysterography

Table 1. Contraction consistency index (CCI).

Number of Patient	Contractions in IUPC (*n*)	Contractions in EHG (*n*)	CCI
1	-	-	NI
2	-	-	NI
3	-	13	UR
4	81	81	1
5	-	-	NI
6	43	40	0.96
7	35	40	0.93
8	74	79	0.96
9	49	52	0.97
10	37	39	0.92

NI- Not interpretable, UR- Uterine rupture

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Can we define a critical cut-off value of PH for the prediction of adverse neonatal outcome?

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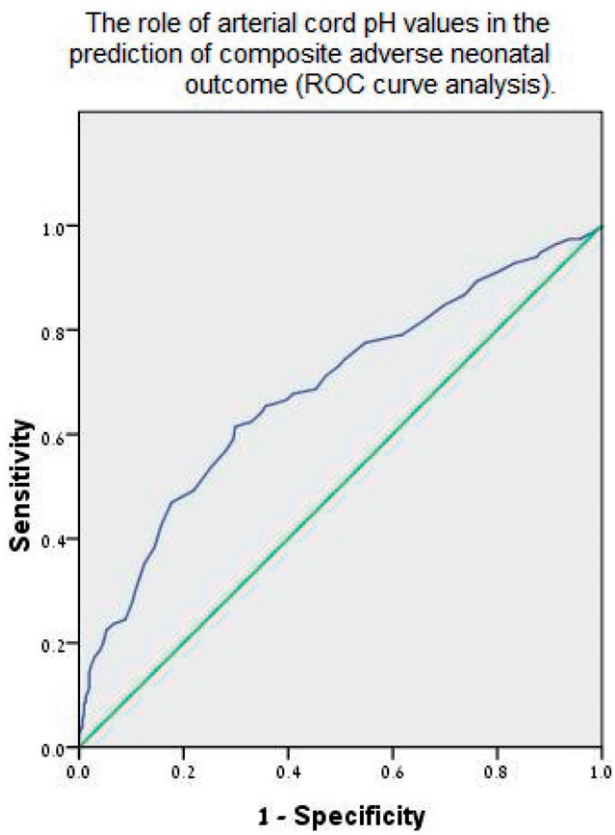
Introduction: To examine the association between arterial cord pH value and adverse neonatal outcome in term deliveries, and to

evaluate whether a critical cut-off value of pH can be defined for the prediction of adverse neonatal outcome.
Materials and methods: The study population included 653 term deliveries (37 weeks gestation and above). Deliveries occurred in a tertiary medical center, where arterial cord pH is routinely taken after birth. Composite adverse neonatal outcome was defined as a low 5-minute Apgar less than 7, admission to neonatal intensive care unit (NICU), prolonged neonatal hospitalization or post-partum death.Receiver operating characteristic (ROC) curve analysis was used to describe the relationship between different values of arterial cord pH and the composite outcome.
Clinical cases and summary results: A significant linear association was documented between arterial cord pH and composite adverse neonatal outcome. Using a receiver operating characteristic (ROC) curve analysis, the area under the curve was 0.683 (95% CI 0.64-0.72, $p<0.001$, Figure). However, using pH < 7.2 as a predictive value for adverse neonatal outcome, the sensitivity was only 62%, (with a specificity of only 68%). Likewise, pH value <7.0 had a sensitivity of only 14% (despite a specificity of 99.8%) in the prediction of composite adverse neonatal outcome.
Conclusion: Although low arterial cord pH is associated with adverse neonatal outcome, there is no clinical cutoff value of pH that can be practically used for the prediction of composite adverse neonatal outcome.



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Arterial cord PH is a better predictor of low apgar scores at 1 versus 5 minutes

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Introduction: To examine the association between arterial cord pH value and low Apgar scores in term deliveries, and to evaluate whether pH is a better predictor of abnormal Apgar scores in 1 or 5 minutes.
Materials and methods:The study population included 653 term deliveries (37 weeks gestation and above). Deliveries occurred in a tertiary medical center, where arterial cord pH is routinely taken after birth. Receiver operating characteristic (ROC) curve analysis was used to describe the relationship between arterial cord pH in the prediction of 1 and 5 minutes Apgar scores lower than 7.
Clinical cases and summary results: A significant association was documented between arterial cord pH and Apgar scores less than 7 in 1 and 5 minutes. Using ROC curve analysis, investigating the association between pH and Apgar scores at 1 minute <7, the area under the curve was 0.811 (95% CI 0.76-0.85, $p<0.001$, Figure 1a), i.e. good accuracy. Another ROC curve analysis investigated the association between pH and Apgar 5 minute <7. The area under the curve was 0.763 (95% CI 0.63-0.88, $p<0.001$, Figure 1b), i.e. only fair accuracy.
Conclusion: In our population, arterial cord pH is a better predictor of low Apgar scores at 1 versus 5 minutes.

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Way of delivery as a reson for birth trauma

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Introduction: The aim of this study was to prove the connection between the birth trauma and the way of delivery.
Materials and methods: 9496 newborns, term 8630 (90.88%), praeterm 866 (9.12%), who were born at Special Hospital for Gynecology and Obstetrics -Mother Theresa,Skopje, Macedonia, during the period of tree years (2009-2011), were studied retrospective. We analyzed the method of delivery: vaginal (spontaneous and with intervention) and cesarean and the type of birth trauma. 7699 (81%) of newborns were born by spontaneus vaginal method,135 (1.42%) were born vaginal with intervention and 1662 (17.5%) were born with cesareum section.
Clinical cases and summary results: The incidence of birth trauma in the whole group (9496 newborns) was 5.72% (544). In a group of newborns with spontaneous vaginal delivery 6% (462) were with birth trauma. In a group of a newborns with vaginal delivery with intervention 37% (50) were with birth trauma. In newborns with cesareum section 1.92% (32) with birth trauma. From 9496 newborns: Intracranial hemorrhage (ICH) were 0.85% (81), term 0.7% (61), praeterm 2.3% (20). Cefalhaematoma 2.54% (242), term 2.6% (225), praeterm 2% (17). F-ra claviculae 1.94% (185), term 2.1% (181), praeterm 0.5% (4). Paresis plexus brachialis 0.23% (22), term 0.23% (20), praeterm 0.23% (2). Paresis N.Facialis 0.11% (11), term 0.1% (9),

praeterm 0.23% (2). F-ra Femoris 0.01% (1), term newborn. Oedema cerebri 0.02% (2), term newborn 0.01%(1), preterm 0.1%(1).
Conclusion: Obstetric techniques of delivery, like the methods of Bracht, vacuum extraction, forceps and extraction are connected with increase of incidence of birth trauma. This is pointing us to the risk of the use of vaginal obstetrics intervention, and to avoid them when ever it is possible.

Keywords: Birth trauma, way of delivery

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The status of knowledge and performing nonpharmacological methods in labour pain management of midwives and nurses work in delivery rooms

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Introduction: Giving birth is one of the most painful actions and the stress related to uncontrolled pain while delivery has bad effects on mother, fetus and newborn's health. To prevent these effects, some nonpharmacological methods are performed to overcome labour pain. For pain management by midwife/nurse, the midwife/nurse should be qualified in pain management in labour and delivery. The aim of this study is to estimate the level of knowledge in nonpharmacological in labour pain management and delivery of midwives/nurses work in delivery rooms and the status of performing these methods.
Clinical cases and summary results: In this descriptive study, it was aimed to assess the level of knowledge and the status of performing nonpharmacological methods in labour pain management and delivery of midwives/nurses work in delivery room, and also to guide ingoing training programmes. Due to excess in the numbers of midwives/nurses work in delivery room, only five hospitals in Izmir and 60 volunteer midwives/nurses were included in this study. The average age of participants was found as 35.31 ± 6.84, the average of years of working was found as 14.3 ± 8.40 and the average of years of working in delivery room was found as 7.25 ± 7.08. Besides, it was found that 55 midwives and five nurses were working in delivery room and 66.7% of them were graduated from college. 70% of midwives/nurses were defined that they were informed about in labour pain management,. 41% of them defined that the reason of not performing nonpharmacological methods was finding themselves inadequate even they were trained in labour pain management. Also it was found that 88.3% of participants knew movement and changing position as one of the nonpharmacological methods the most, and 61.7% of them performed this method.
Conclusion: According to the results of this study, it is defined that the level of knowledge of midwives/nurses in labour pain management is high, but the status of performing these methods are insufficient. Moreover, it is recommended that training programmes about pain management in labour should be arranged for the midwives and nurses work in delivery room, and these subjects should be included in educational programmes before graduation.

Keywords: Labour pain, nonpharmacological methods, midwife

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Fetal heart rate monitoring category 3 during the 2nd stage of labor is an independent predictor of fetal acidosis

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Introduction: To determine whether fetal heart rate (FHR) monitoring categories during the 1st and 2nd stage of labor can predict arterial cord pH <7.2.
Materials and methods: A case control study was conducted including 653 consecutive term deliveries (37 weeks gestation and above) that were divided according to fetal pH≤7.2 (*n*=315) and fetal pH>7.2 (*n*=338). Deliveries occurred in a tertiary medical center, where arterial cord pH is routinely taken after birth. Intrapartum FHR monitoring categorization was defined according to the ACOG committee guidelines by 2 obstetricians. Multivariable models were constructed to control for confounders, FHR categorizations were entered as Dummy variable.
Clinical cases and summary results: A significant association was observed between category 2 and 3 during the 1st stage of labor and pH≤7.2 (Table, model 1). However, while controlling for FHR category 3 at the 2nd stage of labor, 1st stage categorization lost its association with pH <7.2 (Table, model2).
Conclusion: FHR monitoring category 3 during the 2nd stage of labor is an independent predictor of fetal acidosis as expressed by arterial cord pH<7.2.

Keywords: FHR monitoring categories, 2nd stage of labor, fetal acidosis, arterial cord PH

	OR	95% CI	p
Model 1			
1st stage, category 1 (ref)			
1st stage, category 2	1.7	1.2-2.4	<0.001
1st stage, category 3	13.7	3.1-60.8	0.001
Model 2			
1st stage, category 1 (ref)			
1st stage, category 2	1.2	0.8-1.7	0.257
1st stage, category 3	4.1	0.8-21.2	0.09
2nd stage, category 3	4.2	2.7-6.4	<0.001

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Effect of hyoscine butyl-N-bormide (BUSCOPAN) on cervical dilation during first stage of labour in term multiparus and primiparous women

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Introduction: Prolonged labor is the important risk factors for perinatal compromise and adverse perinatal outcome (e.g. obstructed labor, the risk of uterine rupture, postpartum hemorrhage, puerperal sepsis, neonatal injury, infection and asfyxia). Various drugs have been tried to hasten cervical dilatation in aim to minimise maternal or perinatal mortality and morbidity. Thus, we aimed to determine whether hyoscine butyl-N-bromide (HBB) shortens the stages of labor, and how it impact on maternal and/or neonatal complications. Additionally, we have pointed on its good analgesic effect against labor pain.
Materials and methods: A retrospective study of 541 cases were included of primigravidae or multigravidae with gestational age of 37 to 42 weeks with full term with single foetus, vertex presentation and no major antenatal complication of women in labour. Women were studied and divided into 2 groups. Cases (n=320) - labour accelerated by hyoscine butyl-N-bromide received 20-40 mg (1ml) i.v./i.m. in the active phase of labor and control group (n=221) without buscopan during the first stage of labor. The effects of hyoscine in shortening labor time, perinatal complications and neonatal Apgar score was compared and results were adjusted for parity. Pain scores were assessed at baseline and two hours later, and as a need for epidural analgesia.
Clinical cases and summary results: Mean duration of the first stage of labor in primiparous cases versus primiparous controls was 190.4 ± 125.8 and 241.6 ± 115.1 minutes and for multiparous women was in cases 140.3 ± 105.3 minutes and 176.3 ± 74.2 minutes in no-hyoscine group, respectively. The difference between the groups was highly significant (p <0.01). There were no differences in the duration of the second and third stages of labour. Frequency of cesarean section, postpartum haemorrhage and mean of neonatal Apgar score at minutes 1 and 5 were not different in all studied groups. No serious adverse events were seen between the groups. Pain relief of 31.3% in primiparous and in 26.8% in multiparous women was noted on visual analog score with the use of HBB, as well as lower demand for EDA.
Conclusion: Injection of hyoscine in active phase of labor can be effective in significantly shortening of labor without any adverse effect on mother and fetus and effectively hastened the rate of cervical dilatation.

Keywords: Labor, pain control, dilatation augmentation

272 (CASE REPORT)

Massive idiopathic fetomaternal hemorrhage - a happy ending

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Introduction: It is physiologic for small amounts of fetal blood to enter maternal circulation during pregnancy, however, larger volumes causing significant fetomaternal hemorrhage (FMH) can have catastrophic consequences. They can be spontaneous or due to trauma. Transfusions >20ml/kg are considered massive, due to the significant fetal and neonatal morbidity and mortality. The most common presenting symptom for massive FMH is decreased fetal movements, fetal heart rate may show a sinusoidal pattern. Treatment depends on gestational age at diagnosis, after 32 weeks immediate delivery should be the course of action. We present a case of spontaneous massive FMH, with antenatal signs of compromise and a newborn with severe anemia who, due to prompt recognition and delivery, had a positive outcome.
Clinical cases and summary results: 25-year old RG, Gravida 2 Para 1, had an uneventful pregnancy followed by her primary care doctor, third trimester ultrasound showed normal fetal biometry. At 34 weeks RG presented to our emergency room with reduced fetal movements. Fetal heart rate monitoring was reassuring, with fetal movements on ultrasound and a biophysical profile of 8/8. Two days later she returned because of no fetal movements since discharge. Fetal heart rate tracing revealed a spontaneous deceleration lasting 4 minutes with slow recovery, maintaining variability. On ultrasound no fetal movements were seen, and she was admitted to the labor ward for continuous monitoring. Two hours later tracing became sinusoidal, and she was submitted to an emergency C-section with delivery of a 2800gr markedly pale newborn with 1, 5 and 10 minute Apgar of 1, 5 and 8 respectively, and respiratory depression responding to bag and mask ventilation. Intra-operatively no signs of placental abruption or anomalies were detected. Cord blood gas pH was 7.13. Immediate hemoglobin was 3.0g/dL, recovering to 16g/dL after 2 unit transfusion. Kleihauer-Betke test was positive, with an estimated volume of transfusion of 80mLs.
Conclusion: Although rare, FMH should be suspected in a woman complaining of reduced fetal movements with non-reassuring CTG trace. The majority of cases are idiopathic, severity will depend on rate and rapidity of transfusion. The triad diminished fetal movements, sinusoidal trace and hydrops should raise suspicion. Recognition and prompt intervention are key in order to avoid negative outcomes. Tests that detect fetal hemoglobin in maternal circulation, such as the Kleihauer-Betke, may aid in diagnosis.

Keywords: Feto-maternal hemorrhage, Kleihauer-Betke test

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Effect of electronic fetal monitoring (EFM) education program on EFM interpretation skills of students

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Introduction: Application to correct body part and correct trace interpretation are highly important in the emergence of benefits of electronic fetal monitoring (EFM) such as the reduction of intrapartum deaths. Implementation and interpretation of EFM are performed by health professionals especially by nurses/midwives. However, midwifery and nursing degree programs does not have the aim of gaining a qualification in EFM. Inadequacy of midwifery students' in this issue who will work in obstetrics services increases insufficient monitorings, wrong assessments and intervention possibilities. Monitoring and interpretation errors endanger the fetal health. For this reason, this study aims to evaluate EFM knowledge and interpretation skills of midwifery students' by educating them about EFM.
Materials and methods: The sample of the research planned as an intervention study is consisted of voluntary 4th grade students studying between 2014-2016 years. Data were collected by pre-test (14 questions containing theoretical information, 10 trace paper), post-test (the same as the pre-test), Trace Interpretation Skills Criteria. Students also interpreted 10 more trace papers except that they interpreted in pre and post tests. At the end of the evaluation done by ''Trace Interpretation Qualification Criteria'', students who correctly interpreted 8 (80%) and more trace papers were considered as successful. Analysis of the data was tabulated by using average, standard deviation, percentage, paired t-test in SPSS (22.0) package program. Statistical significance was accepted as p <0.05.
Clinical cases and summary results: All the 4th grade students participated in the study are female students (100%) and their average age is 22.56 ± 2.11. The difference between student's scores they got before EFM education and after EFM education was found to be statistically significant (p <0.05). While students' point distribution was 55.29 ± 11.17 before EFM education, after education it was found

to be 76.15 ± 6.72. When trace interpretation qualification criteria are examined, 96.1% of students' in determining basal/basic heart rate, 94.2% of them in assessing the long and short term variability, 87.4% of them in detecting accelerations and 80.6% of them were found to be sufficient in assessing decelerations and contractions. 80.6% of midwifery students' have been successful in EFM education.
Conclusion: In accordance with these results, it can be said that, EFM education significantly increased the theoretical knowledge of students' and improved their trace interpretation skills.

Keywords: Education program, Electronic Fetal Monitoring, Student, Trace interpretation

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Diagnostic accuracy of the FIGO 3-tier and the 5-tier fetal heart rate classification system in the detection of neonatal acidemia

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Introduction: The use of electronic fetal monitoring (EFM) is ubiquitous. However, despite numerous attempts, the obstetric community has been unable to reach a broad consensus on a standardized approach to the management of most fetal heart rate (FHR) patterns. In 2007, Parer and Ikeda described a five categories complex system based on 134 possible fetal heart rate patterns. In 2015, a three categories system was proposed by the FIGO Intrapartum Fetal Monitoring Expert Consensus Panel. The objective of this study is to determine which system presents more validity for fetal acidemia detection
Materials and methods: We conducted a one year retrospective case-control study of all singleton, non-anomalous gestations delivered at $\geq$ 37 week with neonatal acidemia, defined as an umbilical cord gas pH$\leq$7,10 and base excess (BE) <-8 mmol/L. A sub-analysis was performed in those fetus with pH$\leq$7 and BE <-12mmol/L. Neonates in the control group were matched to each neonate in the case group in a one-to-one fashion using the subsequent delivery matched by gestational age. The primary exposure was 30 minutes of EFM immediately prior to delivery, interpreted by two obstetricians, blind to clinical and outcome data. Both reviewers categorized EFM patterns into three and five categories systems. Relative risks, 95% confidence intervals and test characteristics for acidemia were calculated.
Clinical cases and summary results: During the period of study 3490 women met inclusion criteria, of these, 102 delivered an acidemic fetus (Figure 1). There were no meaningful differences in maternal demographics between the neonates in the case group and those in the control group (n=100). More than 77% of tracings classified as normal where green or blue, according to 5-tier system. 59.2% of pathological tracings were orange or red, although there were also blue and yellow tracings within this category. According to validity of both systems, Orange, Red and combination of both categories presented a lower sensitivity and a higher specificity in acidemia detection, compared to the Pathological category (Table 1). However, based on the Youden index, both systems had a similar validity for detecting mild (FIGO: 0.26, Parer: 0.24) and severe acidemia (FIGO: 0.45, Parer: 0.42).
Conclusion: The FIGO 3-tier and the 5-tier systems were similar in fetal heart rate interpretation and validity for fetal acidemia detection. Whether one system is superior to the other in predicting fetal acidemia remains unknown.

Keywords: Electronic fetal monitoring, fetal heart rate classification systems, validity, acidemia

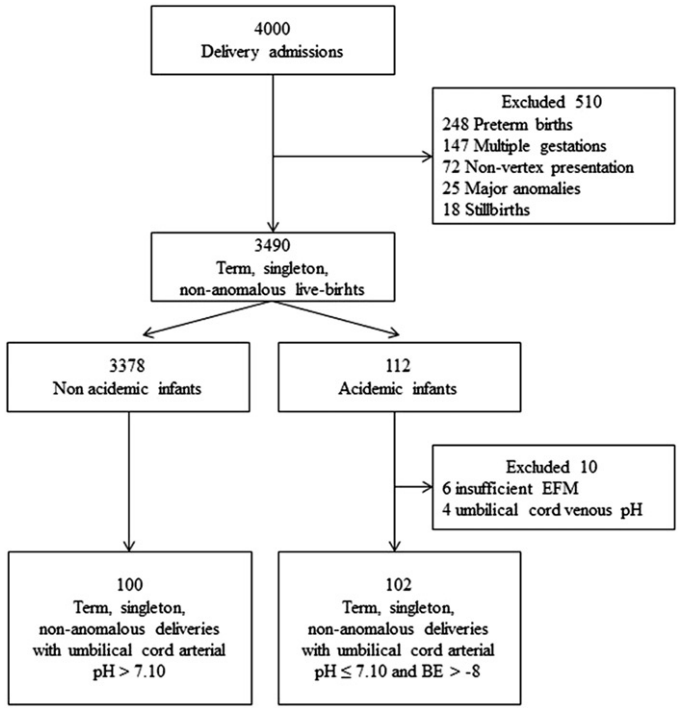

Table 1. Validity of classification systems for pH ≤ 7.10 and pH ≤ 7

	pH ≤ 7.10		pH ≤ 7.0	
	Sensitivity	Specificity	Sensitivity	Specificity
Green	12.7	54.0	7.1	68.2
Blue	10.3	88.5	4.7	85.6
Yellow	40.7	74.5	26.0	66.0
Orange	30.9	88.0	47.6	81.5
Red	5.4	100	14.3	98.6
Orange or Red	36.3	88.0	61.9	80.1
Normal	22.5	45.0	19.0	58.8
Suspicious	33.8	72.5	11.9	67.6
Pathological	43.6	82.5	71.4	74.0

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Electrohysterography compared to external tocodynamometer and intra-uterine pressure catheter

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Presenter: **Marion Vlemminx**

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Introduction: Monitoring uterine activity is one of the main intrapartum measurements during high-risk childbirth. The fetal heart rate is evaluated in relation to uterine contractions. And uterine activity is monitored in order to detect tachysystole. Unfortunately, current uterine monitoring techniques have major drawbacks. The sensitivity of the external tocodynamometer (TOCO) is low and influenced by maternal movements or obesity. The alternative is an invasive intra-uterine pressure catheter (IUPC), which is the gold standard but carries some rare but serious risks. Electrohysterography (EHG), reporting the electrical activity of the uterus, is a promising new method. The objective of our W3-study is twofold: to validate EHG by comparing this method to IUPC and to compare EHG with TOCO.
Materials and methods: We performed a prospective observational study of pregnant women during term labor at the Máxima Medical Center, Veldhoven, The Netherlands. The pregnant women were simultaneously monitored with three different uterine monitoring techniques: IUPC, EHG and TOCO. We aimed for a two-hour measurement during the dilation and/or expulsion phase, with a minimum of 30 minutes. Afterwards, contractions were automatically detected using a computer-based algorithm. We considered contractions as consistent when the peak of the contraction in EHG or TOCO was within 30 seconds from IUPC. Our primary outcome parameter was the sensitivity of EHG and TOCO, with and without maternal obesity.
Clinical cases and summary results: A total of 48 term pregnant women with a singleton in cephalic presentation have been included from July 2014 till September 2015. One patient was excluded because the duration of the measurement was insufficient (<30 minutes). There were no dropouts due to technical problems. The sensitivity of EHG was significantly higher compared to TOCO: respectively 87% versus 66%, $p<0.001$. On average, the EHG method registered 2.6 contractions per hour more compared to IUPC ($p<0.001$) and 3.2 per hour more than TOCO ($p<0.001$). The false positive and false negative contraction ratio was significantly lower in EHG than in TOCO. Finally, the sensitivity of EHG was not influenced by maternal obesity (88% versus 84%, $p=0.374$). TOCO did show a significant decrease of sensitivity in case of maternal obesity (73% versus 51%, $p=0.001$).
Conclusion: EHG has a high sensitivity for contraction detection during term labor and performs significantly better than TOCO. Maternal obesity does not influence the EHG performance while TOCO shows a significant decrease in sensitivity. EHG does monitor more contractions than IUPC. It is yet unclear if these ''contractions'' are technical artefacts or actual contractions, i.e. that EHG is more sensitive than IUPC. In conclusion, EHG can improve fetal monitoring non-invasively.

Keywords: Electrohysterography, uterine monitoring, external tocodynamometer, intra-uterine pressure catheter

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Monitoring contractions: which method do pregnant women prefer?

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Presenter: **Kirsten Thijssen**

Introduction: In most countries the standard method for uterine monitoring during labor is the external tocodynamometer (TOCO). The intra-uterine pressure catheter (IUPC) is only used on strict indication. Recently, a new non-invasive uterine monitoring technique has become available: electrohysterography (EHG), measuring the electrical activity of the uterus. In our W3-study, we compared EHG to both IUPC and TOCO during term active labor. The study design allows the evaluation on patient preference, since the women were exposed to all three methods simultaneously, which is very unique. As a secondary objective we studied which method women prefer and which aspects are most important.
Materials and methods: Women in labor were monitored with IUPC, TOCO and EHG for about two hours. The EHG-system (NEMO Healthcare, Eindhoven, The Netherlands), consists of a PURE trace-device and a patch that was placed on the maternal abdomen after skin preparation. The obstetrician inserted the IUPC and the nurses placed the TOCO. Post-partum, the participants filled out a questionnaire about which technique was preferred and what aspect of uterine monitoring was valued as most important. Furthermore, participants completed continuous scale questions from 0 (not bothering at all) to 100 (very bothering) for each technique regarding positioning, presence during labor and removal. Values were expressed as median [25% quartile - 75% quartile]. Boxplots and the Friedman-test were applied for statistical analysis.
Clinical cases and summary results: From July 2014 till September 2015, 48 women participated in the W3 trial at Máxima Medical Centre, Veldhoven, The Netherlands. 79% indicated to prefer EHG, 19% IUPC and 2% TOCO. From the continuous scale questions (0 - 100 corresponding to not bothering at all and very bothering, respectively), ''placement of EHG'' was scored low 2.1 [0.0-4.8])*, compared to TOCO 8.5 [2.1-25.5] and IUPC 30.2 [7.5-52.5], $p<0.001$. For ''presence of the device during labor'', patients were more bothered by TOCO 36.5 [9.9-61.3], than by IUPC 6.5 [0.0-44.2]. Although seven (14,6%) patients reported minor irritation of the skin after preparation and one patient developed an allergic reaction, EHG scored lowest regarding presence throughout labor: 2.1 [0.0-6.8] on our continuous scale, $p<0.001$. TOCO scored best regarding ''removal of equipment'', but differences were not significant, $p= 0.147$. Patients reported both safety and mobility during labor as the most important factors for uterine monitoring techniques.
Conclusion: This is the first study evaluating patient satisfaction of uterine monitoring techniques. Women strongly preferred EHG over TOCO and IUPC. EHG was considered as the most comfortable method regarding both placement and presence during labor. Women may have been positively influenced, being aware that EHG was the newly introduced method, but the results seem evident. As safety and mobility are important factors, patient satisfaction could be further improved by introducing wireless EHG in future.

Keywords: *Electrohysterography, uterine activity monitoring, patient preference*

MATERNAL PSYCHIATRIC DISORDERS AND PREGNANCY - 140

The influence of the environmental origin in mental illness in perinatal period

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Introduction: The number of mental illness in perinatal period is bigger in last period of time. We admint that pregnancy represents a high-risk period for new episode of mental disease or for relaps of preexisting mental illness.
Materials and methods:We realized both a prospective as retrospective study about pregnant women who were hospitalized and who delivered between 1.07.2010-30.06.2013 in Craiova County Emergency Hospital.
Clinical cases and summary results: In this period of time we registered 8.784 pregnant women. After our analysis we found a number of 15 pregnant women who presented mental illness during the pregnancy after delivery. From these, 11 women were coming from urban environment and just 4 women were coming from the country side. We structured our research per year and we showed that in every year the number of patients with mental illness coming from urban environment was higher comparing with the patiens who came from the country side.
Conclusion: We can observed a very low number of pregnant women with mental illness. From 8.784 preganant women we found only 15 patients with psychiatric disease. One explanation can be the fact that our study was develop in a Department of Obstetrics and it is difficult for doctors who are not psychiatrist to separate the physiological changes specific for perinatal period by pathological mental symptoms. Probably, the stress factors like social problems, family relations and stressfull city life,are the most important risk factors for mentall illness at pregnant women from urban environment.

Keywords: Pregnancy, environmental origin, mental illness

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Correlations between the mode of delivery and mentall illness in perinatal period

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Introduction: The perinatal period is a special time both for pregnant women as for her family. Many psychiatric symptoms are correlated with the mode of delivery.
Materials and methods: We included in our study a number of 8.784 pregnant women hospitalized at Craiova County Emergency Period between 1.07.2010 and 30.06.2013.
Clinical cases and summary results: Only 15 women from the whole number of 8.784 pregnant women presented psychiatric symptoms. According to the mode of delivery, we found 11 pregnant women who delivered by caesarean intervention and just 4 women who delivered by psysiologically way. We tried to structure our research for each year of study and we have seen that on every year we cand observe a higher incidence of psychiatric symptoms at women who delivered by caesarean operation.
Conclusion: We observed some correlations between the caesarean intervention and the incidence of mental illness after delivery. It is well known that caesarean like every surgical intervention generates higher stress, increasing the emotional lability and the depressive idea. Unfortunatly, it is difficult to define strong correlations between caesarean intervention and psychiatric diseases according that our study included a small group of patient. However, we considered that a connection between caesarean intervention and mental diseases exists.

Keywords: Caesarean intervention, stress, depression

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The influence of the education level at pregnant women with psychiatric symptoms

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Introduction: The paper is about both a prospective as a retrospective analysis of pregnant women with mental diseases hospitalized in Craiova County Emergency Hospital.
We tried to show how the education level influences the incidence of psychiatric symptoms at pregnant women.
Materials and methods: We studied a number of 8.784 of pregnant women. The period of the study was 1.07.2010-30.06.2013. We develop the research in the Department of Obstetrics of Craiova County Emergency Hospital.
Clinical cases and summary results: Only 15 pregant women presented psychiatric diseases. We divided the group of study by two criteria: the year of hospitalization and the education level. According to the level of education 7 (0.08%) patients had graduated the college, 6(0.07%) had graduated the high school and 2 (0.02%) had graduated

just the elementary school. The distribution according to the year of hospitalization was as follows:
Between 1.07.2010-30.06.2011 registered 2 cases(0.07%) of pregnant women who graduated the college, 2 patients(0.07%) who graduated the high school and only one patient who graduated just the elementary school.
Between 1.07.2011-30.06.2012 were 2 cases(0.07%) of pregnant women who graduated the college, 3 patients(0.11%) who graduated the high school and only one patient(0.03) who graduated just the elementary school.
Between 1.07.2012-30.06.2013 we found 3 cases(0.11%) of pregnant women who graduated the college, one patients(0.04%) who graduated the high school and none patient who graduated just the elementary school.
Conclusion: After our analysis of pregnant women with mental illness according to education level we can say that the incidence of psychiatric symptoms is higher at the patients with a higher level of education comparing with the others.

Keywords: Education level, pregnancy, depression

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Traumatic experiences associated with childbirth: the teach study

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Introduction: Childbirth can be a traumatic event for many women. Around 30% of new mothers refer to the birth as a trauma, and 1-3% of them fulfill criteria for post partum PTSD. Although many risk factors for the development of PTSD after birth have been described in literature, no study has ever examined which factors the women themselves identify as cause of their trauma and how they think this could have been prevented.
Materials and methods: An online questionnaire was shared on social media networking sites like twitter and facebook, and posted on sites for women with traumatic birth experiences, women who want other than recommended birth care, and women who have suffered from HELLP or severe pre-eclampsia. Inclusion criteria were a self described traumatic birth experience in the last 10 years, age over 18 and good knowledge of the Dutch language. The responders were presented with questions about their background, the specifics of the birth, which aspects they found most traumatic, and if they think there was anything their care provider or they themselves could have done to prevent it. They were also asked if this was discussed post partum, if any treatment had been offered, and were given a full PTSD questionnaire.
Clinical cases and summary results: Results to follow, questionnaire closes at the end of March, data will follow in April. However, the response so far has been overwhelming. In the first 48 hours over 1500 questionnaires have been filled out. Many comments were received of women who reported they thought they had dealt with their trauma, but found themselves crying while filling out the questionnaire. Many women lamented that they wanted to participate but their birth experience was before 2005. We even received requests to participate from other countries.
Conclusion: None as yet. We hope this will be the first time women themselves will report the reasons they believe their birth was a traumatic event and what they think could have been done to prevent this. Hopefully we can use this information to prevent some of these experiences in future.

Keywords: PTSD, traumatic experiences, chilbirth, causes, prevention

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Effects of coping with stress training on pregnant women's depression, stress and coping with stress levels

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Introduction: Pregnancy is the period when significant biopsychosocial changes experienced and the period existing high risk of encountering many factors that can create anxiety and stress. Identification of depression, stress and coping strategies and prevention initiatives made by health care professionals in this period are important. The research was conducted to examine the effects of coping with stress training on pregnant women's depression, stress and coping with stress levels.
Materials and methods: Randomized controlled study's sample is consisted of 202 pregnant women (study: 103, control: 99). Planned stress and coping training was given to pregnant women in the study group with standard care application in a home environment and standard care was applied to pregnant women in the control group. Pregnant women in study and control groups were visited four times in their homes, forms were repeated in monitorings. Data were collected by Personal Information Form, Beck Depression Inventory (BDI), Perceived Stress Scale (PSS) and Stress Coping Scale (SCS). In data analysis, percentage distribution, Chi-square and *t*-tests were used. The statistical significance level was assumed as $p < 0.05$.
Clinical cases and summary results: In both groups of pregnant women, there was an average decline of points in the BDI during the monitoring period and after a month of training, avarage points of the study group was found to be significantly lower than the control group ($p < 0.05$). PSS points of the pregnant women was found to be lower in study group, one and two months after training, their average points were found to be significantly lower than the control group ($p < 0.05$). A month or two after training, from sub-dimensions of SCS, self-confidence and social support search approaches and one month after training, optimistic approach average scores of women in study group were found to be significantly higher than the ones in control group ($p < 0.05$).
Conclusion: As a result, BDI and PSS average scores of women in study group were low in monitorings after stress and coping training. Increase was determined in self-confidence, optimism and social support search approaches from sub-dimensions of SCS.

Keywords: Pregnancy period, depression, stress, stress coping strategies

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Postpartum depression: what about the fathers?

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Introduction: The perinatal period offers suitable conditions to develop psychiatric disorders. So far, most of the research focus on the mother's well-being. However, men can also suffer from psychiatric disorder such as postpartum depression. This phenomenon is known to be associated with maternal depression (Goodman, 2004) and can have consequences on the child's development (Ramchandani et al., 2005). Despite the growing interest regarding the father's well-being, a lack of focus on a global perception of the paternal experience in the francophone population, particularly in Belgium, still remains. Therefore, the aim of our study was to examine the prevalence of depression and anxiety and to evaluate the dimensions of self-esteem, social support and coping strategies among fathers.
Materials and methods: Fathers were assessed at 5 days of postpartum in a Belgian hospital (Hainaut, Wallonia). The Edinburgh Postnatal Depression Scale (EPDS-10, Cox et al., 1987) was used to assess symptoms of depression. The prevalence of anxiety was determined with the Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983). Self-esteem, social support and coping strategies were respectively measured with the Self-Esteem Inventory (SEI, Coopersmith, 1984), the Social Support Questionnaire (SSQ6, Sarason et al. 1987) and the Coping Inventory for Stressful Situations (CISS, Endler & Parker, 1990). Sociodemographic variables were also taken into account.
Clinical cases and summary results: 66 French speaking fathers (mean age: 32,68 years, SD: 5,36) completed the questionnaires. 16,7% of them are depressed and 36,4% suffer from anxiety. 15,2% of the fathers also seem to have a low self-esteem. Scores on the EPDS, HADS and SEI are significantly correlated. We can therefore assume that there is a significant number of subjects who suffer from psychological distress. Many fathers (63,6%) preferentially resort to avoidance strategies when faced with a stressful situation. The results concerning social support showed that our subjects have a sufficient number of people on whom they can rely on in their life and an adequate social satisfaction. Some variables seem to be protective factors against the psychological distress such as conjugal status, vaginal birth and the availability of social support while socio-professional categories and coping strategies focused on emotion and distraction act as vulnerability factors.
Conclusion: Our results are globally consistent with previous research conducted in other countries but we found higher rates of anxiety and depression in our sample. Therefore, these results highlight the importance of paying attention to the fathers given the implications for family health and well-being. Further research in this area will be carried out in a PhD thesis.

Keywords: Postpartum depression, family health, fatherhood

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Anxiety and perceived stress, strong predictors of postpartum depression. unclear role of oxytocine

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Introduction: Great amount of research has found multifactorial causes for postpartum depression. Different studies have shown that anxiety, stress or neuroticism have been associated to PPD. Nevertheless, new investigations have evidenced that hormonal factors as oxytocine could be associated to depressive symptoms during puerperium. The aim of this study is to analyze the influence of anxiety and perceived stress on PPD in puperperal women, and the mediation effect of a biological variable such as oxytocine
Materials and methods: A longitudinal correlational and prospective design was performed with two measures: one day after childbirth and four months after childbirth. A blood test was done with women consent between 24 and 36 hours after childbirth, to measure serum oxytocine. Furthermore, anxiety was evaluated. At fourth month of puerperium, women were contacted to measure depressive and anxiety symptoms, and perceived stress. Edinburg Postnatal Depression Scale (EPDS) was used for depression, State-Trait Anxiety Inventory (STAI) was used for anxiety, and Perceived Stress Scale (PSS) to measure perception of stress. The final sample was composed by 57 mothers.
Clinical cases and summary results: The bivariate correlational analysis showed a possitive association between depression and trait anxiety at 24 hours (0.377, $p < 0.001$), state anxiety at fourth month (0.780, $p < 0.001$), trait anxiety at fourth month (0.777, $p < 0.001$) perceived stress (0.820, $p < 0.001$) , and oxytocine ((0.358, $p = 0.006$). A regression analysis was performed, indicating that state anxiety and perceived stress predicted depressive symptoms (corrected $R^2 = 0.707$, $F = 46{,}04$, $p < 0.001$), without significant mediation of oxytocine.
Conclusion: To suffer anxiety and stress symptoms seems to increase depressive symptoms, however there's no clear influence of oxytocine in initial postpartum on depression afterwards. An evaluation of anxiety and stress during postpartum is needed to prevente or improve mood disorders.

Keywords: Anxiety, stress, postpartum depression, oxytocine, childbirth

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Depress and anxiety in pregnant women

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Introduction: The pregnancy is high demending period of time for women's psysically and psychologically.Motherhood is very rewarding but also very complex the psychological point of view. Pregnancy is related with many psychological effects inducing anxiety and

depression. It is characteristic for pregnant woman to present susceptibility, and mood swings that can accentuated with small proportion adversed events. Depression, anxiety, and stress, are psychological conditions than can affect the mother as well as the fetus in short and long term. The knowledge of the emotional changes of future mothers are important for health care professionals. It is essential to performe appropriate messures to avoided negative consequences.
Materials and methods: We performed across sections study including 254 pregnant women with non-pathological pregnancies followed in hospitals of Madrid. Two validates scales (Zung Depression Scale and Beck Anxiety Questionnaire) were used to assess anxiety and depression in the population studied.
Clinical cases and summary results:
Objetive: To assess psycho-emotional changes in pregnant women with non-pathological gestations.
Methods: We performed across sections study.
Including 254 pregnant women with non-pathological pregnancies followed in hospitals of Madrid.
Two validates scales (Zung Depression Scale and Beck Anxiety Questionnaire) were used to assess anxiety and depression in the population studied.
Results: 31,9% of pregnant women had symptoms of depression, and 19,3% presented anxiety disorders.
Self-esteem problems prior pregnancy planning, previous antidepressant treatments, family history of depression, changes in sleep patterns and lack of emotional support were risk factors for depression and anxiety
Conclusion: Psychoemotional, disords as anxiety and depression can be present during pregnancy. The evaluation of the emotional status of pregnant women is a pending activity for health care providers. It is very important to detect risk factor for psychological pathology in pregnat women to prevent adverse consequences

Keywords: Pregnancy, depression, anxiety, mood profile of pregnancy

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The effect of psychosocial stress on pregnancy and the further development of the offspring (the example of an experimental model)

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Introduction: There can be drawn a parallel between the psychosocial stress and the action of ultrasonic waves of variable frequencies (UWVF) on mice. It was proved, that the continuous presence of the UWVF on the animal model for 21 days leads to the development of a depressive-like state.
Materials and methods: The aim of our study was to investigate the effects of continuous action of ultrasonic waves of variable frequencies on the pregnant mices and the further development of the offspring. The experimental group of mouse dams underwent the continuous action of ultrasonic waves of variable frequencies during pregnancy (17 days). The control group was bred up in the standard conditions.
Clinical cases and summary results: During the pregnancy there was no difference in behavioral tests (open field test, social interactions test) between the control and the experimental groups of the pregnant mice. The evaluation of higher nervous activity and physiological parameters showed that psychosocial stress affects not only the social sphere, but also the somatic sphere of pregnant mice. After the dams had given birth, they were isolated from the ultrasonic waves. In the experimental group it was recorded only one case of severe maternal aggression toward the offspring: one litter was completely eaten by the lactating dam at the age of 2 weeks. Young offspring were tested for behavioral deficits using three standardized behavioral assays (open field, forced swimmed test, new object recognition test). The offspring showed no differences in the forced swim test as well as in the parameters in the open field - such as the travel distance, vertical activity, visits to the center. However, during the new object recognition test recognition index was found to be decreased in the male offspring of the dams who were under ultrasound. The marked decline of the index was found in the group of males born from stressed mice ($p < 0.001$).
Conclusion: This fact may indicate that the changes caused by the psychosocial stress may have adverse impact on the further development of the offspring (its cognitive development).

Keywords: Stress, pregnancy, neuroendocrine regulation, ultrasound, cognitive disorders, animal model, mice

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Postpartum depression, mother-infant bonding and postpartum coping strategies in mothers of newborns admitted to the neonatal unit

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Introduction: One of the most stressful concerns for the mother is the health of her offspring, particularly when admission to the neonatal unit (NU) is needed after birth. The stress coping strategies (SCS) can determine the mother's adaptation and perception of stress, influencing the appearance of the postpartum depression (PPD) and the mother-infant bonding.
The objectives of the study were:

- To determine, at 6 weeks postpartum, the presence of PPD and mother-infant bonding disorders in a population of mothers whose infants were admitted to the NU in the first days after birth.
- To analyze the SCS and its correlation with PPD and bonding disorders.

Materials and methods: In a prospective study, mothers whose infants had been admitted to the NU after birth for a period longer than 24 hours were recruited. Those who accepted received by e-mail, at 6 weeks after delivery, a link to complete on line 3 validated questionnaires: the Edinburg Postnatal Depression Scale (Cox J et al, 1987) for PPD detection, the Parental Bonding Questionnaire (PBQ) (Bronckington et al, 2006) to evaluate the bonding disorders, and the Coping Strategies Questionnaire (Tobin et al, 1989) to evaluate the SCS to manage stress.
Clinical cases and summary results: A total of 155 mothers were recruited and accepted to participate during the newborns admission. From those, 68 (43,8%) completed the questionnaire on line at 6 weeks after delivery.

The prevalence of suspected PPD was 17,6%. None bonding disorder was found in the whole population. The model of multiple logistic lineal regression for the independent variable PPD, demonstrate five items that were related with coping strategies: problem solving, social support, self-criticism, cognitive restructuration and social isolation (Table 1). These five factors are responsible for the 40,8% of the outcome PPD.
Conclusion: The prevalence of PPD in mothers of newborns admitted to NU was similar than in general population. The mother-infant bonding was not affected, probably in relation to the practices of the NU, like kangoroo mother care, enhancing mothers to stay beside their infants, empowering them and inviting them to take an active role. Some SCS can explain a higher rate of PPD in the first 6 weeks. We suggest than the PPD could be prevented in mothers of sick babies.

Keywords: Bonding. Postpartum depression. Coping strategies

STRATEGY	ADAPTATIVE/DISADAPTATIVE	TYPE OF CORRELATION (Pearson)	INTERPRETATION
Problem solving	+	Inverse (-,474**)	More problem solving, less PPD
Social support	+	Inverse (-,289*)	More social support, less PPD
Self-criticism	-	Direct (,489**)	More self-criticism, more PPD
Cognitive restructuration	+	Inverse (-,408**)	More cognitive restructuration, less PPD
Social isolation	-	Direct (,429**)	More social isolation, more PPD

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Pregnancy and delivery after liver transplantation

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Presenter: **S. Stasenko**

Introduction: We present a case of a successful pregnancy and delivery in a 30-year-old liver transplant recipient who conceived spontaneously 2 years posttransplantation.
Clinical cases and summary results: The patient was diagnosed with Wilson disease when she was 15 years old . In 2001, she delivered a male infant weighing 3,500 g and 52 cm long, and in 2003 had a therapeutic abortion at 12 weeks' gestation for portal hypertension. She conceived spontaneously 2 years posttransplant. She was followed on an out-patient basis (12 clinical and 6 ultrasonographic examinations during pregnancy) and was admitted to the hospital for work-up at 22, 28, and 39 weeks' gestation. During pregnancy she was administered cyclosporine in a dosing regimen of first 150 mg 0, 150 mg, and then 150 mg, 0, 175 mg for immunosuppression. Cyclosporine whole-blood trough levels were monitored regularly, and were found to be within the normal therapeutic range. The results of all biochemical tests during pregnancy were normal, except the platelet count, ranging from 49 to 85 x109/L. Thrombocytopenia had been also present before pregnancy, probably as a consequence of spleen enlargement. Abdominal ultrasonography showed normal blood flow through the portal vein and other hepatic vessels, and an enlarged spleen 180x160 mm in size with a venous convolute in the hilus. Ultrasound of the fetus was normal, with fetal growth and development appropriate for gestational age. The patient was delivered of a male infant with a birth weight of 4,110 g and 52 cm in length, Apgar 10/10 by spontaneous vaginal delivery at 40 + 1 week of pregnancy.
Conclusion: Successful pregnancy after liver trasnsplantation is possible.The majority of pregnant liver recipients do not develop graft dysfunction, especially if they become pregnant when the graft function is stable. Every pregnancy in patients with previous transplantation should be closely monitored, offered multidisciplinary approach to pregnancy care, and accompanied by high compliance and motivation on the part of the pregnant patients.

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Psychopatological traits in pregnancy: the importance of an early screening

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Presenter: **L. Rinaldi**

Introduction: Pregnancy is a crucial event in a woman's life. It is a delicate time that can result in the development or onset of psychopathology. We conducted this study of pregnant women with no obvious psychiatric symptoms to investigate the presence of psychopathological traits, in order to demonstrate the importance of an early screening. Finding mental changes and their treatment during gestation allows the prevention of more serious diseases (Post-partum Depression and Puerperal Psychosis) or organic and mental diseases in the fetus.
Materials and methods: Our sample made up of 38 pregnant women (middle age 32.9 ± 5.61) recruited from the Department of Obstetrics and Gynaecology, Gemelli Hospital, Rome, between January and July 2014. Psychiatric assessment, socio-demographic, psychosocial and anamnestic variables were recorded on the basis of a psychiatric talk, a non-standardized questionnaire and a psychometric assessment: EDI (Eating Disorder Inventary), BSQ (Body Shape Questionnaire), ORTO-15 (Orthorexia), BDI (Beck Depression Inventory), SCL-90-R (Symptom Check List-90-Revised). Moreover we sistematically recorded anthropometric newborn data and any childbirth complications.
Clinical cases and summary results: 63% of the women had a pathological score, specially in BDI (31,6%) and in the subscale "maturity fear" in EDI (44,7%) emphasizing the evolutionary crisis presenting in this period. We detected elevated scores also in most of the subscales of SCL-90-R (somatization, depression, anxiety and sleep disorders). Correlation of Pearson highlights a statistically significant association between the BMI before pregnancy and the smoking status during pregnancy and some subscales in EDI, BSQ and SCL-90-R. They probably represent compensatory mechanisms to manage a new condition. We also observed that women with psychopathological traits who reported higher scores in SCL-90 had complications during childbirth, such as a slow descent of fetus and consequent an operative vaginal delivery. This underlines that maternal anxiety affects the course of pregnancy and childbirth, and consequently the physical and mental development of the child.
Conclusion: The presence of psychopathological traits, detected in our research, shows the importance of an early screening, as part of a multidisciplinary approach to the welfare of pregnant women, to allow psychological support and prevent the onset of post-natal diseases.

Keywords: Psychiatric disorders, pregnancy, early screening

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Schizophrenia and recurrent pregnancies outcomes (Case report)

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Presenter: **R.M. SIMA**

Introduction: Schizophrenia is among the most disabling and economically catastrophic medical disorders, ranked by the World Health Organization as one of the top ten illnesses contributing to the global burden of disease. Schizophrenia occurs throughout the world. The overall prevalence of schizophrenia approaches 1 percent. The incidence is about 1.5 per 10,000 people. Slightly more men are diagnosed with schizophrenia than women (on the order of 1.4:1), and women tend to be diagnosed later in life than men. There is also some indication that the prognosis is worse in men. Characteristics of schizophrenia typically include positive symptoms, such as hallucinations or delusions; disorganized speech; negative symptoms, such as a flat affect or poverty of speech.
Clinical cases and summary results: We present the case of 35 years of age woman who was admitted several times in our hospital. Her medical history revealed schizophrenia, but she refused the psychiatric treatment. We report this case because of the social, medical, economical and ethical issues. This patient had a normal vaginal delivery 3 years ago. The new-born was healthy and the mother abandoned him into the hospital. One year later she referred to our unit with a pregnancy at term without prenatal care. She had a breech vaginal delivery and the new-born was also abandoned. This year the same patient came into our hospital for abdominal pain. The ultrasound examination diagnosed a 14 weeks of gestation twin pregnancy. More accurate examination revealed that both fetuses present features suggestive for trisomy 21. The issue is that a genetic diagnosis cannot be performed because the public health insurance does not cover those tests. The question is: how to manage this situation? There are some ethical issues to be dealt with concerning the patient capacity to understand the condition of the fetuses and the outcome, who will support the burden that two babies with disabilities and special care needs implies, how to decide for a women that has no discernment.
Conclusion: The particularity of our case results from many aspects: the schizophrenia in pregnancy and a pregnancy with potentially complications. The medical history of the patient with two fetal abandons adds a new issue. There is a more important issue concerning the fact that there is no regulation that allow termination of pregnancy in such conditions.

MISCELLANEOUS – 001

Effects of maternal asthma on pregnancy, delivery and fetal outcomes: a retrospective cohort study

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Introduction: Asthma is a common problem around the world with a prevalence of 1–18%. This common disease could affects women during pregnancy too with different complications. This disease was known as the most common chronic problem during pregnancy. The aim of current study was to determine pregnancy, delivery and fetal outcomes of maternal asthma in a cohort of women.
Materials and methods: Using a retrospective cohort design data of 580 pregnant women were gathered form a large and teaching hospital in Tehran, Iran. The medical records of pregnant women who had attended to hospital between 2009 to 2011 was assessed. Pregnancy, delivery and fetal outcomes of maternal asthma as an exposure was evaluated. Data of delivery and fetal outcomes was gathered by observation and medical records of women. Multiple logistic regression and adjusted odds ratio (OR) was used to assess the independent effect of asthma on outcomes.
Clinical cases and summary results: 274 patients (47.2%) were asthmatic and 306 patients (52.8%) were non-asthmatic. Basic and demographic variables had a same distribution across two groups. Maternal asthma had an adjusted effect on gestational diabetes (OR=2.64), gestational hypertension (OR=3.79), cesarean delivery (OR

Table. Crude and adjusted odds ratios (OR) of maternal asthma as risk factors of pregnancy, delivery and fetal outcomes with 95% confidence interval (CI)

Maternal and fetal outcomes	Crude		Adjusted	
	OR	CI	OR	CI
Gestational diabetes mellitus [1]	2.35	1.32- 4.20	2.64	1.45- 4.78
Gestational hypertension	3.79	2.13- 6.75	3.79	2.10- 6.70
Abnormal vaginal bleeding [2]	4.28	1.82- 10.09	3.75	1.54- 9.10
Fetal death [3]	2.87	1.30- 6.37	1.53	0.57- 4.12
Preterm delivery [4]	2.14	1.43- 3.20	1.74	1.14- 2.65
PROM [5]	2.14	1.35- 3.38	2.17	1.36- 3.47
Cesarean section [6]	2.21	1.56- 3.12	2.08	1.43- 3.02
Low birth weight [7]	2.24	1.39- 3.62	1.78	1.07- 2.94
Being small for gestational age [8]	3.41	1.94- 6.00	2.86	1.46- 5.60

1. OR adjusted for age
2. OR adjusted for education, gestational diabetes and gestational age.
3. OR adjusted for PROM and gestational age.
4. OR adjusted for gestational hypertension, abnormal vaginal bleeding, PROM and age.
5. OR adjusted for preterm delivery.
6. OR adjusted for gestational hypertension, preterm delivery, low birth weight, small for gestational age and PROM.
7. OR adjusted for abnormal vaginal bleeding and gestational hypertension.
8. OR adjusted for gestational hypertension, preterm delivery and low birth weight.

= 2.68), small for gestational age (OR= 2.86), premature rupture of membrane (OR=2.18), preterm delivery (OR=1.74), abnormal vaginal bleeding (OR=3.75), and low birth weight (OR=1.78) significantly (p <0.05 for all associations).
Conclusion: Majority of pregnancy, delivery and fetal outcomes (just for fetal death, abortion, placenta previa and placenta abruption) were significantly associated with maternal asthma. The largest effect of maternal asthma was on gestational hypertension and abnormal vaginal bleeding respectively.

Keywords: Maternal asthma, fetal outcomes, delivery outcomes, pregnancy

008

Revisiting abo incompatibility as a risk factor for significant hyperbilirubinemia

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Introduction: ABO haemolytic disease is a major risk factor for hyperbilirubinemia requiring readmission. American Academy of Pediatrics and National Neonatology Forum of India recommends clinical and biochemical monitoring of these babies for hyperbilirubinemia, leading to prolonged hospitalization and economic burden. But, very few studies have compared bilirubin levels in neonates with and without ABO incompatibility setting.
Materials and Methods: This was an observational cohort study that included ≥34 weeks neonates, born to O positive mothers and having blood group 'A' or 'B' versus those with blood group 'O'(92 in each group). Direct Coombs' test was done with cord blood. Serum bilirubin, hematocrit, peripheral smear examination and reticulocyte count were done at 48 ± 2 hours of age. Serum bilirubin and hematocrit were repeated at 96 ± 2hours. Primary objective was to compare mean serum bilirubin levels at 48 and 96 hours of age between neonates with and without ABO incompatibility setting. Secondary objectives were to compare hematocrit, Coombs positivity, reticulocyte count, peripheral smear findings, and number of babies requiring phototherapy and exchange transfusion in these groups.
Clinical cases and summary results: Mean Serum bilirubin levels in both groups at 48hours (11.48 ± 4.29 versus 10.37 ± 3.45; p value 0.054) and 96 hours (11.40 ± 3.87 versus 10.52 ± 3.50, p value 0.106) were comparable (Table 1). Mean hematocrit levels were also comparable. Mean reticulocyte count of babies with ABO incompatibility was significantly higher (3.56 ± 1.20 versus 2.70 ± 1.10; p value <0.01). Direct Coombs' test was positive in two babies who underwent exchange transfusion.
Conclusion: As there is no increased risk of hyperbilirubinemia in neonates with ABO incompatibility setting, policies regarding prolonged hospitalization of these neonates need to be revised to promote early discharge.

Keywords: ABO incompatibility, hyperbilirubinemia

	Serum bilirubin (mg/dL)(Mean ± SD)	
Groups	48 hours	96 hours
Group 1(N=92)	11.48 ± 4.29	11.40 ± 3.87
Group 2(N=92)	10.37 ± 3.45	10.52 ± 3.50
p value	0.054	0.106

031 (CASE REPORT)

Neonatal bradycardia and transient QTC

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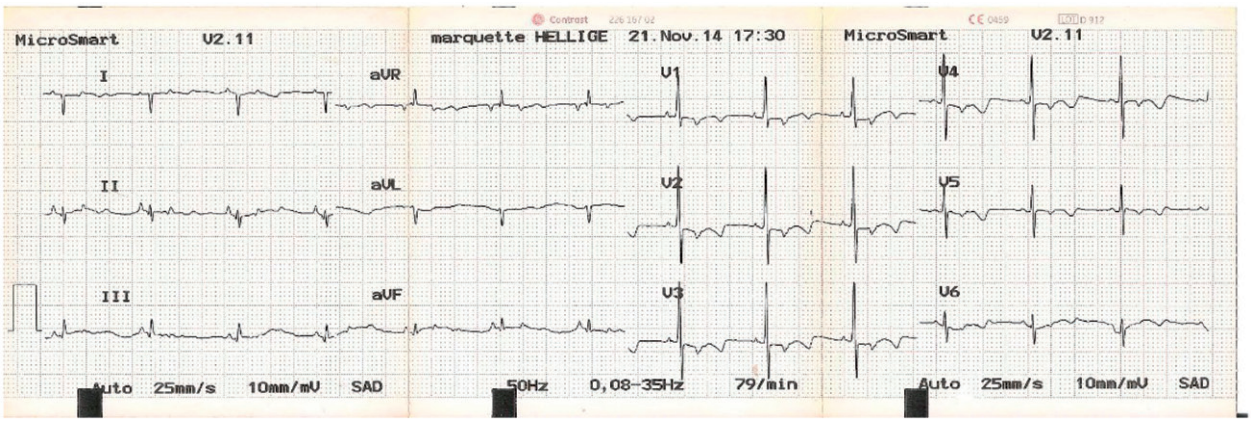
Introduction: A male full-term neonate of one day of age was admitted to NICU with bradycardia. He was born by cesarean section for poor variability of fetal heart tones and nonprogression of labor. Apgar 8/9. Parents were healthy. There is no a family history of long QT syndrome.
Clinical cases and summary results: *Physical Examination*: T°C.: 36,9 °C RR, 82/min HR, 44 bpm BP: 77/41 mmHg TAM: 41 mmHg SpO2:96% in room air. *Weight*: 3.335g length:46 cms head circunferance: 36 cms. On physical examination, the baby was awake, crying, and vigorous. There were no dysmorphic facial features.There were mild intercostal retractions, but the lungs were clear to auscultation. The heart rate was bradycardic with strong pulses. The remainder of the examination was normal.
Diagnostic Studies: A completed blood count revealed 11.000 WBCs/mm3 (37% segmented neutrophils, 48% lumphocytes, 10% monocytes) hemoglobin, 15.5 mg/dl and platelets, 225.000 mm3.Serum chemistry values included sodium, 144 mmol/L; calcium 8,5 mg/dL, Serum alanine and aspartate amonitranferases were normal. Troponine was 74.03 ng/L. TSH: 12.57 uU/mL, T4: 2,52 ng/dL. Anti Ro/SSA) 2.8 u/mL, Anti La (SSB) 2.8 U/mL. ANA: negative. Chest X -ray was normal. The ECG recordings had a long QT interval (QTC= 0.5 seconds) in the setting of a second degree AV block. Echocardiography showed an anatomy and fuction normal. Genetic testing was normal. His parents were under study but theirs ECG were also normal.
Treatment: The baby was treated at 5 days of age with beta-blocking (propanolol 3mg/Kg/d) . He didn't need insert a pacemarker and are doing well at home with apnea monitor.
Discussion: It is important to recognize prolonged QT-interval because it is a potentially lethal condition, implicated in the pathogenesis of sudden infant death syndrome in approximately 10%. The diagnosis of prolonged Qtc is based on clinical history, ECG findings and family history.
Conclusion: Prolongation of the QT interval in neonates may be transient or may represent an early form of the long QT syndrome and the length of the QT interval may provide data on prognosis: those with a Qtc less than 0.50 second returned to normal; those with a QTC greater than 0.60 second were associated with severe arrhytnmias. He is controlled for sinus dysfunction and atrial extrasystole

Keywords: Bradycardia, transient QTC



047

Our experience with gestational diabetes after implementation of IADPSG criteria

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Introduction: The growing incidence of obesity and carbohydrates metabolic disorders represents a special problem in pregnant women and influences gestational diabetes incidence. The aim of this retrospective study is to evaluate the type and frequency of GD complications after implementation of new diagnostic criteria for gestational diabetes at our department.
Materials and Methods: We compared our experiences in 2005, 2006 and 2007 when we used World Health Organization criteria for GD with results in 2012, 2013 and 2014 when we diagnosed gestational diabetes according to the IADPSG criteria. Results were statistically analyzed by SPSS 15.0 for Windows, T-test and Chi-square test.
Clinical cases and summary results: We have found significant diference in birth weight between all studied years (F=4.151, df=6/1851 p<0.01) and significant diference between 2005-2007 group and 2012-2014 group (t=2.18, df=1639, p=0.03). There was no significant diference in mode of delivery between years (χ^2=9.65, df=6, p=0.140) and two diagnostic criteria groups (χ^2=0.048, df=1, p=0.826). We have found significant diference in number of hypertrophies between all studied years (χ^2=28.10, df=6, p<0.01) and between two diagnostic criteria groups (χ^2=20.590, df=1, p<0.01). Chi-square test showed that there is a significant difference in incidence of gestational diabetes between 2011, 2012, 2013 and 2014 (χ^2=377.03, df=3, p<0.01).
Conclusion: Significant differences is found in incidence of hypertrophy and newborns overweight, whereas no difference in the mode of delivery is found in studied groups. Recorded increase in the incidence of gestational diabetes is repercussion of better diagnostic. An early detection and treatment of GD has reduced the adverse consequences for both mother and newborn.

Keywords: Gestational diabetes, IADPSG criteria, hypertrophy, mode of delivery

055

Trends in incidence rates of large size at birth, Brazil, 2001-2013

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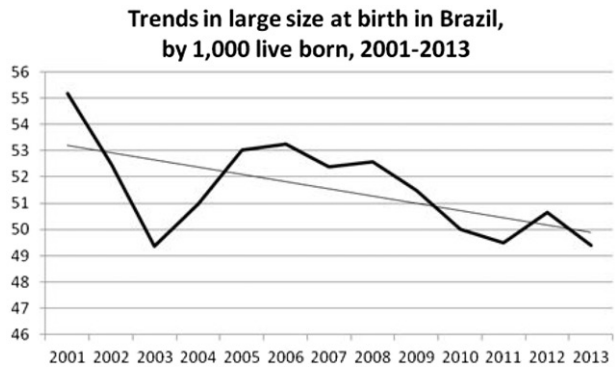
Introduction: Birth weight at delivery ≥4000 g is associated with immediate adverse outcomes for babies and mothers, including dystocias, fractures, injuries, intensive care hospitalizations and surgical interventions. Later, these babies have a higher risk of developing obesity, type 2 diabetes and other chronic diseases. This study aimed to estimate incidence rates of babies with birth weight of 4000 g or more and analyze trends from 2001 to 2013, in Brazil, by using time series model.
Materials and methods: In Brazil, DATASUS - Department of Informatics of the Unified Health System - is the official source about all Brazilian live births. The data are provided by SINASC (Live Births Information System) and was consulted for getting total of live births, considering all gestational ages and 37 or more gestational weeks, occurred from 2001 to 2013. Microsoft Excel Program was used to calculate rates and produce trend graphic for all gestational ages and to full-term births. Time series were analyzed using Prais-Winsten auto-regression. The Annual Percent Changing - APC and 95% Confidence Interval (CI) were estimated using logarithmic transformation of rates and STATA Statistical Package
Clinical cases and summary results: On these 13 years, 38 343 116 babies were born alive in Brazil, being 1 977 745 with birth weight of 4000 g or more. The average annual incidence rate of large babies was 55.6 by 1000 live born. The higher rate occurred in 2001 (55.2 by 1000 live born) and the lower rate occurred in 2003 and 2013 (49.4 by 1000 live born). The visual inspection of plotted data shows a decreased trend from 2005 to 2013 (Image). The Annual Percent Changing (APC) was of 0.62% with 95% confidence interval stastistically significative (−1.218%, −0.009%). The analizes of babies born with gestational age ≥37 weeks (1 919 987 out of 34 833 194 live born) showed the average annual incidence rate of 55.1 by 1000 and reducing trends of large size at birth, but APC (−0.43%, 95% CI: −0.97%, 0.11%) was not stastistically significant.
Conclusion: Although the analysis of all newborns shows a significant decrease of large size at birth rates, data restricted to full-term births were not statistically significant. These findings suggest a non-optimal

prenatal care in Brazil with a higher risk of perinatal complications and of development of disease related to large size at birth.

Keywords: Fetal macrosomia, time series studies, prenatal care



086

Detection of a universal fetal DNA marker RASSF1A by RT-PCR: reassurance to NIPD

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Introduction: Noninvasive prenatal diagnosis (NIPD) using cell-free fetal DNA (cffDNA) from maternal plasma is routinely performed to detect alloimmunization and fetal aneuploidies in women. The necessity of a control or a fetal marker for extraction of cffDNA is imperative for NIPD. This study was taken to facilitate a modified protocol to detect fetal DNA marker RASSF1A using a real-time polymerase chain reaction (rt-PCR).
Materials and methods: Maternal plasma samples from pregnant women (n=30, mean gestational age 18 ± 2 weeks) were collected for the isolation of cffDNA. From 200 μl of plasma, cffDNA was extracted using QIAamp DNA Blood Mini Kit. Samples were analyzed in triplicate with no digestion, a methylation-sensitive digestion, and a methylation insensitive-digestion, and then subjected to real-time PCR analysis of RASSF1A.
Clinical cases and summary results: RASSF1A was detectable in all undigested samples (100%) demonstrating that total cffDNA had been extracted successfully. For the methylation-sensitive digest, 2 (6.6%) samples had no detectable hypermethylated RASSF1A, indicating no cffDNA in the sample and 28 (93.3%) had one or more replicates positive for RASSF1A indicating the presence of a cffDNA in the sample. For the methylation-insensitive digest, 28 samples (93.3%) were negative for RASSF1A indicating complete restriction digestion and 2 samples (6.6%) had 1 replicate positive for RASSF1A indicating that restriction digestion was incomplete.
Conclusion: This modified rt-PCR assay for RASSF1A could be valuable for NIPD, for use as a universal fetal DNA marker.

Keywords: Cell-free Fetal DNA, noninvasive prenatal diagnosis, real-time polymerase chain reaction, plasma

095

Effect of two different bathing methods on crying duration and physiological measurements in newborns

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Introduction: Bathing the newborn is an important part of nursing interventions in terms of hygienic, aesthetic, socio-cultural and personal benefits. Today, the results of several studies relating to the newborn bath time and method are being discussed. The temporal and procedural mistakes in bathing may adversely affect newborns' physiologic-autonomic signs such as body temperature, oxygen saturation and heart rate (HR). This study was designed as randomised controlled, experimentally to determine the effects of swaddle bathing (SB) and tub bathing (TB) applications on crying time and physiological measurements (body temperature, Oxygen saturation, HR) of newborns.
Materials and methods: The population of the study consisted of newborns who were born on 38 weeks of gestation and met the sampling criteria in İstanbul University Cerrahpasa Faculty of Medicine Hospital between June and August 2015. The sample group consisted of 80 newborns (40 SB group and 40 TB group) by using randomized controlled method. Newborns' body temperature, HR, Oxygen saturation and crying duration were compared between both groups at before, immediately after and 10 minutes after bath.
Clinical cases and summary results: As a result of the study, it was determined that there was significant difference within-group and between groups when the vital signs were evaluated in the immediately after and 10 minutes after bath ($p<0.05$). Crying time were evaluated, there was found statistically significant difference between the groups in the advanced level ($p<0.001$).
Conclusion: It was found that both bath methods had decrease on body temperature and that the SB method affected crying time, oxygen saturation and heart rate of infants compared to TB and thus caused infants to relax.

Keywords: Newborn, bath, swaddle, physiological measurements, crying

096 (CASE REPORT)

Uterine vascular malformations after pregnancy

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Introduction: We have three recent cases of patients with heavy blood loss after a pregnancy, due to an uterine vascular malformation. We describe their clinical pattern, diagnosis en therapy.
Clinical cases and summary results: We describe a 'real' arterioveneus malformation with succesful embolisation. There is also a case with pseudo-aneurysm with spontanous resolution and a intramural myoma that presents as a arterioveneus malformation.
Conclusion: Uterine vascular malformations are abnormal hypervascular regions in the endometrium, with the presence of turbulent

flow. There is a low prevalence and the clinical presentation can be variable. There is an congenital etiology (embyronic) or it can be acquired after an uterine trauma. Making a diagnose and the differentiation is often hard. The need and the way of treatment depends on the clinical presentation but also on the underlying pathofysiology. The purpose of reviewing those three case-reports is to give an overview of uterine vascular malformations after a pregnancy, their possible presentations and the need for treatment, with implication in the clinical practices.

Keywords: Uterine vascular malformations

135 (CASE REPORT)

Delivery and postpartum management of a patient with pompe disease, case report and review of the literature

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Introduction: Pompe disease (PD) is an autosomal-recessive disorder caused by acid alpha-glucosidase deficiency due to mutations in the GAA gene. Adult patients are affected by limb-girdle muscular weakness and respiratory insufficiency. There is a little knowledge about pregnant women with PD. These patients should be considered as high risk pregnancies.Herein we present postpartum hemmorhage management of a cesarean delivery of a patient with PD who choose to interrupt enzyme replacement therapy during pregnancy.
Clinical cases and summary results: A 38-year-old primiparous woman at week 38 of gestation was admitted to our department for delivery. She only had motor deficiency on her proximal leg muscles. After the diagnosis of PD, enzyme replacement therapy (ERT) was initiated. Pregnancy was uncomplicated and fetus was appropriate for gestational age. The patient discontinued ERT at the very beginning of her pregnancy because of fear of any adverse fetal effects. At 38 5 weeks, elective cesarean section was performed under regional anesthesia because it was risky as the patient might not be able to be extubated due to limited diaphragmatic and intercostal muscle strength. As glycogen may be stored in the myometrium and impede with its ability to contract, it was considered of utmost importance to follow up vaginal bleeding and vital signs. In order to prevent postpartum hemorrhage, oxytocin infusion at a rate of 100 mU/min was given for 16 hours continuously. Methylergonovine was prescribed 0.2 mg IM three times a day and after 24 hours 0.125 mg orally every 8 hours for the next 3 days. Preoperative Hb was 12.8 gr/dL and decreased to 10.4 gr/dL 6 hours postpartum. Patient was admitted to the ICU for 12 hours postpartum. The following 3 days were uneventful until discharge at the same day.
Conclusion: In our quite uncomplicated case of pregnancy in a patient with a diagnosis of PD, we aimed to stress out postpartum management with all preventive measures needed to be taken to avoid the possibility of uterine bleeding and postoperative infection. Although anticoagulation medication had not been used in our patient due to early ambulation, the tendency of increased intravascular coagulation in these immobilized patients should be taken into consideration. We did not observe any postoperative complications with this approach.

Keywords: Pompe disease, cesaerean section, postpartum managment

165 (CASE REPORT)

Antenatal Bartter syndrome: a case report

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Introduction: Antenatal Bartter syndrome is a rare autosomic recessive tubulopathy (1/100 000 births) characterized by idiopathic hydramnios in mother leading to premature delivery, and elevated levels of amniotic chloride. Postnatally newborns suffer from recurrent episodes of severe dehydration and electrolyte imbalance which can lead to fatal outcome.
Clinical cases and summary results:: A six-month-old female was admitted in our intensive care unit for dehydration and staturo-ponderal delay. She was the second child of third degree consanguineous parents. In family history there is a maternal niece treated for a Bartter syndrome with deafness. Pregnancy was complicated by hydramnios at 26 WG. The patient was born at the term of 36WG by vaginal delivery. Physical examination showed poor weight gain (1500g for 6 months), cranial circumference 30000 mIU/L). A bilateral sensorineural hearing loss at 70 DB was detected, Molecular biology is ongoing (mother and child). The patient received intravenous fluid replacement at 200 ml/kg/day with hypokalemia correction, ibuprofen at the dose of 30 mg/kg/day and Aldactone dose 2 mg/kg/day. Actually, she is 9 months old the last biological test was correct and she had a good weight gain.
Conclusion: Antenatal Bartter syndrome is characterized by severe polyhydramnios in mother leading to premature delivery. This premature newborn had severe manifestations of polyuria, recurrent dehydration, and electrolyte derangements. Antenatal diagnosis is possible by amniocentesis and should be performed for heterozygous mother's or those who already have an affected child.

Keywords: Bartter syndrome, polyhydramnios, hypokalemia

166 (CASE REPORT)

Hypercalcemia induced by hypersensitivity to vitamin D: a neonatal case

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Introduction: Vitamin D supplementation for the prevention of rickets is one of the oldest and most effective prophylactic measures in pediatrics. Idiopathic infantile hypercalcemia (OMIM#143880) or Hypercalcemia induced by hypersensitivity to vitamin D is rare, and can be fatal. Clinical manifestation is characterized by failure to thrive, vomiting, dehydration, and nephrocalcinosis.

Clinical cases and summary results: A twenty four-days-old male was admitted for severe dehydration. He was born by cesarean section for preeclampsia at 34 WG and was hospitalized in our unit for 10 days. The newborn received a single dose of 200 000 IU of vitamin D3 (VitD3 BON©) for 6 month by 15 days of age. He was asymptomatic until 22 days old when he developed hypotonia and vomiting. Physical examination showed a severe dehydration, hypotonia and hypotension. Laboratory tests showed a major hypercalcemia (4.70 mmol/l) with high urinary calcium (Cau/creat.U >0.3)and low phosphoremia (1.51 mmol/l), PTH was at 5 pg/ml, high vitamin D3 at 29.720 nmol/L, and 1,25-dihydroxyvitamin D3 at 442 pmol/l. Abdominal ultrasound showed bilateral nephrocalcinosis grade III. Our patient received an intravenous hydration, and corticosteroids (Hydrocortisone 3mg/kg/day) to control hypercalcemia. Outcome was good: normalization of serum calcium, urinary calcium level regress and the baby has progressive weight catch. To confirm genetic involvement we underwent a molecular analysis of CYP24A1 gene.
Conclusion: Hypersensitivity to Vitamin D is a rare disease that can be life threatening and require urgent and appropriate care. Selective occurrence of toxic effects in some individuals can be explained by a genetic sensitivity to intrinsic vitamin D.

Keywords: Neonatal hypercalcemia, dehydration, hypersensitivity *to* vitamin *D*

175

Course of chronic idiopathic leukocytosis in pregnancy

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Introduction: Showing a progressive increase during pregnancy, peripheral leukocyte count may rise up to 20.000 - 30.000/mm3 at birth. It has been demonstrated that the increase in leukocyte count may be associated with increased estrogen and cortisol levels and a ''leukocyte activation'' occurs due to the phenotypic and metabolic changes in leukocytes. We intended to show in this case report the antepartum and postpartum outcomes of a pregnant lady with chronic idiopathic leukocytosis.
Materials and methods: A G2P1 patient who had been diagnosed with high WBC for a period of approximately 15 years was referred to our hospital due to a WBC of 35*10.e3/ml at gestational week 30.The peripheral smear perform showed that the leukocyte percentage distribution was within normal limits. In the flow cytometry that was carried out to exclude Chronic Lymphocytic Leukemia (CLL), there was no finding compatible with that condition. The result of the Ph chromosome analysis was reported to be normal.
Clinical cases and summary results: The patient was diagnosed with idiopathic leukocytosis. Until the genetic analysis was reported we started a LMWH therapy. At gestational week 39, she was administered a cesarean delivery. The JAK2 V617F gene mutation analysis, turned out to be negative, bone marrow aspiration and biopsy examination were proposed. The patient did not give permission. The patient's WBC was 12*10.e3/ml at postpartum week 6 and 14.8*10.e3/ml at postpartum week 8.
Conclusion: Our aim here was to evaluate the antepartum and postpartum results of a pregnant woman with chronic idiopathic leukocytosis in pregnancy where the immune function exhibits changes. We think that when the results of the two pregnancies are examined in this rarely seen case.

Keywords: Leukocytosis, white blood count, low molecule weight heparin

201

Pregnancies and deliveries in migrant women: the experience in an Italian region

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Introduction: The social disadvantage of immigrant women and the difficulties of access to services result in worse outcomes in terms of health, so the aim of this study is to evaluate the access to services and maternal-child health of immigrant women in Umbria.
Materials and methods: The data was obtained from a population based study using routine maternity discharge data. This study consists of 7310 women who delivered in Umbria, an Italian Region, during 2014. Indicators such as access to services during pregnancy (WHO indicators as first visit and visit's number, ecograph's number and invasive prenatal diagnosis), Pomi indicator (presence of trusted person), mode of delivery and neonatal outcomes (duration of pregnancy, birth weight, need of intensive care and stillbirth) in relation to citizenship's mother are studied. Logistic regression models were used to analyse the magnitude of citizenship's mother with respect to indicators.
Clinical cases and summary results: - 23% of childbirths is represented by foreign women (over 50% of which come from Romania, Albania and Morocco) and the fertility rate (the average number of children per woman) among foreign residents is 1.63 against 1.27 of Italian residents - the average age at delivery is 32.7 for Italian residents, while it is 29.1 for foreigners and the frequency of mothers aged more than 35 is higher among Italian women (37.7% versus 16.5%), the percentage of multiparous mothers is higher among foreign women than Italian ones (46.1% versus 35.8%). It also highlights, in women with foreign citizenship compared to italian women, the critical points in the Table1.
Conclusion: The maternal and child health is one of the most critical areas for which many have stressed the importance of accessibility to social and health services which is largely conditioned by the information and knowledge that foreigners receive and by the quality of relationships with health and social service workers.

Keywords: Immigrant women, access to services, maternal-child health

Table 1: Pregnancies and deliveries in migrant women: the experience in an Italian region.

INDICATORS	MIGRANT (%)	ITALIAN (%)	MIGRANT vs. ITALIAN (OR)
LATE MAKING PREGNANT CONTROLS	11,5%	3,8%	(OR 3,36; 2,72<IC<4,14)
NUMBER OF CONTROLS (≤4)	9,9%	2,75%	(OR 3,95; 3,17<IC<4,94)
EXECUTION OF MORE THAN 4 ECHOGRAPHIES	52,0%	82,3%	(OR 4,77; 4,20<IC<5,39)
INVASIVE PRENATAL DIAGNOSIS IN WOMEN UNDER 35	4,3%	16,1%	(OR 4,27; 3,01<IC<6,05)
INVASIVE PRENATAL DIAGNOSIS IN WOMEN OVER 35	26,0%	53,2%	(OR 3,23; 2,68<IC<3,90)
CESAREAN SECTION (ESPECIALLY IN ELECTION)	27,8%	32,3%	(OR 1,26; 1,12<IC<1,43)
PRESENCE OF A TRUSTED PERSON AT CHILDBIRTH	83,4%	93,4%	(OR 2,79; 2,26<IC<3,43)
PRETERM DELIVERY	7,2%	7,4%	----
WEIGHT LESS THAN 2500GR	5,2%	6,8%	---
NEED FOR INTENSIVE CARE	1,9%	1,5%	---
STILLBIRTH	4,71x1000	3,36x1000	(OR 5,37; 1,83<IC<15,7)

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Hyperemesis gravidarum affects maternal sanity, thyroid hormones and fetal health: a prospective case control study

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Introduction: Hyperemesis gravidarum (HG) is a condition of severe nausea or vomiting accompanied by various complications during pregnancy. In the present study, we aimed to demonstrate the effects of HG on mother and fetus health
Materials and methods: Control and case group were arranged from 50 healthy pregnant women and 50 pregnant women with HG.Information about the participant women was gathered with data collection form and Beck's Depression Inventory (BDI) and State Anxiety Inventory (SAI) were administered to the women. Following an abortion or delivery, the data about birth complications and neonatal health were collected. All laboratory results (blood count, thyroid hormones, electrolyte values and biochemical parameters) were gathered from the laboratory information system used in the hospital.
Clinical cases and summary results: It was found that in the case group, mean postpartum weight, serum hemoglobin, hematocrit and thyroid stimulant hormone levels were lower than control group (p <0.01). Conversely, case group women have higher T3 and T4 levels than control group (p <0.01). There was no significant difference between the two groups in terms of intrauterine growth retardation, low birth weight and abortion but it was observed that women with HG had often delivered prematurely. The mean scores of BDI and SAI in the case group were higher than those of control group.
Conclusion: These results suggested that HG may have adverse effects on both mother and baby's health. Pregnant women with HG should be provided with training and consultancy services and be closely monitored in terms of anemia and thyroid hormones.
(This study was publicated in Archives of Gynecology and Obstetrics at August 2015, Volume 292, Issue 2, pp 307-312)

Keywords: Hyperemesis gravidarum, maternal sanity, fetal health

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Relationship between antenatal factors and the birth outcome in Korean women

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Introduction: The birth outcomes could be influenced by the many factors during the pregnancy. In Korea, the trends have been shown that increasing the numbers of the women with high risk pregnancy and antenatal depression. This study aimed to identify the role of the women's characteristics during the pregnancy including the pre-pregnancy affecting the birth outcome among the Korean mothers.
Materials and methods: The participants were 255 pregnant women who were followed in a prospective study. Of these, 197 cases were examined included birth weight, AFGAR scores at 5 minutes, premature contraction, complication of labor, delivery types and laboratory data for dependent variables. The independent variables were that age, BMI, income level, education, antenatal depression, and high risk pregnancy. The relationships between the dependent and independent variables were analysed using Relative Risk and Adjusted Logistic regression with SPSS/Win.
Clinical cases and summary results: level of antenatal depression was associated with low birth weight (x2=7.69, p=.010) and high risk

pregnancy was a predictor of low birth weight (OR=6.98[1.21-40.30]) and baby's weight (OR=2.12,[1.05-4.28]). Prepregnancy body mass index (BMI) was a predictor of complications in labors (OR=3.59[1.03-12.48]).
Conclusion: Women with antenatal depression, high risk pregnancy, prepregnancy BMI more than 23 kg/M2 shuld be carefully monitored and managed to ensure favorable birth outcomes.

Keywords: Depression, low birth weight, pregnant women

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Perception of the human papillomavirus and the willingness to prevent HPV infection of the boys

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Introduction: The rate of HPV vaccination is low and formal education for HPV prevention is not provided to Korean students. This study explored the perception of HPV and the willingness to prevent HPV infection of Korean boys.
Materials and methods: This study explored the perception of HPV and the willingness to prevent HPV infection of Korean boys. The survey design involved 615 Korean boys. Measurements were the levels of the perception of the severity of HPV as a sexually transmitted infection (STI) and as a cause of cancer, and their willingness to prevent HPV infection using at least one of four methods toward the boys and the girls.
Clinical cases and summary results: HPV as an STI in boys ($p < 0.05$) and as a cause of cervical cancer ($p < 0.05$) were associated with minimizing the number of sexual partners toward the boy. Whereas, HPV as a cause of cervical cancer was associated with condom use ($p < 0.05$), delaying sexual activity ($p < 0.05$), and minimizing the number of sexual partners ($p < 0.05$) and HPV as an STI in boys ($p < 0.01$) were associated with minimizing the number of sexual partners toward the girl.
Conclusion: Extending the perception of HPV to the girls could increase the willingness of boys to prevent HPV infection. Boys should be made more aware that HPV causes cervical cancer and is a common STI in both sexes.

251 (CASE REPORT)

A curious case of neonatal hyperparathyroidism: what causes it?

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Introduction: The neonatal hyperparathyroidism secondary to maternal hypoparathyroidism is a rare condition. When the maternal hypoparathyroidism is not diagnosed during pregnancy, it produces hypocalcemia in the fetus, which is considered the stimulus to increase production of fetal parathyroid hormone (PTH).
Clinical cases and summary results: Maternal hypothyroidism treated with levothyroxine 25mcg. Vaginal delivery at 36 weeks. At birth, the newborn presents generalized hypotonia and respiratory depression, requiring IPPV. Apgar 5/7. Weight 2400gr (−2 SD), height 45cm (−2 SD). Hés admitted in the Neonatal Unit for distress and study of symmetrical intrauterine growth restriction. During the first hours, the newborn presents respiratory distress and tachypnea (90rpm), weak cry, yellowing. Associated dysmorphic features: narrow and elongated thorax, axial hypotonia, intense craniotabes, small petechiae, narrow palate and face and trunk, so we initiated a study of syndromic pathology. During the first days, the respiratory distress persists, he needs respiratory support, improving gradually and allowing its removal week prior to discharge. Analytical study shows:phosphorus 2.8mg/dL (low), calcium ion 6.02mg/dl and very high levels of PTH 1766pgmL,so that neonatal hyperparathyroidism is suspected. During admission, PTH levels down to normal in the third week,like the serum calcium and phosphoremia. In the extension study, we request a radiological bone series, and we watch a hypoplastic thorax, short ribs with dysplastic aspect, widespread demineralization, shortening and bowing of femur, humerus, radius and ulna. Suspecting neonatal hyperparathyroidism and as extension study thereof, asymptomatic maternal hypoparathyroidism is diagnosed so far, with PTH 10.1pg/mL, Ca ion 4.38mg/dL, phosphorus 4.6mg/dL, FA 149U/L.
Conclusion: The patient had diffuse bone disease at birth and severe hypotonia. The diagnosis of neonatal hyperparathyroidism was made based on an increase in serum PTH in association with radiological abnormalities. The transience of the disease is reflected in the resolution of laboratory abnormalities at month of life, and bone lesions at six months. He received treatment with vitamin D 400U / I day for the first 6 months of life.

Keywords: Neonatal hyperparathyroidism, maternal hypoparathyroidism, fetal hypocalcemia, parathyroid hormone

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Ambiguous external genitalia: what might be the reason?

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Introduction: Presence of ambiguous genitalia involves a birth defect where the external appearance of the external genitalia is not characteristic of the newborn. The are differents causes: decreased production of fetal androgen, decreased or absent androgen in men, primary defect in the development of the external genitalia in males by non-hormonal problems, or partially masculinized genitals due to fetal exposure XX response androgen in utero (congenital adrenal hyperplasia or origin of the mother). Triying to discover the cause we use the clinical history, physical examination and additional tests.
Clinical cases and summary results: Our cause is about a newborn who presented bifid scrotum with testes in bags and peneanoescrotal hypospadias with micropenis, the remaining normal scan. Personal Background: Prematurity 35 + 1 weeks dichorionic twin gestation second diamniotic by in vitro fertilization. Cesarean section for breech position. negative serologies. Apgar 9/10. Birth weight: 1610 gr. In abdominal and testicular ultrasound could be seen in bags and normal morphology, thickened scrotal hydrocele covered. karyotype, blood count, blood gas and biochemical hormone was requested. Blood gases and electrolytes were within normal limits, the presence

of very high levels of Androstenedione (>10 ng / ml) and Hormone antimulleriana (>150 ng / ml), with other hormones in the normal range (testosterone, dihydrotestosterone, 17O Hprogesterona , LH, FSH, DHEA-S, Estradiol 17B, basal Cortisol (11 deoxycortisol). Karyotype 46 XY. With that hormone levels and presentation he was diagnosed of a probable partial androgen insensitivity syndrome (PAIS). Pending the genetic results for gene mutation in the AR (androgen receptor), responsible for 20% of these cases. The baby was delivered to sugery unit to monitorised and repair hypospadias and orchidopexy made in the first year of life, after weekly treatment with B-HCG intramuscular.
Conclusion: In most cases of ambiguous genitalia, the differential diagnosis is difficult, given the wide variety in both:the symptoms and the underlying causes. PAIS is a disorder of sexual development, with an unknown prevalence characterized by abnormal genital development in a 46XY child with normal development of the testes and partial sensitivity (generally resistance) to the appropriate levels of androgens for age, presenting highly variable needs genital appearance and sometimes corrective surgery.

Keywords: Ambiguous external genitalia, PAIS, disorder of sexual development

257 (CASE REPORT)

Ellis-van Creveld syndrome: case report

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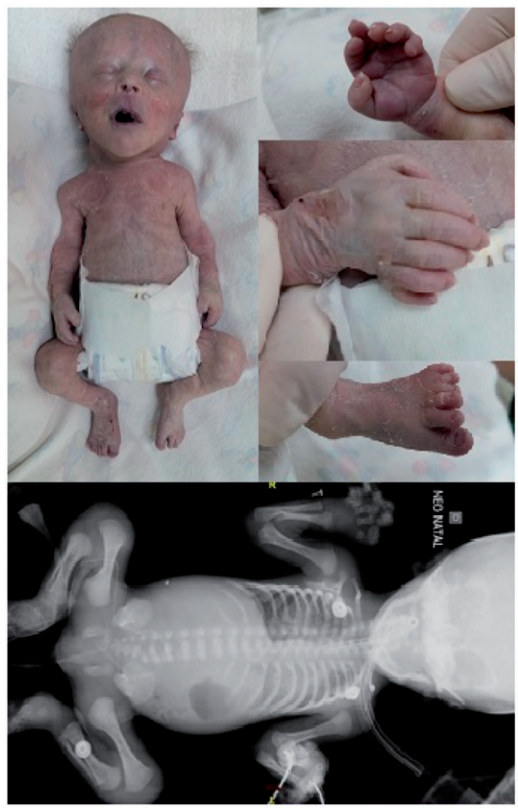
Introduction: Ellis-van Creveld syndrome (EVC) is a rare syndrome characterized by short limbs and short ribs, postaxial polydactyly, dysplastic hair, nails and teeth, and congenital heart defects. It was first described in 1940 and, until the present, about 200 cases have been reported. Its prevalence is between 1 in 60,000 to 200,000 newborns. Two genes in chromosome 4p16 have been found to be related to this syndrome. It can be a fatal condition prominently due to cardiac defects, although some individuals can reach adulthood bearing mental and sexual delays. The diagnosis is essentially based on clinical features but radiologic and cardiologic evaluation can be helpful on the screening of complications. Genetic study may also be performed in order to provide genetic counseling to the families.
Clinical cases and summary results: A girl was born at 35 weeks of pregnancy from a 32-year-old mother with two previous stillborns and no living children. The mother had no previous morbidities but developed gestational hypertension. No family history was reported. Prenatal ultrasound revealed polyhydramnios, fetal growth restriction, polydactyly in hands and feet, intraventricular communication and possible absence of right kidney. The baby was non-vigorous at birth, requiring tracheal intubation at birth room. Apgar score was 2, 6 and 7 at first, fifth and tenth minutes. At physical examination: rare, brittle hypochromic hair, small, dysplastic nails, enlarged nose, short limbs, type III postaxial polydactyly in both hands and both feet, incomplete syndactyly of left 2nd-3rd toes and right 3rd-4th toes, narrow thorax with short ribs and prominent hypoventilation, lower attachment of upper labial frenum. Echocardiography confirmed intraventricular communication, persistent ductus arteriosus and primary pulmonary hypertension (PPH). Abdominal ultrasound showed hypoplastic right kidney. The newborn had PPH related complications such as refractory cardiogenic shock and severe hypoxemia, with fatal evolution at 19th day.
Conclusion: EVC is a rare dysplastic syndrome caused by mutations in the chromosome 4p16. Its diagnosis is clinical but complementary exams may be necessary for a comprehensive evaluation. Its fatal cases are usually secondary to cardiac defects. Prenatal suspicion and postnatal confirmation are essential for family follow-up and genetic counseling.

Keywords: Ellis-van Creveld syndrome, chondroectodermal dysplasia, newborn, mutation, prenatal diagnosis



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Maternal quality of life in routine labor epidural analgesia versus labor analgesia on request, results of a randomized trial

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Introduction: Maternal quality of life (QOL) is complex, multidimensional, and may be affected by many factors, including childbirth. The maternal QOL has been increasingly recognized as an important outcome measure for the evaluation of medical practice. Women's

childbirth experience is influenced by many factors, including coping with pain and pain relief during labor. The purpose of this study was to evaluate the changes in QOL from pregnancy to 6 weeks after delivery in women who received routine labor epidural analgesia (EA), compared with women who received pain relief on maternal request only.
Materials and methods: Women delivering of a singleton in cephalic presentation beyond 36 + 0 weeks' gestation were randomly allocated to routine labor EA or analgesia on request (control group) in one university and one non-university teaching hospital in The Netherlands. The Short Form health survey (SF-36) was used to assess women's QOL before randomization, and 6 weeks postpartum. Data were analyzed according to the intention to treat.
Clinical cases and summary results: A total of 488 women were included and ante partum, as well as postpartum SF-36 questionnaires were filled in by 356 (73.0 %) women, where 176 (49.4 %) of them were allocated to the routine EA group, and 180 (50.6 %) to the control group. In the control group, 41 (22.8%) women gave birth without any pain medication. Compared to the QOL during pregnancy, women's QOL, six weeks after delivery, showed comparable changes in the routine EA group and the control group. Women in the routine EA group had significantly more adverse events related to EA, including maternal hypotension, motor blockade, and postpartum urinary retention. This was in comparison to the women who delivered with analgesia and without in the control group, where women who delivered without labor analgesia had more often a previous vaginal delivery and less frequency an unplanned cesarean section, but comparable changes in QOL.
Conclusion: Routine administration of EA during labor and pain relief on request are associated with comparable changes of women's QOL, from pregnancy to six weeks after delivery, whereas women in the routine EA group had more adverse events which were related to EA. Based on the changes in women's QOL, no preference can be given to routine labor EA, as compared with labor analgesia on request.

Keywords: Analgesia, childbirth, epidural, labor, quality of life

Table 2. Score changes of the SF-36 QOL subscales* before randomization (AP) and six weeks postpartum (PP) in the QOL study population and in the control group separately

SF-36 QOL subscale score changes from AP to PP						
	QOL study population			Control group		
	Routine epidural analgesia (n = 176)	Control group (n = 180)	P-value	Request (n=139)	No request (n=41)	P-value
Physical functioning	22.9 ± 26.0	21.2 ± 24.5	0.53	19.6 ± 25.3	26.6 ± 20.9	0.11
Social functioning	3.8 ± 24.3	3.8 ± 26.3	>0.99	4.6 ± 26.0	2.4 ± 27.6	0.64
Role limitations due to physical problems	24.1 ± 49.5	28.5 ± 50.0	0.41	27.9 ± 48.5	30.5 ± 55.5	0.77
Role limitations due to emotional problems	-5.6 ± 35.3	-3.4 ± 33.5	0.55	-3.3 ± 36.4	-4.1 ± 21.3	0.89
Emotional wellbeing	7.2 ± 15.5	6.4 ± 13.7	0.65	7.1 ± 12.5	4.2 ± 16.9	0.23
Vitality	2.8 ± 17.0	3.0 ± 19.2	0.90	4.3 ± 19.6	-1.1 ± 17.4	0.11
Bodily pain	7.7 ± 27.7	8.8 ± 26.5	0.72	8.4 ± 27.1	9.8 ± 24.5	0.77
General health perception	-0.7 ± 12.2	-1.1 ± 14.1	0.77	-1.4 ± 14.5	-0.2 ± 12.9	0.63
General health change	-0.8 ± 20.4	-2.0 ± 19.6	0.58	-2.4 ± 19.8	-0.6 ± 19.2	0.61

Score changes were presented as mean ± SD
*(range from 0 to 100)

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Factors affecting infantile colic in infants of 0-4 months of age and relevant maternal practices

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Introduction: Gas pains observed specifically among healthy infants of 2 weeks to 4 months of age (infantile colic) affects parent-infant relationship and occasionally put families in tense and stressful situations. It is of great importance for nurses and midwives to provide information and assurance to tense and stressed parents with respect to the physiology of infantile colic, its effects on the infant, and the methods to be used to relieve gas pains either during house calls or at hospitals. Therefore, the present study was planned with the aim of identifying the factors affecting gas pains among infants of 0-4 months of age and the practices used by mothers in this context.
Materials and methods: The cross-sectional study included volunteering mothers (373 people) of 0 to 4 month old infants suffering from gas pains that applied at the Family Healthcare Centres (Alibaba, Aydogan, etc.) situated in central Sivas between 15.02.2015 and 15.05.2015. Study data were collected through the use of a questionnaire form created by the authors as a result of the review of the relevant literature. The data were evaluated in the SPSS (22.0) software package and tabulated through the use of averages, standard deviations, percentages, Fisher's exact test and chi-square test. Statistical significance was examined at the level of $p < 0.05$.
Clinical cases and summary results: 15.7% and 53.1% of the mothers were identified to use baby bottles and pacifiers, respectively, whereas 72.4% were found to be consuming flatulent foodstuffs. In the first four months, mothers had used medicinal treatment (41%), herbal teas (25.7%), holding baby in arms (58.2%), blow-drier (13.1%) and sound of washing machine or vacuum cleaner (23.6%), car rides (28.4%), massaging, back-patting (74%), heat treatment (37%), frequent changes in position (39.9%), light music (17.1%), and bathing (11.8%). From amongst the mothers, secondary school graduates had more recourse to medicinal treatment and use of a blow-drier, those in the age group of 21-30 years to holding in arms and sound of washing machine, those living in districts to use of herbal teas, those living in villages and the city to bathing, and those that stated they had a stress-free personality to holding in arms and massaging. The difference among these groups was found to be statistically significant ($p < 0.05$).
Conclusion: Mothers had utilised a number of different practices to relieve their infants of gas pains (herbal and medicinal treatment, back-patting and massaging, use of blow-drier or sound of washing machine, heat treatment, etc.). The ratios of such practices against gas pains were affected by certain socio-demographic characteristics (educational status, age, domicile location, stressful personality).

Keywords: Mother, Infant, Infantile colic

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Perinatal outcomes from in vitro fertilization –retrospective cohort study in latvia

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Introduction: Pregnancies that occur after assisted reproduction, constitute high-risk pregnancies. The multiple births and delivery

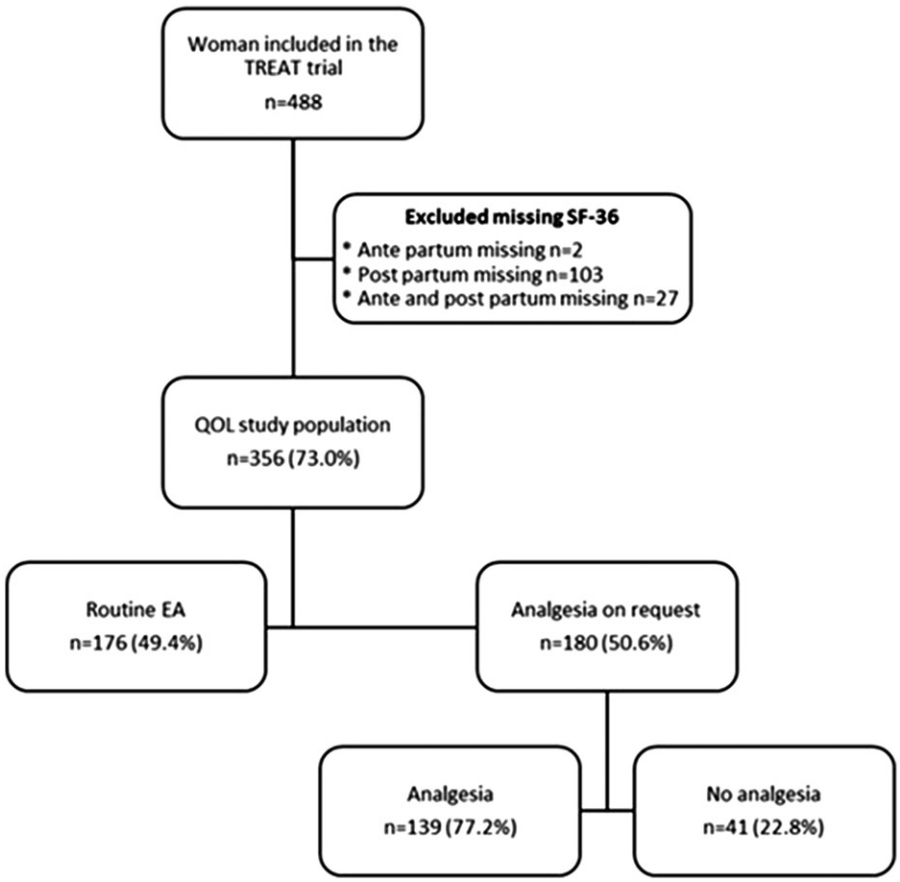

Figure 1. Flowchart of the participants of the QOL study.

complications are much higher from in-vitro fertilisation (IVF) pregnancies than the average. In Latvia IVF births have increased from 147 cases in 2007 to 263 in 2014.

Keywords: *In-vitro* fertilisation, perinatal outcomes, multiple births

Objective: To investigate the association with newborns perinatal risks conceived through in vitro fertilization.
Materials and methods: Data from population-based Medical Birth Register were used. The analysis includes data on 1674 IVF newborns and comparative or control group - without IVF - 167,038 newborns (2007 - 2014). Adjusted Odds ratios (OR) with 95% confidence intervals (CI) were estimated. Multiple regression model adjusted for mother age, multiple births, delivery complications, birth weight (BW) and gestational week (GW).
Clinical cases and summary results: The average maternal age of IVF group was 33.1 years (SD ± 4.9) in contrast without IVF (28.0 (SD ± 5.8)), newborn gestational week respectively 37.5 (SD ± 2.9) and 39.1 (SD ± 1.9). Maternity characteristics showed significant differences between multiple births - 25.0% with IVF to 1.1% (p <0.001), delivery complications 58.8% to 54.2% (p <0.001), caesarean sections 49.4% to 22.6% (p <0.001), maternal age ≥35 years 37.7% to 14.6% (p <0.001), primipara 79.7% to 48.1% (p <0.001). Perinatal factors: certain conditions originating in the perinatal period 35.2% to 31.8% (p <0.01), low birth weight (≤2499g) 20.3% to 4.5% (p <0.001), gestationl age (≤36 GW) 21.6% to 5.4% (p <0.001), stillbirths 1.0% to 0.6% (p <0.05), congenital anomalies no differ between groups. The higher odds of having a multiple birth was in IVF group (ORadj=28.1, 95% CI 25.2-31.4, p <0.001), maternal age 35≥ years (ORadj=7.2, 95% CI 6.3-8.1, p <0.001), primipara (ORadj=8.5, 95% CI 7.4-9.8, p <0.001), delivery complications (ORadj=1.2, 95% CI 1.1-1.3, p <0.05) and perinatal conditions (ORadj=1.2, 95% CI 1.1-1.3, p <0.05).
Conclusion: IVF children are often born to mothers aged ≥35 years, from multiple birth, primipara, by caesarean section. Although the rates of adverse perinatal outcomes of the pregnancies after IVF just slightly higher than pregnancies without IVF.

269 (CASE REPORT)
The tricky peripherally central catheter in preterm infant

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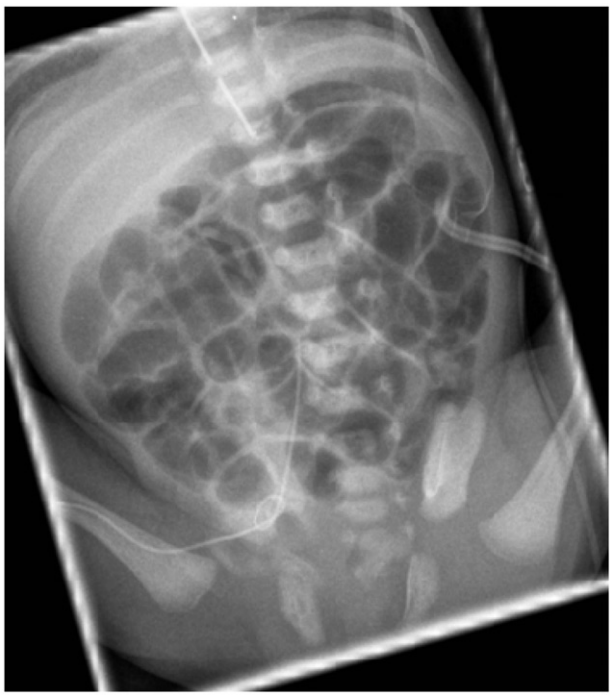
Introduction: Peripherally inserted central catheters (PICC) are frequently inserted in preterm babies for central delivery of total parenteral nutrition. We are presenting a case in which the PICC was noted to make a loop on abdominal X ray. On pulling back to adjust its position, a true knot was noted and it was difficult to remove the line. Our line coiled intra-luminally which is very rare, especially in preterm babies.
Clinical cases and summary results: A 30 + 1-weeks gestation female infant was born by emergency caesarean section. She was successfully recruited in the SIFT trial. She required parenteral nutrition for which a 2 Fr PICC was inserted in the left saphenous vein on day 2 of life. There was difficulty in advancing the line beyond 10 cm when it was thought to be in the groin but after some perseverance line was advanced easily to 20 cm. An abdominal x-ray revealed the line making a loop in the abdomen(figure1). The line was pulled back 5 cm to adjust its position(figure2) and then a further 5 cm(figure3). At

this point a true knot was noted and the line was removed without pulling too hard(figure4). It needed a stab incision over the skin at the entry point. Bleeding at the exit site was controlled by applying surgicel and pressure.
Conclusion: Knotting is a rare complication of PICC but an important cause of difficult line removal. It is likely that the line met resistance more centrally and coiled and the knot probably formed as we pulled the line back to adjust its position. It is very important to recognise this complication and not to pull too hard when removing the line as forceful removal can cause venous trauma, line fracture and embolisation. For more complicated knots surgical approach would be recommended.



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Cordocentesis with diagnostic and theurapeutic indications

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Purpose: The purpose of this retrospective study is to present the indications, the demographic characteristics of pregnant women and the outcome of pregnancies which underwent cordocentesis with either diagnostic or therapeutic indications.
Materials and methods: In this retrospective study we included 312 cordocenteses done in our department during the period 01/01/2007 to 01/06/2015.
Clinical cases and summary results: The mean age of the pregnant women was 32 years (19-42) and the mean gestational age at the procedure was 22 weeks. The main indication for therapeutic cordocentesis was Rhesus immunization and for diagnostic procedures late diagnosis of anatomical abnormalities of the fetus. The percentage of live births was 97% while the abortion rate was 2.5%. Conclusion: Cordocenteses for diagnostic purposes are rarely performed nowadays. However, cordocentesis remains the method of choice in several situations where intrauterine fetal therapy is indicated such as immune hydrops and hemolytic anemia.

Keywords: *Cordocentesis*

Diagnostic indications	hemophilia	11/260
	Markers of chromosomal abnormalities	51/260
	2nd trimester biochemical screening	8/260
	Structural abnormalities	48/260
	Maternal age	55/260
	Cardiac abnormalities	4/260
	B-thalasemia	46/260
	Infections	1/260
	Other indications	13/260
	Laboratory failure after amniocentesis	8/260
Therapeutic indications	Rhesus disease	46/52 (88%)
	Fetal hydrops	6/52 (12%)

298 (CASE REPORT)

A case report of a 21-year-old pregnant patient with abnormal karyotype and Bloch-Schulzberger syndrome diagnosed for metachromatic leukodystrophy

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Introduction: Bloch-Sulzberger syndrome is an X-linked dominant inherited and rare genetic disorder with an incidence of 1:50 000-1:75 000 live female births. Genetic basis of this disease is a mutation in the NEMO gene which is located in locus 28 of the X chromosome. It is characterised by progressing lesions of different morphology, which after many years present as hairless, atrophic spots or regions of hypopigmentation. Other symptoms observed in these patients are ocular (strabismus, nystagmus, iris hypoplasia) or neurological (microcephaly, mental retardation). Incontinentia pigmenti often also presents with tooth and nail dysplasia.
Clinical cases and summary results: 21-year-old patient was admitted to the Clinic of Obstetrics and Perinatology in Cracow because of hypertension, anhydramnios and rupture of the membranes during her first pregnancy. She was diagnosed with an abnormal karyotype- 45XX der (13,14) (q10,q10) and Bloch-Sulzberger syndrome in 2008 with the following symptoms: pigmentation disorders on the left side of the trunk, around the left shoulder, lower and upper limb, bilateral hypoplasia of the nails, abnormal skull construction, facial dysmorphia, congenital dysplasia of the teeth, intelectual retardation. During hospitalization she complaint about blurred vision and headaches. After neurological consulatation MRI of the eyes and brain was ordered. MRI image suggested metachromatic leukodystrophy. Genetic tests for lysosomal disease were done. Arylsufatase activitiy level was within normal limits. The deterioration observed in the imaging examinations is probably related to the progress of Bloch-Sulzberger syndrome.
Conclusion: This case presents the issues of pregnancy care for patients diagnosed with genetic disorders. Our patient has an abnormal karyotype and X-linked Bloch-Sulzberger syndrome and we also suspected an autosomal recessive disease. Patients with

elevated risk of multiple genetic disorders should be offered a proper prenatal diagnosis. Appropriate obstretic care should be provided due to a multitude of systemic defects found in those rare diseases.

Keywords: Bloch–Sulzberger syndrome, abnormal karyotype, prenatal diagnosis

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Childbirth fear of pregnant women in prenatal period and related factor

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Introduction: Given that childbirth is not a completely controllable process whose results cannot be entirely predicted, during their pregnancy most women may experience fear of delivery. Fear of labor which is affects the mother, fetus and new born in many ways, leads to negativity of relationship between the parents. Fear of birth to be identified by medical staff, determine the level, determine the factors cause of fear of labor and planning the appropriate interventions is important. This research was conducted to examine fear of childbirth in pregnant and to determine the factors that cause this fear.
Materials and methods: This descriptive and cross-sectional study was conducted in obstetrics and gynecology clinics and NST polyclinics of Manisa Merkez Efendi State Hospital between 21 and 25 March 2016. Instead of sampling selection, 132 pregnant women who appealed to related policlinics that met the criteria for being included in this study were consisted the sampling of the study. Data of the research were collected by using Survey Form and version A of the WIJMA Delivery Expectancy/Experience Questionnaire (W-DEQ A) (Cronbach alpha, 0.89) after permisson of the institute and approval of Ethical Committee. The data obtaining from the Study were evaluated in SPSS package program by using median, minimum and maximum values with percentage numbers and paired *t* test.
Clinical cases and summary results: 40.9% of pregnant women are in 18-24 age group, 26.5% of them are graduated from middle school, 85.6% were hausewife, 75.8% of them have nuclear family. Average duration of marriage is 3 years and 43.9% of them are in their first pregnancy. 82.6% of the pregnancies were planned. All multipar pregnant women were given birth by vaginal delivery. It is observed that 81.1% of the pregnant women are afraid of delivery. 68.2% of women are stated that they have knowledge about delivery. Resources, mother, friends, relatives and health staff, respectively. The mean W-DEQ A score of women was 55.92 ± 22.95 (Min:6 - Max:116). Statisticall significant difference was found in W-DEQ A scores in relation to unplanned pregnancy, socioeconomic status, fear of childbirth, hearing negative stories about labor ($p < 0.05$).
Conclusion: We found that pregnant women had moderate fear of childbirth. In antenatal period, fear of childbirth to be identified by medical staff, determine the level, determine the factors cause of fear of labor and planning the appropriate interventions is important.

Keywords: Pregnancy, fear of childbirth, wijma delivery expectancy/ experience questionnaire

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Knowledge levels of pregnants about vaginal delivery with epidural anesthesia

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Introduction: Epidural analgesia provides pregnant women to attend the delivery process as well as to ease the labor pain. Comfort of patient and psychological convenience which result of less labor contribute more satisfied discharging patients from hospital. This method is the most preferred analghesia method for delivery. This research is planned to determine the knowledge level of the pregnant women who applied to Manisa Maternity Hospital.
Materials and methods: This resarch is a descriptive study. The sample size of this study is calculated as *n*=357 which is minimum sample size in Epi info program with 95 % confidence interval and 5 % margin of error and 50 % unknown prevalance by assumed the monthly average number of pregnant women who applied to Polyclinics of Manisa Morris Sinasi Maternity Clinic as 5064 in 2014. Data of the research are collected by survey form with face to face interview method that was prepared by researchers. Percentage distribution of numbers is used for evaluation of data.
Clinical cases and summary results: Average ages of pregnants included in this study is found as 37.15 ± 12.14 and 31,9% of them are graduated from primary school. Examining of reproductive documentation of the pregnants is shown that 62,7% of them have previously given birth and 74,3 of them have given vaginal delivery. It's found that 57,7% of pregnant women haven't heard epidural vaginal delivery, 72,1% of them have never had information about this issue. It's determined that 37,8% of pregnant women know the correct definiton of epidural vaginal delivery. It's found that 73,1% of them don't know the effects of epidural delivery on mother and 87,7% of them don't know the effects of epidural delivery on child
Conclusion: It's determined that the knowledge levels of pregnant women about epidural vaginal delivery is very poor.

Keywords: Epidural analgesia, vaginal delivery, knowledge level

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Psychological support for obstetric professionals: views from staff

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Introduction: Obstetrics professionals sometimes face to critical incidents, related to severe maternal and fetal outcomes. There are specific factors in obstetric units that could increase the perceived threat, leading to psychological and physiological reactions with potential dangerous consequences for professionals. It's essential to manage these stressful events with tools as Critical Incident Stress Debriefing. A great amount of research defends its positive effect on personnel.

Keywords: *Aims*: To perform an adaptation of CISD for obstetric staff to manage stress after critical situations. Evaluate professionals perceptions about implementing this plan.
Materials and methods: A standard protocol in obstetric units is proposed, with two sessions of one hour, the first one day after the event, and the second one week later, with special emphasis in reaction phase. If required, could be a third session to handle coping resources. For those professionals with psychological symptoms after the sessions, a consult with psychology department is suggested.
Clinical cases and summary results: It's expected that with the implementation of this protocol, the professional who has experienced a crisis could reduce their stress response, acquire adequate coping mechanisms and gain resilience. Midwifes and physicians expressed their intention to accept the protocol due to emotional impact that involve critical situations
Conclusion: It's important to offer emocional support during obstetric adverse outcomes, to reduce symptomatology and to improve psychological adaptation on professionals. Good acceptance by staff would allow to start this specific protocol for managing threatening situations.

Keywords: Crisis intervention, coping, resilience psychological, childbirth

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The effect of eight weeks of stretching exercises and walking in the third trimester of pregnancy on physiological and psychological indices of pregnant women

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Introduction: Pregnancy is one of the most important periods in the women's life. Physiological and psychological health of women in this period has a significant effect on the future life of the pregnant women and their child. The objective of the present study was to evaluate the effect of eight weeks of stretching exercises and walking on physiological and psychological indices of pregnant women.
Materials and methods: The populations in this study were twenty four pregnant women aged between 25-35 years. Women were randomized into two groups. The study group exercised under supervision for eight weeks (n=16) and the control group followed their routine life (n=8). The women in the study group and control group had an average age of 27.07 ± 6.06 and 26.87 ± 4.70, an average height of 161.37 ± 5.20 and 157.62 ± 3.46, an average weight of 75.87 ± 9.52 and 61.75 ± 6.92 and an average BMI of 29.20 ± 3.65 and 24.90 ± 2.88, respectively. For all participants the systolic and diastolic blood pressure, mother's heartbeat and fasting blood sugar were measured in two stages of pretest and post test. Furthermore Cohen perceived stress questionery forms were filled by the participants at the mentioned stages.
Clinical cases and summary results: Paired t-test, t-test and Kolmogorov-Smirnov test was used to analyze the data. The results showed that in the study group there was a significant differences in systolic blood pressure values (p <0.007), heart rate (p <0.012) and stress score (p <0.05) before and after exercise. As experimental group compared to control group there was a significant differences in their systolic blood pressure values (p <0.001) and heart rate (p <0.017).
Conclusion: The results revealed that exercise during pregnancy reduced the systolic blood pressure and improves the cardiovascular system this may be due to better structural adjustment in epicardial arteries. On the other hand the results showed that exercise reduce stress during pregnancy this may be attributed to the fact that exercise affects the neurotransmitter involved in the stress level and reduces the level of stress hormones and muscle tension.

Keywords: Exercise, pregnancy, systolic and diastolic blood pressure, heart rate, fasting blood sugar, stress

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Routine use of array comparative genomic hybridization analysis in fetus with markers for chromosomal abnormalities

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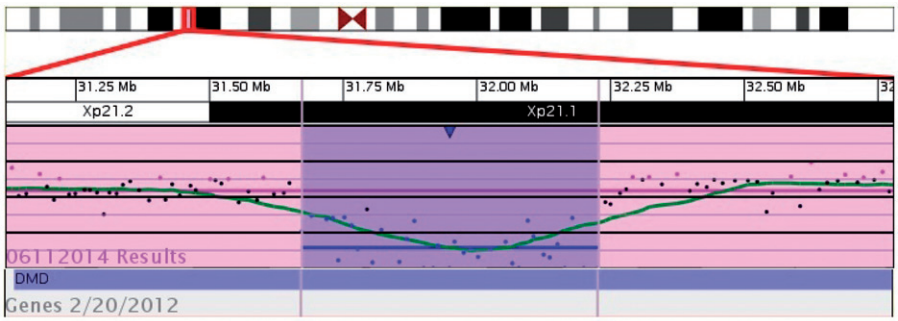
Introduction: This study aims to investigate the possible association between different markers for chromosomal abnormalities (ultrasound and/or serum biochemical markers, advanced age) and pathogenic chromosomal rearrangements including copy number variants (CNVs) detected by array comparative genomic hybridization (aCGH) in pregnant women.
Materials and methods: aCGH was carried out in samples of chorionic villi or amniotic fluid from 407 singleton pregnancies for which chorionic villus sampling at 11-13 weeks' gestation or amniocentesis at 17-21 weeks' gestation were performed. The median maternal age 32.4 (17.0-47.0) years, the percentage of women with advanced maternal age - 38.8 %. A customized 60K CGXTM Chip v2 (PerkinElmer by Agilent Technologies, Inc., Finland) was used for the aCGH studies and the data were analyzed with the use of a Genoglyphix aCGH software (PerkinElmer, Finland), with data aligned to the Human Genome release 19 (hg19).
Clinical cases and summary results: All women had sonographically detectable defects or/and biochemical markers or/and advanced maternal age. Numerical (12.0%) and structural (3.4%) chromosomal abnormalities were identified. The most frequent aneuploidies were trisomy of 21 (47%) followed by trisomy of 18 (20%) and monosomy X (8%). The percentage of the normal and pathological cases for women younger and over 35 years old was approximately the same. The fetal nuchal translucency (NL) was increased in 33 (20%) cases with aneuploidies and structural rearrangements. High-risk group with biochemical markers revealed aneuploidies and pathogenic CNV in 17 (23%) cases. For confirming structural microscopic and submicroscopic abnormalities (see Table) FISH-analysis with specific probes have been used. Microdeletion in DMD gene (see Fig.) (Xp21.1, 45-th - 55-th exons) was confirmed by MLPA.
Conclusion: Approximately 80% pregnancies with increased fetal NL or/and biochemical markers or other markers for chromosomal abnormalities may not be associated with aneuploidies or pathogenic CNVs.

Keywords: Prenatal diagnosis, nuchal translucency (NL), advanced maternal age, aCGH



Array comparative genomic hybridization investigation shows an ~ 544-kb microdeletion of Xp21.1 encompassing the DMD gene.

Table. Abnormal ultrasound and aCGH findings

N	Sample type	Abnormal ultrasound findings, anamnesis	Array result (structural anomaly)	Minimal region, Mb	Description	OMIM	Other methods
1	CVS	NT 4.2 mm, multiple congenital abnormalities	arr 1p31.1p13.2(83,519,517-112,344,487)x3	28.8	Pathogenic duplication unclassified as a syndrome	-	46,XY
2	AF	Multiple congenital abnormalities	arr 1p36.33p36.22(835,601-12,175,555)x1	11.33	Chromosome 1p36 deletion syndrome	607872	ish del(1)(p36)
3	CVS	US	arr 5q21.2q32(104,227,265-114,883,075)x3	14.7	Pathogenic duplication unclassified as a syndrome	-	46,XY,der(5)dup(5q)
4	AF	US	arr 6q16.3q22.31(103,695,543-118,572,768)x1	14.9	Pathogenic deletion unclassified as a syndrome	-	46,XX,del(6)(q16.3q22.3)
5	AF	NT 5.3 mm	arr 11q23.2q25(114,342,742-134,928,850)x3	20.6	Pathogenic duplication unclassified as a syndrome	-	46,XX
6	AF	46,XX,ins(5;13)(q21;q32)	arr 13q21.33q32.1(69,793,930-95,866,141)x1	26.1	Pathogenic deletion unclassified as a syndrome	-	46,XY,der(13)
7	AF	Patent ductus arteriosus	arr 22q11.21(18,919,528-21,417,549)x1	2.5	DiGeorge syndrome, Velocardiofacial syndrome	188400, 192430	46,XY, ish del(22)(q11.2q11.2) (D22S75-)
8	CVS	Has a child with Duchenne muscular dystrophy	arr Xp21.1(31,673,069-32,227,840)x1	0.55	Duchenne muscular dystrophy	310200	MLPA
9	AF	NT 3.5 mm 46,XY,t(1;3)(q25;q25), 9ph	arr 1q31.3q44(197,952,144-249,208,146)x3, 3p26.3(101,072-1,740,973)x1	51.3 / 1.6	Pathogenic deletion and duplication unclassified as a syndromes	-	46,XY,der(3)t(1;3)(q 31;p26),9ph pat
10	CVS	NB(-), 46,XX,t(1;4)(q41;p15)	arr 1q41q44(221,235,614-249,208,146)x3, 4p16.3p15.2(55,715-25,854,057)x1	28.0/25.8	- / Wolf-Hirschhorn	- /194190	46,XX
11	CVS	46,XY,t(2;22)(q37;q13) US, non-immune hydrops fetalis, IVF	arr 2q37.1q37.3(234,709,430-243,006,013)x1, 22q13.1q13.33(39,485,954-51,178,150)x3	8.3/11.7	2q37 Microdeletion syndrome / -	600430 /-	ish del(2)(q37)(D2S447-), dup(22)(q13.3)(ARSAx3)
12	CVS	NT 7.7 mm, absent nasal bone, ventricular septal defect	arr 4p16.3p16.1(77,414-8,915,250)x1, 8p23.3p23.1(202,133-6,920,415)x3	8.8/6.7	Wolf-Hirschhorn / -	194190 /-	46,XY,1qh+[8]
13	CVS	NT 3.9 mm	arr 5q34q35.3(162,953,616-180,686,444)x3, 10q26.13q26.3(123,791,708-135,371,756)x1	11.6/17.7	- / 5q35.2-q35.3 Microduplication	-	46,XY[7]
14	CVS	US, reverse in the ductus venosus	arr 7p14.3p11.2(29,196,686-56,787,334)x3, 7q11.21q21.2(63,420,008-92,569,042)x1	27.6/29.1	- / Williams-Beuren syndrome	- /194050	47,XY,+D[4]/46,XY[4]

CVS - chorionic villus samples; AF – amniotic fluid; NT- nuchal translucency; NB – nosal bone; US - ultrasound markers; MLPA – multiplex ligation-dependent probe amplification

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Eosinophilic infiltrate as a confounder in the diagnosis of neonatal bullous epidermolysis

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Introduction: The blistering diseases are a group of disorders characterized by the primary appearance of bullous lesions. Each of them is categorized according to the level of blister formation. Hereditary blistering diseases or bullous epidermolysis , are produced by an alteration in the proteins involved in the dermo epidermical junction. Initially biopsy is used to determine the level of injury but for a definitive diagnosis it's required electron microscopy. The mapping of antigens by direct immunofluorescence (IFD), is a fast method for the classification of bullous diseases. It is important to consider that some common skin conditions in newborns as toxic erythema, may hinder the diagnosis of bullous disease if they appear together and the biopsy sample contains skin lesions.
Clinical cases and summary results: We report the case of a black newborn with a history of not classified maternal skin lesions in the third trimester. At birth has severe cutania dryness and in the following hours, bullous lesions appear progressively all over the body. A skin biopsy was performed determining the presence of a subepidermal blister with inflammatory component and eosinophilic infiltration. Because of this, the case was oriented as a pemphigoid, since the presence of eosinophilic infiltrate in subepidermical blisters is suggestive of neonatal pemphigoid. Given the suspected diagnosis, analysis of antiepidermical antibodies was done to the mother and newborn, pending the outcome of the IFD and electronic microscopy. Antibody testing proved negative. At 12 days of life lesions in oral mucosa and nail involvement appear. 15 days later, the patient presented a sepsis. Given the persistence of clinical and the diagnosis suspiccion of cogenital bullous epidermolysis, the newborn was referred to a tertiary care center. The result of the IFD and ME confirmed the clinical suspicion of bullous epidermolysis junctional type. The patient died at 2 months of age due to septic meningitis.
Conclusion: The intent of this event is to reinforce the importance of early diagnosis and treatment at the onset of bullous lesions in the newborn. Some common skin conditions in newborns as toxic erythema, may hinder the diagnosis of bullous diseases. As in our case, the presence of eosinophilic infiltration and blister level

determined by biopsy could erroneously guide the diagnosis in neonatal period, with the consequent delay in treatment.

343 (CASE REPORT)

Breath holding spells in the neonatal period , a very rare entity

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Introduction: Breath-holding spells is a common entity described in 4-5% of the paediatric population. It is considered a benign paroxysmal non-epileptic disorder occurring in healthy children from 6 to 48 months of age and only 15% of them start before 6 months. The episodes start with an stimulus, such as an emotional upset or a minor injury, and consist in breath holding, cyanosis or pallor and sometimes syncope. They do not have pathological consequences and its evolution is benign, with tendency to disappear in 3-4 years. There are two clinical forms, cyanotic and pallid. The cyanotic form could be due to inhibition of respiratory effort, and the pale presentation to an exaggerated vagal reaction, leading to bradycardia, which produces cerebral hypo perfusion.
Clinical cases and summary results: We present two cases of cyanotic breath-holding spells that appeared before the 48 hours of life, which is a very unusual age for this entity. None anomalies were detected during pregnancy and labour, and the physical exploration at birth was normal. They both initiated at 24 and 36 hours of life clinical episodes compatibles with cyanotic breath-holding spells. In one of these episodes, the patient presented a decrease in oxygen saturation down to 70 % with a compained bradycardia , which both recovered spontaneously . None of the episodes required resuscitation, and in one of them there was a paternal history of breath-holding spells, but not in neonatal period. Because of the unusual presentation at this age, we performed some examinations, including cranial ultrasonography, blood analysis (with glucose, calcium and electrolytes), blood culture, ECG and EEG that were all normal. At the moment, they are 3 and 4 months-age, and the episodes are less frequent and with rapid resolution.
Conclusion: Breath-holding spells presentation in the immediate neonatal period, like the two cases we present, is very rare, and there is poor literature on the subject. It is important to make a good differential diagnosis with other most prevalent entities at that age. The diagnosis is clinical and once suspected, is recommended to perform an ECG and rule out anemia, but no more studies are usually needed, except in neonatal period.

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Gastric perforation: unusual presentation of gastric lymphoma in pediatric population

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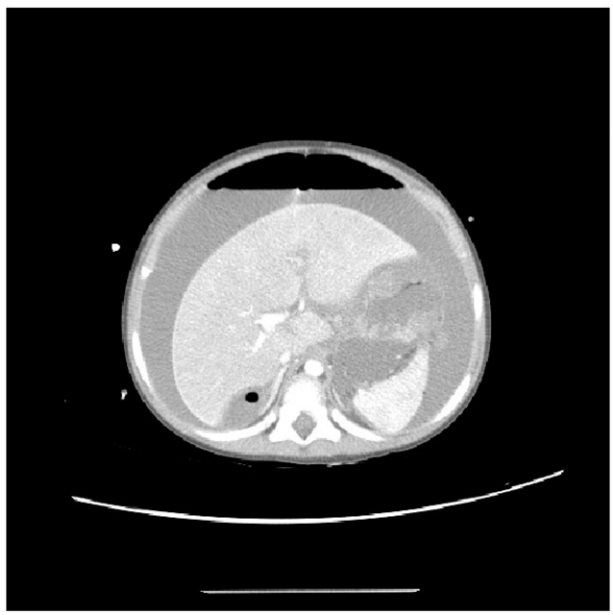
Introduction: Gastric rupture is a potential fatal condition occasionally encountered in adults and neonates but it rarely occurs in children over 1 year of age. We report a case of gastric perforation in a 3 year old boy presenting with surgical abdomen and fever and found to have T cell lymphoma.
Clinical cases and summary results: 3-Year-old boy presented with abdominal pain and distension after 5 days history of fever treated with NSAIDs. Abdominal ultrasound showed intraperitoneal ascites and air-fluid level at the level of the stomach. Abdomen/pelvis CT-scan showed pneumoperitoneum. Patient underwent urgent laparotomy, gastric perforation was found, repaired and biopsies were done. On Day 5 post-op, he developed abdominal pain, tachypnea and desaturation. Abdomen/pelvis CT-scan showed large amount of fluid in the peritoneal cavity and thickening of the parietal peritoneum. Adhesion within peritoneal cavity can't be ruled out. Patient underwent laparotomy, clear fluid was obtained and biopsies from the liver, omentum and spleen were taken. Pathology of Gastric biopsy showed malignant non-Hodgkin's T-cell lymphoma. Liver and retroperitoneum biopsies showed abnormal T cell lymph proliferation favoring T-cell lymphoma. Chemotherapy was to be started however patient was declared dead at day 12 of admission.
Conclusion: Primary gastrointestinal tumors are rare entity in infancy and childhood and accounts for less than 5% of all pediatric neoplasms. Primary non-Hodgkin's lymphoma (NHL) of the gastrointestinal (GI) tract is the most common extra nodal lymphoma in pediatric age group. Although gastric perforation is a rare entity in this group, we should consider gastric lymphoma in the differential diagnosis of gastric perforation.



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Women's knowledge and opinions about lactational amenorrhea

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Introduction: Lactational amenorrhea may be used as a very effective contraceptive method when certain criteria are met. In a conference

which was held by World Health Organization (WHO) and international organizations in Bellogo, Italy in August, 1988 it was agreed to consider lactation as a potential family planning method in all maternal and child health programs in the developed and developing countries. The study was performed to determine knowledge and opinions of mothers who lived in Manisa city center and had babies of 0-6 months about Lactational Amenorrhea as a family planning method.
Materials and methods: The study is a descriptive study. Population was consisted of women (*n*=5024) who were registered in 11 Family Health Centers affiliated to Manisa City Center and had vaginal and cesarean delivery. Study sample was consisted of 357 women who were determined via a Sample Formula with a Known Population and who accepted to enroll in the study. While data were collected, socio-demographic features formed by the researchers and a survey form which contained 33 questions for determining postpartum knowledge and opinions of women who had babies of 0-6 months about lactation were used.
Clinical cases and summary results: It was determined that 63.2% of women were in an age range of 21-30, averages of their ages were 26.23 ± 5.34 and 36.55 of them were primary school graduate. When obstetric history of women was examined in the study, it was detected that babies of 71.7% of women were 1-6 weeks of age and 76.85 of them were amenorrheic and 32.7% of them did not use a family planning method. It was determined that 74.7% of women lactated 7-9 times daily, 71.45 of them lactated every time their babies had cried and 97.3% of them lactated at nights. 27.5% of women give supplementary food. It was revealed that 34.6% of women knew the lactation as a contraceptive method, 39.4% of women who knew the lactation as a contraceptive method learned this information from their friends and 99.7% of them did not get any information for LAM.
Conclusion: As a result, it is thought that women know the lactation as a family planning method but healthcare professionals does not touch on this topic during family planning educations.

*This study was presented at the 1rd Congres of Aegean Midwifery and Labor.

Keywords: Lactational amenorrhea, family planning, lactation

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Viewpoints of pregnant women concerning male midwives in Turkey

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Introduction: Profession of midwifery is one of the oldest professions of history that started with history of humanity in the world and in our country and has continued as women's assistance in their deliveries based on the master-apprentice relationship for many years. Long-term changes for midwifery are similar in many countries although not synchronized. It is known that some countries also have male midwives. In Turkey, on the other hand, midwifery is still a women's profession. Thus, this study was conducted for determining the viewpoints of pregnant women in the city center of Manisa concerning male midwives.
Materials and methods: This is a cross-sectional and descriptive study. While the target population of the study consisted of 2954 pregnant women, the sample consisted of 384. It was conducted in 3 rural-urban-slum Family Health Centers that were randomly selected from Şehzadeler and Yunus Emre districts in the City Center of Manisa. A questionnaire involving 21 questions was used in the study. The data were collected by the researchers from pregnant women that had applied to Family Health Centers via face-to-face interview technic. The data were analyzed by using number and percentage distribution.
Clinical cases and summary results: It was determined that pregnant women that were included in the study had an age average of 26,96 ± 5,13 and 29,9% were primary school graduates, 97,7% were officially married and 81,2% were unemployed. As a result of the analysis that was conducted between the socio-demographic variables and viewpoints of pregnant women, a statistically significant difference was obtained regarding the working condition of pregnant women. Accordingly, it was determined that majority of unemployed pregnant women wanted to get midwifery service from women (97,1%). No statistically significant relationship was determined between other features.
Conclusion: It could be suggested that almost one fourth of pregnant women agree that midwifery service could be provided by male midwives, however, almost all of them prefer female midwives when service procurement is in question.

*This study was presented at the 2rd International & 6th National Students of Midwifery Congress

Keywords: Midwifery, gender, male

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The process of growth related to the period of the conquest of autonomy of the child

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Introduction: This paper aims to describe the process of growth related to the period of the conquest of autonomy of the child from the point of view of Gestalt - therapy through a dialogue with the maturation theory of D. W. Winnicott.
Materials and methods: This work is the result of a dialogue with the theory of maturation of D. W. Winnicott, from which it was possible to describe the constitutive basic needs of human subjectivity and care that meet.
Clinical cases and summary results: To the extent that the basic needs related to the early period of life are met, the baby is the basis for which may take ownership of their experiences in their contact cycles constitute a permeable contact boundary and perform creative adjustments. When the caregiver is in tune with the baby, it identifies the advances in their neuromotor development and realizes that the baby can not only get to wait to have their needs met, as happens even to profit from the expected. Thus, the sense of urgency caregiver to meet the needs of the baby tends to decrease. From this new position, the caregiver is able to provide the care (time and space, person or object that carries the paradoxical role, limits and confrontation in a balanced way between indifference and retaliation) that meet the basic needs related to the period of child autonomy of achievement (ability to move through the cycles of contact with autonomy, opening for play and for inter-human contact boundary of the establishment and ability to perform creative adjustments).
Conclusion: When all goes well, the child can use throughout their first years of life of the care to meet their basic needs related to the early period of life and the conquest of autonomy. When this is possible, the child appropriates their experiences in their contact cycles, is a permeable contact boundary and develops your ability to perform creative adjustments. Thus, the care that meet their basic needs underpin the process of appropriation of self constituent resources.

Keywords: Child development, Gestalt therapy, self support, responsibility, guilt, shame

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Congenital fetal malformations - the importance of *in utero* trasport

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Introduction: The successful outcome of an operation performed on a newborn with congenital anomalies depends not only on the skill of the paediatric surgeon but also on that of a large team consisting of a paediatrician, anaesthetist, radiologist, pathologist, biochemist, nurses, and others necessary for dealing satisfactorily with the newborn infant subjected to surgery. Advances in neonatal intensive care dictate that effective and efficient treatment of the sickest neonates can only be available by concentrating resources such as equipment and skilled staff in a few specialist paediatric centres that have responsibilities to a particular region. It is well established that the outcome of critically ill neonates is better if they are cared for in specialised tertiary centres.
Materials and methods: Gastroschisis - Congenital malformation in which a defect in abdominal wall allows portions of the abdominal contents to herniate outside of the abdominal cavity. During the fourth week of development, the lateral body folds move ventrally and fuse in the midline to form the anterior body wall. Incomplete fusion results in a defect that allows abdominal viscera to protrude through the abdominal wall. The bowel typically herniates through the rectus muscle, lying to the right of the umbilicus. There is no protective sac covering the intestines.
IUGR: 40-60%, Birth weight < 2500 g $\uparrow$ mortality 10% , Survival rate in tertial centers 90%.
Clinical cases and summary results: Till late 90's:birth at term, poor intestine condition- oedema, thickened walls, difficult one-step surgery, more often bowel ischaemia NEC, often perforations, septic shock due to bowels complications or long parenteral nutrition via cenral lines.Changes in diagnostics at the end of 20 century. Bowel loop dilation witth wall thickening.Other ultrasound data: abnormal umbilical artery flow- doppler ultrasound, stomach dilation, blood flow in mesenteric blood vessels, many bowel loops dilation. Clinically more important the changes dynamic. Recommended proceeding: ultrasound scan every 2 weeks from 26 weeks GA, elective c-section 34-36 weeks depending on ultrasound and changes dynamics, steroids few days before planned c-section, fetal growth estimation CTG monitoring, delivery at level III neonatal care hospital (with surgery), infant assessment after birth and when stable transfer to the operating theatre, operation within delivery room, surgical/neonatal care during hospitalization.
Conclusion: What is the reason for better infant condition after birth and long term outcome? Optimal time for c-section regarding the bowels condition, Delivery at level 3 center - every transport and surgery delay worsening infants condition due to: i.v fluids and bowels and coat oedema, mesentery pulling pain reaction, rarely two-step operation, faster enteral feeding, parenteral feeding and central line time shortening, less nosocomial infections, hospitalization shortening.

Keywords: Gastroschisis, ultrasound diagnosis, in utero transport, immediate surgery, level 3 centre

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A complementary treatment in perinatology: reflexology

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Introduction: Reflexology is a complimentary treatment that uses compressions and skin contact to help the body release enkephalins and endorphins.Thus, the neural transmission of pain messages to the brain is stopped, anxiety and pain levels are decreased, as a result of improved lymphatic nerves and blood flow, the excretion of toxins from the body is increased. Further assessment of the evidence relating to the use of reflexology at pregnancy, childbirth, and postpartum units is needed. This study is designed to evaluate the studies in reflexology and related fields systematically.
Materials and methods: Data is obtained by scanning Medline, Pubmed, ScienceDirect, Google Academic, National Thesis center databases in the Celal Bayar University library between January 1 and April 1 2016. Databases were scanned with ''antenatal, intranasal, postpartum, reflexology'' keywords.
Clinical cases and summary results: Nine full texts associated with the subject were found. Mollart (2003) concluded that reflexology is effective in reducing edema in the feet and ankles during pregnancy. Ghaffari and Ghaznein (2010) concluded that it helps reduce fatigue in pregnant women. Close et al (2015) concluded that reflexology can help in a back and pelvic pain management in pregnancy. Hanjani et al (2014) stated that reflexology shortens the delivery time, reduces the intensity of labor pain, reduces anxiety levels, contribute to natural childbirth and lead to an increase in Apgar scores. Chumth et al (2011) concluded that reflexology significantly decreases the stress levels of adolescent mothers after the birth. McNeill et al (2005) argue that reflexology applied before the birth have a positive effect on pain management in labor. Li et al (2011) found that during the postpartum period, reflexology improves the quality of sleep.
Conclusion: Reflexology can help women during pregnancy, childbirth and postpartum period without any side effects.There are a limited number of studies on reflexology. More randomized controlled studies have to be conducted to generate more evidence.

Keywords: Antenatal, intranasal, postpartum, reflexology

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The effect of violence upon women's attitudes toward family planning

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Introduction: Violence is an important public health problem that could be encountered in every area of human life and gradually increases in the world. World Health Organization (WHO) defines violence as, ''a condition where a physical power or power is applied to another person as a deliberation, threat or reality and causes or may cause injury, death and psychological damage in the person who is subjected to violence''. The most common type of violence is the domestic violence which is applied by men to women and children. This study was conducted for the purpose of determining the effect

of violence against women upon women's attitudes toward family planning.
Materials and methods: This is a cross-sectional and descriptive study. While the target population of the study consisted of 64.382 women aged 15-49 in the city center of Manisa, the sample was calculated as 382 women in the smallest sample number Epi Info 6 program with 50% unknown prevalence and 5% margin of error. 342 women aged 15-49 that had applied to the aforementioned FHCs and accepted to participate in the study were included in the study. The study data were collected by using three forms consisting of ''Data Collection Form for Women's Introductory Information'', ''Scale for Domestic Violence against Women (SDVW)'' and ''Family Planning Attitude Scale'', which were prepared according to literature.
Clinical cases and summary results: It was determined that 41.2% of women were in the age group of 21-30 and 29.5% were primary school graduates. 31.9% of women had given birth twice, 27.5% used no family planning method, 72.5% used a family planning method and 29.8% used condom as a family planning method. It was also determined that they obtained a score average of 89.00 ± 9.77 from the Scale for Domestic Violence against Women and 119.15 ± 2.25 from the Family Planning Attitude Scale. As a result of correlation analysis that was conducted between the score averages of Scale for Domestic Violence against Women and the score averages of Family Planning Attitude Scale, a negatively and moderately significant relationship was determined ($r=-0.345$, $p < 0.001$). It could be suggested that as the possibility for women to be exposed to violence increases, their attitudes toward family planning are affected negatively.
Conclusion: As a result of this study, it was determined that violence against women had a negative effect upon women's attitudes toward family planning and their condition of using reproduction health services.

*This study was presented at the First Congres of Aegean Midwifery and Labor.

Keywords: Violence against women, family planning, attitude

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Perspectives of midwifery students on men becoming midwives

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Introduction: Midwifery is one of the oldest professions in the world, starting with the history of humanity, with women help each other in childbirth for many years. It is based on a master-apprentice relationship. Long-term changes to midwifery are similar in most countries, but not in sync. It is known that in some countries there are male midwives. But in Turkey, midwifery is still a woman's job. This study was conducted in order to determine the perspective on the idea of man becoming a midwife.
Materials and methods: The study was a cross-sectional descriptive study. The population of the study was the Celal Bayar University School of Health Midwifery Department students ($N = 257$). In the study sample selection was not made, all students who agreed to participate in the study and those who could be reached constituted the sample of the study ($n = 210$). Data of the survey is collected using the ''Information Form'' created by the researchers. The form is designed to determine the sociodemographic characteristics of the students and their perspectives on the idea of a male midwife. Data was collected in the classrooms of the students who agreed to participate in the study. The participation rate is 81.7%.
Clinical cases and summary results: 51.4% of the students are in the 18-20 age group and their mean age is 20.67 ± 1.73, 36.2% of them are first grade students, 78.1% lived in the city for the most of their lives, 93.3% do not work, income of %63.3 of the students is equal to their expenditures. Students' opinions on male midwives: 59.0% believe that gender is important in this profession and 55.7% believe that it is a job for women. 49.0% of the students believe that both men and women can be midwives. Half of the students believe that male midwives would change the profession and improve it. But when asked to choose a midwife for themselves, 79.5% prefer to see women helping them as the midwife.
Conclusion: Half of the students believe that men can become midwives and improve the profession but prefer women midwives to take care of them if they were pregnant.

*This study was presented at the 1rd International & 5th National Students of Midwifery Congress.

Keywords: Midwifery, occupation, women, men

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The effect of postpartum functional condition of mothers upon their life quality

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Introduction: Postpartum functional condition is defined as ''a mother's preparedness for taking the responsibility of her baby, herself, housework, social and professional activities''. Today, the objective of postpartum care is to cope with possible postpartum problems, develop the power of self-care and increase mother's independence and life quality. This descriptive study was conducted for examining the effect of postpartum functional condition of mothers upon their life quality.
Materials and methods: The study sample consisted of 357 mothers that were registered to 11 Family Health Centers in the City Center of Manisa, had had vaginal birth or c-section and were selected via Stratified Random Sampling Method. The study data were collected between July 2013- December 2013 via ''Mothers' Introductory Form'' aimed at determining the socio-demographic and other variables of mothers, ''Postpartum Functional Condition Inventory (PFCI)'' and ''Postpartum Life Quality Scale (PLQS)''.
Clinical cases and summary results: Examining the distribution of mothers according to their socio-demographic features, it was determined that 40.9% of them were in the age group of 25-30, 40.3% were literate and primary school graduates, 51.8% had been married for one-five years, the average duration of marriage was 5.59 ± 4.89 years, 77.6% were unemployed and 37.5% of working mothers were civil servants. Factors affecting the postpartum life quality of mothers were determined as educational level, economic condition, duration of marriage, number of children, difficulties with housework in daily life and infant care. According to the multivariate regression analysis, self-care activities, mother's educational level, difficulties with housework in daily life and infant care, which are among the subscales of postpartum functional condition, affect the postpartum life quality. 21.0% of postpartum life quality scores could be explained with three independent variables here.
Conclusion: As a result of the study, it was determined that as domestic activities and infant care responsibilities of mothers increased in the postpartum period, their life quality decreased and as social and self-care activities increased, their life quality increased.

*This study was presented at the 1rd National Gynaecological Diseases and Maternal and nfant Health Congress

Keywords: Postpartum period, functional condition, life quality

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Antepartum hemorrhage and use of tocolytics in hospital clinic of Barcelona

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Introduction: To describe the use of different tocolytics and maternal and perinatal outcomes in women admitted because of antepartum hemorrhage.
Materials and methods: Descriptive study in a tertiary center between april 2014 and september 2015 including women admitted because of antepartum hemorrhage (APH) between 23.0 and <36.0 weeks. The clinical management of these women included tocolysis, corticosteroids, and eventually blood transfusion and planned delivery. Maternal and perinatal outcomes were compared based on whether Atosiban or Nifedipine was used for tocolysis. Nifedipine capsules or oral solution were considered. A descriptive study was carried out on qualitative and quantitative variables to characterize the study population. X2 tests or two-sided Fisher test and Student's *t*-test or Mann-Whitney *U*-test, were used when appropriate.
Clinical cases and summary results: 36 admissions from 32 women were evaluated. Nifedipine was more frequently used than Atosiban. Gestational age at admission and at delivery was earlier in the Atosiban group although latency to delivery was similar in both groups. Nifedipine was more frequently used for APH due to placenta previa while Atosiban was preferably used for APH of unknown origin. No differences in days of hospitalisation, number of transfusions, postpartum hysterectomy, abruptio placentae, corticosteroids, mode of delivery and neonatal outcomes were observed. Nifedipine oral solution was administered to two patients getting similar results to Nifedipine capsules. Three neonatal deaths were due to extremely preterm, parenchymatous hemorrhage and sepsis.
Conclusion: In this series there was no evidence to suggest that there is a significant difference in maternal or perinatal outcomes between the use of Nifedipine (whether capsules or oral solution) or Atosiban in the management of antepartum hemorrhage.

Keywords: Atosiban, Nifedipine, antepartum, hemorrhage, tocolytics, maternal, perinatal

	Total *n*=36	Nifedipine *n*=27 (75%)	Atosiban *n*=9 (25%)	*p*
Nulliparity	15(41.7)	10 (37)	5 (55.6)	0.364
Multiple pregnancy	7 (19.4)	4 (14.8)	3 (33.3)	0.224
Previous caesarean section	3 (8.3)	2 (7.4)	1 (11.1)	0.738
Gestational age at admission (w.d)	30.1 (3.5)	31.0 (3.6)	27.5 (3.2)	0.026
Diagnosis at admission				0.040
Placenta previa	18 (50)	15 (59.3)	3 (22.2)	
Placenta hematoma	6 (16.7)	6 (22.2)	0	
APH of unknown origin	12 (33.3)	5 (18.5)	7 (77.8)	
Gestational age at delivery (w.d)	30.2 (4.0)	31.4 (4.1)	27.6 (2.1)	0.066
Gestational age at delivery <34w	12 (33.3)	6 (22.2)	6 (66.6)	0.034
Latency from admission to delivery (d)	5.8 (5)	5.7 (3.7)	6.2 (7.8)	0.873
Days of hospitalisation (d)	6.7 (6.9)	5.7 (4.6)	9.8 (11.1)	0.149
Delivery during hospitalisation	18 (50)	12 (44.4)	6 (66.6)	0.282
Corticosteroids for fetal lung maturation	31 (86.1)	23 (85.1)	8 (88.8)	0.781
Caesarean section	15 (41.6)	10 (37)	5 (55.5)	0.975
Abruptio placentae	3 (8.3)	3 (11.1)	0	0.180
Need for transfusion	6 (16.6)	4 (14.8)	2 (22.2)	0.606
Number of packed red cells transfused	0.8 (1.9)	0.7 (1.9)	1.0 (2.0)	0.686
5′ Apgar $\leq$ 7	3 (8.3)	1 (3.7)	2 (22.2)	0.180
UA pH $\leq$ 7.10	3 (8.3)	2 (7.4)	1 (11.1)	0.952
Neonatal death	3 (8.3)	2 (7.4)	1 (11.1)	0.975

Numbers are expressed as n(%) or mean (SD) when appropriate.

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Experience in external cephalic version at Hospital Universitario Quiron Dexeus

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Introduction: Breech presentation occurs in 3-5% of all term deliveries. It represents around 20% of elective caesarean sections. Vaginal breech deliveries can associate adverse perinatal outcomes. Caesarean section is the main choice but it is not exempted from maternal morbidity. External cephalic version (ECV) is an alternative, reducing the rate of caesarean section and therefore, complications in future pregnancies. ECV is not carried out routinely in all hospitals, but success rate is around 65%. It is usually performed at early term and patients are delivered home afterwards. We present our results from June 2012 to March 2016. We have to point out that our centre offers private health care: insurances do not pay for the ECV and that's the reason why we induce patients into labour after the ECV.
Materials and methods: In this period, we evaluated 77 singleton pregnancies with breech presentation in the last control. The mean gestational age at the moment of evaluation was 36.3 weeks [range 33.4—39.2]. At that moment, 82% (63 patients) kept in breech presentation whereas 18% (14 patients) had changed to cephalic presentation spontaneously. Among the patients who kept breech presentation, 63.5% were nulliparous (*n*=40) and 36.5% were multiparous (*n*=23). We offered the ECV to 58 patients, of which 22 accepted, 35 rejected and 1 presented a premature membrane rupture before taking a decision. The other 6 patients were discarded because of oligohydramnios or fetus small for gestational age with nuchal cord. Among the 22 patients that accepted, two presented premature rupture of membranes before the procedure.
Clinical cases and summary results: The mean gestational age at the moment of the ECV was 38.6 weeks (range 37-39.4). The technique

was successful in 70% of the cases (*n*=14), of which 50% were primiparous (*n*=7) and 50% were multiparous (*n*=7). Vaginal delivery was possible in 10 out of 14 cases (71.4%). VCE was not possible in 30% (*n*=6): 4 of them required an emergency cesarean section because of fetal distress and 2 of them because of the failure of the technique. After the cephalic presentation was obtained, 21.4% of patients were discharged home (*n*=3) and 78.6% of them were induced into labour (*n*=11). Vaginal delivery was achieved in 100% of patients from the first group and 63.6% from the second group (*n*=7), as three patients required an emergency cesarean section due to fetal distress during the induction of labor and one because of arrest of dilation. ECV has allowed us to reduce the rate of elective cesarean section in 0.11% during this period.
Conclusion: During these 3 years, the success rate of the procedure has been 70%, similar or even a bit higher compared to the mean rate in Spain, although the mean gestational age at the moment of the procedure was 38.6 weeks. According to our results, late term ECV seems feasible and we could avoid an intervention in spontaneous cephalic version before 38 weeks.

Keywords: External cephalic version, breech presentation

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Adolescent pregnancy in turkey: a systematic review

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Introduction: Adolescent fertility is an extremely important issue, both for health reasons and for social reasons. Adolescent mothers are more likely to be exposed to adverse pregnancy outcomes or mortality than are adult mothers. In addition, having children at an early age causes adolescents to discontinue their education and prevents them from accessing job opportunities. The mean fertility rate among adolescents aged 15-19 in the world is 43 ‰. This rate is 115‰ in Africa, 26‰ in the UK, and 63‰ in the United States of America. According to TDHS-2013 results, almost 5 percent of adolescent women have begun childbearing. AIM: The research questions in this study are as follows: What are the pregnancy and childbirth consequences of adolescent pregnancy?
Materials and methods: The EBSCOhost, Science Direct databases and Google Scholar were retrospectively scanned between March 30 and April 30, 2013 by using the Ege University Library online database. All articles published both in Turkish and in English in Turkey between 2000 and 2013 were reviewed. During the literature review, the phrase ''adolescent pregnancy'' was used to search for articles in English and the Turkish phrase ''genç gebelik'' meaning ''teenage pregnancy" for articles in Turkish,and 6227 articles were accessed. Of these articles, 21 were directly related to the topic of the review. Therefore, a table presenting research methods, objectives, findings, conclusions, and the recommendations of these 21 articles was prepared, and then the articles were analyzed by the years they were published.
Clinical cases and summary results: Evaluation of the results of the 21 articles included in the study demonstrated that the frequency of prenatal care was low whereas intrauterine growth restriction (IUGR), low birth weight (LBW) and birth complication rates were significantly high. In addition, of the adolescents, 2.94%-7% experienced premature rupture of membranes, 24.3%-52.94% gave preterm birth, 55.6% gave birth to low birth weight infants, 28.4%-82% did not receive antenatal care, and 57.2% did not use any contraceptive method. However, the cesarean section rate among adolescents was low. Among the indications for cesarean delivery were obstetric-related issues such as malpresentation, fetal distress, premature rupture of membranes, preterm births, eclampsia, etc.
Conclusion: The analysis of the reviewed articles revealed that while the rates of perinatal, postnatal, obstetric and neonatal complications were higher in adolescent pregnant women, the rates of utilization of antenatal care and family planning services were low. Adolescent pregnancies are an important issue in the world and Turkey. Training related to reproductive health should be provided for the young. Effective antenatal care and family planning services can improve maternal and fetal outcomes.

Keywords: Adolescent pregnancy in Turkey, teenage pregnancy, adolescent pregnancy

406 (CLINICAL CASE)

Coexistence of congenital diaphragmatic hernia, distal esophageal atresia, tracheoesophageal fistula and trisomy 18

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Introduction: The coexistence of congenital diaphragmatic hernia (CDH) and esophageal atresia (EA) with distal tracheoesophageal fistula (TEF) is extremely rare and has a higher mortality rate. Here, we present a female newborn with CDH, EA, TEF, trisomy 18.
Clinical cases and summary results: The patient, first child of non-consanguineous parents, was born at 36 weeks of gestation by cesarean section due to fetal distress. The pregnancy was complicated by polyhydramnios and triple screening test was abnormal. The fetal ultrasonography and echocardiography performed at 28th week of gestation revealed cerebellar vermis agenesis, polycystic kidney, and Fallot's tetralogy. Her mother refused amniocentesis. Physical examination showed microcephaly, triangle face, prominent occiput, low set and malformed auricles, widely spaced nipples, the absence of breathing sounds on the left side of the chest, a grade 1-2/6 pansystolic murmur in the mesocardiac region, scaphoid abdomen, absence of distal interphalangeal joint on second and fifth finger, partial syndactyly of second, third, and forth tongues, and short hallux. Chest X-ray showed the feeding tube curl up in the upper esophageal pouch, loops of intestine on left side of the thorax, and air in stomach and bowel. She was diagnosed left CDH, EA with TEF. Echocardiography revealed ventricular septal defect, patent ductus arteriosus, secundum atrial septal defect, left arcus aorta, and pulmonary hypertension. Urinary sonography showed increased renal parenchymal echogenicity with loss of corticomedullary differentiation. Chromosomal analysis revealed trisomy 18. She became progressively unstable and died at 24th hour.
Conclusion: The patients with coexistence of CDH, EA, TEF should be investigated in terms of chromosomal abnormalities.

Keywords: Congenital diaphragmatic hernia, esophageal atresia, tracheoesophageal fistula, Trisomy 18

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Paraplegia in pregnancy: two clinical cases with different injury levels and mode of delivery

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Introduction: A significant proportion of spinal cord injury (SCI) occurs in women of reproductive age. Pregnancy in this setting involves special concerns. Complications of SCI include anaemia, urinary tract infections and thermoregulation impairment. Autonomic dysreflexia (ADR) is a potentially life-threatening syndrome that affects up to 85% of the patients with lesions above T6 level. The manifestations of ADR (malignant hypertension, syncope, arrhythmia) are due to exaggerated sympathetic activity in response to stimuli below the level of the lesion (e.g. distension of the cervix). Uteroplacental vasoconstriction may develop, leading to fetal hypoxaemia. The ability to perceive labor pain may be decreased in these patients. Vaginal delivery with close monitoring is generally indicated.
Clinical cases and summary results: The authors present two cases of pregnancy in paraplegic women: 36-year-old women, G2P1 with SCI at T4-T5. The patient had an uneventful pregnancy except for multiple urinary tract infections. She was hospitalized at 37 weeks and an elective caesarean-section was performed by request at 39 + 6 weeks, under spinal anesthesia at L3-L4. A healthy male was born weighing 3315g, Apgar score of 9-10 (1′ and 5′). A 28-year-old woman, G3P2 (two vaginal deliveries before SCI) had a road traffic collision 4 years before, which resulted in SCI at T7-T9. The patient presented hiperreflexia with broad involuntary spastic movements of abdomen and inferior limbs in response to skin and vaginal stimulation. There were no complications during pregnancy. She was hospitalized at 38 weeks and had a spontaneous labor at 39 weeks. Spinal analgesia at L3-L4 was performed. Eutocic delivery of a male newborn, weighing 4080 g, Apgar score of 9-10 (1′ and 5′).
Conclusion: Pregnancy in SCI patients requires a multidisciplinary team that must be aware of the main complications, according to the level of the injury. Most of those pregnant females have concerns about their ability to perceive labor pain. In this setting, liberal hospitalization can be considered near term. A vaginal delivery should generally be preferred. However, both patients were afraid of not being able to cooperate. Mode of delivery should be discussed during the pregnancy.

Keywords: Delivery, paraplegia, pregnancy

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Marfan sydrome and pregnancy, a need for special surveillance

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Introduction: Marfan's syndrome is a genetic connective tissue disorder caused by mutation in the gene encoding fibrillin 1. Fibrillin is an extracellular matrix protein that provides support to rigid tissues and also enable skin and vessels to stretch. It is an autosomal dominant heritable disease. This systemic disease affects mainly the cardiovascular, skeletal and ocular systems. Pregnancy in women with Marfan's syndrome puts two prin issues: the risk of transmission to the fetus and the cardiovascular risk for the mother. The risk of aortic dissection is increased in pregnancy so it is important to assess cardiac funtion and structure. Furthermore marfan sydrome is associated with premature delivery, premature rupture of membranes and increased mortality.
Clinical cases and summary results: In this report we describe a 22-year-old woman with Marfan syndrome referred to obstetric evaluation at 30 weeks of gestation. This woman was diagnosed with Marfan syndrome in 2014 after her first pregnancy. The patient did not have a recent cardiac evaluation because of missed appointments and exams. She reported a family history of Marfan's syndrome, her mother and her first child are affected. At the obstetric appointment it was scheduled a cardiologist evaluation. The ecocardiogram revealed good cardiac function but with severe mitral regurgitation, left auricular dilatation and slight dilatation of the aortic root. It was recommended elective cesarean to prevent excessive maternal efforts. At 34 weeks she was admitted at obstetric emergency department at labour. Together with the cardiologist we decide to perform vaginal delivery. The labour went without complications. Post-partum course was unevent-full. The baby genetic test to identify marfan's family mutation was positive.
Conclusion: This case report reinforces the importance of multi-disciplinary approach in the care of pregnant women with Marfan's syndrome. Health care providers should be familiar with the need for high-risk obstetric surveillance. Preconception counseling is essential due to the risk of fetal transmission and maternal cardiovascular risk. The risk stratification of the pregnant women with hearth disease, timing, place and mode of delivery are important to achieve good outcomes.

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Anxiety experienced by fathers during labor at a state hospital and affecting factors

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Introduction: Whereas anxiety is considered as fears whose origins are not determined, it is feeling influent on social relationships, activities and daily lives of individuals and mostly results in perturbation on individuals. The birth process includes numbers of unknown issues for fathers as much as mothers. In this process, it is important to investigate into feelings of prospective fathers who are usually neglected within the scope of holistic approach. Therefore, the present research was conducted to determine the anxiety levels and factors influent on anxiety levels of fathers whose spouses hospitalized for coming birth operation.
Materials and methods: Universe of the present descriptive and cross-sectional study is consisted of spouses of pregnant women hospitalized in a state hospital in the period between January 1st and February 28th, 2015. No any selection method was adopted, 161 fathers whose spouses were administered into the hospital in the aforesaid period, who agreed to participate in the study were included in the sampling group. The research data was collected through a 35-item survey form applied face-to-face and prepared based on the available literature plus the Anxiety Status Scale upon the relevant permission was issued by the hospital administration. Collected data was analyzed through the SPSS package software by using mean, percentage, chi-square, Kruskal-Wallis and Mann-Whitney *U* test.
Clinical cases and summary results: It was observed that 49.1% of respondent fathers were in 28-35 age group, 34.8% were graduated

from a primary school, 88.8% has medium income level, and 80.1% have an elementary family. 68.9% of women gave birth before and 57.7% of these births were cesarean. It was observed that 47.8% of fathers have received partial information about status of their wives and babies, and the information resource was usually "phone conservation with their wives". Median total score of fathers based on the Fathers' Anxiety Status Scale was determined as 43, anxiety level of 80.7% of fathers was at medium level. Finally it was determined that the differences between median total scale scores and father's age, education level, income level, family type, marriage length, accompanying wives during physician examinations, debriefing about status of wife and baby, being disposed to be next to their wives during birth operation, having birth experience before were statistically significant ($p < 0.05$).
Conclusion: Fathers experienced medium level anxiety status. When factors related with anxiety were taken into consideration, it could be suggested that following conditions are required to be fulfilled, fathers to accompany their wives during antenatal examinations, establishment of pregnancy training centers for couples and to encourage them to attend these trainings, informing fathers during each stage of labor, and allowing fathers to participate in labor if they are disposed to support their wives.

Keywords: Anxiety, father, labor

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Environmental effect on intrahepatic cholestasis of pregnancy: seasonal variations in diagnosis and presenting symptoms/signs

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Introduction: Intrahepatic cholestasis of pregnancy (ICP) is the most common pregnancy specific liver disease classically presenting in the third trimester with pruritus, abnormal liver function tests and raised serum bile acid (sBA) levels, the latter being the most sensitive and specific marker for diagnosis. Although the etiology is complex and appears to be related to hormonal alterations in genetically susceptible women, several environmental factors are also reported to play a role. Low selenium and vitamin D levels have been accused of more frequent diagnosis of ICP in some countries during winter. Therefore, we aimed to re-check this environmental effect and demonstrate seasonal variations in symptoms and signs which may be warning clues for the diagnosis of ICP or other hepatic disturbances.
Materials and methods: Patients who were admitted to Ankara University Department of Obstetrics and Gynecology between May 2010 and September 2015 were retrospectively evaluated. Among those, women presenting with symptoms and signs implicative of a hepatic problem with documented sBA levels were selected. They were grouped into three according to presenting symptoms/signs: pruritus in the absence of a rash (group P), incidental detection of elevated transaminases (group T), and intractable abdominal discomfort together with nausea and vomiting unattributable to other causes (group O). The ones with sBA levels >10.0 μmol/L were diagnosed to be ICP. These three groups and ICP patients were compared within themselves depending on the season of patient admission.
Clinical cases and summary results: Among 100 patients meeting the inclusion criteria of the study, 68 (68.0%) presented with pruritus, 27 (27.0%) with incidental detection of elevated transaminases and 5 (5.0%) with other complaints. A total of 57 (57.0%) patients were diagnosed to be ICP. There was a statistically significant difference between groups in terms of the symptom/sign leading to ICP diagnosis (p=0.004). 46 (67.6%) among 68 were diagnosed to be ICP in group P. This was reduced to 37.0% (10 in 27) for group T and 20.0% (1 in 5) for group O. When ICP cases, group P, group T and group O were analyzed within themselves depending on the season of patient admission, winter followed by spring were the leading times of the year when the ICP cases and symptoms/signs implicative of a hepatic problem accumulate. However, this difference did not reach statistical significance in all of the groups (Table 1).
Conclusion: The results were consistent with the fact that pruritus is the most important clue leading to ICP diagnosis in majority of cases. Our data strengthened the suspicion of seasonal effects not only on ICP cases, but also on presenting symptoms and signs implicative of a hepatic problem. The reason why the difference did not reach statistical significance may be explained by the relatively limited scale of our study and our institution being a tertiary referral center. Further studies are mandatory.

Keywords: Intrahepatic cholestasis of pregnancy, environment, seasonal variations

Table 1. Seasonal variation of diagnosed ICP cases and presenting symptoms/signs

		Season (n, %)				P value
		Winter	Spring	Summer	Autumn	
Confirmed Intrahepatic Cholestasis of Pregnancy (n=57)		17 29.8%	15 26.3%	13 22.8%	12 21.1%	0.098*
Warning clues for further investigation	Pruritus (n=68)	21 30.9%	19 27.9%	16 23.5%	12 17.7%	0.285*
	Elevated liver enzymes (n=27)	11 40.8%	9 33.3%	5 18.5%	2 7.4%	0.581*
	Other (n=5)	4 80.0%	0 0.0%	1 20.0%	0 0.0%	0,235*

(*) Chi-Square test

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Influence of short umbilical cord to neonatal neutrophilia

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Introduction: An umbilical cord is considered short, if it is less than 35 cm. The long umbilical cord can transform to relatively short umbilical cord with wrapping around the fetus. Case mothers and infants are more likely to experience labor and delivery complications, such as signs of fetal distress, when the fetus has not been receiving enough oxygen. A next link in the chain will be neonatal shift neutrophilia.
Materials and methods: We analyzed the results of the triangle of short umbilical cord, fetal distress and neonatal neutrophils number. The cohort contents 386 newborns with short umbilical cord, of late preterm and full term pregnancies with fetal distress, collected during two years in the University Clinics of Gynecology and Obstetrics. We followed neutrophils dynamic in neonate's peripheral venous blood for three times: after birth, in the end of first and second postnatal day.
Clinical cases and summary results: The first group of 120/386 (31%) neonates delivered spontaneously vagynaly or 42/386 (10.8%) by vacuum extraction and a second group neonates 224/386 (58%) delivered by Cesarean Section. Two thirds of newborn babies were with high Apgar score in the first and fifth minutes, but others were livid asphyctic. The early neonatal neutrophilia among the

investigated newborn babies was 38% (148/386), in the range from 74% to 87%. The results of next investigations showed a decreasing of the neutrophils number to normal value, without of each one therapeutic treatment, excluding 24/386 (6.2%) septic newborns. There is not significant differences of neutrophilia between the groups.
Conclusion: Short umbilical cord trigerred brief placental insufficient for more time, what results in fetal distress such an uncommon complication of labor. It typically occurs when the oxygen delivery to fetus decrease. Newborn's answer high number than normal of neutrophils in peripheral blood. Neutrophilia may result from a shift of cells from the marginal to the circulating pool. This post stress neutrophilia appears quickly and disappears to some hours after an influence of provocation.

Keywords: Short umbilical cord, fetal distress, neonatal neutrophilia

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Blood presepsin level in neonates with necrotizing enterocolitis

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Introduction: Necrotizing enterocolitis (NEC) is one of the most serious diseases of neonates because of severe complications (e.g. gut perforations and peritonitis). Early diagnostics of NEC is very important factor for fatal outcomesprophylaxis. In fact we have no specific features of the NEC beginning and very few diagnostic criteria for differential diagnostics of the NEC stages. sCD14-ST(presepsin) is the protein with molecular weight about 13 kDa. Its blood level depends of phagocitosis activity and may be used as a marker of bacterial infection. Some authors suppose blood presepsinlevel increasing in neonates with NEC. The aim of our investigation was to estimate level of blood presepsin in neonates with gastrointestinal tract pathology.
Materials and methods: 18 neonates were examined. All patients were admitted to the hospital at the first week of life. All of them had two or more clinical or X-ray signs of gastrointestinal tract disorders but different diagnoses after examination. Gestational age was 34 [30,37] weeks, birth weight - 2010 [1700, 2738] grams, average age at the moment of gastrointestinal disturbance - 8 [4,16] days and NTISS - 28 [24,33]. (All data is presented as mediana and interquartile [25,75] interval). The examination included dynamic evaluation of clinical signs, blood counter, biochemical analyses, X-ray, US investigation. We estimated level of blood presepsin by method of chemiluminescention (analyzer Pathfast) in the first hours after gastrointestinal tract disorders revealing.
Clinical cases and summary results: The blood presepsin level of 800 pg/ml was chosen as a cut-off. 8 patients (one with partial intestinal atresia, one with NEC I and six neonates with NEC II-III) revealed presepsin level more than 800 pg/ml, 10 neonates (one with Hirshprung disease, one with low intestinal impassability, one with NEC II-III and seven neonates with NEC I) were included to the group with blood presepsin level less than 800 pg/ml. So there were significant difference in the number of patients with NEC I or NEC II-III in both groups (χ^2=5.368, p=0.021). Blood presepsin level in neonates with NEC II-III was higher (1213 [1144, 1688] pg/ml) than in patients with NEC I (671 [532, 747] pg/ml) (z=5.357, p=0.020). ROC-analyses demonstrated following data: sensitivity - 86%, specificity - 88%, AUC - 0.87. Dynamics of blood presepsin was estimated in 11 patients with NEC. The data at the beginning of pathological processes (762 [531, 1425] were higher than at the recovery stage (587 [334, 789]) (W=48, p=0.053).
Conclusion: The measurement of blood presepsin level may be used for the evaluation of severity of gut wall damage. The changes of blood presepsin level reveal the dynamics of pathological processes.

Keywords: NEC, presepsin

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Neonatal death in a tertiary care center in Brazil

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Introduction: One of the most sensitive ways to measure the quality of health care as well as socioeconomic status of a nation is infant mortality rate, especially neonatal mortality. The objective of this study was to establish a profile of the newborns that evolved to death in a NICU in south of Brazil.
Materials and methods: It was performed an observational study that included all hospitalized infants born at Hospital Nossa Senhora da Conceição that died in the NICU from January 2010 to March 2015.
Clinical cases and summary results: 12 201 babies were born during the period of the study. 836 newborns were admitted to the NICU and 128 (15.3%) died during hospitalization. 62.5% of the newborns that died were born by cesarean section, 53.9% were female, 81.3% were preterm, 48.4% weighed $<$ 1.000g and 16.4% $\geq$2.500g, and 43.7% had apgar score $\leq$7 at 5 minutes. The average number of days of life of these infants was 5.60 $\pm$ 6.22 days. 30.5% of the death ocurred in the 1st day of life and 46% between the 2nd and 7th day of life. The main clinical problems of the newborns associated to death were transient tachypnea of the newborn (60.2%), sepsis (44.5%), jaundice (35.2%), respiratory distress syndrome (33.6%), hypoglycemia (31.3%), birth defects (16.4%), intrauterine hypoxia (15.6%), pneumonia (11.7%), pulmonary hemorrhage (10.2%), and pneumothorax (7.8%). 90.6% of the newborns required mechanical ventilation, 57.8% received surfactant, 39.1% blood transfusion, and 37.5% parenteral nutrition.
Conclusion: The in-hospital neonatal mortality rate was 0.09%0. Prematurity and low birth weigh were the leading problems related to neonatal death. The prevention of prematurity is a important goal to improve neonatal survival.

Keywords: Neonatal death, prematurity, mortality

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Evaluation of medical counseling in contraceptive methods to puerperal women

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Introduction: Family planning is an important issue to avoid unwanted pregnancies and unsafe abortions. The aim of this study was to assess the knowledge of puerpera women about contraceptive methods, counseling received about family planning during pregnancy and puerperium, and contraceptive methods used.
Materials and methods: A cross-sectional observational study that included 587 women who gave birth at Hospital Nossa Senhora da Conceição, Tubarão, Brazil, from March to June 2015, was performed. The informations about contraceptive methods were obtained through the application of a questionnaire prepared by the researchers.
Clinical cases and summary results: The median age of the respondents was 27.3 ± 6.8 years. Most of the patients were married, had high school education, and a low income. The pregnancy was planned in 52% of the cases. 62.7% were using a contraceptive method before pregnancy. 64.1% became pregnant by stopping the method, and 30% by improper use. The methods more frequently used were oral contraceptive (80.7%) and male condom (9.1%). The major difficulty in proper use was forgetfulness. Among those who did not use contraceptive method, 37% believed that they would not became pregnant, and 21.5% were unaware of the methods. Doctors were the main source of counseling about family planning. 71.9% found the received informations adequate. Only 3.15% of the women were advised during prenatal care and 17.7% on puerperium. 64.4% of the puerpera women did not want another infant. 99.3% wanted to use a contraceptive method after delivery. Oral contraceptives and female sterilization were the methods of choice (44.2% and 17%).
Conclusion: Puerpera women knew and used various contraceptive methods. However non-use or misuse still led to unplanned pregnancies. There is a need to modify strategies to improve the efficiency of counseling on family planning.

Keywords: Puerpera women, contraceptive methods

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The level of sexual hormones in women of reproductive age with cirrhotic portal hypertension

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Introduction: Chronic liver diseases are commonly associated, in dependence of severity and duration of disease, with menstrual cycle disorders such as amenorrhea and anovulation. In most of cases the possibility of pregnancy is poor but sometimes these women become pregnant.
The aim: To estimate the concentration of sexual hormones in women of reproductive age with cirrhotic portal hypertension, in dependence of functional liver reserve Child Pugh.
We selected 60 women of reproductive age with cirrhotic portal hypertension, caused by chronic virus hepatitis. The functional liver reserve was determined, according to the child pugh A/B/C -25/20/15. We tested the plasmatic levels of oestrogen, progesterone, LH and FSH.
Clinical cases and summary results: In the first group in 25 cases (41,6%), where the functional reserve of liver child pugh a, was good, the medium level of e2 in all the phases of menstrual cycle was at upper admissible range (130,7±30,5PG/ML). In the second and the third group with poor functional reserve child B,C in 24 cases (58,3%) the level of oestrogen have been increased in all the phases of menstrual cycle (366,6±46,3PG/ML). This fact can be explicated by functional insufficiency of the liver and perturbances of protein synthesis in liver, which cause severe pathogenetic infringements in oestrogenic metabolism. The plasmatic medium concentration of progesterone in the first group was 34,5±3,6 NMOL/L and in group with poor liver reserve it was a breakdown of progesterone contents till 16,7±3,4NMOL/L (P0,05).
Conclusion: The increased value levels of estrogen and poor concentration of progesterone in women with cirrhotic portal hypertension, explain the absence of menstruation and anovulatory cycles in patients with poor liver reserve, which are the main factors of infertility in these patients.

Keywords: Infertility, sexual hormones, portal hypertension

476 (CASE REPORT)

The umbilical cord pathology - two true knots and thrombosis of the umbilical cord - case report

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Introduction: All states of the umbilical cord pathology can be divided into two groups. The first includes organic conditions - insertions abnormalities, vasa previa, blood vessel of umbilical cord pathology, umbilical hernia and tumors. The second group includes functional abnormalities - the state of the umbilical cord caused by malfunction or the influence of certain external forces - true and false knot, strangulati of the cord around the neck, umbilical cord descent, umbilical cord prolapse and umbilical cord edema. In our paper, a case of patient with a successful brought out pregnancy with two true knots and its thrombosis.
Clinical cases and summary results: The patient 28 years old, quartipara has been hospitalized due to pain in the bottom of the stomach and notable edema on her feet. At the department, the patient lab, clinical and ultrasound processed, and concluded that it is a vital pregnancy of 39th week. Biometrics and morphology of fetus neat. CTG reactive. On the third day of hospitalization, the patient complains that she does not feel the movements of the fetus. CTG silentan, and opted for an emergency cesarean section. A (female) child was born live, 3700gr | 54cm | 34cm, AS 5 | 7, reanimated. The amniotic fluid green. Umbilical thrombosis with two true knots. The baby was immediately sent to the Department of Neonatology Podgorica. Operative and postoperative tones were in order. PH finding - placenta measure 18x14x3cm with cord length 75cm paracentral insertion. In placenta there are many dark brown areas. Ramifications of the placenta was introduced, areas of bleeding in several places with the elements of necrosis. In the vein of the umbilical cord in several places thrombosis. Complete blockage of blood vessels thrombus. In two true knots, there is also thrombosis of blood vessel.

Conclusion: The presented case of umbilical venous thrombosis and two true knots was successful thanks to rapid caesarean section and child was born alive. Intrauterine diagnosis of umbilical venous thrombosis is difficult. The umbilical venous thrombosis rarely occurs and it is unpredictable, fatal in most cases. Maternal and fetal pathology is missing in many cases. It occurs suddenly, and it is a tragic loss. The diagnosis is often set out after birth, based on histopathology of umbilical cord.

Keywords: Umbilical cord, true knot, umbilical venous thrombosis

480 (CASE REPORT)

The functional damage of the newborn adrenal glands as a result of birth trauma - Case report

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Introduction: Due to its extreme size and hyperemia, adrenal gland in a newborn is extremely fragile and prone to haemorrhage. The clinical picture is nonspecific and varies from asymptomatic image to the development of acute, subacute or chronic adrenal insufficiency. Along with good anamnesis and a careful clinical exam, the gold standard for the diagnosis and monitoring represents abdominal ultrasound exam.
Clinical cases and summary results: A newborn from secundipara, desired, controlled pregnancy, during which the mother had hypertension (taking methyldopa). Birth at term, 40 week, PM 4600 gr, PD 60 cm, APGAR 8/10. On the fourth day of the birth, an increase in serum of bilirubin is noticed and the newborn is sent to the Neonatology. The newborn is placed in the incubator, the i.v. hydration, antimicrobial therapy and phototherapy are engaged. Ultrasound of abdomen performed, showing an elliptical, clearly limited change in the region of the left adrenal gland corresponding to hemorrhage. In the first days of hospitalization, the newborn is of good general condition, stable, takes and tolerates meals. Bilirubin in the fall, so phototherapy switched off. In the fifth day of hospitalization, the general condition of the newborn deteriorates; febrile 38,8?C, skin intense yellow, no tolerance of meals through the probe. Lab findings: elevated indirect bilirubin, PCT, low value of sodium. The i.v. rehydration with electrolyte correction and phototherapy are engaged. In further course, the situation improves, the newborn takes and tolerates meals, lab analysis within the reference values. Control ultrasound: limited change in the region of the left adrenal corresponding hemorrhage.
Conclusion: Visible birth trauma with perinatal asphyxia data, early hyperbilirubinemia should rise suspicion of possible adrenal glands hemorrhage. Clinical manifestation is nonspecific, U/S of the abdomen required. In case of adrenal glands hemorrhage confirmation, monitoring & testing for possible development of transitory/chronic insufficiency is necessary. Unrecognized insufficiency may deteriorate & develop acute insufficiency, one most urgent condition in pediatrics when child's life is endangered.

Keywords: Adrenal glands, haemorrhage, insufficiency

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When do we have to obtain rebound bilirubin levels?

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Presenter: **Hulya Bilgen**

Introduction: The aim of this prospective study was to evaluate the clinical utility and timing of inpatient rebound serum total bilirubin (STB) levels.
Materials and methods: Infants with a gestational age older than 35 weeks of gestation and for whom phototherapy was started according to the American Academy of Pediatrics Practice Parameters guidelines, were eligible for the study. Data including the demographic features of the babies, onset of jaundice and the etiological factors were recorded. The bilirubin work-up included blood groups of the mother and baby, STB, direct bilirubin level, direct Coombs test, reticulocyte count, peripheral blood smear, albumin and glucose-6-phosphate dehydrogenase levels. Rebound STB levels were obtained between 8-12.hours and 24.hours after the termination of phototherapy. All babies were followed up for hyperbilirubinemia during their first month of life.
Clinical cases and summary results: Data was available for 108 infants (82% term and 18% late preterm infants). The median (min-max) age and mean (±SD) STB at onset of phototherapy were 96(3-192) hours and 17.6±5.5 mg/dl, respectively. The median(min-max) duration of phototherapy was 24(8-72) hours for the whole group. Of the 108 neonates who received phototherapy, 17(16%) had blood incompatibility and six (29%) of them required exchange transfusion while seventeen (16%) were late preterm and sixteen (15%) babies had excessive weight loss. No risk factor was found in 54% of the cases. The rebound rate necessitating phototherapy was 9.3%. All babies who rebounded had a risk factor. Most of the babies (80%) rebounded between 8-12 hours, except two babies who rebounded at 24 hours. The rebound group had a significantly longer duration of phototherapy [median (min-max); 36(18-72) vs 24(8-72)] hours; p:0.001) and increased number of patients (40%vs12%;p:0.019) with hemolysis.
Conclusion: Although AAP guidelines states that ''discharge need not be delayed for rebound bilirubin levels'',in countries where the incidence of hyperbilirubinemia is high and the adherence to follow-up after discharge is low,rebound STB has to be obtained inpatient. Our results support that it is essential to check post-phototherapy bilirubin levels in babies with risk factors and found that early inpatient rebound bilirubin levels could detect 80% of the babies who needed a second course of phototherapy.

Keywords: Newborn, hyperbilirubinemia, rebound bilirubin

507 (CASE REPORT)

Pemphigus vulgaris during pregnancy

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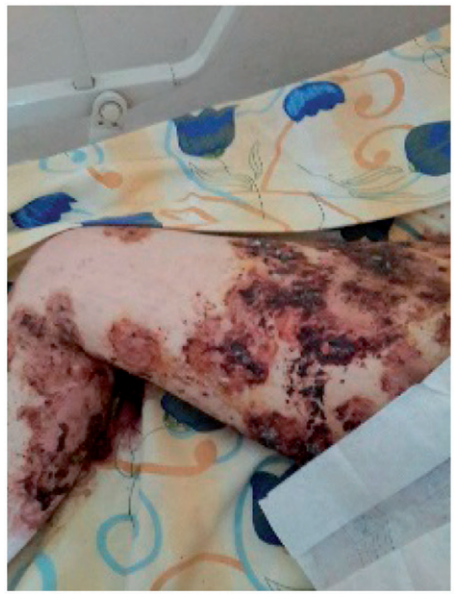
Presenter: **N. Pirtskhalava**

Introduction: Pemphigus Vulgaris (PV) is an uncommon immune - mediated bullous dermatosis, which is very rare during pregnancy. Its management during pregnancy is a challenge and sometimes very difficult. The disease may be associated with adverse fetal outcomes such as intrauterine death, which is confirmed due to umbilical cord prolapse, placental dysfunction or not diagnosed, prematuity and fetal death. The neonate can develop transient skin lesions. We present a case of patient who conceived during the active phase of PV required high doses of corticosteroids and cesarean section was performed due to stop extended uterinal bleeding and finish spontaneous abortion.
Clinical cases and summary results: 33 Year old woman G3P2 was referred to internal medicine department for suspected PV. On admission, there was flare of her disease during pregnancy. She was admitted at 17- week gestation with history of developing persistent gingival erosions, a shift from mucosal - dominant, erosions were present on the mucous membranes of the mouth and the vermillion bordesr of the lips, causing considerable pain and bleeding. Blisters were developed over the abdomen,gradually extended all over the body. Clinical and histologic features were the basis for diagnosing PV. She was treated with high doses of sytemic corticosteoids, she conceived while still on treatment without any difficulty. When she referred to our clinic, the body surface was covered with diffuse infiltrated erythema, with blisters with frail roof. The treatment was continued with oral therapy - Prednisone 75 mg, Cephepim, B Group Vitamins, Fluconasol, Amitriptilin. She needed one transfusion of Venofer. Two week after hospital treatment, she developed early pregnancy bleeding, pain in the region of hypogastrium.Gynecologist suspected spontaneous, unaccomplished abortion with extended bleeding, the endocervix was not ready for delivery .It was performed cesarean section, post cesarean section supravaginal amputation. Significantly, the scar after cesarean section had healed completely and was free from any skin lesions. During the hospitalization, oral therapy with methylprednisolone was continued.
Conclusion: It is seen in our case that during active phase of PV, it is possible to conceive. Our case indicates that PV in pregnancy requires care by a gynecologist, dermatologyst and internal medicine doctor. We believe that the cesarean section performed in the same cases could be a standard procedure, conceivably preventing induction of pemphigus lesions such as blisters or erosions in genital region during parturition. Finally, our case shows that prednisolone is first choice treatment for PV.

Keywords: Pemphigus vulgaris, SIRS, Pregnancy



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Fetal ductus arteriosus constriction and maternal consumption of polyphenol-rich foods in late pregnancy: a 6 year experience in a portuguese tertiary-care hospital

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Presenter: **Marcia Marinho**

Introduction: The ductus arteriosus (DA) plays an essential role in fetal circulation. It is a small vessel connecting the pulmonary artery and the proximal descending aorta that allows 80-85% of the blood from the right ventricle (RV) to bypass fetal pulmonary circulation. Ductal patency depends on circulating prostaglandins (PG) especially during third trimester and also endothelial nitric oxide and low O2 blood tension. Polyphenols are present in a large part of our daily food (dark chocolate, fruits and vegetables, etc) or beverage ingestion (green, black or other teas). They're able to inhibit PG synthesis, interfere with DA dynamics and condition a constrictive effect. Intrauterine DA constriction (DAC) may lead to RV hypertrophy, pulmonary hypertension, heart failure or even perinatal death.
Materials and methods: This is a retrospective study of all cases of DAC related with maternal polyphenol-rich substances consumption, that occurred between January 2010 and January 2016 presenting to a tertiary care hospital. A search of our hospital's electronic medical record system was used to identify all the cases.
Clinical cases and summary results: We present four clinical cases: two with pre-natal and two with post-natal diagnosis.

In two cases, the diagnosis of DAC was made during a fetal echocardiography in the 3rd trimester and related to a maternal ingestion of Ice Tea (> 1L/day). After it's suspension there was a reversion of DAC in one of the cases but not in the other. The 3rd case was a dichorionic twin pregnancy monitored and uneventfully until 35 weeks of gestation, when a caesarean was performed after a preterm membrane rupture. A few hours after birth, one of the newborns presented respiratory distress signs and hypoxemia with no response to O2 supplementation. An echocardiogram was performed and DAC in utero was hypothesized and related to maternal consumption of black tea, dark chocolate and orange juice. In the last case, the diagnosis was also made after birth and DAC was related to maternal Ice Tea consumption in late pregnancy.
Conclusion: Polyphenols are abundant micronutrients in our diet. Besides an anti-oxidant action, their anti-inflammatory effect (similar to NSAIDs- nonsteroidal anti-inflammatory drugs) inhibits the synthesis of PG. Excessive consumption during third trimester may interfere with DA hemodynamics leading to its constriction or premature closure. Since polyphenols consumption can be a reversible cause of DAC, dietary habits during pregnancy need to be paid attention.

Keywords: Polyphenols; ductus arteriosus constriction

510 (CASE REPORT)
Seizures in early postpartum period: a diagnostic challenge

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Presenter: **Marcia Marinho**

Introduction: There are several causes of seizures in the post-partum period. Evaluation and management should be performed in a stepwise fashion and may require a multidisciplinary approach with other specialties such as neurology.
Differential diagnosis includes eclampsia, epilepsy, cerebrovascular accidents (ex. cerebral venous thrombosis), infectious encephalitis, brain tumors, liver/renal failure, metabolic derangement, thrombophilia, posterior reversible encephalopathy syndrome (PRES), thrombotic thrombocytopenic purpura (TTP), etc.
There may also be considerable overlap in the presentation of these conditions, making diagnosis and treatment difficult. The distinction of etiology is critical, because therapy must be directed at the underlying disorder in order to achieve seizure control.
Materials and methods clinical cases & summary results: G2P0 previously healthy woman with an uneventful pregnancy followed at our institution because of maternal age (38 years old). She received a lumbar epidural during labor and delivered a healthy baby boy via cesarean section after nonreassuring fetal status. At the 3rd day after delivery she started paroxysmal episodes of involuntary contraction of the last three fingers and left hand, lasting seconds with spontaneous cessation and then a stronger seizure with loss of consciousness. There was no altered state of consciousness, hypertension, headache, nausea, visual disturbances or fever. She had 3 more episodes after the inaugural one. Magnesium sulphate was started until eclampsia was safely excluded. Laboratory tests with no thrombocytopenia, liver or renal impairment.
Lumbar puncture, head CT scan, EEC and ECG did not reveal any abnormality as well as cerebral MRI and magnetic resonance angiography. After being studied these partial/focal seizures were interpreted as inaugural epilepsy.
Conclusion: Seizures in the postpartum period poses a clinical challenge. Since pregnancy and postpartum are pro-thrombotic states, it is important to exclude cerebral venous thrombosis, thrombophilia, hemorrhage and also arteriovenous malformations.
Eclampsia presents as tonic-clonic seizures, besides headache, hypertension, proteinuria,etc. It seemed unlikely in our case. Inaugural epilepsy in the postpartum period is uncommon and a exclusion diagnosis that must be considered.

Keywords: Convulsions, postpartum

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Mode of delivery and perinatal results on donor oocyte pregnancies

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Presenter: **I. Mejía**

Introduction: Pregnancies conceived through oocyte donation are on the rise, most of them characterized by advanced maternal age, primiparity and multiple gestation. They have been linked to complications of abnormal placentation, hypertensive disorders, increased rate of induction of labor (IOL) and cesarean delivery. Most research has focused on the first two and little on mode of delivery and perinatal results which have been justified by maternal characteristics
Materials and methods: The study group included 136 women who conceived through IVF-DO within 2011-2015 and were followed up at our center. Medical files were reviewed to make a description of the basal characteristics, mode of delivery: vaginal delivery (VD), instrumental delivery (ID) and cesarean section (CS), looking for perinatal complications including Apgar<7 at 5 min, arterial pH<7.1, neonatal intensive care unit (NICU) admission and perinatal mortality. We searched for differences in obstetric outcomes between singleton and multiple pregnancies and between under and over 35 years old of maternal age.
Clinical cases and summary results: We studied 136 pregnancies; 94 singletons and 42 multiples (41 twins and one triplet). Maternal age distribution was bimodal with two peaks at 30 and 40 years. Mean body mass index (kg/m2) was 24.2(SD3.6).
In singleton pregnancies, 30.5% of women start labor spontaneously, 55.0% undergo IOL (main cause having reached 41weeks of gestation) and 14.5% have a planned CS (main causes preeclampsia and breech presentation). In multiple pregnancies 27.2% of women start labor spontaneously, 12.2% undergo IOL and 60.6% have a planned CS (main cause fetal malpresentation). In singleton pregnancies, prevalence (%) of VD, ID and CS on women who started labor spontaneously or underwent IOL was 31.9, 18.8 and 49.3 respectively. On multiples it was of 23.1, 7.7 and 69.2. No significant statistical differences were found when stratified by maternal age (under and over 35 years old). Main causes (%) for CS on singletons (excluding direct CS) were failure of induction of labor (26.2) labor arrest (14.3) and non reassuring fetal status (14.1%). In general, rate of VD, ID and CS were of 26.2%, 16% and 57.8% in singletons and 9.1, 3.0 and 87.9% on multiples.
Mean gestational age at delivery (weeks) was 38.9 (SD7.5) in singletons and 35.7 (SD3.6) in multiples. Mean neonatal weight was 2795 (SD784) grams. There were 3 cases of Apgar <7 at 5 minutes (2.2%), 13 (9.6%) infants who required NICU admission, two postnatal deaths, (one on a singleton, one on a twin pregnancy), and one stillbirth.
Conclusion: IVF-DO pregnancies have a higher rate of IOL (42.3%) and CS (66.1%) than spontaneously conceived pregnancies. Main causes

of CS on women who attempted VD were failure of IOL and labor arrest. These differences remain statistically significant when stratified by maternal age and number of fetuses. Further research is recommended in order to find other factors that might be playing a role on mode of delivery so we can improve these outcomes.

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Transported neonates in tunisia: condition at arrival and outcome

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Presenter: **K. Ben Ameur**

Introduction: To describe the transport of sick neonates to a tertiary care hospital and evaluate their condition at arrival and outcome.
Materials and methods: A multicenter, prospective cohort study was performed from 1st april to 31 July 2015.During this period, a total of 4122 neonates were admitted to 7 NICUs in Tunisia. Demographic parameters, transport details and clinical features at arrival were recorded. All neonates were followed up till discharge or death.
Clinical cases and summary results: A total of 239 consecutive neonates were enrolled in the study representing 5.7% of all admitted infants. Sex-ratio was 1.46. Preterm infants represented 24% of transported babies. Maternal risk factors were present in 26% of neonates admitted. Seventeen percent of neonates had severe respiratory distress and 10% had hemodynamic troubles. Referred hospital was not informed in 24% of cases. Regarding the transport mode, 113(47.5%) were transported in ambulance accompanied by a nurse and the majority of the transportations had been done without monitoring blood oxygen(75%).Transport incubator was available in 28% of cases. Documentation during transfert was present in 14% of cases. Five babies expired on arrival and rate mortality was 13.8%.
Conclusion: Transporting neonates in developing countries is a challenge. Organized transport services in Tunisia are not available. No health provider is available to accompany the baby and communication systems are inefficient. So, in cases of at-risk pregnancy, it is safer to transport the mother prior to delivery than to transfer the sick baby after birth.

Keywords: Ambulance, Birth weight, Neonatal transport, mortality

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Pulmonary hypertension during pregnancy: perinatal and maternal outcomes in our hospital

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Presenter: **Alicia**

Introduction: Pulmonary hypertension is a syndrome defined by elevated mean pulmonary arterial pressure. It is a rare disorder with multiple etiologies, one of them is primary PH (without previous cardiac damage)and secondary HP (in wich the clinical situation is a result of a heart injury. This condition is mainly characterized by flow restriction through the pulmonary circulation, entailing an increase resistance in the pulmonary vessels. Pregnancy in this patients poses a high risk with elevated maternal an fetal mortality rates (30%-50%). Current guidelines advise against pregnancy, and still consider PH as a contraindication. However, an intensive multidisciplinary team approach and the development of new drugs has improved the survival of these patients.
Materials and methods: We designed a descriptive, retrospective and no controlled study. We include all patients followed in our hospital between September 2011 and April 2015, with an evolutive pregnancy who decided to go on, despite full awareness of the risks and serious complications.
Clinical cases and summary results: A total of 7 women were included. 71% (5/7) were affected by primary pulmonary hypertension. Treatment before pregnancy was Sidenafil in 57,9% of the patients and Calcium channel blockers were used in the rest of them. Each patient same treatment and no modifications were made during the pregnancy. 86% of them had a good NYHA ($\leq$II).
Antenatal corticoids for fetal maturation were administrated in 4/7 (57%). Mean gestational age at delivery was 34 + 6 weeks (from 31 + 5 to 37 + 5). An elective cesarean was performed in all cases, 5 with regional and 2 cases using general anesthesia.
All women delivered healthy babies with a great Apgar score. Neonatal mean weigh was 2410 g (from 1490 to 3360 g). Prematurity complications occurred in 5 of the newborns. One of them is affected by a supraventricular tachyarrhythmia of hard management. No complications took place during the obstetric follow-up or post-partum. There were no maternal or neonatal deaths.
Conclusion: Although Pulmonary Hypertension has a high risk of mortality, current treatment allow to achieve a successful pregnancy if this situation is managed by a skilled multidisciplinary team ideally at a centre with experience in these disorders so this pathology could be no more an absolute contraindication for pregnancy.

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Attempted operative vaginal delivery: evaluation of maternal and neonatal outcomes

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Presenter: **A. Vázquez Sarandeses**

Introduction: The purpose of this study is to assess the short-term maternal and fetal morbidity associated with operative vaginal delivery (OVD). In this study we intend to evaluate whether there is an association of OVD to the development of adverse maternal and neonatal outcomes.
Materials and methods: Retrospective study of 309 women carrying singleton fetuses who underwent attemped lowpelvic OVD. The mean gestational age was 39 +4 weeks (from 33 + 4 to 42 + 5 weeks). This group is composed of 254 nulliparous (82.2%) and 55 multiparous (17.8%) women. Severe maternal morbidity was defined as postpartum hemorrhage, fever, blood transfusion, thromboembolic events, third or fourth degree perineal laceration and the development of urinary or fecal incontinence. Severe neonatal morbidity was considered as Apgar score below 7, metabolic acidosis (umbilical artery pH<7,10), shoulder dystocia, respiratory distress requiring the use of positive pressure ventilation or intubation and neonatal intensisve care unit admission. For data analysis STATA IC14 was used.
Clinical cases and summary results: During 2015, 4200 deliveries occurred. There were 309 lowpelvic OVD (7,4%): 144 Spatula (46.6%), 133 Forceps (43.0%) and 32 Vacuum (10.4%) attemped. Most common indication for OVD was prolonged second stage of labor n=170(55.0%) followed by Suspicion of inmediate fetal compromise n=74(24.0%). There were no maternal or perinatal deaths. Severe maternal morbidity rate was 17.6% (n =53): 86.8% in nulliparous, and 13.2% in multiparous women. Main adversal outcome was severe perineal laceration n=22 (30.1%), followed by blood transfusion n=16 (22.9%). Mean birth weight was 3307.8 (from 1490 to 4870g). Severe neonatal morbidity rate was 17.5% (n =54) and respiratory distress was the main cause 37.0% followed by metabolic acidosis 22.2%. Shoulder dystocia occurred in 5 cases, all of them presented brachial plexus neurophaty with good subsequent recovery
Conclusion: In those fetuses who manifests signs of compromise and when shortening the second stage of labor might result in a maternal benefit, operative vaginal delivery, performed by a trained professional is a good alternative. It has proven to be safe for both, the mother and the newborn. Finally, we are not able to conclude that a type of OVD is safer than another one.

Operative Vaginal Dellivery type	Neonatal morbidity No	Yes	Total
Spatula	117	27	144
	0.0	0.1	0.2
	81.25	18.75	100.00
Forceps	110	23	133
	0.0	0.0	0.0
	82.71	17.29	100.00
Vacuum	28	4	32
	0.1	0.5	0.5
	87.50	12.50	100.00
Total	255	54	309
	0.1	0.6	0.7
	82.52	17.48	100.00

Pearson chi2(2) = 0.7146 Pr = 0.700

Operative Vaginal Dellivery type	Maternal morbility No	Yes	Total
Spatula	121	23	144
	0.0	0.1	0.1
	84.03	15.97	100.00
Forceps	106	27	133
	0.2	0.8	0.9
	79.70	20.30	100.00
Vacuum	29	3	32
	0.2	1.1	1.4
	90.63	9.38	100.00
Total	256	53	309
	0.4	2.0	2.4
	82.85	17.15	100.00

Pearson chi2(2) = 2.4310 Pr = 0.297

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Advanced maternal age and the risk of stillbirth at term

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Presenter: **Petrov Victor**

Introduction: Delayed child-bearing, which has increased greatly in recent decades, is associated with an increased risk of adverse pregnancy outcome [Laopaiboon M et al. 2014, Jo-Ann Johnson et al., 2012]. Thus, advanced maternal age (≥35 years) has been reported as a risk factor strongly associated with stillbirth in many developing countries [Aminu M. et al., 2014]. Fretts and colleagues have shown

that maternal age over 35 years is associated with increased risk of fetal death. These findings were confirmed in multiple studies, and association persists even after adjustment date for potential covariates such as genetic problems, innate defects, medical problems and maternal weight [R.M. Silver, 2007].
Materials and methods: A retrospective case-control study was handled. The sample size was limited by the total number of stillbirths at term (0 Apgar score at the first and fifth minute of life) registered in the Institute of Mother and Child (IMC) of Republic of Moldova during 2013-2014. The control group consisted of live births in the same obstetric units. As mature were considered newborns since 37 obstetric week. The study group (L1) included 39 cases of intrauterine fetal demise at term, the control group (L0) - 69 live births. In order to obtain the necessary information it has been examined the stationary patient chart (Form 000-1/e). Data collection was carried out by means of a specially developed questionnaire.
Clinical cases and summary results: The stillbirth rate in the IMC was equal to 12%0 and 9,0%0 in the 2013 and 2014, respectively, compared with 7.1 and 6,2 at the national level. A considerable difference is explained by the fact that the IMC is a medical institution of III level, where, according to predetermined criteria, are focused pregnant women with the presence of risk factors, as well as those, whose pregnancy has complicated by intrauterine fetal death. In 2013 in the framework of IMC stillbirth explained 54.5% of all perinatal losses (72/132), in 2014 - 51, 3% (61/119). Stillbirth rate at term was stable during 2013-2014 years (3,3 and 3,2%, respectively).
The present study revealed that the average age of women who gave birth to an intrauterine mature demised fetus is higher than in the control group (29.26 vs. 26,75 years). At the same time, the share of women with the age $\geq$35 years is higher in the group of stillborn's (25,64% vs.2.9%). Odds Ratio (OR) for this risk factor was equal to 11.6 (CI 2,38-56,05).
Conclusion: Advanced maternal age is a significant risk factor associated with stillbirth at the gestational term of 37 weeks and over. The risk of intrauterine death of mature fetus is, at least, double times higher in the older pregnant women. Deeper research should be carried out in order to prove the influence of maternal age on the course of ante- and intrapartum period in association with the coexisting factors and medical conditions.

Keywords: Stillbirth, maternal age

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Pregnancy complications in patients with recurrent miscarriages in anamnesis

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Presenter: **Olga Lebedeva**

Introduction: Rate of recurrent miscarriages at late pregnancy is about 1% (H. Carp, 2012). There are very small data about pregnancy complications in women having recurrent miscarriages in anamnesis, in spite that some conditions, which led to miscarriages, still can exist.
Materials and methods: Pregnancy complications according to outpatient case histories were estimated in 100 pregnant women with recurrent miscarriages in anamnesis (2 or more miscarriages) and in 89 pregnant women without miscarriages in anamnesis (control group). Groups were randomized by age.
Clinical cases and summary results: It was showed, that in patients with miscarriages had significantly higher rate of emesis gravidarum (OR=15,53; 95% CI 2,01-120,26, p=0.009) and gestosis (OR=4,20; 95% CI 1.5044-11.7259, p=0.006). Also higher rate of placental insufficiency (OR=13,75; 95% CI 5.14 - 36.79, p<0.0001) and fetal hypoxia (OR=3,28; 95% CI 1.63 - 6.61, p=0.0009) was observed in this group of patients, while rate of fetal growth retardation had no significant difference with the control group. Among women with recurrent miscarriages in anamnesis higher rate of intraamnial infection (OR=18.64; 95% CI 4.3055 - 80.7236, p=0.0001) and olygohydramnios (OR=12.00; 95% CI 1.53 - 94.28, p=0.02) were discovered. Rate of polyhydramnios was the same in both groups.
No differences in rate of early and late miscarriages, preterm labor, gestational diabetes mellitus, gestational pyelonephritis were discovered between study group and control group. Rate of fetal macrosomia has no significant differences in both groups.
Conclusion: Thus, women with recurrent miscarriges in anamnesis have more complications during pregnancy and require better preconception.

Keywords: Pregnancy complications, fetal hypoxia, gestosis, miscarriages, placental insufficiency, intraamnial infection

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The relation of expectant mothers' health-related practices during pregnancy and fatigue in mother and prenatal attachment

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Presenter: **Sinem Yalnizoglu Caka**

Introduction: Pregnancy is a complex process that brings along many changes in physiological, psychological and social aspects. While expectant mother experiences the initial excitement, she can also encounter undesired problems during pregnancy. Fatigue is one of the most important problems experienced. Although fatigue is observed at each stage of pregnancy, health behaviors can be an important factor in the decrease/increase of fatigue felt. Prenatal attachment is used in defining the emotional, cognitive and behavioral attachment established between the baby and the woman during pregnancy. The purpose of this study is to examine the relation of expectant mothers' health-related practices during pregnancy and fatigue in mother and prenatal attachment.
Materials and methods: The descriptive correlational study was carried out at a State Hospital in Sakarya. The study sample consisted of pregnant women (at least 20-week gestation) who applied to prenatal care services and agreed to participate in the study. This study was approved by the Ethical Board in Sakarya University. The data were collected through a Personal Information Form, Brief Fatigue Inventory (BFI) and The Prenatal Attachment Inventory (PAI). The Cronbach's alpha coefficient in this study for PAI was 0.97. The Cronbach's alpha coefficient in this study for BFI was 0.93. The data collected were analyzed by percentage distribution, means square, Spearman's correlation, Mann-Whitney U-test and Kruskal-Wallis test. A p-value <0.05 was considered significant.
Clinical cases and summary results: 43.1% of the expectant mothers (n=91) participating in the study were in the 24-29 age range. 59.7% (n=126) of the participants had a middle income level, 35.5% (n=75) of them were secondary school graduates, and 92.4% (n=195) of them

went for regular controls. While the PAI average of the expectant mothers going for regular control was 55.18±15.79, who did not go for regular control was 43.56±16.23, and the difference between them was found to be statistically significant (p=0.004). While the PAI average of the expectant mothers who smoked during pregnancy was 45.29±14.18, who did not smoke during pregnancy was 54.85±16.05, and the difference between them was found to be statistically significant (p=0.032). While the BFI average of the expectant mothers with planned pregnancy was 28.93±12.07, the BFI average of the expectant mothers with unplanned pregnancy was 38.69±12.88, and the difference between them was found to be statistically significant (p<0.001). While the BFI average of the expectant mothers with sufficient sleep duration was 31.26±12.56, the BFI average of the expectant mothers with insufficient sleep duration was 41.19±14.09, and a statistically significant negative relationship was found between fatigue and sleep duration (r= -0.331, p<0.001). The PAI averages of the participants were 54.30±16.09, and the BFI averages were 32.77±13.26, and a negative, weak but statistically significant relationship was found between BFI and PAI (r=-0.184,p=0.007).
Conclusion: It was observed that the expectant mothers' health-related practices during pregnancy positively affected the fatigue and prenatal attachment. It was determined that the prenatal attachment was negatively affected as the fatigue increased in pregnant women. The fact that expectant mothers develop positive health behaviors during pregnancy will decrease the fatigue felt and positively affect the prenatal attachment.

Keywords: Pregnancy, Prenatal Attachment, Fatigue

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Ductus dependent cardiopathies. aproach and evolution in a neonatal unit

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Presenter: **R. Roldán López**

Introduction: Congenital heart defects (CHD) are the most frequently admitted to neonatal critical care units (NICU) congenital malformation. They require a quick diagnosis and treatment, specially ductus dependent heart defect (DDC). Our objective is to describe the characteristics, management and complications until discharge from the Neonatology Unit of the children with DDC in our NICU. Our secondary aim is to evaluate possible evolution predictors. The frequency of side effects described previously in the literature as associated with the use of prostaglandins was also registered.
Materials and methods: A transversal study was performed, by clinical story revision of the children with DDC hospitalized in our NICU in the last five years (2011-2015).
Clinical cases and summary results: We studied 48 patients (43,8% female), 18 with prenatal diagnosis (37,5%). 41 (85,4%) born at term and 7 (14,6%) preterm (32-36 weeks). 17 (35,4%) were born in our hospital and 31 (64,4%) came transferred from other hospitals. 25 where asymptomatic and 23 symptomatic (cyanosis or low cardiac output).
The most frequent DDC were great arteries transposition (16; 34,8%) and aortic flow changes (13; 28,2%). 8 (16,8%) associated non-cardiac major malformations. Rashkind technique was performed in 3.
All patients received prostaglandins, for an average 10.6 days (1-71). Vasoactive drugs (VAD) were needed in 23 (47%) (more often dobutamine (17) and dopamine (11)). They needed central venous catheter for an average 12.25 days (1-71) and mechanical ventilation (MV) for 4,8 days (0-71).
During admission, 24 (50%) had sepsis, 7 (14,6%) microbiologically confirmed. 7 (15,6%) had digestive and 6 (12,8%) neurological disorders. Cardiac surgery was performed (postoperative care in pediatric intensive care unit) in 29 (60,4%) and 6 (12,8%) died before surgery.
There were fewer deaths among those born in our hospital against transferred patients (0 vs 6, not statistically significant (NS) (p=0,07)) with fewer VAD need (p=0.015), shorter MV (p=0.027) and fewer infections (p=0.035).
Children with prenatal diagnosis required less VAD (p=0.04), with longer treatment with prostaglandins (p=0.012) and had less (NS, p=0.07) neurological disorders.
Conclusion: Children with DDC have significant morbimortality, with long stays at hospital and with venous catheter and MV during long periods, favouring the appearance of complications (death, infections. . .).
There may be side effects of prolonged treatment with prostaglandins, although new prospective studies are still needed.
Prenatal diagnosis and birth in a tertiary hospital with a neonatal unit is associated with lower morbidity and mortality.

Keywords: Ductus dependent cardiopathies, prostaglandins

	N (%)
Total (fiebre y febrícula)	18 (58,4%)
Citopenias	12 (27,3%)
Hiponatremia	11 (22,9%)
Hiperostosis	1 (2,1%)
Apneas	5 (10,4%)
Clínica digestiva	7 (14,6%)
Hipotensión	14 (29,2%)
Hipoglucemia	4 (8,3%)

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Drug use knowledge and practices of expectant mothers during pregnancy period

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Presenter: **Sinem Yalnizoglu Caka**

Introduction: Drug use during pregnancy, the used drug has a special importance because it may have potential risks that could threaten the life of the mother and fetus. To compare the benefits of drugs and its potential harms to mother is a basic principle in pregnancy. Medicines and some substances used in pregnancy may create teratogenic effects in embryonic period, also can lead to morphological and functional problems at later stages. Therefore, mothers should not use drugs without doctor recommendation during pregnancy. The study was conducted to determine the knowledge and practices regarding drug use of pregnant women in this process.
Materials and methods: The descriptive study was carried out at a State Hospital in Ankara. The study sample consisted of pregnant women aged 18 years or above (n=266) who applied to prenatal care services and agreed to participate.This study started after receiving approval from related local authorities.The data were collected through a Personal Information Form which were prepared by the researchers themselves.Personal Information Form included items on age, educational status, economical status, drug use etc.The participating women were informed of the purpose of the study and the methods to be used and signed an informed consent statement.The obtained data were evaluated using percentage and average.All statistical analyses were performed using commercial software (IBM, SPSS statistics V. 22).
Clinical cases and summary results: 31.2% of respondents (n = 83) in the 25-29 age range and mean gestational age was 27.26±10.59 weeks. 75.2% of respondents (n = 197) was nuclear family, 66.9% (n = 176) with middle-income, 76.8% (n = 202) housewife, 41.9% (n = 111) primary/secondary school graduate. 60.6% of pregnant (n= 152) experienced various health problems during pregnancy and 18.9% of them (n= 44) has been treated by medication. 43.1% of respondents (n = 113) do not have information about drugs can be used in pregnancy and 15.1% of respondents (n= 38) stated that used drugs before learning to pregnancy. 12.4% of respondents (n= 32) stated that did not use the drug for fear it would harm the baby although the doctor recommended. For the question of ''when you have any health problem during pregnancy, first what you do?'' 89.8% (n= 237) of women answer was ''I take drug with the doctor's advice''. 91.3% of women (n= 239) stated that drugs use will affect the baby during pregnancy, 57.3% of them (n= 149) will not use drug in pregnancy period for fear it would harm the baby despite the doctor's recommendation, 50.2% (n = 132) of respondents stated that the drug should not be used at all if possible during pregnancy.
Conclusion: Inform women about the use of drugs in pregnancy will reduce their concerns about the issue and will prevent incorrect applications.

Keywords: *Pregnancy, drug use, health problems*

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An analysis of patient's knowledge on prenatal testing

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Presenter: **Magdalena Nowak**

Introduction: Prenatal tests are one of the basic diagnostic methods during pregnancy. Nevertheless, they arouse many controversies among pregnant women due to insufficient knowledge on diagnostic possibilities of, potential risks and benefits for further process of treatment. The objective of this study was to assess knowledge of the possibilities, benefits and risks associated with prenatal diagnostic among pregnant women.
Materials and methods: A prospective evaluation of questionnaires filled by 100 pregnant women. The patient women were hospitalized between December 1st 2015 and January 31st 2016 at the Department of Obstetrics and Perinatology of Jagiellonian University Medical College in Cracow. The research was based on the questionnaire that included 21 questions about women's knowledge on prenatal tests.
Clinical cases and summary results: In this research mean age was 26.6 years; min:19 max:39. Among 100 women: 93% (93) performed the ultrasound between 11 and 13 + 6 weeks of pregnancy. Only 37% (37) female had simultaneously double test. All participants had made an ultrasound between 18 and 22 week of gestation. 43 women conducted it at private gynaecologists, 57 women were in the public healthcare units. Among first group gynaecologist recommended to perform double test more often (30 - 69.77%) compared to the second group (7 - 12.28%) ($p < 0.05$). Detailed information on prenatal tests women obtained from: the Internet (99%), their own gynaecologist (85%), in fashion & lifestyle magazines (78%), friends (56%). 19% (19) women considered frequent ultrasound as potentially harmful to the fetus.
Due to medical indications 65% (65) participants would perform invasive diagnostic. The majority - 85 patients (85%) considers it reasonable to carry out information campaigns about the possibilities of prenatal diagnosis.
Conclusion: This study demonstrated insufficient knowledge on possibilities and risks of prenatal diagnostics. More information about prenatal diagnostic is obtained from private gynaecologists. Performing information campaigns on prenatal tests is necessary.

Keywords: Prenatal testing, patient, knowledge

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Improving the quality of medical care for mothers and newborns in kyrgyzstan by funding health care based on the results

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Presenter: **Sagynbu Abduvalieva**

Introduction: Kyrgyzstan has achieved the MDGs in 2015, reducing child mortality by 2/3 from 71 to 23% since 1990. Maternal mortality in the last 10 years is not close to the target criterion of 15.7 per 100,000 children born. The trend in maternal mortality in the country is volatile; its lowest value observed in 2011 (43.8 per 100,000 children born in 2013 to 39.2 per 100,000, and the highest in 2009. 75.3).
The Ministry of Health of Kyrgyzstan follows the strategy ''Den Sooluk'' aimed at addressing key disadvantages in the current system of health care, with emphasis on maternal and child health. Project ''HFBR'' (health financing based on the results) has been proposed for the maintenance of health programs for maternal and child care in health care organizations of the district and hospital level.
Materials and methods: I component -Testing two alternative approaches to improve the quality of maternal and newborn health care at the level of district hospitals;

II component - financing, training and technical assistance to providers of medical services;
Assessment tools include:

- scorecard consisting of 7 sections
- Infants, children up to 5 years
- Management, security, hygiene
- Human resources, training
- Patient Satisfaction
- Quality Assurance
- Surgery
- Obstetrics

All components used structured (quantitative) questionnaires or checklists for data collection, all field workers, doctors have been previously trained evaluation methods.
Clinical cases and summary results: Results:

- The pilot hospitals located in rural areas and small towns, held stimulating payment by results of activity and intensive monitoring of the quality of care for mothers and newborns.
- Increased capacity of the Government (the Ministry of Health, Mandatory Health Insurance Fund) and the provider of health services in the award of contracts by the results of the activities, also in monitoring and evaluation.

As a result of the ''HFBR'' (health financing based on the results) project integration have been identified:

- Process changes in the hospital
- Defining vital medicines needs, purchase of medicines, medical products. destination, changing medication storage conditions
- Improve hygiene conditions for patients and staff.
- Components library, Internet connection
- Education management and staff

Indicators of the project impact were:

- Improving the material resources
- Improving medical supplies
- Strengthening the capacity to manage governance
- Capacity building professionals
- Availability of patient satisfaction

The highest growth was recorded in the group of hospitals with incentive pay based on the results of activity and intensive monitoring of the quality of care for mothers and newborns.
Conclusion: In this way, the integration of the intensive monitoring of the quality of medical care for mothers and babies at the district hospitals of Kyrgyzstan with all the quality components of medical services, with a challenging payment by the results of the health care organization, improve the material and technical base, medical supplies, enhances the potential of managers and health professionals of the hospitals and most importantly - improves patient satisfaction of care.

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IVF outcome in patients with antiphospholipid antibodies

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Presenter: **J. Khizroeva**

Introduction: it has been suggested an association between APA circulation and IVF failure. We evaluated the IVF outcome among APA-positive patients and determined the relationship between the presence of antiphospholipid antibodies and IVF success.
Materials and methods: since 2008 to 2016 we observed 367 women undergoing IVF. I group composed 228 women with IVF failure (1 to 9 failures) and II group consist of 139 women with IVF success. Control group consist of 60 healthy pregnant women. Serum from all patients were examined for antibodies to cardiolipin, annexin V, b2-glycoprotein I, prothrombin and lupus anticoagulant circulation.
Clinical cases and summary results: Total 42,1% patients of I group had APA circulation. Among them - antibodies to cardiolipin - 8,9%, to b2-GPI - 31,4%, annexin V - 24%, to prothrombin - 13,5%. LA circulation - 19,6%. In II group APS was diagnosed in 19%. In women with successful outcome of IVF in 12.4% we observed subsequent reproductive fetus wastage. No stillbirth or antenatal fetal death. Miscarriage occurred as stagnant pregnancy before 12 weeks of pregnancy. All women with pregnancy after IVF received the therapy (LMWH, antioxidants, folic acid, aspirin, vitamins group B) were delivered at term with alive healthy newborns.
Conclusion: Women with APA circulation demonstrate significantly high IVF failures (42,1%) and worser reproductive outcome compares with the women undergoing IVF protocols but without APA. We consider the presence of antiphospholipid antibodies as temporary contraindication for the IVF programme.

Keywords: Antiphospholipid antibodies, pregnancy loss, IVF

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Planned home birth- attitude of polish women

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Presenter: **Malgorzata Radon-Pokracka**

Introduction: Home birth is an increasingly popular form of labour in certain countries of Western Europe and the United States. In Poland, according to the latest data in 2014, only 111 children were born on the road of planned home birth. The aim of this study was to analyze pregnant women knowledge and attitude to this form of labour.
Materials and methods: Prospective analysis was performed using data obtained on the basis of a specially prepared questionnaire. The questions related to the women knowledge of the possibility of planned home birth and the risks associated with this form of giving birth. The study involved 100 patients hospitalized in the Department of Obstetrics and Perinatology, Jagiellonian University in Cracow in the period from 1 January 2016 to 29 February 2016.
Clinical cases and summary results: 83% of respondents answered that they were aware of the possibility of home birth but were not interested in, 17% didn't know about this option. All women as a reason for not choosing to undergo a planned home birth indicated concerns about the ability to provide adequate supervision over the safety of the woman and the fetus. To the question ''Do you consider planned home birth as a safe form for the mother and the fetus?'' 27% respondents answered ''definitely not''; 67% ''probably not'' and only 7% ''rather yes''. Main advantages of the home birth that women included were: greater sense of intimacy during childbirth (88%), possibility of support from family (76%) and establish a family tradition (18%). More than 50% of survey participants answered that hospital conditions are sufficient to maintain the family atmosphere of the childbirth. All respondents considered lack of connection between a possible better mental and emotional child development and the home birth.
Conclusion: Planned home birth is not a widespread problem in obstetrics in Poland yet. Among Polish pregnant women there is a high awareness of the danger to the mother and the fetus in case of birth outside the hospital - both with or without proper doctor or midwife supervision. The conditions of perinatal care in the hospital are considered by patients to be sufficient to provide the necessary comfort and intimacy of childbirth.

Keywords: Home birth, labour

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RH0(D) immunoglobulin in pregnancy with immune thrombocytopenia (case report)

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Presenter: **V. Kazliakova**

Introduction: It is well known that the main goal of maternal therapy of Immune Thrombocytopenia (ITP) during pregnancy is to minimize the risk of hemorrhage and to restore a normal platelet count. Usually the initial treatment is prednisone 0,5 to 2,0 mg/kg/day. But is not clear how steroids improve platelets counts and decrease bleedings in patients with ITP that are beginning from glucocorticoids (prednisone). Hypertension, osteoporosis, glucose intolerance, psychosis, moon faces, increased risk of premature rupture of the membranes are adverse effects of glucocorticoids during the pregnancy. We presented a case of ITP in pregnancy with the usage of Rh0 (D) immunoglobulin.
Clinical cases and summary results: A 29-year-old woman, with history of menorrhagia, gravida 2, para 2 was monitored with laboratory control from 9 weeks of gestation because of Immune Thrombocytopenia (ITP) (platelet 88,000 cells/μl). Medrol (methylprednisolone) was taken by the patient from 15th weeks of gestation (platelet 45,000 cells/μL). The lowest level of platelet was revealed at the 25th weeks of gestation (19,000 cells/μL) with maximum dosage of Medrol of 52 mg/day. The patient was admitted to our clinic because of vaginal bleeding at the 28th weeks of gestation (platelet count 63,000cells/μl). Fetal ultrasound examination revealed polihydroamnios without any signs of retroplacental hematoma. The treatment included intravenous Tranexamic acid 10mg/kg, antibiotic (ceftriaxone 2,0 gr/day+metronidazole 1,5 g/day). After the bleeding has stopped, Rhesonativ (Rh0 (D) immunoglobulin) 1250 ME was used. Second injection of Rhesonativ was at the 34th weeks gestation. After Rh0(D) immunoglobulin injection the level of platelet was not less than 100,000 cells/μl till the date of delivery. A female infant was born by cesarean section at the 37th weeks with a weight of 2760 g, and length 47 cm.
Conclusion: Rh0(D) immunoglobulin can be used in the Immune Thrombocytopenia during pregnancy. However it is not clear now what kind of dose of Rh0(D) immunoglobulin is necessary for patients to obtain the optimal clinical effect.

Keywords: Immune Thrombocytopenia (ITP), Medrol, Rh0 (D) immunoglobulin

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JAM3 gene mutation in a newborn with congenital cataracts, brain calcifications and cerebral hemorrhage

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Presenter: **P. Araujo Salinas**

Introduction: The JAM3 protein belongs to the group of transmembrane proteins with tight junction function (tight binding). Those are necessary to maintain the integrity of the endothelium in the brain circulatory system. A female patient was diagnosed with a mutation of the JAM3 gene (Junctional Adhesion Molecule 3). She belonged to a consanguineous family, her two brothers had died presenting similar clinical features (one of them in utero, the other one in the early neonatal period).
Clinical cases and summary results: Newborn, 37 3/6 weeks, result of a fourth gestation that was well controlled and uneventful. Gestation ended by emergency caesarea due to pathological fetal record (held fetal tachycardia, slowdowns and low variability), born in apnea with bradycardia and in need of dvanced resuscitation maneuvers. Extubated within minutes, when she started spontaneous breathing. Apgar 1/5/6/9. The phisical examination revealed bilateral leukocoria, pale skin and superficial tachypnea. At 24 hours she started showing signs of irritability, plenty protruding fontanella, myoclonus and reduced suction. Transfontanelar ultrasound showed diffuse cerebral ischemic and hemorrhagic parenchymal alterations with ventricular dilatation. Ophthalmologic study reported bilateral nuclear cataract. On the 9th day of life, brain MRI shows massive hypoxic-ischemic changes, severe periventricular cystic transformation in all the four ventricles and hydrocephalus. Given the results of clinical and imaging techniques, limitation of the therapeutical effort applied. Given the suspected gene mutation, genetic study was performed on JAM3 and confirmed that the patient carried out homozygous mutation c.2T> G in the 11q25 locus of the JAM3 gene; parents have the same mutation in heterozygous form. On the 17th day, in order to confirm the classic triad, cerebral CT scan was performed showing brain subependymal calcifications in band distribution. The case resulted in death at 43 days of life.
Conclusion: JAM3 proteins are necessary to maintain endothelial integrity of cerebral circulatory system. We should suspect the mutation of the gene that regulates the synthesis of JAM3 protein when the triad of congenital cataracts, cerebral hemorrhage and cerebral calcifications is present in a consanguineous family . The presence of the triad also forces us to look for other family members with similar symptoms given the inheritance pattern.

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A case of fetal facial multilocular cystic tumor

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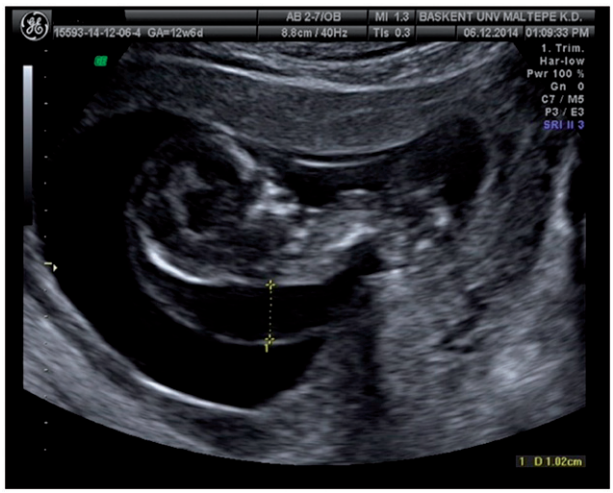
Presenter: **K. Biringer**

Introduction: Fetal head cystic tumors are relatively frequent finding indicating possible genetic abnormality (e.g. cystic hygroma). However, facial location is rare, bringing some diagnostic difficulties and needing individual approach in the management. We present a case of fetal facial multilocular cystic tumor.
Clinical cases and summary results: A 24-years-old secundigravida was referred to our perinatal center in the 19 + 1 gestational week (g.w.) with the finding of fetal facial subcutaneous anechogenic cystic lesion of 27x12mm on 2D ultrasound. Its untypical location in the right cheek extending retro-orbitally and retro-zygomatically leaded to the differential diagnosis of parotic cyst, brachial cleft cyst and meningocele. 3D/4D ultrasound and in-utero fetal MRI were performed. They confirmed previous finding with normal passage of amniotic fluid. No other anomalies were identified, and amniocenthesis excluded chromosomal abnormality. Three weeks later, we found a clear progression in tumor size (40x20 mm) leading to the deviation

of zygomatic arch and facial dysmorphism. Pregnancy with uncertain prognosis was interrupted according to patient's request by intra-amniotic prostaglandins in the 23rd g.w. An autopsy confirmed fetal facial multilocular lesion as fetal cavernous lymphangioma.
Conclusion: Fetal facial lymphangiomas are rare in the fetal age. They are more frequent in children as the consequence of infection and injury. Differential diagnosis also includes cysts of thyroglossal duct, dermoids, cervical bronchogenic cyst, and ranulas. Progressive growth can lead to airway obstruction requiring emergency surgical intervention. However, such finding has uncertain prognosis, and their management must be individualized including EXIT procedure and emergency tracheostomy.

Keywords: Fetus; cavernous lymphangioma; ultrasound



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Caffeine beyond the apnea. Observational study of its use and indications in the neonatal units worldwide

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Presenter: **Laura Castells Vilella**

Introduction: Since more than 30 years ago, the caffeine is considered as the pharmacological treatment of choice in the apnea of prematurity, being one of the drugs that are more secure, more effective and more cost/benefit from those used in our Neonatal Intensive Care Units (NICU).
There are many studies on the use and benefits of the caffeine in preterm infants. Recently papers have been published on the prophylactic use in very low birth weight premature infants as well as new benefits beyond the apnea of prematurity.
Materials and methods: We wanted to know about the use of caffeine in the daily practice of the NICU of Spain and compare it with the practices in other countries.
A survey was designed with 11 questions. It was proposed the participation through NICU teams and scientific societies through social networks for professionals.
Clinical cases and summary results: 66 NICU from all continents, which correspond to a population of more than 215,000 births a year and more than 9,500 very low birth weight premature infants at birth. The majority of hospitals surveyed used the caffeine citrate like methylxanthine drug of choice. A 30% of NICU do not have protocol, Spain wasone of the countries where less protocolized is its use. The 83% of the centers used prophylactically in preterm infants <28 weeks of gestation and a 60% in <1g, being these lower rates in Spain with respect to rest (see attached table 1). 90% of the NICU administered 20 mg/kg of caffeine citrate like loading dose, but there is a disparity in the maintenance dose, observing that in the 50% of NICU already use doses between 8-10 mg/kg/day. Most of the centers don't control levels of caffeine. 49% of the units use the caffeine for other purposes, mainly in the pulmonary broncodisplasia (27%) and as a neuroprotective agent (15%), among others.
Conclusion: Despite being one of the most used drugs in our NICU, there is no protocol for use in many of our units. There is a disparity in their indications, as well as in the dose to manage. The current trend is to use higher doses without entailing a risk for the premature but quite the opposite.
Therefore, all the NICU should have a protocol for the use of the caffeine and get to know the real impact on morbidity and mortality in preterm to obtain the maximum possible benefit.

Keywords: Caffeine citrate, Apnea of prematurity, Neuroprotection

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Postpartum fever: study of cases in a tertiary hospital

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Presenter: **I. Mejía Jiménez**

Introduction: Postpartum fever is defined as an oral temperature of 38.0^0C or more after delivery, excluding the first 24 hours. It is a sign that can be associated with a wide range of pathological entities, such as endometritis, surgical wound infection or ovarian vein thrombosis. It is described as a relatively common obstetric complication, with a frequency of approximately 5-7% of births, and is more common after a cesarean delivery compared with vaginal birth. The aim of this work is to describe the number, main characteristics and diagnosis of woman admitted in a Tertiary Hospital that consulted in Emergency Service for presenting postpartum fever.
Materials and methods: A retrospective descriptive study was performed in a Tertiary Hospital in Madrid (Spain), between 1 January of 2015 and 31 December of 2015. All the patients that were admitted in Hospital presenting postpartum fever, regardless of diagnosis, were included in this study.
Clinical cases and summary results: 56 patients (1.31% of all deliveries) were admitted in Hospital for presenting postpartum fever in 2015. The diagnosis were: 35 (62.5%) endometritis, 8 (14.3%) mastitis, 4 (7.1%) surgical wound infection, 2 (3.6%) ovarian vein thrombosis, 4 (7.1%) pielonefritis and 3 (5.4%) patients presented other causes.
Among endometritis group, we registered 24 (68.6%) normal deliveries, 2 (5.7%) instrumental deliveries, 8 (22.9%) cesarean sections. The mean time of symptom's onset after delivery was 8.5 days. 7 (20%) patients required puerperal curettage. The mean time of intravenous antibiotic was 3.2 days.
In the surgical wound infection group, the mean time of symptom's onset after surgery was 15.5 days. All of the patients required wide spectrum antibiotics. The mean time of intravenous antibiotic was 12.5 days. All the patients required surgical treatment.

In the ovarian vein thrombosis group, both patients had a normal delivery. None of them received prophylactic anticoagulation treatment during the first 7 days of postpartum. The mean time of symptom's onset was 4 days after delivery. The treatment for both patients was therapeutic doses of subcutaneous HBPM.
Conclusion: The incidence of postpartum fever in our Hospital is lower than reported. The main cause of postpartum fever was endometritis, followed by mastitis, surgical wound infection and pielonefritis. The two cases of ovarian thrombosis group were reported after a normal delivery, just the opposite as described in the literature, with a higher incidence after cesarean delivery. Is it important to define risk of potential postpartum complications in order to prevent them in immediate puerperium.

Keywords: Postpartum fever, endometritis, ovarian vein thrombosis

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Fetal oxytocin levels at term

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Presenter: **Oleg Baev**

Introduction: Postterm pregnancy is commonly defined as patients beyond 42 completed weeks. Numerous studies have associated postterm pregnancies with increased rates of perinatal and maternal complications. But this complications of pregnancy increases not as a discrete risk beyond some threshold, but instead continuously with increasing gestational age from 39 to $\geq$ 41 completed weeks (Caughey A. et al., 2004; Heimstad R. et al., 2006; Tita A. et al., 2012). Why pregnancy lasts beyond 40 week is still unclear. It is speculated that fetal oxytocin may play a part in the initiation of labour. But exactly how oxytocin secretion changes during these weeks is still unknown.
The purpose of this study was to evaluate the concentrations of oxytocin in the fetus blood from 38 to 42 weeks of pregnancy.
Materials and methods: Forty one women at term gestation were included (26 who were delivered vaginally and 15 - by elective cesarean section). All women were divided to four groups (early term 37 - 38 + 6/7, full term 39 - 40 + 6/7, late term 41 - 41 + 6/7 and postterm 42 and >), accordingly ACOG and SMFM recommendation on Term Pregnancy Definition (2013). Patients who received oxytocin before delivery were not included to this study.
Eighty-two umbilical blood samples (41 arterial and 41 venous) were obtained. Each sample was taken and collected in a chilled tube containing EDTA and immediately centrifuged at 40C and stored at -200C until assay. Oxytocin concentrations were measured by the ELIZA method.
The measured values are given as mean ± SD. To compare means, a t-test was carried out.
Clinical cases and summary results: Newborn Apgar scores were greater than 7 in all cases and pH values were within normal range. The mean concentration of the oxytocin in the umbilical artery increased from early term (52.94±21.62) to full term (80.28±36.27) and than decreased to late term (55,25±30,90) pregnancy ($p<0.05$). The mean concentration of the oxytocin in the umbilical vein was lower, but revealed the same changes (22.38±6,97; 44.69±23.29; 36.23±17.55).
Conclusion: There are significant changes of oxytocin concentration in fetus blood between different weeks of term pregnancy. These changes do not have continuous trend simultaneously with increasing gestational age, but decrease to late term pregnancy. We suppose that low oxytocin levels may took a part in prolongation of pregnancy and was a risk factor of rising of perinatal complications after 40 + 6/7 week of gestation.

Keywords: Term pregnancy, postterm, oxytocin

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Primary hyperparathyroidism during pregnancy and it's effects in newborn - A case report

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Presenter: **C. Reis Gonçalves**

Introduction: Primary hyperparathyroidism(PHP) is a rare life-threatening condition which is usually diagnosed between the fifth and sixth decade of life. Its prevalence in the general population is 0.15%. In pregnant women, there are no more than 200 cases reported in the English literature. The incidence of PHP in reproductive age women is reported to be 8/100,000 population/year. The diagnosis can be difficult to establish during pregnancy, given the nonspecific symptoms related to hypercalcemia. Maternal complication rates related to PHP during pregnancy can reach 67%, and fetal complications are reported to occur in up to 80% cases. The most serious fetal complications are neonatal tetany, still birth, and miscarriage.
Clinical cases and summary results: Patient C.C.S., 43 years old, on her second pregnancy, was being followed on high risk prenatal care due to one episode of bilateral deep venous thrombosis. She was diagnosed with diabetes and systemic hypertension. Besides that, was also identified total serum calcium level above 11 mg/dL, elevated parathormone level, and a solid nodular lesion located in one of her parathyroid gland, thus, was also diagnosed with primary hyperparathyroidism. She remained stable and her baby was uneventfully delivered within 39 weeks GA. The newborn presented with seizures before first 24 hours, which were identified, after being broadly investigated, as hypocalcemia-induced seizures. His mother's unchanged hypercalcemia induced by primary hyperparathyroidism was surgically treated with parathyroidectomy 20 days after delivery. After operation she had a satisfactory recovery, with normal glucose and blood pressure levels, nevertheless, remained hospitalised for clinical following in use of warfarin.
Conclusion: Most of the evidence supports conservative treatment during first and third gestational trimesters - which includes hydration, loop diuretics and low-calcium diet. Surgery is the definitive treatment on the second trimester, and our patient had surgery on postpartum period and her newborn presented with a complication associated to PHP. Further studies are needed in order to build better evidence concerning the safety of surgery, therefore providing new options for patients with late diagnosis.

Keywords: Primary hyperparathyroidism, treatment, complications

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Modifiable risk factors for obstetrical anal sphincter injuries (oasis)

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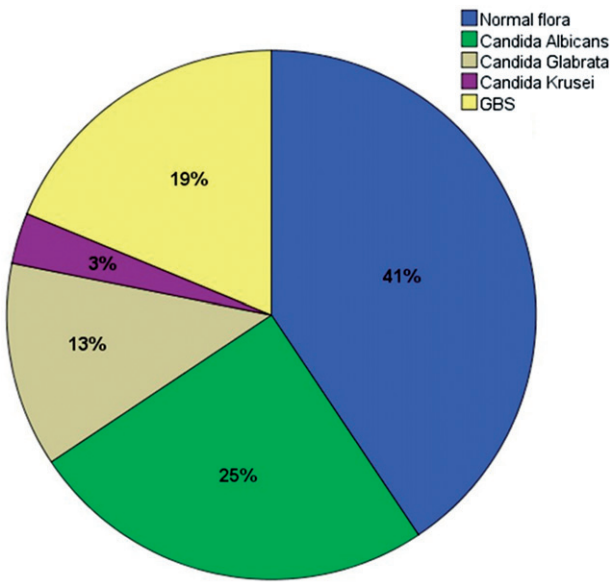
Presenter: **Yael Baumfeld**

Introduction: Obstetrical anal sphincter injuries (OASIS)are associated with significant long-term morbidity in young healthy women. Many studies have explored the risk factors for OASIS; however, these are largely non-modifiable risk factors including nulliparity, fetal macrosomia and instrumental delivery. Vaginal candidiasis has been found associated with different pregnancy complications. Some modifiable risk factors such as the experience of the midwife and vaginal candidal infection have not yet been widely explored. No studies, to date, have investigated the association between OASIS and vaginal candidial infection.
Materials and methods: A retrospective cohort study of all women with OASIS who gave birth between January 2011 and March 2016 at the Soroka University Medical Center (SUMC) was undertaken. Reported modifiable and unmodifiable risk factors were evaluated. Data was collected from the SUMC perinatal database and from the neonatal hospitalization data. The study was approved by the SUMC Institutional Review Board.
Clinical cases and summary results: A total of 60 women suffered OASIS during the study period.
With regard to unmodifiable risk factors, the majority of subjects (81.7%) were nulliparous. Prolonged second stage of delivery was found in 10% of patients. Vacuum extraction was the mode of delivery in 27% and episiotomy was performed in 41%. Twenty percent of neonates were macrosomic, weighing over 4000 grams.
Modifiable risk factors reviled that a high rate of inexperienced midwives (<5 years' experience) were involved in deliveries complicated with OASIS (47%). Vaginal cultures were available for 52% of the women. Out of these, 42% had normal flora, 19% had group B streptococcus and 39% had candida, the distribution is shown in figure 1.
Perinatal outcomes reviled that eleven neonates suffered from hypoxia, with a pH level measured under 7.1 and nine neonates with a first minute Apgar score under 7.
Conclusion: OASIS has grave long term morbidity and with many known unmodifiable risk factors. Midwife experience may play a role in the occurrence of OASIS.We found an increased rate of vaginal candida infection and believe there might be an association between the two.

Keywords: Severe perineal tear; Risk factors; Long term morbidity



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Kidney's 3d-ultrasounds combined with renal biochemical parameters in newborns and children: A multidisciplinary approach to dohad

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Presenter: **Benito Cappuccini**

Introduction: Noncommunicable diseases has assumed great relevance. The leading metabolic risk factor is the hypertension (18% of global deaths) Kidney is central in the blood pressure control. Fetal exposure to intrauterine growth restriction (IUGR), prematurity (PR) and/or gestational diabetes (GDM) can have a negative impact on nephrogenesis, resulting and these insults represent a mayor risk for renal function impairment, long term renal diseases/high blood pressure[1,2].
Aim of the study: Realize an early multidisciplinary follow-up in newborns of high risk pregnancies, correlating results of biochemical approach to the 3D ultrasounds studies of the kidney[3], in order to better evaluate the crucial postnatal renal adaptation
Materials and methods: We estimated renal volume (RV) and renal cortex volume (RCV)using 3D-ultrasounds (VOCAL II, GE Ultrasounds, USA),in more than 300 newborns of high risk pregnancies (IUGR,PR,GDM), vs healthy matched newborns (C), at 30-40 days of corrected age. Data were correlated to biochemical parameters of renal function/injury (i.e.urinary levels of Cystatin C and of the activity of Cathepsin B and NAG).
Clinical cases and summary results: IUGR showed lower RV, RCV and significant higher Cystatin C urinary levels ($p<0.001$) vs Controls[4]. We found a strong correlation among Cathepsin B,RV, RCV as well as an early microalbuminuria in postnatal kidney adaptation of PR and IUGR vs C ($p<0.001$)[5]. Unexpectedly, in the last two years, renal volumes and the biochemical urinary parameters were often normal in the GDM.Postnatal kidney's adaptation, in IUGR and in PR is altered compared to C. Most of the newborns of GDM seems to have a normal renal function, while in an our previous study, GDM children at 3 years of age showed a significant lower RCV and microalbuminuria vs healthy ones [6]. Probably, these results in GDM are related to early diagnosis and the appropriate management of gestational diabetes, except when it is underestimated or complicated by obesity: further studies are needed
Conclusion: Conclusions: Kidney's 3D ultrasounds is an useful technology that, if combined with biochemical parameters of renal function/injury, could represent an improved multidisciplinary approach of postnatal renal follow-up.

Keywords: KIdney, DOHAD

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Analysis of perinatal outcomes after in vitro fertilization

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Presenter: **M. Nachajova**

Introduction: In assisted reproductive techniques the number of transfers of frozen and fresh embryos is increasing worldwide. The known benefits of frozen embryo transfer include a minimum proportion of pharmacological and surgical treatment and a lower risk of ovarian hyperstimulation syndrome. It also allows to store embryos almost indefinitely, until the time suitable for fertilization.
Materials and methods: A retrospective comparative analysis of perinatal outcomes after frozen and fresh embryo transfers at the Department of Obstetrics and Gynaecology in Martin in the period from January 2011 to December 2015. Data were obtained from medical records of patients. Rated parameters represented a patients age, pregnancy, parity, birth length and weight of the newborn, gestational age, route of delivery and Apgar score. We evaluated the incidence of pre-eclampsia, gestational hypertension and diabetes, the incidence of premature rupture of membranes and intrauterine fetal distress.
Clinical cases and summary results: The study included 98 women, 40 after frozen embryo transfer and 58 after fresh embryo transfer. Average age of women who became pregnant after transfer of frozen embryos was 34 years (range 20-50 years), the mean number of pregnancies was 1.73 (1-5) and 1.3 parities (1-3). In this group, 44 children were born with an average weight of 3264 ± 212 (1350-4650) g and a length of 51 ± 2 (40-56) cm at 40 ± 1 (31-42) weeks of gestation. 70% of pregnancies were terminated by cesarean section, 27.5% by spontaneous delivery and 2.5% by forceps. The average age of women after fresh embryo transfer was 34.3 (20-50) years, the average number of pregnancies was 1.5 (1-5) and parities 1.17 (1-3). 66 were born in this group with an average weight of 3050.53 ± 201 (875-4400) g and a length of 50.5 ± 2.5 (34-55) cm, at 39.5 ± 0.5 (27-42) weeks of gestation. In 70.7% was performed cesarean section, 27.6% gave birth spontaneously and 1.7% by forceps. The most common indication for caesarean section in both groups was intrauterine fetal distress (30%), followed by breech presentation (12.86%), not progressing labor (11.43%), locked twins (11.43%) and other (34.28%). The only statistically significant difference was observed in the number of newborns admitted to the care of intensive care unit ($p<0,05$) in group after fresh embryo transfer. We have not seen significant difference in any other parameter of compared groups.
Conclusion: We conclude that the frozen embryo transfer does not adversely affect perinatal results in comparison to the transfer of fresh embryos. Our study supports the importance of further, more extensive analyzes dealing with perinatal outcomes of both methods of assisted reproduction.

Keywords: In vitro fertilization, frozen embryo transfer, fresh embryo transfer

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Thrombohpilia evaluation in women with history of ischemic stroke and VTE

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I.M. Sechenov First Moscow State Medical University

Presenter: **A.Maksatsariya**

Introduction: Despite intensive research, arterial and venous thromboses still account for a significant maternal mortality and morbidity. Our aim was to determine thrombophilia in patients with history of arterial and venous thromboembolism and to evaluate the efficiency of antithrombotic prophylaxis.
Materials and methods: Group I: 57 women with a history of VTE, group II: 59 women with a history of stroke and 60 healthy pregnant women were screened for genetic and acquired thrombohpilia (homocysteine level and titer of antiphospholipid antibodies). Subgroup Ia (20 women with history of VTE) and subgroup IIa (22 women with a history of stroke) received prophylaxis with LMWH in preconception period, during pregnancy and at least 6 weeks postpartum. In 17 women with history of VTE (subgroup Ib) LMWH was started from II-III trimesters.
Clinical cases and summary results: in the group I genetic thrombophilia was detected in 94,1%, including fibrinolytic defects in 64,7%, antiphospholipid antibodies circulation - in 49%, hyperhomocysteinemia - in 45%. In the group II in women with history of stroke thrombophilia was revealed in 88,2%,including fibrinolytic defects in 76,5%, antiphospholipid antibodies circulation - in 41,2%, hyperhomocysteinemia - in 19,6%. In subgroup Ia and IIa no one had severe obstetric complications. All patients were delivered at term and all babies were alive. In subgroups Ib and IIb moderate to severe obstetric complications were noted.
Conclusion: Thrombophilia might be th essential pathogenetic mechanism of thrombosis in women of childbirth age. LMWH was effective for prevention of recurrent thromboembolism and obstetric complications. Women with personal or familial history of thromboembolism or with history of obstetric complications should be screened for thrombophilia.

Keywords: Venous thromboembolism, stroke, pregnancy, thrombophilia

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IVF outcome in women with antiphospholipid antibodies

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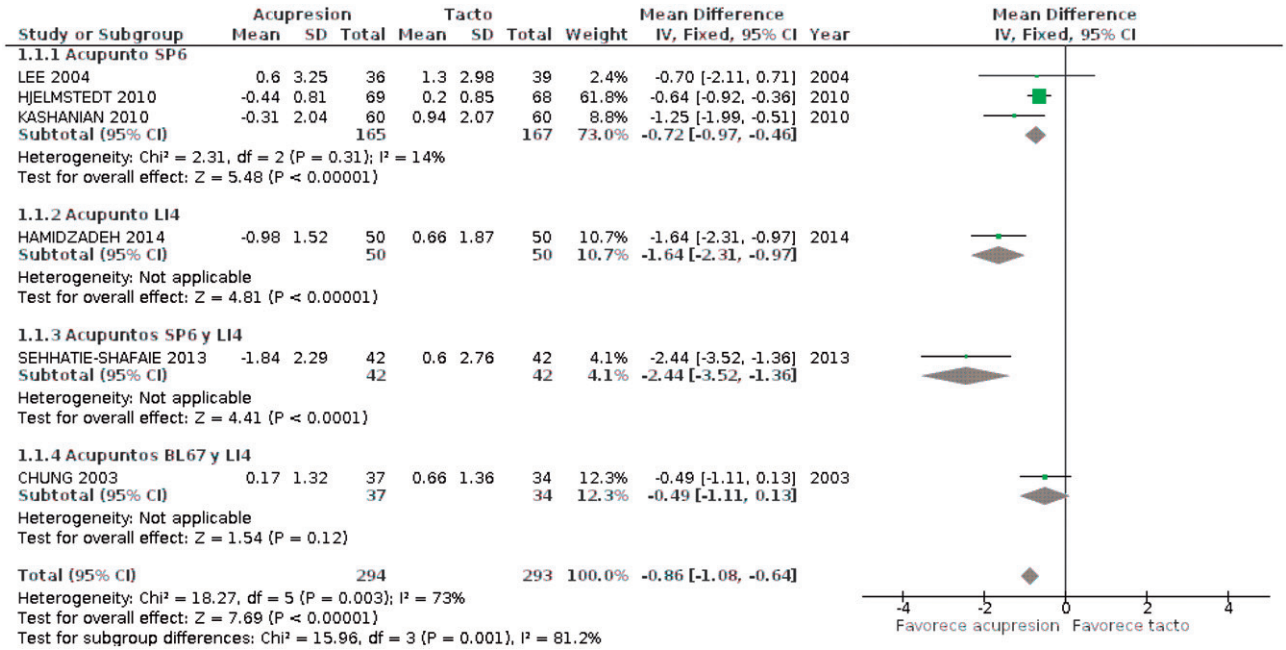
Presenter: **J. Khizroeva**

Introduction: It has been suggested an association between APA circulation and IVF failure. The proposed mechanism of such failure includes abnormal implantation, placentation, and early embryonic vascular compromise. We evaluated the IVF outcome among APA-positive patients and tried to determine the relationship between the presence of antiphospholipid antibodies and IVF success.
Materials and methods: since 2008 to 2016 we observed 367 women undergoing IVF. I group composed 228 women with IVF failure (1 to 9



failures) and II group consist of 139 women with IVF success. Control group consist of 60 healthy pregnant women. Serum from all patients were examined for antibodies to cardiolipin, annexin V, b2-glycoprotein I, prothrombin and lupus anticoagulant circulation.
Clinical cases and summary results: total 42,1% patients of I group had APA circulation. Among them - antibodies to cardiolipin - 8,9%, to b2-GPI - 31,4%, annexin V - 24%, to prothrombin - 13,5%. LA circulation - 19,6%. In II group APS was diagnosed in 19%. In women with successful outcome of IVF in 12.4% we observed subsequent reproductive fetus wastage. No stillbirth or antenatal fetal death. Miscarriage occurred as stagnant pregnancy before 12 weeks of pregnancy. All women with pregnancy after IVF received the therapy (LMWH, antioxidants, folic acid, aspirin, vitamins group B) were delivered at term with alive healthy newborns.
Conclusion: women with APA circulation demonstrate significantly high IVF failures (42,1%) and worser reproductive outcome compares with the women undergoing IVF protocols but without APA. We consider the presence of antiphospholipid antibodies as temporary contraindication for the IVF programme.

Keywords: In vitro fertilisation, antiphospholipid antibodies, pregnancy

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Effects of acupressure in labor: A meta-analysis

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Presenter: **C. Bejar**

Introduction: Relief of labor pain is one of the main challenges that women and health professionals must face. Finding a balance between the necessary relief and the use of analgesic methods might be complex, because it could cause over-medicalization of childbirth and this in turn can have adverse consequences. Thus, women might prefer alternative methods for labor pain relief, such as acupressure.

This noninvasive, easily applied technique, is based on traditional Chinese medicine; it uses fingers to stimulate acupoints, seeking to restore the flow of vital energy (Chi). For the Western medicine, the effect of acupressure is based on the stimulation of neural strucutres and the release of endorphins. Our objective is to asses whether or not acupressure is effective to help women cope with labor pain.
Materials and methods: A literature research and subsequent meta-analysis were carried out, following PRISMA guidelines. The terms "acupressure" and "labor pain" were introduced in PubMed, Scopus and Web of Science search engines. 76 articles were obtained, of which 16 were relevant to our goals, being randomized controlled trials with outcomes such as pain assessment, maternal anxiety, labor duration, mode of delivery, medication use, and neonatal outcomes. There were articles comparing acupressure with placebo, a control group or labor assisted by a doula. Assessment of the methodological quality was made through Jadad scale. Finally, 9 papers were included in the meta-analysis, where the results of the treatment effects were presented as mean difference and odds ratio, with 95% confidence interval.
Clinical cases and summary results: Regarding pain relief, stimulation of the SP6 and LI4 acupoints has shown a significant reduction in labor pain scores using a visual analog scale (VAS) when compared with placebo (tactile stimulation), and when compared with control group. These effects can be seen immediately after the application of the technique, and last up to two hours; acupressure applied with complete dilation has also shown efficacy in reducing pain intensity. Regarding duration of labor, comparison of BL32 and SP6 acupoints stimulation with the control group showed shorter duration of labor, with statistical significance. SP6 and LI4 acupoints stimulation also shortens labor duration, when compared with the placebo group. Also fewer caesarean sections were performed in the acupressure group when compared to the tactile stimulation group and the control group. No significant differences in the Apgar test results were observed, proving the absence of negative consequences for the newborn.
Conclusion: The results of this study, whith better outcomes for both pain relief and labor duration, and fewer caesarean sections performed in the acupressure group, make us recommend the inclusion of acupressure among the methods of pain relief offered in labor wards, as it has proved to be a safe, noninvasive, easily applied technique that can help mothers cope with pain. On the other hand, in order to improve scientific evidence, conducting more high-quality randomized studies, is also recommended.

Keywords: Childbirth, pain relief, acupressure, alternative therapies

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Hereditary thrombophilia - prenatal manifestation and care on different stages of pregnancy

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Presenter: **N. Veropotvelyayn**

Introduction: One of the probable reproductive losses causes is considered to be hereditary thrombophilia. As the observation and analysis of clinical cases show, the manifestation of this disease can occur on different stages of pregnancy and have different manifestations - from early reproductive losses to stillbirths. Our objective was to examine the frequency of main factors of hereditary thrombophilia polymorphic variants in a group of early reproductive losses and chorionic\placental abruption, antenatal fetal deaths and stillbirths.
Materials and methods: A study to determine the SNP's in genes associated with susceptibility to blood clots and abnormal folate metabolism (FGB G455A, FII G20210A, FV 1691A, PAI-1 5G/4G, MTHFR C677T, MTR A2756G) in groups of women with early pregnancy losses episodes (n = 781) and women who had a history of one or more episodes of placental/chorionic abruption, stillbirth or antenatal fetal death (n = 59) were conducted.
Clinical cases and summary results: Analysis of the survey results showed that the genotype frequency FII G/A group of early miscarriage is 4 times higher than population prevalence of mutations G20210A FII (5.8% vs. 1.4%; p <0.05); frequency of genotype G/A FV group of miscarriage is 2.2 times lower than this mutation prevalence; combination heterozygous genotype C/T 677 MTHFR + A/G 2756 MTR significantly to 2.98 times more common in the group of women with multiple episodes of early abortion (20.56% vs. 6.9%; p <0.01); genotype FGB A/A 455 at 4.66 times significantly more common in placental/chorionic abruption (77.78% versus 21.7%; p<0,01); associative links with the pregnancy losses and the polymorphic variant gene PAI-1 could not be found.
Conclusion: Thus, today there are two approaches to the management of the patients with hereditary thrombophilia factors: prevention of early reproductive losses and placental abruption in women with history of this pathology; and maintenance of the current pregnancy with the presence of retrochorial hematoma choosing an optimal treatment strategy and balanced use of hemostatic agents and low-molecular -weight -heparins.

Keywords: Hereditary thromobophilia, miscarriage, placental abruption

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Preterm birth, low birth weight and birth defects after assisted reproductive technologies. A 19-year comparative study

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Presenter: **K. Ben Ameur**

Introduction: *Background and aims*: Assisted reproductive technologies (ART) raises a great debate about increased perinatal risks, especially preterm birth, low Birth weight (LBW) and Birth defects (BD). The risks of preterm birth and LBW has been attributed largely to the higher rate of multiple gestations associated with such technology. We aim to compare the neonatal outcome of newborns from ART versus natural conception.
Materials and methods: *Methods*: Study design: A 19-year retrospective, descriptive and comparative study regarding neonatal outcome and BD in two groups of newborns.
Setting Subjects: The first group included all newborns from ART admitted in Resuscitation and Intensive Care Unit of Neonatology of Military Hospital of Tunis between 1997 and 2015 (ART group). The second group included newborns from natural conception admitted at the same period and selected randomly (Controls group).
Main outcomes and measures: preterm birth, very preterm birth, LBW, very low birth weight (VLBW), and BD. For LBW and preterm birth, we compared separately singletons and twins, from ART and natural conception.
Clinical cases and summary results: *Results*: We identified 425 newborns In the ART group and 328 newborns in controls group. The rate of multiple births was 71.53% in ART group. Among singleton infants, the use of ART was associated with an increased rates of LBW and VLBW (51% and 18.7%) than in controls (21% and 2%), (p<10-3, Odds Ratio of 3.92 and 11.3, respectively). Among twins, ART was not associated with a further increase in the risk of LBW (66.45% versus 66.47%, p=0.99); however, the risk of VLBW was statistically significantly higher only in twins from ART (33.5% versus 5.2%, p=10-3, Odds Ratio of 9.2, 95% confidence interval (CI), 4 to 21). The risk of preterm birth, was statistically significantly higher, both in singletons (30.3% and 17%, p=0.01, OR=2.12; 95%CI, 1.14 to 3.97), and in twins (74.6% and 57%; p=0.0003; OR=2.22, 95%CI, 1.4 to 3.6) of ART than in controls. Newborns conceived with ART had a risk of BD that was 3 times that in controls (11.05% versus 3.65%; p=0.0001, 95% CI, 1.6 to 6.6). BD were major in 72.34% (34 of 47) in ART group versus 66.7% (8 of 12) in controls, p=0.72. The difference concerned cardiac and neurologic BD. Birth defects were associated with IntraCytoplasmic Sperm Injection (ICSI) in 40.4%. The risk of BD was 2.4 times with ICSI (17.05%) than with all others techniques condensed (8.03%), (95% CI; 1.23 to 4.68). Among malformed ART newborns, BD were lethal in 23.4% and associated with major handicap in 29.2% (7/24).
Conclusion: This study highlighted the increased perinatal risks even, in singleton infants conceived with ART than those naturally conceived. Multiple births may be, partially responsible of these risks. BD risk is also, significantly increased in newborns from ART. The exact mechanisms underlying all these risks remain unclear. Further studies are required to prove the part of ART underlying parental factors, and sterility itself in these risks.

Keywords: Assisted reproductive technologies (ART); Infant, Premature; Infant, Low Birth Weight; Infant, Very Low Birth Weight;Birth defects

670 (CLINICAL CASE)

Prader willi síndrome:not as uncommon as we think

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Presenter: **Esther Guirado Sayago**

Introduction

- Prader willi síndrome (PWS) is a neurogenetic disorder which main clinical features are muscular hypotonia, growth retardation, short stature, hypogonadotropic hypogonadism, abnormal facies with small hands. In the neonatal period, the usual symptoms are severe neonatal hypotonia causing feeding problems.
- Despite all these features, the diagnoses in the neonatal period is very rare, Prader-Willi syndromés incidence is thought to be 1/ 12.000 - 1/15.000 newborns.
- This syndrome is caused by genetic mechanisms that mainly affect the 15q11-q13 region, regulated by genomic imprinting.

Clinical cases and summary results: In the last 5 years we have diagnosed 4 cases of PWS in newborns, 2 of them wewre extremely premature newborn. The guide symptom in all cases was hypotonia; in all patients ogival palate and feeding problems due to hypotonia were present and in 3 of them hypogenitalism was detected. Complementary exams were practiced (analytics, ultrasound, cerebral magnetic resonance and ocular exam), with no significant findings except for dilatation of left occipital horn and left choroid plexus hemorrhage in one of them, secondarily to prematurity.

The diagnosis was achieved by positive Methylation test in all cases; karyotype was realized in 3 of them, with normal result. 15q11q13 paternal delection, SNRPN delected region and maternal uniparental isodisomy were identified.

Conclusion: The importance of early diagnosis allows early intervention and follow-up by a multidisciplinary team, achieving a better prognosis.

It is important to identify the genetic mechanism, to study correlations phenotype-genotype for prognosis and genetic counseling.

Although the estimated incidence of PWS described is 1/12.000-15.000 births,in the last 5 years we have detected up to 4 cases in a total of 13.844 births, so may be it is an increasing pathology in which we should think more often.

PATIENT	CLINIC	COMPLEMENTARY EXAMS		DIAGNOSIS	FOLLOW UP
1 JGF 36+4 w 2.500 g APGAR 8/9	- Macrocephaly - Small ears - Ogival palate - Hypoplasia of labia minora hypertrophy of the clitoris - Axial hypotonia - Weak cry - Feeding problems	A/S US RMN OE	Normal - CNS : Normal - ECOC: FOP - ABD: right hydronephrosis HI Not done Normal	-Positive Methylation test. - Karyotype: N - 15q11q13 paternal delection.	7 months: -Improved axial hypotonia and head support - Multidisciplinary follow up - GH treatment
2 IGV 31+5 w 1.100 g APGAR 6/8	-Ogival palate -Microftalmia -Low-set ears -Aracnodactilia - Wispy hair - Hypotonia - Weak cry	A/S US RMN OE	Normal - CNS : Normal - ECOC: Normal - ABD: Normal Not done Normal	- Positive Methylation test. -Karyotype: N - SNRPN delected region	4 months: -Global -Hypotonia -Feeding problems
3 NTV 40+6 w 3.180 g APGAR 9/10	- Ogival palate - Bilateral cryptorchidism - Hypotonia - Hyporeflexia - Seizures	A/S US RMN OE	Normal - CNS : Normal - ECOC: FOP - ABD: normal Normal Normal	-Positive Methylation test -Metabolic study: N	2 months: -Hypoactivity -Weak cry -Axial hypotonia - Multidisciplinary follow up
4 PGM 27+5w 850g APGAR 7/8	-Ogival palate - Hypotonia - Seizures	A/S US RMN OE	Normal - CNS: dilation left occipital horn; left choroid plexus hemorrhage -ECOC: Normal -ABD: Normal Dilation left occipital horn; left choroid plexus hemorrhage Normal	-Positive Methylation test -Metabolic study: N -Karyotype: N - Maternal uniparental isodisomy.	- Multidisciplinary follow up - GH treatment - 12 months: scaphocephaly and trigonocephaly surgery

A/S : analytics ; US: ultrasound; OE: ocular exam ; CNS: Central Nervous System ; ECOC: ecocardiography ; ABD: abdominal

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Platelet indices in the mother-fetus system and thromboelastographyc assessment of the hemostatic system in newborns with cephalohematoma

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Presenter: **Katsiaryna Leonava**

Introduction: The transition from the intra- to extrauterine life leads to changes in all systems of a newborn, including the hemostatic system. Many coagulation variables constantly change in various diseases, such as hypoxia, intraventricular and subdural hemorrhage. Platelet indices such as mean platelet volume (MPV), platelet distribution width (PDW) and platelet large cell ratio (P-LCR) have been investigated as prospective platelet activation markers. Thromboelastography (TEG) is a whole blood coagulation test that provides a global assessment of hemostasis from clot initiation and development, to fibrinolysis.

Objectives: To investigate platelet indices in the mother-fetus system and the coagulation system of newborns with cephalohematoma (CH) according TEG.

Materials and methods: 91 pregnant women and their infants, gestation age 37-41 weeks, were prospectively enrolled into the study. These patients did not have infectious diseases, and these women were not receiving any anticoagulant therapy during pregnancy. The patients were divided into two groups: 45 infants with cephalohematoma with their mothers and 46 healthy newborns with their mothers. Platelets count (PC), MPV, PDW, P-LCR were obtained from each woman before delivery, and from each child on the 1 day of life. Blood samples were collected by venous cannulation at 3-4 days of life and TEG was performed. Clot reaction time (R), clot kinetics time (K), maximum amplitude (MA), α-angle, time maximum amplitude (TMA) and coagulation index (CI) were obtained from the TEG tracing (native citrated).

Clinical cases and summary results: In women's samples PC and MPV did't differ significantly between the two groups. PDW and P-LCR were 15,6 (13,6-16,6) and 39,3 (33,0-42,8)% respectively in group of women who have delivered children with CH and were higher compared to the control group (12,7 (11,5-14,5) and 32,7 (26,7-39,1)% respectively). In infant's samples PC and PDW did not differ significantly between the groups. MPV and P-LCR were 9,9 (9,5-10,0) fl and 22,6 (19,5-25,3)% respectively in group of children with CH and were lower compared to the healthy newborns (10,1 (9,6-10,5) fl and 24,9 (20,8-27,5)% respectively).

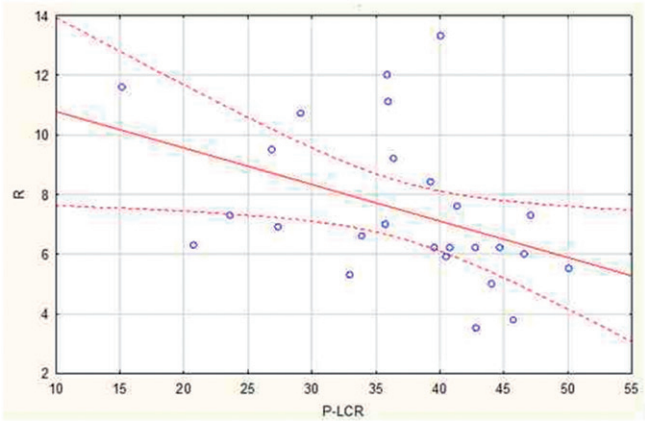
TEG R, K and TMA were statistically shorter in the group of newborns with CH compared to the healthy control group (tab. 1). The α-angle, MA and CI were statistically higher in newborns with CH compared to the control group. Bivariate analysis showed a significant correlation between P-LCR in women's samples and R on TEG of newborns with CH ($r = -0,524$; $p<0,0500$), but no correlation in the control group.

Conclusion: Hypercoagulation has been demonstrated in the group of newborns with cephalohematoma that manifested reduction of clot reaction time, clot kinetics, time maximum amplitude, as well as an increase of the α-angle, maximum amplitude and a high coagulation index.

The disturbance of platelet hemostasis of newborns and their mothers might play an important role in the genesis of CH, which

is manifested by a decrease in MPV, P-LCR of newborns and an increase in PDW and P-LCR of their mothers.

Keywords: Cephalohematoma, hemostasis, platelet indices, thromboelastography



Variable	Newborns with cephalohematoma	Healthy newborns	Z, p
Clot reaction time (R), min	7,3 (6,2-10,5)	11,5 (8,2-15,6)	Z= 3,67, p<0,001
Clot kinetics time (K), min	2,2 (1,8-3,2)	3,8 (2,7-5,1)	Z= 3,97, p<0,001
Alpha angle (α),-	59,1 (50,3-64,1)	46,8 (38,1-56,3)	Z= -3,77, p<0,001
Maximum amplitude (MA), mm	63,3 (61,5-65,2)	59,4 (57,3-61,9)	Z= -3,88, p<0,001
Time maximum amplitude (TMA), min	27,8 (24,7-32,0)	36,4 (28,1-41,2)	Z= 3,40, p<0,001
Coagulation index (CI)	2,2 (1,4-2,7)	0,85 (-0,1-1,4)	Z= -4,48, p<0,001

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Pregnant women's knowledge external cephalic version

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Presenter: **JM Puerta-Sanabria**

Introduction: The effectiveness of external cephalic versión (ECV) to reduce non-cephalic presentation, and caesarean section (CS) has been demonstrated in good quality trials. Despite these findings the incidence of breech presentation at term remains unchanged. Possible explanation for this is that ECV is not being accepted by women, or that they do not receive real and contrasted information by the different proffesionals. In our hospital region, anecdotal information suggested that women were declining ECV. This prompted us to investigate the need for evidence-based information for women making decisions about breech management. As a baseline measure we needed to know women's knowledge and how information were given to those patients.
Materials and methods: The study was performed at Virgen de las Nieves University Hospital between May 2015 and May 2016. We conducted a questionnaire whose item were based on previously published questionnaires and critical review from obstetricians from this hospital. The questionnaires comprised scales with five-point response scale, from "the worst" to "the best", except the pain scales, which goes from "no pain" to "much pain". There were also open-ended style questions. It was given to most patients who came for ECV during that period or who had rejected it to be done.
Clinical cases and summary results: Questionary was completed by a total of 46 patients, of which 33 (72%) were reported by the gynecologist, 10 (22%) by midwife, and 3 (6%) by their family doctor. There were no differences in the assessment of information received by the various professionals, with an average score of 3.9 (good information). Only 15% changed his mind about the technique after receiving the information, referring lack of prior information in all cases. 59% of patients were afraid about the technique, by the supposed fetal risks in 96% of cases. ECV were performed to 30 of the 46 patients (65%), in 93% of cases to avoid a CS. In 47% the technique was effective, with no significant differences in the degree of satisfaction (4.4 vs 4) or the level of pain (2.2 vs 2.65) when compared with non-effective. All those patients would recommend the technique to other people. From the 16 patients (35%) that VCE were not performed, the main reasons were fear of fetal or maternal risks (31%), non-recommendation of the technique by acquaintances (31%), or the desire of not intervention (25%). Most of them (56%) felt that both techniques (ECV and CS) have the same risks.
Conclusion: Many women are now limited to two options for delivery of a fetus presenting by the breech: ECV or CS. Given that most women have a preference for vaginal birth, and their knowledge of ECV is often from less reliable sources, as we shown having more than 60% of patients who rejected the technique for fear and unsubstantiated arguments; care providers should give women who are considering breech management options, true and complete information on ECV within a shared decision-making enviroment.

Keywords: External cephalic versión, breech presentation

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Clinical and evolutionary features in neonatal convulsive syndrome

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Presenter: **M.Boia**

Introduction: The convulsive syndrome in the neonatal period represents a challenge for the physician due to increased frequency and to its severe evolutionary potential.
Objectives: The authors aim to analyze the causes, the land on which is grafted and the evolution and prognosis of seizures in the neonatal period.
Materials and methods: The study was conducted in the Emergency Hospital for Children "Louis Turcanu" Timisoara - Neonatology on a group of 317 newborns at term and premature infants, who presented seizures (109 newborns at term and 208 preterm babies). The study was conducted over a 6 year period. Criteria for inclusion in the study were: the presence of seizures and clinical signs, cranial ultrasound ± brain CT or brain MRI, complete biochemical examinations, EEG and neurological checkup.
Clinical cases and summary results: In the study group 80.5% had ultrasound changes, the most common being signs of hypoxic-ischemic encephalopathy 31.3%, followed by periventricular or intraventricular bleeding 25%, 5.16% brain malformations, cerebral and systemic infections 2.03%.
Metabolic cause seizures (hypoglycaemia ± hypocalcemia) 9.95%. In about 10% of cases there were not present clinical and biological signs.

The study group with term infants showed more severe clinical forms: 14% generalized tonic-clonic seizures recurrent under treatment; 27% tonic and clonic seizures. Just for a rate of 3% of the group the recurrent convulsive syndrome has not responded to treatment.
Conclusion: The neonatal convulsive syndrome can be easily etiological diagnosed using brain ultrasound.
The most severe forms of disease were present in the babies to term without etiologic diagnosis.

Keywords: Newborns, seizures

691 (CLINICAL CASE)

Vulvar rhabdomyoma associated a new case of a lumbar syndrome

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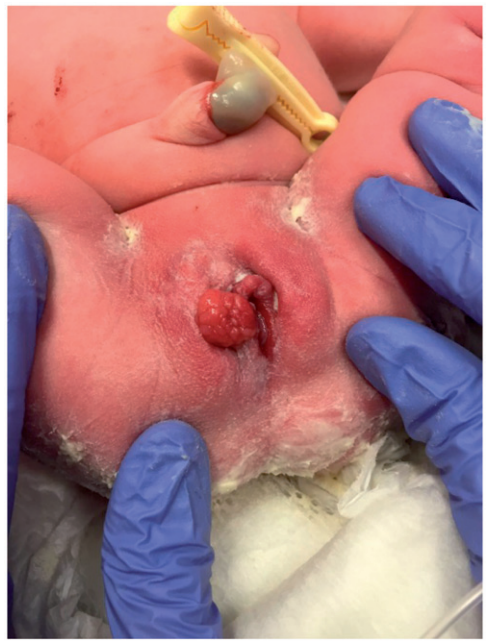
Presenter: **Marta Nicolás**

Introduction: Neonatal interlabial masses are very infrequent. Their diagnosis is usually clinical but sometimes histopathological studies are required. They represent a vast spectrum of heterogeneous lesions.
The most frequent include hymeneal cysts, paraurethral glands cysts, urethral anomalies and tumours like botryoid rhabdomyosarcoma. They can be associated with multiple malformation syndromes wich is important for management.
Clinical cases and summary results: Newborn, 39 + 4 gestational weeks. No incidents, except the finding on 20 weeks USS of genital interlabial mass. Karyotype (46XX), negative arrays and adrenal hyperplasia study in amniotic fluid. Eutocic delivery, weight 3550g. There is a polypoid mass in right minor labia and anorectal malformation vestibular fistula type. Colostomy, excision and biopsy of the mass are performed at 24 hours of life and malformation studies:abdominal USS shows low anorectal malformation with fistula, right kidney slightly rotated and abdominal MRI dysplasic coccyx, lipomatous lesion in conus medularis and partial sacrum agenesia.
She is discharged after 8 days. Histology report of the mass is a fetal intermedium type rhabdomyoma.
At 23 days it appears a segmentary hemangioma in perineum and lumbosacral region orienting the case as a LUMBAR syndrome(lower body infantile hemangioma, urogenital anomalies and ulceration, myelopathy, bony deformities, anorectal malformations, arterial and rectal anomalies).
Conclusion: Neonatal tumours are very rare in newborns. Due to their scarcity there is little literature about them. We should consider them in our differential diagnosis in order to rule out rare malignant forms, specially the rhabdomyosarcoma. Excepcionally they can appear associated with polimalformative syndromes.



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Pregnancy outcome in HIV positive women in a tertiary care centre in India

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Presenter: **Dr. Kavita Khoiwal**

Introduction: About 2.4 million (1.93 - 3.04 million) people are living with HIV/AIDS in India. Of all HIV infections, 39% (9,30,000) are among women. 5.4% of infections are from mother to child transmission (MTCT), 25,000 infected children are born every year. Besides the risk of mother to child transmission of HIV, these women are at risk of higher adverse pregnancy outcome. The objectives of the study were to compare the obstetric and neonatal outcome in women who are HIV positive with low risk HIV negative women and effect of antiretroviral drugs on preterm birth and IUGR.
Materials and methods: Retrospective case record analysis of 212 HIV positive women delivering from 2002 to 2015, in a tertiary health care centre which was compared with 238 HIV negative controls. Women who underwent MTP and abortion were excluded. Obstetric outcome analyzed were PIH,intrauterine growth restriction, preterm birth, anemia, gestational diabetes and ICP. Neonatal outcome analysed were birth weight, apgar score, NICU admission and perinatal transmission. Out of 212 HIV positive women, 204 received antiretroviral therapy (ART) to prevent MTCT, 27 women received single dose nevirapine (sdNVP) or sdNVP tailed with 7 days of zidovudine and lamivudine (ZDV + 3TC), 15 received ZDV, 82 women received duovir and 80 women received triple drug therapy depending upon the time period of presentation.
Clinical cases and summary results: Mean age of 212 HIV positive women was 25.72 + 3.6 years, 101 women (47.6%) were primigravida. HIV positive status was diagnosed during pregnancy in 200 women. Among 212 HIV positive women, 20(9.4%) women had preterm delivery,194 women(91.5%) delivered by cesarean section and18 women(8.5%) delivered vaginally.178 neonates received exclusive top feeding and 34 received exclusive breast feeding. When compared to HIV negative women, HIV positive women were more likely to deliver

preterm (OR 1.27), have anemia (OR 1.39) and IUGR(OR 2.07). Incidence of PIH, DM and ICP was not increased. Mean birth weight was significantly lower in HIV positive women (2593.60 + 499 gm) than HIV negative women (2919 + 459 gm). Complete follow up is available for 148 neonates till date. Out of these 7 neonates found to have HIV positive status. Risk of preterm birth(P value = 0.039) and IUGR (P value = 0.739) was higher in HIV positive women who did not receive any ART during pregnancy than women who received ART.
Conclusion: HIV positive pregnant women are at increased risk of adverse pregnancy outcome. Multidisciplinary team approach and use of highly active antiretroviral therapy can optimize the maternal and perinatal outcome.

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Comparison of the utility of modified combined apgar score with both combined and conventional apgar scores in the delivery room

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Presenter: **M. Cetinkaya**

Introduction: Apgar score has been used to define the status of the newborn just after the delivery. As it has been affected by the gestational age and interventions performed, combined Apgar score has been developed by evaluation of the requirement of positive pressure ventilation, oxygen, intubation, chest compression and drugs. We expanded the combined Apgar scoring by inclusion of the cord blood gases analyses and oxygen saturation and called it as modified combined Apgar scoring system. The aim of this study was to evaluate the efficacy of modified combined Apgar scoring system and to compare it with both conventional and combined Apgar scores.
Materials and methods: This prospective study was performed between July 2015 and January 2016 and all live born infants were included. Infants with major chromosomal abnormalities and stillborn were excluded. The three Apgar scores of all infants were evaluated at minutes 1, 5 and 10 by the same physicians. The demographical data, all Apgar scores and requirement of hospitalization were recorded. Appropriate ststistical analyses were performed by using SPSS 20.0 statistics programme and $p<0.05$ were called as significant.
Clinical cases and summary results: A total of 800 infants (228 preterm ad 572 term) were included. The mean gestational age and birth weight of infants were 37.5±2.9 w and 3008±737 g, respectively. The median conventional and combined Apgar scores of infants at minutes 1 and 5 were (9 -10) and (16-17), respectively. The median modified combined Apgar scores at minutes 1 and 5 were 18 and 19. The modified combined Apgar scores at minutes 1 and 5 showed a positive correlation with both conventional and combined Apgar scores. A total of 231 infants were hospitalized and the best AUC value for hospitalization of all infants were determined by the 1st minte modified combined Apgar score. For preterm infants that required hospitalization, the best AUC was established with the modified combined Apgar score at minute 5.
Conclusion: The modified combined Apgar sytem developed by inclusion of cord blood gas and oxygen saturation just after delivery were found to be used as a effective scoring system in the delivery room. It may be superior to determine the evaluation of hospitalization in both term and preterm infants. More studies are required to evaluate its effectiveness.

Keywords: Apgar, combined Apgar, modified combined Apgar

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Features of influence in folate-related genes polymorphisms on neonatal period course and female reproductive disorders

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Presenter: **Z. Rossokha**

Introduction: Introduction. Polymorphisms in folate-related genes involved in homocysteine metabolism and nutrients delivery. According to certain studies folate-related genes polymorphisms are affected in fetal development disorders and neonatal pathologies. It has been shown that both maternal and fetal genotype influence on disorders risk. Folate-related maternal genes polymorphisms traditionally studied in case of reproductive disorders with inconsistent results. Different results may be due to gene-gene and gene-factor interactions. Nutrients consumption and vitamin requirement interact with widely studied folate genes polymorphisms. The purpose of this study was to examine the contribution of folate genes polymorphism in neonatal and reproductive disorders in context of folate metabolism changes.
Materials and methods: Materials and methods. Case-control study conducted in 56 term neonates with perinatal asphyxia (moderate severity), 24 term neonates with intraventricular hemorrhage (III-IVstages) and 75 clinically healthy term neonates (control group) from Poltava region. This study included also 550 women with reproductive disorder (primary and secondary infertility, premature birth) from different Ukrainian regions. All patients had full clinical and laboratory examinations. Study was approved by the Ethics Committee. The past history of patients, folic acid status (homocysteine in plasma, folic acid level in serum and red blood cell), MTHFR (C677T, A1298C), MTRR (A66G) folate-related genes polymorphism were analyzed. Statistical approach was determined using binary logistic regression (SPSS 17.0).
Clinical cases and summary results: Summary results. There was found no significant differences in frequencies of MTHFR (C677T, A1298C), MTRR (A66G) folate-related genes polymorphism in the three neonatal groups. But we defined significant differences in distribution of combined genotypes between neonates with perinatal asphyxia and neonatal control group. Neonates with perinatal asphyxia compared to control group had significantly increased frequencies of 1298AC or 1298CC genotypes combined 66AG or 66GG; 677CT or 677TT genotypes combined 66AG or 66GG; 1298AC, 677CT and 66AG or 66GG (51,78%; 50%; 28,57% different from 36%; 37,33%; 12%, respectively). Neonates with perinatal asphyxia had significantly reduced folic acid levels and significantly increased homocysteine levels after delivery. Folate-related genes polymorphism in women with reproductive disorders had frequencies corresponding to population distribution. Defined changes in folate status of patients correlated with MTHFR genotypes despite taking folic acid.
Conclusion: Conclusion. Combinations of folate-related genotypes in neonates were associated with development risk of perinatal asphyxia

accompanied by impaired folate metabolism after birth. Folate status in neonates with perinatal asphyxia may be the result of gene-nutrient interactions in complicated women. The optimal choice of folic acid drug in these and other patients will improve the folate metabolism in neonates. Further research of gene-nutrient interaction is needed in the mother-fetus system.

Keywords: Folate-related, gene, neonatal outcome

710

Obstetric outcomes and prenatal predictor factors in previable preterm premature rupture of membranes

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Presenter: **M. de la Calle Fernández-Miranda**

Introduction: Previable preterm premature rupture of membranes (PPROM) complicates <0.1% of pregnancies. The latency period until delivery is 7 days in about 50% of cases, and 2-5 weeks (w) in 80%, resulting in late miscarriage and extrem preterm deliveries (24w, the obstetric history is the most important. Iatrogenic PPROM usually courses with small defects away from cervix, therefore it used to recovers the amnioic fluid, and it has better fetal outcome and survival.

Our target is to analyze the obstetric outcomes in PPROM and relate factors that can predict survival, fetal viability and term reaching.

Materials and methods: Retrospective observational study, case series, of PPROM pregnancies <24.0w diagnosed in H.U. La Paz from January 2011 to December 2015. Only singleton pregnancies were evaluated, excluding twin pregnancies in order to avoid inherent bias.

Statistical analysis was performed with SPSS Statistics 20, executing T-Student and Chi-square tests, setting significance at p 24.0w), and term reaching (> 37.0w).

Clinical cases and summary results: 136 PPROM were reported, 13.24%(16) of them were twin pregnancies and 86.76%(118) singleton ones. Obstetric outcomes are shown below.

The average PPROM GA was 18.32± 2.7w; the average latency until delivery was 60.78± 67.58 days. Overall survival was 48.5%(33/68). 61.2%(41/67) of PPROM reached viability, and 45.0%(18/40) of these get to term.

The average PPROM GA was similar in patients who survived (p 0.60) or reached viability (p 0.71). PPROM was earlier in patients who came to term (17.28w vs. 19.91w; p 0.008).

In the group of patients who had made a previous invasive fetal procedure (16/68) reached viability 87.5%(14/16, p 0.013), and 71.4(10/14, p 0.014) of these came to term.

In patients with oligoamnios (46/67) fetal viability was 52.2%(24/46, p 0.025), and only 21.7%(5/23, p 0.001) of these came to term.

The fetal survival rate was 87.5%(14/16, p 0.001) in patients who underwent invasive fetal procedure; however, they survived only 35.6%(16/45, p 0.003) who had oligoamnios.

Conclusion: The average PPROM GA seems not to be related to overall survival, neither viability; however, it does in getting term.

PPROM after invasive procedure seems to have a positive influence in reaching viability and term, probably because of amniotic fluid recovery. Pregnancies with oligoamnios seem to have higher risk of not reaching fetal viability or term. The survival is increased in those patients who underwent invasive fetal procedure or presented normal amniotic fluid at the end of pregnancy.

Keywords: Previable PPROM, outcome, viability, term

EVENT		% (n)
OBSTETRIC HISTORY		
Previous conization		5.9% (7/118)
Uterine malformation		5.9% (7/118)
Primigravida		33.89% (40/118)
Previous caesarean section		44.0% (22/50)
Previous miscarriage	Early	55.1% (32/58)
	Late	14.5% (8/55)
Previous PROM		12.8% (9/70)
Invasive fetal procedure		22.0% (26/118)
OBSTETRIC OUTCOMES		
Oligoamnios		72.8% (86/118)
Histologic chorioamnionitis		51.8% (44/85)
Clinical chorioamnionitis		22.9% (27/118)
Umbilical cord prolapse		9.3% (11/118)
Placental abruption		1.7% (2/118)
TOP		33.0% (39/118)

711 (CASE REPORT)

Adnexectomy of remaining annex at 11 weeks of pregnancy

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Presenter: **M. Boia**

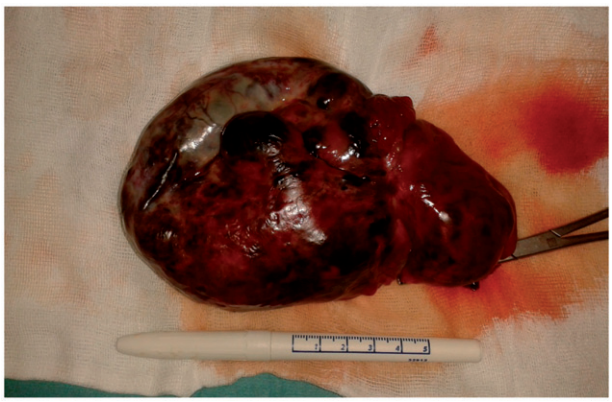
Introduction: The incidence of non-obstetric surgical pathology during pregnancy varies between 0.2-2.2%. The delay in the diagnosis of these conditions is common due to the increased difficulty in the differential diagnosis and use of complementary tests. The treatment decision is complex, taking into account the gestational age, anesthesic aspects and surgical approach routes. We present a clinical case referring to an intervention with removal of the remaining annex at 11 weeks of pregnancy with a successful term delivery.

Clinical cases and summary results: 35 years old, 2 pregnancies 1 delivery (pregnancy without complications, vaginal delivery at term, healthy newborn). History of left adnexectomy for a borderline ovarian tumor. She resorted to the emergency department of our hospital at 10 weeks of amenorrhea, due to pelvic pain with a week of evolution, with progressive worsening. A 10-week and 5-day pregnancy and a 10 cm right ovarian cyst were diagnosed, hospitalization was proposed. Cyst ecoguided puncture was performed with suction of 440 cm3 of cyst fluid, leading to great relief of symptoms.

Due to further worsening in D4, with acute abdomen, a decision to perform laparotomy was made. Necrosis of the whole right annex due to cyst torsion was observed, and adnexectomy was performed. The cytological study of the fluid revealed no cellular elements. The surgical specimen revealed serous cystadenoma without malignancy. Hospital surveillance was maintained, she remained asymptomatic and without sonographic or analytical changes, under vaginal progesterone. Spontaneous labor at 40 weeks occured, with eutocic

delivery. Newborn with 3370 g and Apgar score 10-10 at 1rst and 5th minutes. Uneventful puerperium.
Conclusion: The incidence of pelvic tumor in pregnancy varies between 0.5 to 2.2%, being the serous cystadenoma adnexal tumors 21% of adnexal tumors in the first trimester. The annex torsion is an emergency situation and, in cases of acute abdomen, a fundamental principle is to treat the woman as if she was not pregnant. We managed to treat this surgical emergency and it was possible to proceed with the pregnancy, despite the absence of both ovaries.

Keywords: Surgical pathology, pregnancy



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Does maternal hydronephrosis have an impact on urinary neutrophil gelatinase associated lipocalin (UNGAL) levels?

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Presenter: **Mine Kiseli**

Introduction: Maternal hydronephrosis during pregnancy occurs mainly due to compression of the ureter by the gravid uterus or secondarily due to the dilatant effect of progesterone on the urinary tract. Asymptomatic dilatation of the renal calyces in pregnancy is generally considered physiological. Neutrophil gelatinase-associated lipocalin (NGAL) is a small molecule of almost 25 kd that belongs to the well-defined superfamily of proteins called lipocalins. Marked elevation in NGAL levels indicates the renal injury. NGAL has been postulated to regulate renal epithelial morphogenesis and suggested to play a role in repairing damaged tubules by means of re-epithelization in the ascending limb of Henle's loop. The aim of the study was to determine uNGAL levels in asymptomatic maternal hydronephrosis.
Materials and methods: We recruited 44 uncomplicated pregnant women with hydronephrosis and 46 pregnant women without hydronephrosis as controls between the 24-36 weeks of gestation. The diagnosis of hydronephrosis was graded according to the maximal calyceal diameters: 5-10 mm mild, 10-15 mm moderate, and >15 mm as severe hydronephrosis. Patient age, gestational age, body mass index (BMI), systolic and diastolic blood pressures, and side and degree of hydronephrosis were documented. Urine (spot and 24 hours) and blood samples were collected from all subjects. Blood urea nitrogen (BUN), creatinine, uric acid, serum cystatin-C, uNGAL levels and complete urinary analysis were determined. Additionally, creatinine clearance values were calculated in all participants using the creatinine clearance formula.
Clinical cases and summary results: Demographic data and laboratory results of controls and hydronephrosis cases were summarized in Table 1. In the study group, 21 of patients had severe, 7 had mild, and 16 had moderate hydronephrosis. There were no statistically significant differences between groups in terms of age, BMI, gravidity, mean systolic, diastolic blood pressures and the creatinine clearance values; but significantly elevated uNGAL levels were detected in the presence of asymptomatic maternal hydronephrosis compared to controls (Table 1). The demographic characteristics were comparable among all hydronephrosis groups without any significant differences. An increasing trend in uNGAL levels was detected with increasing degrees of hydronephrosis, (29.57±23.87 in mild; 41.61±35.72 in moderate; 60.61±53.96 in severe hydronephrosis; p=0.163). Maternal pelvic diameter was found as a significant independent factor influencing uNGAL concentrations (β=0,289 95% CI: 0.522-3.061; p=0.006).
Conclusion: Mean uNGAL levels in uncomplicated pregnancies were reported as 30.5 and 47.8 ng/mL (33.2 ng/mL in our study). We detected higher uNGAL levels in increasing degree maternal hydronephrosis similar to higher levels with worsening obstructive nephropathy in children. Increased tubular pressure might be one of the underlying mechanisms for up-regulated uNGAL levels in our study. In conclusion, significantly elevated uNGAL levels were detected in the presence of asymptomatic maternal hydronephrosis.

Keywords: Maternal hydronephrosis, urinary Neutrophil gelatinase-associated lipocalin

Table 1: Demographic characteristics and laboratory results of controls and hydronephrosis cases

	Controls (n=46)	Hydronephrosis (n=44)	p-value
Age (year)	28.77±4.50	29.44±3.80	0.244
BMI (kg/m2)	27.04±3.89	26.96±4.72	0.931
Gravida	1.5 (1-5)	1 (1-5)	0.590
Systolic Blood Pressure (mmHg)	100 (80-120)	100 (80-140)	0.416
Diastolic Blood Pressure (mmHg)	60 (50-80)	60 (50-90)	0.232
Pelvis Diameter (mm)	4.48±0.71	13.39±4.32	<0.001*
BUN (mg/dL)	5.00±1.20	6.05±1.45	0.647
Creatinine (mg/L)	0.53 (0.45-0.83)	0.53 (0.45-0.84)	0.436
Uric acid (mg/dL)	3.35±0.66	3.50±0.89	0.368
Urinary NGAL (ng/mL)	33.28±24.68	45.23±42.06	0.004*
Serum Cystatin-C (mg/L)	0.68±0.20	0.72±0.27	0.487
Creatinine clearance (ml/min)	130.24 ± 48.39	140.27 ± 36.19	0.267

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Relevant conditions of stillbirth at term

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Presenter: **N. Bursacovschi**

Introduction: Stillbirth cases are the most important adverse outcomes of pregnancy, however poorly understood and recognized [Jay E Lawn et al., 2011]. Intrauterine death of mature fetus justifies up to 50% cases of stillbirth [Stratulat P. et al., 2014]. Many times these deaths are due causes which may be prevented [A. Choudhary, 2014, H. L. Kidanto, 2014]. Reduction of stillbirth at term requires mostly inexpensive interventions [Stratulat P. et al., 2014]. To do this, it is crucial to understand the causes and factors associated with stillbirth [Aminu M. et al., 2014]. Classification helps to identify the probable etiology of fetal deaths and series of events that eventually led to fetal death, as well as to formulate prevention policies and protocols [A. Choudhary, 2014].

Materials and methods: A retrospective case-control study was handled. The sample size was limited by the total number of stillbirths at term (0 Apgar score at the first and fifth minute of life) registered in the Institute of Mother and Child (IMC) of Republic of Moldova during 2013-2014. The control group consisted of live births in the same obstetric units. As mature were considered newborns since 37 obstetric week. The study group (L1) included 39 cases of intrauterine fetal demise at term, the control group (L0) - 69 live births. In order to obtain the necessary information it has been examined the stationary patient chart (Form 000-1/e). Data collection was carried out by means of a specially developed questionnaire.

Clinical cases and summary results: The main disease that led to death in utero of mature fetus in IMC according to the ICD-10 was mostly intrauterine fetal hypoxia, present in 61.5% of cases and congenital abnormalities in 18%, intrauterine infection -20,5%. According to the ReCoDe classification, that seeks to identify the condition(s) which existed at the time of death in-utero, approximately half of the cases of intrauterine death are related to fetus pathology (Fig. 1). The last is represented by intrauterine growth retention (17,9%) and congenital abnormality (15%), as well as intrauterine infection (23%), confirmed by the histological examination. It should be mentioned that the majority of the IGR cases were not detected during ante/intrapartum period. Umbilical cord pathology was present in 23% of the cases and placenta related conditions (infarcts or inflammatory damage) -7, 7%. Intrapartum fetal deaths were all due to acute intrauterine asphyxia (n=5). Maternal pathology was presented by hypertensive disorder.

Conclusion: According to ICD-10 more than half of mature fetuses died in utero due to acute or chronic intrauterine hypoxia. The conditions that lead to the development of hypoxia vary and become transparent after evaluation by the ReCoDe classification. In most cases, they were related to fetal and umbilical cord pathology, as well as placental dysfunction, intrapartum asphyxia and hypertensive maternal disorder.

Keywords: Stillbirth, relevant condition

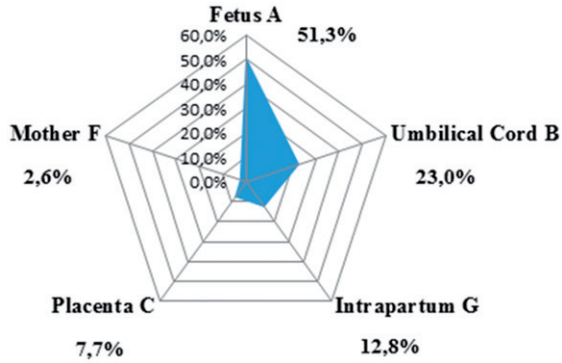

Fig.1 Classification of stillbirth by Relevant Condition at Death in IMC 2013-2014

732 (CASE REPORT)

Impact of electrical shock in pregnancy

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Presenter: **I. Ferraz**

Introduction: Electrical shocks during pregnancy are very rare. The spectrum ranges from transient unpleasant sensation with no effect on the fetus to sudden maternal and fetal death. The severity of maternal injury is not predictive of fetal outcome. The pathophysiology of electric shock during pregnancy depends on the characteristics of the current and the pathway of electrical current through the mother's body. Most of the injuries come from low voltage and alternating current in standard household electrical installations. Vertical flow of the current may pass through the uterus and be more dangerous to the fetus. Adverse fetal outcomes include: spontaneous abortion, placental abruption, cardiac arrhythmias, intrauterine fetal death, asphyxia, intrauterine fetal growth restriction.

Clinical cases and summary results: G4P2, 39-years-old gravida, presented to our emergency department at 32 + 6 weeks after an injury from electrical shock with low voltage at home. She was conscious and asymptomatic with no external injuries. Nevertheless, she was hospitalized for maternal and fetal monitoring. Blood tests (renal function, basic serum electrolytes and coagulation tests) and ECG were performed, with no abnormality. A prolonged (4 hours) cardiotocography (CTG) was done with a normal tracing. Blood panel tests, ECG and CTG were repeated on the very next day with normal results and the patient was discharged. They were performed one week later, with no abnormalities.

Pregnancy was monitored and uneventfully. She delivered a healthy baby boy at 39 + 4 weeks.

Conclusion: The effects of electrical shock during pregnancy remain unknown and the severity of maternal injury is not predictive of fetal outcome. Women who suffered electric shock, even if it was minor, require a complete obstetric evaluation. There are no specific guidelines for management during pregnancy and the majority of authors recommend fetal monitoring after 20 weeks of gestation.

The effect of gestational age and other factors have not been thoroughly studied yet.

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Correlation between the declaration of drug abuse and psychotropic drugs consumption and their detection in maternal hair and neonatal meconium

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Presenter: **Laura Almeida**

Introduction: Major depression prevalence is 5-9%. Choosen treatment is selective serotonin reuptake inhibitors (SSRI). Recent studies have estimated the pregnant women consumption is 2-8%. There are reasonable doubts about safe use in pregnancy. Up until now there are few studies that have been determined psychotropic drugs in maternal hair and meconium, so that no validated biomarker of chronic fetal exposure for these.
The aim of the study is:

- To know the prevalence of prenatal exposure to psychotropic drugs because of maternal consumption by determination in alternative biological matrices (maternal hair and meconium).
- To find out the usefulness of the questionnaire to detect patient consumption of antidepressant and anxiolitics compared to the determination in alternative biological matrices.

Materials and methods: DESIGN: This is a transversal observational collaborative study. Five hundred mothers and their newborns will be correlatively included after birth.
Instrumentalization: (1) Questionnaire about sociodemographic characteristics and consumption and exposure to tobacco, alcohol, drugs of abuse, and anxiolytics and antidepressants during pregnancy. (2) Biological samples: maternal hair, meconium.
Measurements: Anxiolytics and antidepressants values in maternal hair and meconium by gas chromatography coupled with mass sprectrometry.
Clinical cases and summary results: There is an infradeclaration of tobacco, alcohol and drug abuse; and psychotropic drugs consumption in pregnancy when compare the questionnaire with alternative biological matrices.
There is statistically significant differences in marijuana consumption, antidepressant and anxyolitic consumption when compare maternal hair detection with meconium detection, being meconium a better matrix to measure maternal consumption than maternal hair.
There are not statistically significant differences found in those drugs different to marijuana when compare meconium with and maternal hair detection.
Conclusion: Questionnaires do not reflect the real consumption of antidepressant, anxyolitics and drug consumption in pregnancy.
Meconium seems a better matrix than maternal hair to evaluate drug abuse and psychotropic drug consumption in pregnancy, although there are not statistically significant differences in the detection of some abuse substances. This lack of differences can be explained by low number of pregnant women who are consumers of this type of drugs.

Keywords: Meconium, maternal hair, pregnancy, depression, anxyolitic, antidepressant, drug abuse

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Maternal cardiac arrest

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Presenter: **Itziar Garcia-Ruiz**

Introduction: The objective of this analysis was to evaluate the frequency, potential etiologies, neonatal outcomes and survival rates of maternal cardiopulmonary arrest in a tertiary care centre.
Materials and methods: We performed a retrospective chart review of maternal cardiac arrest in Vall D'Hebron Hospital, Barcelona,from 2005 to 2016.
Clinical cases and summary results: Five cases were identified, for an incidence of 1/6500 deliveries (0.15?). Four of the five women were obese (BMI $\geq$30) and three of them older than 35 years.
The first patient collapsed being in-patient seven days after acute myocardial infarction due to anterior coronary artery dissection. Cesarean perimortem was performed. After delivery she was successfully resuscitated. The second patient had placenta accrete and underwent an elective c-section with uterine arteries embolization. She suffered massive pulmonary embolism and died. The third patient was abruptio placentae and suffered from amniotic fluid embolism, resulting in encephalic death. The fourth patient suffered cardiac arrest due to the anesthetic induction during an emergency c-section due to uterine rupture. The last patient suffered hemorrhagic shock and fatal cardiac arrest during c-section for transverse lie. The necropsy revealed an Ehler-Danlos. All neonates survived without any morbidity
Conclusion: Cardiac arrest in pregnancy is a rare event, but supposes high maternal morbidity and mortality. Survival depends on the underlying etiology of arrest. Clinicians must be trained in cardiopulmonary resuscitation. A community database, Catalan Obstetric Surveillance System (CATOSS), for rare and severe maternal conditions is ongoing.

Keywords: Maternal cardiac arrest

743

Newborn hearing screening on anoxic babies admitted on Brazilian follow - up service

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Presenter: **Iumy Santos**

Introduction: According to WHO, in 2005, 278 million people have hearing loss from moderate to profound degree, and 80% of these live in developing countries . Half of disability on hearing can be prevented and its effects minimized if the intervention starts early. Newborn Hearing Screening (NHS) is nationally developed in Brazil between patients with high and low risk for hearing loss through behavioral and electrophysiological procedures for early detection.
Materials and methods: This is a cross-sectional study conducted from January to December 2015. The test records held by the Fonoaudiology Service at Hospital Geral Dr. Waldemar Alcântara, in

Fortaleza, Brazil, were analyzed and demographic and perinatal data of screened patients were documented, in addition to results of their tests.
Clinical cases and summary results: On 2015, 341 newborns were tested on hearing screening and of these, 66 had neonatal anoxia. Among the anoxic babies, 38 (57.58%) were male and 28 (42.42%) female; 64 (96.97%) were born by vaginal delivery and 2 (3.03%) by cesarean delivery; and 45 (68.18%) had Apgar 6 in the fifth minute. Hearing screening, 19 (28.79%) passed and 47 (71.21%) failed. 57 (86.36%) have cochlear-palpebral reflex (CPR) present, 7 (10.61%) absent and 2 (3.03%) doubtful. 52 (78.79%) achieved satisfactory results in the right ear (RE) and 54 (81.81%) in the left ear (LE); failed 14 (21.21%) and 12 (18.18%) in right and left ears respectively. Of those who achieved satisfactory results in RE and LE, 84% to 94% had accoustic emissions presenst in the frequency 2k, 3k, and 4k, and 71% to 92% absent in 1k and 1.5k. All patients were referred to the Audiology Service of reference for newborn monitoring with risk indicator for hearing loss.
Conclusion: Most anoxic newborn obtained CPR present, and positives results on speech frequencies, which favors the stimulation and communication of newborns. However, these results do not rule out future hearing loss, requiring monitoring at least until school age, in order to reduce learning difficulties among these children.

Keywords: Anoxic, Hearing Screening, Newborns

750 (CASE REPORT)

Progressive abdominal distension and severe blood dyscrasia

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Introduction: Neuroblastoma is a tumor derived from the neural crest cells of adrenal gland medula or sympathetic ganglia and the most common malignant tumor in neonatal period. We report a case of newborn with abdominal distension and severe blood dyscrasia.
Clinical cases and summary results: The mother was 29 year old with normal obstetric ultrasounds, the last one at 34 week. It was a vaginal delivery at 38 weeks. The Apgar score at 1, 5 and 10 min was 7/8/8. At birth a progressive abdominal distension was detected, so he was transferred to a level III NICU.
He was admitted under mechanical ventilation with undetectable blood pressure. Spontaneous bleeding in the local of venous puncture and a marked abdominal distension were noted. Analytically, there was a severe metabolic acidosis, hemoglobin 10.7g/dL with 32x10◦9/L platelets, APPT 158 sec; TP 4,1 sec; and Fibrinogen <10 mg/dL. From five hours of life he presented a refractory hypotension with severe blood dyscrasia. Death after cardiac arrest was declared at 8 hours of live.
Autopsy revealed an abdominal mass (11x10x9cm).The liver had numerous metastasis. Normal hepatic parenchymal was scarce. The adrenal glands where normal. The histological exam and the immunohistochemical markers confirmed neuroblastoma.
Conclusion: Congenital neuroblastoma is rare. Autopsy alone or in conjunction with ancilliary techniques play an important role in the diagnosis of neuroblastoma.

Keywords: Neuroblastoma, Newborn

751

Uterine rupture in a 23 week gestational age pregnancy. Management with preservation of pregnancy

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Introduction: Uterine rupture is one of the most severe and uncommon complications of pregnancy. In the majority of the cases, the patients have a gynecological history of uterine interventions, which provoke the formation of uterine scars affecting the integrity of the myometrial wall. The interruption of the myometrial structural integrity is the leading cause of the Intra gestational uterine perforation. The standard treatment of this complication is an emergency hysterectomy after delivery in order to control the massive intraabdominal bleeding.
Clinical cases and summary results: A 33 year old caucasian woman was brought to the delivery room during the 23rd week of her pregnancy. Her vital signs were Arterial blood pressure of 50-16 mmHg and a cardiac frequency of 125 bpm.The physical examination showed diffuse abdominal tenderness without any clinical signs indicating an acute abdomen or a vaginal bleeding. The ultrasound performed showed the presence of a eutrophic fetus, with cardiac function in a breech position. The portion of amniac fluid in the sac was deemed normal, the placenta was located in the anterior wall without any signs of placental hematoma or placental dysfunction. Because of the hypovolemic shock we performed an abdominal ultrasound which revealed a fair amount of free fluid in the abdominal cavity extending from the recto-uterine (Douglas) pouch to the Morrison (hepatorenal) pouch. An emergency exploratory laparotomy was performed. Intraoperatively, an anterior uterine wall rupture of 3×3 cm was revealed. An intraoperative obstetric ultrasound was performed showing a viable fetus. Given the viability of the fetus and the early age of the gestation, we took the decision to maintain the pregnancy instead of performing immediate delivery. We performed Hemostasis by suturing the uterine lesion . In the next weeks because of placenta previa totalis, a subsequent vaginal bleeding led to an emergency cesarean section during the 29th pregnancy week. A classical cesarean section was performed for the delivery of the fetus.
Conclusion: Despite the fact that Hysterectomy is considered to be the golden standard for the treatment of intractable uterine bleeding,
a pregrancy preservation should be kept in mind in cases of a vital pregnancy by the time of the diagnosis.
Hysterectomy is sometimes the only choice for the successful control of an acute massive bleeding during pregnancy. We report this case because of the rarity of management of this obstetrical emergency.

Keywords: Uterine rupture, preservation of the pregnancy

753 (CASE REPORT)

Intra-abdominal injury in birth trauma

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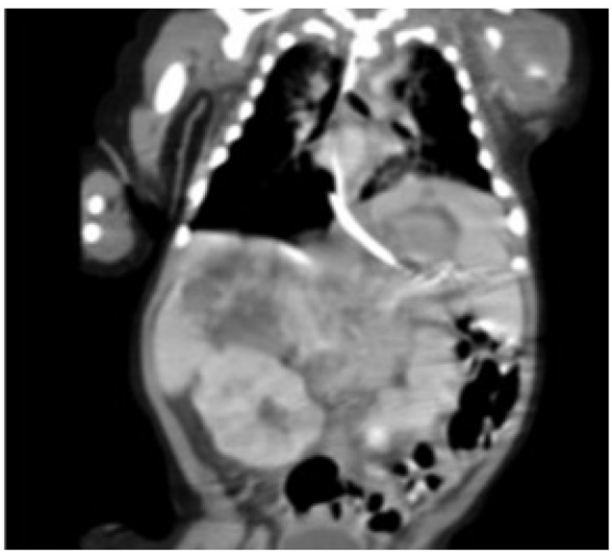
Introduction: Birth injuries are those sustained during the birth process, which includes labor and delivery. Liver is the most frequently injured abdominal organ and trauma more often results in subcapsular hematoma than laceration of the liver.
Clinical cases and summary results: A female newborn of 3975 g was born at 36 weeks by vacuum delivery to a 28 years old, 1G 0P, healthy mother. The birth was complicated with shoulder dystocia with very hard extraction and the Apgar Score at 1st and 5th min was 3 and 7. She was mechanically ventilated during first hour of life. On 2nd day of life, she developed seizures, acute renal failure, anemia and thrombocytopenia. An hepatomegaly was noted with increased levels of alanine transaminase (4668UI) and aspartate transaminase (1748UI), without coagulopathy. Creatinine kinase was 13469U/L. A metabolic disease was suspected and she was transfered to our NICU. An abdominal TC showed a distended liver with increased dimensions. Dispersed by all liver segments there were extensive heterogeneous and hypodense areas without capture of contrast corresponding to hepatic lacerations. Elevations of left diaphragmatic hemi-cupula was noted and phrenic paresis was confirmed. Hemi diaphragm plication was performed. Metabolic disease was excluded.
Conclusion: Physicians should be aware for birth trauma involving intra-abdominal organs because evolution can be fulminant and in newborns with undetected lesions.

Keywords: Birth trauma



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Outcomes of high risk surgical neonatal cohort up to 18 months at a UK tertiary perinatal referral surgical unit

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Introduction: Background: Preterm babies' outcomes are better monitored unlike for their neonatal surgical counterparts.
Aim: To determine the clinical and developmental outcome of high-risk surgical neonates at a tertiary referral perinatal centre over 6 years.
Materials and methods: Clinical and demographic data was collated retrospectively on eligible infants for the unit's high-risk neurodevelopmental program from 2008 to 2013 using clinical notes and Standard Electronic Neonatal Database. Inclusion criteria: inborn <31 weeks gestation, hypoxic ischaemic encephalopathy (HIE) grades 2/3 and major surgical cases. Congenital diaphragmac hernia (CDH) and tracheo-oesophageal fistula (TOF) are reported. Developmental screening used standardised proforma and Bayley Infant Neurodevelopmental Screener (BINS) classifying as low, moderate and high-risk for disability.
Clinical cases and summary results: Of 221 infants; male (55%); 57 (37%) ex-utero. Eighty-five (38.6%) had TOF; 39 (17.7.8%) had CDH; 35 (15.9%) had HIE. Median birthweight and gestation was 2449g and 33 weeks respectively; 27.7% SGA. Commonest comorbidies were PDA (26.6%; 47% preterm TOF), CLD (15.9%; 40% preterm-TOF vs 3% term-TOF patients), IVH (10%; 40% surgical-preterm), Laser treated ROP (1.7%), and PVL (2%). Feeding was key discharge issue: 20% nasogastric/gastrostomy/jejunostomy, 42% GORD and 43 (19.6%) deaths post-discharge before 2 years; 34% had CDH. Surgical babies' (n=37) BINS scores: at 3 months; 24% had moderate and 10% high risk; 18 months; 29% moderate versus 13% high risk. By contrast, medical preterms <31 weeks (n=56),10% moderate and 3% high risk at 3 months and 12% moderate and 12% high risk at 18 months.
Conclusion: Post-discharge mortality and developmental morbidity to 18 months is higher in surgical infants compared to medical preterms <31 weeks.

Keywords: Outcomes, high risk, surgical neonates, preterm

769 (CASE REPORT)

Aplasia antebrachii et manus congenita

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Introduction: The appearance of the congenital major abnormality varies, depending the time when problem occured during intrauterine development. . There are few theories about its etiology -intrauterine conditions as trauma, viral infections, placenta abnormalities during embryo genesis but persistence of amniotic ribbon I can be one of the major causes for partial unilateral partial muscle/bones deformation or agenesia
Clinical cases and summary results: A few days ago we have hospitalized a female newborn with rare congenital abnormality as antebrachial and manus agenesia of right arm is Surprisingly it was

was detected at the birth! From discharge letter from Obstetric Clinic in Novi Sad we found out that it was mother's second pregnancy, she claimed thatshe did not know that she was pregnant until spontaneous rupture of amnion membranes so she did not have even one check up during pregnanacy When amniotic membrans ruptured, she hurried to delivery room but it was too late so vaginal delivery occurred at the entrance to delivery room. Neonatologist after first assessment estimated GA at 40 weeks, BW 3000g BL48cmHC 34 cm/eutrophic for GA/AS 9/10.and described major abnormality of right arm as antebrachial et manus agenesia is. After seeing the baby, mother denied to take it home so we have already contacted social workers to find a family willing o take care of this otherwise healthy newborn baby.

Conclusion: Although it is rare congenital abnormality it is important for gynecologist to try always to see both arms and legs as we had cases of partial unilateral agenesia of leg as absence of foot, or only fingers but prenatal ultrasound was described as normal because gynecologist thought that if one leg is normally formed, the other leg is the same although he has not not seen it properly and nowadays he is under investigation for medical mistake that can cost him lost of licence

Keywords: Congenital abnormality,newborn, aplasia antebrachii et manus

NEONATAL LUNG - 067 (CASE REPORT)

Congenital pulmonary lymphangiectasia presenting as fetal bilateral pleural effusion

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Introduction: Congenital pulmonary lymphangiectasia (CPL) is a rare condition caused by failure of the normal regression process of pulmonary lymphatics. The prognosis has been reported to be very poor.

Clinical cases and summary results: We report a premature male newborn presenting at birth with nonimmune hydrops, bilateral pleural effusion and severe respiratory distress syndrome. At birth he required immediate resuscitation, intubation and chest tube placement for drainage. He was not dysmorphic and karyotype was 46, XY. After we started enteral nutrition on the 2nd day, effusion become chylose, so we started with total parenteral nutrition and medium-chain triglycerides (MCT) based formula afterwards. Despite that, chest-drain losses were up to 200 ml/kg/day. One the 22nd day we began treatment with octerotide, but without significant success. At the age of 53 days diagnostic thorascopy and a lung biopsy was performed and at the same time pleurodesis with sterile talc. After that, we removed chest drains with no recurrance of the effusion. Histopatologic findings confirmed congenital pulmonary lymphangiectasia. He was discharged to the regional center at 80 days of age, still dependent on mechanical ventilation.

Conclusion: Adequate prenatal diagnosis and perinatal/neonatal clinical care can reduce mortality rate and improve outcome of newborns with CPL.

Keywords: Pulmonary lymphangiectasia, congenital chylotorax, fetal hydrops

068

A comparative study of hhhfnc and ncpap in preventing re-intubation in extreme preterm infants born at less than 30 weeks gestation

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Introduction: Despite recent advances in respiratory support, the wide use of antenatal steroids and surfactant replacement therapy, respiratory problems continue to represent the leading cause of mortality in premature infants during the neonatal period. In the last few years, HHHFNC has been widely adopted as a mode of non-invasive respiratory support for infants with respiratory difficulties. However, data of the safety and efficacy of HHHFNC use in extremely premature infants are scarce. This study will aid in bridging the knowledge gap and sheds light on the efficacy and, more importantly, the safety of HHHFNC as non-invasive respiratory support for extremely premature infants.

Materials and methods: This is a retrospective comparative study conducted at Neonatal Intensive Care Unit (NICU), Norfolk and Norwich University Hospital between 01/October/2010 and 31/December/2014. Data were collected from the medical notes of the eligible patients. Participants' total number was 26, 9 patients in nCPAP group while HHHFNC group consisted of 17 patients. The participants' gestational age was ranging between 24 to 29 + 9 weeks who were supported by either nCPAP or HHHFNC after first extubation. Primary outcome defined as the need for re-intubation within 72 hours post-extubation i.e. failure of non-invasive respiratory support.

Clinical cases and summary results: Study showed no statistically significant differences in either primary (nCPAP (9/2 [22%]), HHHFNC

Demographics of two groups and outcomes tables

Table 1 Demographic characteristics of selected infants in both groups

	nCPAP (n=9)	HHHFNC (n=17)	*P* - value
Gestational age in weeks, range (mean)	25-28 (26)	24-29 (26)	0.74
Birth weight in grams, range (mean)	631 – 1384 (963)	700 – 1525 (978)	0.87
Female, n (%)	2 (22)	10 (59)	0.11
APGAR scores, means at 1/5 minutes	7/7	5/8	0.4/0.65
Weight pre-extubation in grams, range (mean)	630 – 1285 (964)	700 – 1510 (959)	0.96
Age in days, mean	6	5	0.57
Antenatal steroids given, *n* (%)	6 (67)	17 (100)	0.032*
Delivery mode C-section (%)/NVD (%)	67/33	35/65	0.22
Presence of chorioamionitis, *n* (%)	0 (0.0)	6 (35)	0.06
Surfactant replacement therapy given, *n* (%)	8 (89)	17 (100)	0.35
Caffeine administered, *n* (%)	9 (100)	17 (100)	Not computed Ω

*P-value <0.05 is significant
Ω *P*-value not computed because caffeine administration is constant.

Table 5 Primary and secondary outcomes

	nCPAP (n=9)	HHHFNC (n=17)	*P* – value	RR (95% CI)
Primary outcome:				
Failed extubation incidence, *n* (%)	2 (22)	2 (12)	0.59	1.89 (0.32 – 11.27)
Secondary outcomes:				
Constant need for O_2 in 1st 4 weeks, *n* (%)	7 (78)	12 (71)	0.62	1.16 (0.82 – 1.65)
No pneumothorax, *n* (%)	9 (100)	16 (94)	1.00	1.06 (0.94 – 1.20)
Spontaneous bowel perforation, *n* (%)	0 (0.0)	0 (0.0)	Not computed Ω	Not computed Ω
No nasal injury, *n* (%)	8 (89)	17 (100)	0.35	0.89 (0.71 – 1.12)

Ω *P*-value not computed because spontaneous bowel perforation is constant. RR – relative risk. CI denotes confidence interval.

(17/2 [12%], $p = 0.59$) or secondary outcomes (Constant need for O2 in the first 4 weeks of life ($p = 0.62$), Pneumothorax ($p = 1.0$), nasal injury ($p = 0.35$)). P value for spontaneous bowel perforation was not computed as there was no affected patients.
Conclusion: The study demonstrate that HHHFNC is similarly safe and efficacious in comparison to nCPAP as non-invasive respiratory support for extremely premature infants post-extubation.

Keywords: Premature, HHHFNC, nCPAP

073

Current bronchopulmonary dysplasia at preterm children with the patent ductus arteriosus to age 3 year

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Introduction: Although improvement in perinatal care over the past few decades has increased the survival of very low birth weight infants, these newborns continue to suffer from significant morbidities such as bronchopulmonary dysplasia (BPD). The hemodynamically significant patent ductus arteriosus (PDA) promotes formation it (Kaempf et al., 2013). There is insufficiently clear a role hemodynamically insignificant (HI) PDA in formation and a current BPD. The aim of this study is to reveal features of current BPD in 1-year-old and 3-year-old age at children born prematurely depending on a condition of PDA.
Materials and methods: The retrospective analysis of 146 preterm infants 24-32 weeks of gestation with BPD and follow-up during 3 years was performed. The children was divided in group depending on a condition of PDA: group 1 - 58 preterm infants at whom DPA it was closed independently in the early neonatal period, group 2 - 60 preterm infants with hemodynamically insignificant PDA which was not demanding closing by a surgical way, group 3 - 28 preterm infants with hemodynamically significant PDA which was closed by a surgical way at the age of 21.5 ± 1.6 day of life. Uitrasound criteria of hemodynamically significant PDA (Tacy TA, 2009, Sehgal A, McNaMara PJ, 2009, El Hajjar M, 2005): diameter of ductus arteriosus (DA) more than 1.2-1.4 mm/kg body weight, left atrium-to-aortic root diameter ratio of 1.4 in the parasternal long-axis view, presence of the is left-right shunting of blood through DA, holodiastolic flow in the descending aorta, resistance index in the a. cerebri anterior $\geq$ 0.8, absence diastolic blood-groove in aa. renalis and/or mesenterica.
Clinical cases and summary results: At a treatment stage in perinatal centre in group 2 was more children (23.3%, $p < 0.01$) with heavy degree BPD in comparison with group 1 (5.6%) and accordingly there are less than children severe BPD (41.7%, 58.6%, $p < 0.05$). In group 3 was more (53.6%) children with 3rd and more degree active retinopathy of preterm infants in comparison with group 2 (35.0%, $p < 0.05$) and a hearing disorder at (67.9%) of children that is confirmed by the negative test of otoacoustic issues in comparison with group 1 (46.8%, $p < 0.05$). At the 1-year-old from 20 to 35% of children were healthy, about 50% had mild BPD, 15-20% mediate and 5-10% severe BPD. Authentic distinctions of weight BPD at the age of 1 year in comparison groups it is not revealed. At the age of 3th years in 1 group there are more than children who have recovered (59.5%) in comparison with group 2 (43.5%, $p < 0.05$) and with group 3 (25.0%, $p < 0.01$), in group 2 it is revealed more children with severe BPD (11.5%) in comparison with group 1 (0%, $p < 0.05$).
Conclusion: Presence of hemodynamically insignificant DPA promotes severier current BPD at a nursing stage in the perinatal centre and at 3-years-old age children at whom ductus arteriosus was closed

independently in the early neonatal period or has been closed by a surgical way. Do not revealed of authentic distinctions between weight of current BPD from term of surgical closing DPA at average term of surgical closing of hemodynamically significant DPA 21.5 ± 1.6 days of life.

Keywords: Preterm infants, bronchopulmonary dysplasia, patent ductus arteriosus

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Hypothyroxinemia and increased risk for transient tachypnea of newborn

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Introduction: Transient tachypnea of newborn (TTN) might require mechanical ventilation. TTN is caused by retained fetal alveolar lung fluid (FALF) which impairs gas exchange. Low umbilical blood FT3 and thyroxine deficiency after birth delay FALF clearance via reduction of stimulation of both beta-adrenergic receptors and Na-K-ATPase activity in epithelial lung cells. We hypothesized that low serum TT4 level after birth is associated with greater risk for TTN.
Materials and methods: This retrospective study was performed in the nursery (1.1.2010-31.07.2015) at Ram bam Health Care Campus in Haifa. We included all 26549 term neonates except for two neonates with hyperthyroidism. Blood for Neonatal Metabolic Screening was collected at 40-48 hours of age and TT4 was routinely measured for all term infants while TSH was measured for all premature infants. In case of abnormal TT4, TSH was also measured and vice versa.
Clinical cases and summary results: Univariate analysis showed a significantly greater risk for TTN with TT4<14.4μg/ld., male gender, vacuum extraction delivery, Caesarean delivery (CD), maternal IDM, and GDM. Nonetheless, emergency CD and epidural anesthesia were significantly associated with a lower TTN rate. Multivariate logistic regression analysis showed significantly independent association between higher risk for TTN and male gender (p<0.001, OR=1.59, 95% CI: 1.2-2.1), elective CD (p<0.001, OR=2.27, 95% CI: 1.7-3.04) and serum TT4 <14.4 μg/ld. (p<0.001, OR=1.98, 95% CI: 1.49-2.64).
Conclusion: Male gender, elective CD and TT4 <14.4 μg/ld. were significantly associated with increased risk for TTN. Our results might raise questions regarding treatment of severe TTN by thyroid hormones.

170 (CASE REPORT)

Congenital pneumonia

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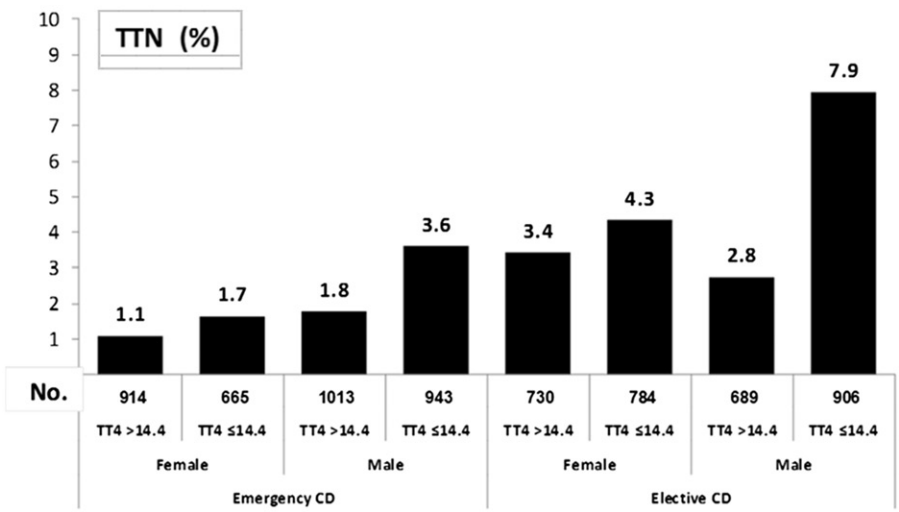
Introduction: Congenital pneumonia appears at birth or in the first three days of life and is called so, because contamination was made during the fetal period, before or during labor.
Clinical cases and summary results: We present the case of a male newborn coming from GIII PII, 37/38 weeks of gestation, APGAR score 9, good status at birth. After half an hour from birth, he shows shortness of breath and grunting sounds while breathing, sharp pulling in of the chest below and between the ribs with each breath, shallow breathing, rapid breathing (FR=80 resp/min), tachycardia (FC=170b/min). The RDS is getting worse, and the newborn needs mechanical ventilation in IPPV mode for 24 h and SIMV mode for another 24 h. After 48 hours the newborn is extubated and continue the oxygen therapy for 72 hours. The chest x-ray shows opacity to the superior left lobe and to the median right lobe. Laboratory tests: HLG(28.06) WBC=19.100/uL, RBC=5.270.000/uL, Hb=19.5g/dl, Ht=55.2%, Tr=172.000/uL, HLG(29.06) WBC=13.300/uL, RBC=5.070.000/uL, Hb=18.6g/dl, Ht=54.9%, Tr=199.000/uL. The blood culture, the vernix culture and the culture from the umbilical catheter were negative. Mother cervical culture was positive, with E.Coli. Under treatment, the evolution was favorable. He was released after 14 days.
Conclusion: Newborn congenital pneumonia is a serious disease, that could have unfavorably evolution and in most of the cases the germ involved can not be identify. The most newborn need mechanical ventilation.

Keywords: Newborn, congenital pneumonia, mechanical ventilation



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Inhibition of RSV- and corticosteroid-induced ctgf expression in H441 lung epithelial cells by caffeine

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Introduction: Respiratory syncytial virus (RSV) is the leading cause of severe lower respiratory tract infection during the first two years of life, especially in preterm neonates with bronchopulmonary dysplasia (BPD). In addition, RSV acts as a trigger for elevated pulmonary morbidity (wheezing, bronchial asthma) in later infancy. Underlying pathomechanisms are largely unknown so far. Methylxanthines such as caffeine have been ascribed positive effects on airway inflammation as well as remodeling. The aim of the current in vitro study was to define the impact of RSV on regulation of connective tissue growth factor (CTGF) in lung epithelial cells which plays a key role in airway remodeling. Furthermore, the impact of corticosteroids and caffeine on expression of CTGF was characterized.
Materials and methods: The human airway epithelial cell line H441 was infected with recombinant RSV and subsequently treated with different corticosteroids and caffeine. CTGF, TGF-β1-3 and TNF-α mRNA expression were determined by quantitative real-time PCR.
Clinical cases and summary results: Infection with RSV significantly induced CTGF mRNA levels in H441 cells (10.4 ± 1.8-fold, $p < 0.0051$), while no effect was observed on expression of TGF-β1-3. Surprisingly, the additional treatment with dexamethasone (DXM) led to further amplification of CTGF (2.5 ± 0.4-fold, $p < 0.0004$) indicating additive effects. Caffeine was able to significantly antagonize dexamethasone- and RSV-mediated induction of CTGF ($p < 0.0001$). The increased expression of TNF-α (53.9 ± 14.5-fold, $p < 0.0001$), which has been described as potent inhibitor of CTGF expression, might provide a potential explanation for the observed caffeine-mediated inhibition. In accordance with DXM, also other corticosteroids like betamethasone, prednisolone, budesonide, and hydrocortisone were able to induce CTGF expression in lung epithelial cells. Again, caffeine was able to antagonize these corticosteroid-mediated induction.
Conclusion: This in vitro study describes an upregulation of CTGF expression in H441 lung epithelial cells by infection with RSV and by corticosteroids. In addition, caffeine was able to abrogate these negative effects of corticosteroids and RSV. Should this effect of RSV infection, steroid and caffeine on CTGF expression be also seen in vivo, caffeine might help to restore normal lung physiology during infection with RSV and may serve as an additional medication to steroids.

Keywords: RSV, caffein, CTGF, steroide

NEONATAL LUNG - 204

Pneumothorax in neonate

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Introduction: Pneumothorax is more frequent in the neonatal period than any other time in life. It occurs in 1-2% of full term newborn and 6% in premature infants. The aim of our study was to assess the clinical presentation, therapeutic modalities and the early outcome of our patients with neonatal pneumothorax.
Materials and methods: We underwent a retrospective and descriptive study in ICU and Neonatal Medicine of Monastir for a period of six years (from 1 January 2010 to 31 December 2015).
Clinical cases and summary results: 67 newborns were included. The sex ratio was 2.7. The patients were in born in 73.1%. The average gestational age was 35 WG [26- 42]. Patients were delivered by caesarean section in 39 cases. The average age of newborn when pneumothorax was diagnosed was 27 hours [1-240].The respiratory pathologies associated were: hyaline membrane disease in 31.3%, infectious pneumonitis in 26.9%, transient tachypnea in 9% and inhaling meconium in 7.5%. Silverman average score was 3.11 [0-5]. When the pneumothorax was noted: the average of oxygen saturation was 80.3% [40-100], pH rate was 7.26 [6.75 to 7.46]. Diagnostic were confirmed by chest × ray in 100% of cases. Pneumothorax was bilateral in 17.8% of cases right side in 56.7% and left side in 25.4% of cases. Pneumothorax was partial in 15 cases, total in 52 cases. Pneumothorax was secondary to respiratory disease in 25 cases. Spontaneous pneumothorax was recorded in 15 cases. The initial treatment was exsufflation and assisted ventilation in 53. 7% of cases, controlled hyperoxia in 28.4%, exsufflation in 10.4% of cases and switching the ventilation mode in 7. 5% of cases. We had 5 cases of recurrence after an average of 5.4 days [1-11] and 4 cases of immediate therapeutic failure. The main complications related to pneumothorax, were: 22 hemodynamic disorders, 15 nosocomial infection and 10 pulmonary arterial hypertension. The average duration of stay in ICU was 7 days [1-32] and the hospital stay average was 10.8 days [1-44].
Conclusion: The neonatal pneumothorax is a frequent pathology in neonatal ICU whose prognosis depends on its importance, its etiology and the initial therapeutic cares.

Keywords: Neonate, pneumothorax, respiratory distress

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Respiratory distress in the newborn: review of cases admitted to our hospital in 2014 and 2015

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Introduction: Respiratory disease is one of the most frequent causes of death in the neonatal period, affecting about 3% of newborns, and up to 20% in <2.5 kg, due to both the anatomical development,

sometimes scarce in premature, and to changes in the lungs at the time of birth. Thanks to the diagnostic and therapeutic advances, mortality from this disease has decreased, but we are still very interested on the issue.
Materials and methods: We have conducted a review of cases admitted to present respiratory distress requiring hospitalization in our neonatal unit level II-B, during the years 2014 and 2015, analyzing the following parameters: sex, gestational age (distinguishing between weeks gestational age 32-36 + 6 and >=37), infectious risk factor, type of delivery, Apgar score, elapsed until the time starts breathing difficulty, score Silverman, need for oxygen therapy, duration of oxygen therapy, performance or non performance of chest radiography, channeling or venous access and antibiotic therapy, part-time income, causing pathologies of distress, devices used (nasal prongs, nasal prongs high flow (HFNC), nasal CPAP or mechanical ventilation) and mortality. Data were analyzed using SPSS 19.0 statistical program.
Clinical cases and summary results: 31 newborns were admitted by respiratory distress in the first 24 hours in 2014 and 2015.74.2% men. Premature between 32-36 + 6weeks gestation accounted for 45.2%, and 54.8% term. 42% of children had infectious risk factor. The delivery was eutocic in 51,6%, 35,5% by caesarean section. They presented test Apgar>7: 74.1%, <6: 25.9%. 90.3% of patients began respiratory distress in the first hour of life. Silverman score was 7 in 13%.74.2% required oxygen therapy, spontaneus solution in the rest. The average duration of the oxygen therapy was 24.9 hours. 58% received antibiotic therapy. 61.3% of children underwent chest radiography. The average admission time was 9 days (fashion 4 days). Among the factors causing distress,the most frequent was transient taqchypnea (71.1%), followed by hyaline membrane disease (12.9%). 87.1% of them used nasal prongs or HFNC, nCPAP 9.7%, and intubation 3,2%. Only one patient was transferred to a level III NICU, he was the only one deceased.
Conclusion: Most of the patients admitted who presented respiratory distress in the first 24 hours of life were males (term). The main cause of distress was the transient tachypnea of the newborn. Most required oxygen therapy in the form of nasal prongs or HFNC, but the distress was resolved in the majority of patients in the first 25 hours of life. The average stay was extensive, probably because patients with longer hospital stays have increased the average. Mortality was very low.

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Very low birth weight twins product of repetitive ivf with unusual presentation of RDS

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Introduction: Respiratory distress is a common neonatal presentation and accounts for the most neonatal admissions. Perinatal tuberculosis (TB) is an extremely rare presentation of respiratory distress in newborn and its diagnosis is challenging, as clinical signs are nonspecific and maternal history, remains an important tool for the suspicion of congenital TB.
Materials and methods: Postmortem autopsy showed Mycobacterium tuberculosis, morphologically compatible with military tuberculosis.
Clinical cases and summary results: 27 weeker female was born by repeat cesarean section for premature contraction and vaginal bleeding, with a very low birth weight, member of twins and product of repetitive IVF. The mother was known to have pelvic inflammatory disease treated as for C. trachomatis. Patient was asymptomatic until day 12 of life when she developed respiratory distress with bilateral infiltrates on chest X-ray, managed by assisted mechanical ventilation, and broad-spectrum antibiotics and antifungals for refractory increase in inflammatory markers with however negative cultures. Echocardiography was normal. Patient was extubated/reintubated three times for recurrent desaturations, right upper lobe atelectasis and increase in the size of the infiltrates on CXR. She required PRBCs transfusions for recurrent episodes of anemia. TORCH and RSV PCR were negative. Dexamethasone was given for one week. Sputum culture then grew pseudomonas and enterobacter sensitive to the prescribed antibiotics. She developed fever after 2 weeks of antibiotics. Bronchoscopy and consequent bronchoalveolar lavage for acid-fast bacilli stain technically could not be done because of her VLBW. CSF studies were negative. Chest CT scan showed no lung tissues with diffuse consolidation. HIV, CMV, EBV, Hepatitis B and C were all negative. On day 74 of life, the patient died because of severe desaturation and bradycardia, unresponsive to CPR. Patient's mother and twin brother were both positive for TB.
Conclusion: Congenital tuberculosis is a very rare condition and only few cases have been reported in literature. Appropriate history taking from the mother should be undertaken to increase the chance of detecting congenital tuberculosis and any complaint during pregnancy should be taken into consideration. This will improve the outcome of the infected patients and help decrease the mortality especially in the endemic area because if left untreated, congenital TB is usually fatal.

Keywords: IVF, prematurity, RDS, tuberculosis

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Treatment of persistent pulmonary hypertension of the newborn with INO - our experience

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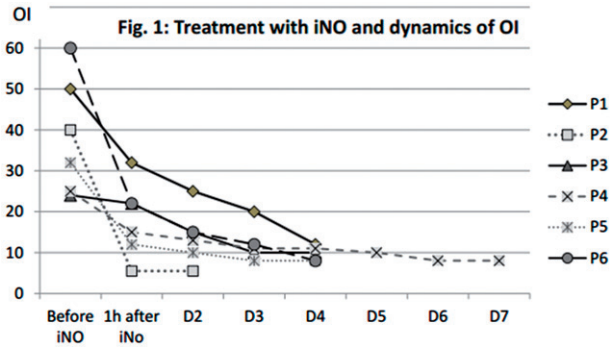
Introduction: Persistent pulmonary hypertension of the newborn (PPHN) is a life threatening condition as a result of high pulmonary vascular resistance and persistent right to left shunts across Foramen ovale and Ductus arteriosus. The treatment of PPHN is complex and often ineffective. Inhaled nitric oxide (iNO) as a selective pulmonary vasodilator has been used since 1992 and since 1999 is the drug of choice for treatment of PPHN.
Materials and methods: INO for treatment of newborn infants is available in our hospital and for the first time in our country since 2015. We present the first six infants with PPHN treated with iNO, based on an established protocol. The protocol enables the standardization of this new for our country therapy. The effectiveness of the treatment is based on the reduction of the OI (= MAP x FiO2 / PaO2).
Clinical cases and summary results: All patients had severe underlying disease - asphyxia, congenital infection, pulmonary hemorrhage. In the first hours or days of life a critical deterioration with severe cyanosis and cardio-circulatory failure occurred. Cyanotic congenital heart disease was excluded by echocardiography, PPHN with supra systematic blood pressure in the pulmonary artery with right to left shunts through Ductus arteriosus and/or Foramen ovale was diagnosed. After starting the iNO therapy rapid effects in all babies were established - the hemodynamic was stabilized, the OI underwent a fast reduction (fig. 1). All infants survived without side effects and with a good neurological outcome.
Conclusion: The iNO for treatment of PPHN that was applied for the first time in our country in the last year has demonstrated its efficiency and

safety. We recommend its use according the standardized guidelines and after establishing the diagnosis PPHN by echocardiography.

Keywords: PPHN, iNO



508 (CASE REPORT)

Case study of a child with congenital diaphragmatic hernia, fetal tracheal endoscopic catheter occlusion with balon-catheter

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Presenter: **S. Deneva**

Introduction: Congenital diaphragmatic hernia remains one of the leading causes of high mortality due to pulmonary hypoplasia and pulmonary hypertension. Over the past 20 years, efforts have been directed to introduce intrauterine fetal surgery to improve perinatal lung maturation in severe cases of congenital diaphragmatic hernia.
Clinical cases and summary results: A case study of full-term boy born in 37 g.week and three days with weight 3160 g., height - 49 cm from a second pregnancy with severe isolated congenital diaphragmatic hernia in 19 g. week and conducted intrauterine fetal endoscopic tracheal occlusion with flexible balloon catheter in 28 g. week with subsequent endoscopic removal of the balloon in 34 g.week. Performed resuscitation and intensive care after the delivery, neonatal surgery at the 24 hour for recovery of the defect. After surgery and early neonatal period the child is with clinical evidence for GERD with esophagitis. Conducted treatment with prokinetik and positional posture.
Conclusion: The application of fetal endoscopic tracheal occlusion (FETO) is successfully conducted for the first time in Bulgaria in two stages with the participation of a multidisciplinary team of specialists. The outcome is a newborn without pulmonary hypoplasia, discharged for home care and raising three weeks after surgery.

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Neonatal chylothorax in a level III neonatal intensive care unit

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Presenter: **Jacinta Fonseca**

Introduction: Neonatal chylothorax results from the accumulation of chyle in the pleural space and may be either a congenital or an acquired condition in most cases following intrathoracic surgery. Diagnosis is confirmed when analysis of pleural fluid shows triglyceride levels >110 mg/dL and an absolute white cell count >1000 cells/μL with a lymphocyte fraction >80%.
Management, is independent of the etiology. It initially consists of chyle drainage and dietary modifications (total parental nutrition or enteral diet containing medium chain triglycerides). Octreotide may be useful in refractory chylothorax not responding to conservative management.The aim of this study is to determine the etiology, clinical course and response to treatment of neonatal chylothorax in a tertiary neonatal intensive care unit.
Materials and methods: We performed a retrospective observational study of all newborns with the discharge diagnosis of chylothorax between 2000 and 2015 in our neonatal intensive care unit.
All data were obtained from the hospital computer database and medical records.
Demographic data and information regarding pregnancy and delivery were recorded. Pleural effusion characteristics were also collected: congenital or acquired, laterality, clinical presentation, prenatal diagnosis, gestational age at diagnosis, duration of the effusion and biochemical, cytological and bacteriological analysis of the fluid. In addition, data regarding treatment and neonatal morbidity and mortality were collected. The impact of etiology on outcome and response to treatment was investigated.
Clinical cases and summary results: Seven cases of chylothorax were reported: 4 congenital and 3 traumatic following intrathoracic surgery.
Of the 4 cases of congenital chylothorax (CC), 3 were diagnosed prenatally and started management during the antenatal period. One case of CC was idiopathic and the others were associated with hydrops fetalis (n=1), Noonan Syndrome (n=1) and Trisomy 21 (n=1). Traumatic chylothorax occurred after surgical repair of congenital diaphragmatic hernia (n=2) and esophageal atresia (n=1). Pleural effusion appeared between the 4th and 10th postoperative day.
Treatment consisted of pleural taps when respiratory function was compromised, total parental nutrition (TPN), and respiratory support as required.
Four cases who did not respond to TPN were successfully treated with continuous infusion of octreotide. The dose ranged between 4 to 12 μg/kg/h and no side-effects were observed during octreotide administration.
Resolution time of chylothorax ranged between 15 and 86 days.
Two newborns died.
Conclusion: Clinical outcome of chylothorax is generaly good but etiology seems to be decisive in the evolution, with more prolonged course and associated morbility in congenital cases. Octreotide seems to be an important adjuvant treatment among the conservative strategies and appear to have a good safety profile in newborn. More studies are still necessary to investigate all aspects of octreotide treatment to determine the amount of its dose, initiation time and treatment duration.

Keywords: Neonatal, Chylothorax, Congenital, Octreotide

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Bronchopulmonary dysphasia in extremely low birth weight infants

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Presenter: **R. Gueorguieva**

Introduction: Aim: To define the incidence and severity of bronchopulmonary dysphasia in the cohort of extremely low birth weight infants, treated in the NICU, University Pediatric Hospital, Sofia for a period of two years and to analyse some risk factors,possibly contributing to the severity of the disease
Materials and methods: 52 premature infants with mean gestational age 26,7 weeks and mean birth weight 817,69 +- 114,51 g. All infants were treated with surfactant,mechanical ventilation and non invasive respiratory support. The diagnosis of bronchopulmonary dysplasia was defined according to the criteria of Jobe and Bancalari based on oxygen and/or respiratory support requirements after 28 postnatal days. The following risk factors were analysed: absence of steroid prophylaxis,maternal-fetal infection and hemodynamically significant persistent ductus arteriosus.
Clinical cases and summary results: 19% of the infants showed no evidence of chronic lung disease, 39% were with mild bronchopulmonary dysplasia, 23% with moderate disease and 19% with severe bronchopulmonary dysplasia. There was a significant correlation between the severity of BPD and the presence of maternal-fetal infection, hemodynamically significant persistent ductus arteriosus and the absence of steroid prophylaxis. 11,54 of the patients died in the first two years of age, all of them with severe bronchopulmonary dysplasia.
Conclusion: 81% of the extremely low birth weight infants develop bronchopulmonary dysplasia, 19% were with severe form of the disease. Steroid prophylaxis, early screening for maternal-fetal infection, persistent ductus arteriosus and proper treatment could improve the respiratory outcome.

Keywords: Bronchopulmonary dysplasia, low birth weight infants

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Outcomes at discharge of infants born with congenital diaphragmatic hernia over 8 years

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Presenter: **Alice Tang**

Introduction: Congenital diaphragmatic hernia (CDH) is a devastating congenital condition of the lung and factors affecting survival are reviewed.
Materials and methods: Clinical and demographic data were collated retrospectively on all babies with a diagnosis of CDH admitted to our neonatal unit, a designated perinatal unit for neonatal surgery from 1st January 2006 to 31st December 2014 using clinical notes and Standard Electronic National Database.
Clinical cases and summary results: Of 62 babies; 39 (61%) male, 33 (53.2%) antenatally diagnosed, 37 (60%) inborn with mean birthweight 2950g (864-4000g). 50 (81%) had left sided CDH and 1 eventration; 6 (9.6%) were syndromic (Pierre Robin Sequence, Patau Trisomy 13 syndrome, Trisomy 5p, unbalanced translocation 5/9). Mortality was 83.3% in 'syndromic' versus 7 (12.5%) in 'non-syndromic' babies. Median hospital stay was 12.5 days (2 - 246 days); 23 (41%) were discharged home but the majority needed ongoing post-neonatal care.
Conclusion: Survival with CDH has improved for 'non-syndromic' babies but they have significant ongoing post-discharge morbidity. Nearly all 'syndromic' CDH babies died. Associated life-limiting syndromes should be actively sought, preferably antenatally, to inform prenatal prognostic counselling within surgical referral networks.

Keywords: Prognosis, Congenital diaphragmatic hernia, associated syndromes, antenatal counselling

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The effect of umbilical cord milking and different umbilical cord clamping techniques on early postnatal oxygenation of term infants: randomized control trial

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Presenter: **ASLI MEMISOGLU**

Introduction: Delayed cord clamping and umbilical cord milking have shown to benefit neonates with leading to higher haemoglobin concentrations, additional iron stores and less anaemia later in infancy, higher red blood cell flow to vital organs and better cardiopulmonary adaptation. This is the first study in which the different umbilical cord clamping modalities have been compared on the basis of early postnatal oxygenation and hemodynamic adaptation immediately after birth. The objective of this study was to investigate the effect of umbilical cord milking, early or delayed umbilical cord clamping on postnatal oxygen saturation in the first minutes of life among term neonates and to compare with Dawson's reference curve.
Materials and methods: This was a prospective interventional trial. According to randomization, neonates got either early cord clamping(within 30 seconds) or late cord clamping(at 60 second) or umbilical cord milking. All groups got similar routine care. If a member of the research team was available to record preductal oxygen saturation(SpO2), heart rate(HR) and perfusion index(PI) immediately after birth, infants of >37 weeks gestation who were spontaneously breathing and vigorous during postnatal stabilization were enrolled and their data were recorded with a data acquisition system. SpO2, HR and PI were measured with a sensor applied to the right hand or wrist as soon as possible after birth; data were collected during 10 minutes.
Clinical cases and summary results: The total 240 women were enrolled and randomized in three intervention groups. Finally, there were 63, 61 and 64 neonates who completed the study in the early cord clamping group (ECC), delayed cord clamping group (DCC) and umbilical cord milking group (UCM), respectively. The baseline

characteristics of groups were comparable. The mean SpO2, HR and PI values at 1, 3, 5 and 10 minutes were not statistically different between the three groups ($p>0.05$ for each comparison).
Conclusion: Milking the umbilical cord and late cord clamping are easy interventions with the potential to prevent late anemia in term babies. Our study demonstrated that different cord clamping practices did not affect the SpO2, HR and PI values of neonates in the first postnatal 10 minutes. Hence, we concluded that AAP's recommendations of SpO2 targets for delivery room resuscitation can be used regardless of the umbilical cord clamping practices.

Keywords: Late cord clamping, neonate, cord milking, oxygen saturation target, perfusion index

768 (CASE REPORT)

Congenital alveolar-capillary dysplasia. An infrequent cause of irreversible pulmonary hypertension

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Introduction: Interstitial lung diseases include a heterogeneous group of conditions that impair the development of alveoli and pulmonary vasculature, including the alveolar-capillary dysplasia (ACD). Congenital ACD is a rare condition whose etiology is unclear. It involves persistent neonatal pulmonary hypertension (PNPHT) with right-left shunt and severe hipoxemia. Symptoms usually appear within the first hours or days of life leading to a fatal and irreversible situation and, finally, death. 10% of cases are heritable in an autosomal dominant or recessive pattern. Most of them are ''de novo''. Recently, alterations in the transcription of gene factor FOXF1 has been identified in 40% of cases.
Clinical cases and summary results: Newborn of 3210 grams of weight and 40 weeks gestational age with Apgar 7-9, who required resuscitation at birth (type III). Prenatal diagnosis of left hydronephrosis. No infectious risk factors were described. After 24 hours of life generalized cyanosis and signs of respiratory distress appeared. Respiratory distress rapidly increased with severe hypoxemia, and mechanical ventilation was started in the second day of life. Chest x-ray was normal. No response was obtained with several pulmonary specific vasodilator treatment. The patient showed hemodynamic instability with associated hypotension, needing vasoactive drugs. The physical examination revealed a nonspecific systolic murmur. Echocardiography showed structurally normal heart with pulmonary hypertension. Right ventricle overload worsened progressively. Patient died on the sixth day of life. Postmortem lung biopsy showed images compatible with alveolar-capillary dysplasia.
Conclusion: PNPHT may be due to a variety of diseases. It may also be considered idiopathic, and if it shows poor response to conventional therapy ACD must be suspected. This condition is probably underestimated. It is extremely important to make an early diagnosis by performing open lung biopsy in order to avoid false expectations of life and reduce unnecessary treatments. The genetic study probably will not need to be performed routinely because alterations in FOXF1 are usually ''de novo''.

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Effects of pressure support plus volume guarantee ventilation versus synchronized intermittent mandatory ventilation in extremely low birth weight infants with respiratory distress syndrome: a prospective, randomized study

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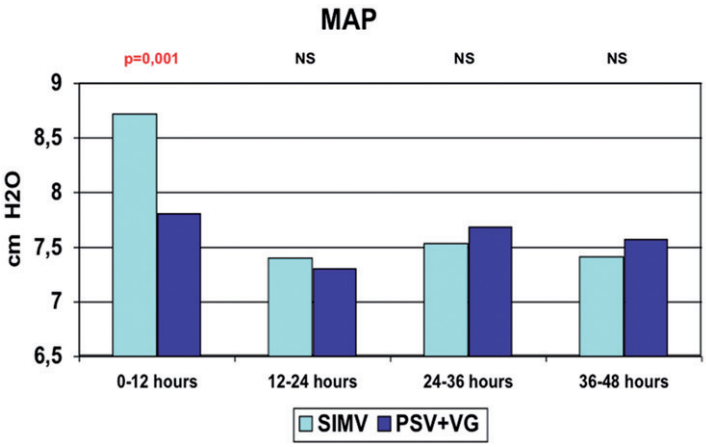
Introduction: Regardless the development of many new ventilation modalities and its spread use, limited clinical data is available. Since the last Cochrane review in 2010 comparing volume targeted ventilation (VTV) with pressure limited ventilation (PLV) modalities, only 3 new articles have been published. SIMV is the most widely used modality of PLV: We set the PIP and we obtain variable VT with the risk of overdistending the lung. With PSV+VG only the VT is chosen and the onset, rate, PIP and IT are dependent on the infant. In this study, we aimed to compare safety and short-term outcomes of PSV+VG versus SIMV in the first 48h after surfactant admin. We hypothesized that PSV+VG would detect and adapt ventilation better to the faster changes in lung compliance and airway resistance given at this period.
Materials and methods: Randomized controlled prospective study. Setting: Tertiary care neonatal unit. Patients: A total of 76 ELBW infants between 25-32 weeks gestation and over 500g receiving mechanical ventilation and surfactant because of RDS were studied. A total of 35 babies were randomized to SIMV (1037+/−277g, 28,0+/−1,69 weeks) and 41 babies to PSV+VG (1172+/−392g, 28,7+/-2,37 weeks), 30 minutes after administration of surfactant. We used Babylog 8000 Plus. Patients remained in the assigned modality until extubation or changed to HFOV when conventional ventilation failed. Study was based on the initial 48 h. We selected 64 variables for each patient. PIP, MAP, VTe/Kg, MV/Kg, FiO2 and RRm were recorded at one-minute intervals. Results were shown at 12 hours intervals.
Clinical cases and summary results:

- There was homogeneity between the study (PSV+VG) and the control group (SIMV). No significant differences between the 18 variables analysed were found.
- The modality PSV+VG was considered safe. There were no significant differences between the 14 variables defining morbidity and mortality.
- Infants on PSV+VG required significant lower MAP within the first 12 hours after surfactant administration.
- We found significantly less hypocapnic episodes (<30 mmHg) in patients on PSV+VG.
- Patients on PSV+VG modality required fewer days on CPAP.

Conclusion:

- PSV+VG has proved to be safe, with similar morbi-mortality rates than SIMV. It doesn't increase episodes of hyperventilation or atelectasis.



Morbi-mortality

	SIMV (35)	PSV+VG (41)	p
Arterial Hypotension	5 (14,3%)	8 (19,5%)	0,546 NS
Atelectasis <48 hours	4 (11,4%)	1 (2,4%)	0,174* NS
Air Leak	2 (5,7%)	2 (4,9%)	0,999* NS
Intraventricular Haemorrhage (grade I-IV)	14 (40,0%)	15 (36,6%)	0,760 NS
Patent Ductus Arteriosus	16 (45,7%)	21 (51,2%)	0,632 NS
Pulmonary Haemorrhage	1 (2,9%)	1 (2,4%)	0,999* NS
Sepsis	10 (28,6%)	16 (39,0%)	0,338 NS
Necrotizing Enterocolitis	3 (8,6%)	1 (2,4%)	0,329* NS
Acute Renal Failure	3 (8,6%)	4 (9,8%)	0,859 NS
BPD at 28 days	3 (8,6%)	3 (7,3%)	0,999* NS
BPD at 36 weeks	0	0	-----
Retinopathy of Prematurity	9 (25,7%)	10 (24,4%)	0,999 NS
Early death (<4 days)	0	1 (5,0%)	0,999* NS
Alive with no BPD	34 (97,1%)	38 (92,7%)	0,385 NS

Morbi-Mortality. Modality PSV+VG could be considered safe. * Test Fisher

- Patients on PSV+VG required lower MAPs during the first 12 hours, contributing to reduce mechanical ventilation lung injury.
- PSV+VG reduced hypocapnic episodes and this could be neurologically beneficial.
- Infants on PSV+VG showed a trend in reducing days on oxygen, ventilation, days in NICU, and presented a significant reduction on days on CPAP.

Keywords: Mechanical ventilation, neonatal ventilation, pressure support ventilation, volume guarantee ventilation, synchronized intermittent mandatory ventilation, extremely low birth weight infants, premature infant, respiratory distress syndrome, prospective study

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Arterial oxygen saturation (SpO2) and cerebral regional tissue oxygenation (crSO2) during automated control of inspired oxygen in a model of delivery room management in preterm lambs

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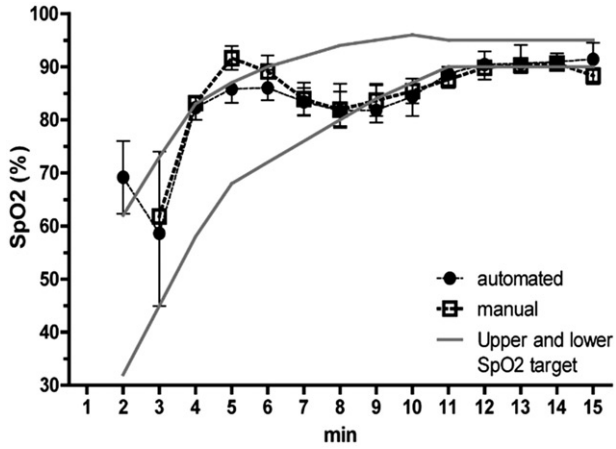
Introduction: Hyperoxemia and hypoxemia may contribute to morbidity and mortality of preterm infants, e.g. by compromised neurodevelopmental outcome. Hypoxemia has been shown to influence cerebral oxygenation. Automated closed-loop control of the fraction of inspired oxygen (FiO2) helps to keep preterm infants receiving ventilation within predefined limits of arterial oxygen saturation (SpO2) during neonatal intensive care, but might already be beneficial in the delivery room. We hypothesized that automated FiO2 control in the delivery room could stabilize cerebral regional tissue oxygenation (crSO2) in a preterm lamb model of preterm respiratory distress.

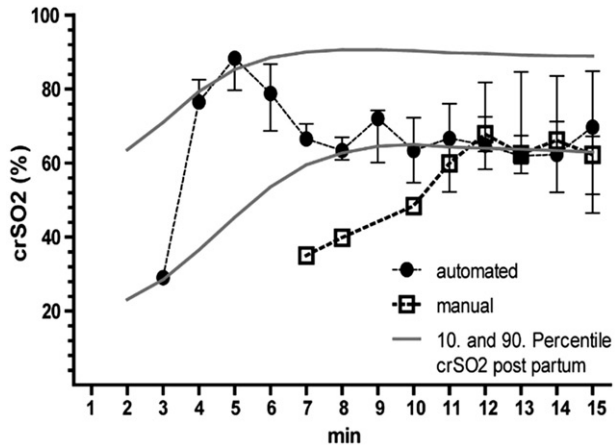
Materials and methods: In a comparison trial of 22 preterm lambs receiving automated or manual FiO2 control directly after operative delivery, 12 animals received additional crSO2 measurement by near-infrared spectroscopy (NIRS, InvosTM, Covidien). All animals received standardized resuscitation including endotracheal intubation and surfactant replacement therapy depending on FiO2, followed by volume-guaranteed ventilation for 3 hours. SpO2 was measured by pulse oximetry, and FiO2 was adjusted to keep SpO2 within a target range defined by the Dawson curve in the first ten minutes and 90-95% from the 11th minute of life (Figure 1).

Clinical cases and summary results: During resuscitation, we observed a time delay between increase of crSO2 and increase of SpO2, however the difference between automated and manual control was not significant (figure 1). before and after surfactant therapy, we observed stable SpO2 and stable crSO2 while FiO2 was automatically decreased. during subsequent ventilation, animals receiving automated fio2 control spent 94.4% [IQR 85.8-97.6%] of the time within the SpO2 target range, which was not significantly more than animals in the manual group (84.4% [75.9-90.4%], p=0.082). in contrast, crSO2 showed a high variability from a ± 5% range above and below average crSO2 in both groups (time outside range 13.9% [9.1-37.3%] versus 9.6% [1.7-34.0%], n.s.).

Conclusion: Our data suggests that stabilizing SpO2 by automated FiO2 control might only have minor effects on cerebral oxygenation during postnatal adaptation. With automatically stabilized SpO2 and declining FiO2 during surfactant administration, crSO2 is not affected by surfactant replacement therapy.

Keywords: Delivery room, automated FiO2 control, cerebral regional tissue oxygenation





445

Comparing the effectiveness of two respiratory therapies - invasive/noninvasive for premature under 30 weeks gestational age

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Introduction: After 25 years since the introduction handling, administration of surfactant has become a routine although not currently know the exact optimal ventilation therapy for premature babies. We were seduced by evolving technology and invasive therapeutic practices without any evidence
Materials and methods: The purpose of this study was to compare the effectiveness of two methods: (INSURE versus surfactant therapy and VM) for premature infants with VG <30 wk who received surfactant for RDS. Cohort study included 268 newborns with VG under 30 weeks born between 2010 and 2015 in a III level center.
Clinical cases and summary results: 268 newborns with VG under 30 weeks born between 2010 -2015, which received surfactant, divided into two grupe - INSURE versus mechanically ventilated. CPAP ventilation should be the first embodiment for VLBW/ELBW - immediately followed early surfactant therapy.
Conclusion: Minimally invasive therapy administration of surfactant shows obvious benefits but further studies are needed to implement an addequately management.

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Accidental extubation, extubation failure and mechanical ventilation in newborns admitted to brazilian neonatal intensive care unit

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Presenter: **Iumy Santos**

Introduction: Newborns survival has risen after use of pulmonary surfactant and development of mechanical ventilation (MV) for treating airway obstruction and respiratory failure. The maintenance of patients with artificial airway is a safe practice nowadays, but not without risks, as adverse effects resulting from failures associated with mechanical ventilation may occur, including accidental extubation (AE) and extubation failure (EF). Some european studies find AE values in NICU ranging from 0.72 to 4.8 EA per 100 patient-days ventilated. AE is a prevenible event that exposes the patient to the risks of a new intubation (airway and oral cavity trauma), predisposes hypoxemia, bradycardia and, in some cases, may cause death.
Materials and methods: To establish the association of AE and EF with the MV time of newborns on NICU in Fortaleza, Brasil, a historical cohort study of quantitative approach was made with 457 records. The records of MV weaning protocol of the newborns admitted under intubation to NICU in the period January 2012 to July 2014 were collected in August 2015. The variables analyzed were duration of mechanical ventilation, monthly number of accidental extubation and extubation failure. Data were stored and analyzed using the SPSS version 21.0 program. The numerical results were presented by mean ± standard deviation and percentage for categorical variables. Data was performed to Pearson correlation, considered strong correlation values above 0.7, moderate between 0.3 and 0.7 and weak between 0 and 0.3.
Clinical cases and summary results: Between 457 patients, the average time spent in the MV was 93.61 ± 23.33 days. The incidence of extubation of newborns studied was 86.43% (395) of these 23.79% (94) had failed extubation and 14.43% (57) accidental extubation, with accidental extubation rate average of 1.94 ± 1.88. There was moderate and significant correlation between the duration of mechanical ventilation and cases of accidental extubation ($R = 0.45$ and $p = 0.01$) and duration of mechanical ventilation and extubation failure ($R = 0.36$ and $p = 0.04$)
Conclusion: In the sample studied was found association between mechanical ventilation with both accidental extubation events and extubation failure. Accidental extubation rate was within normal values described in the literature.

Keywords: Mechanical Ventilation, Extubation, Newborn

NEUROSCIENCE (THE FETAL AND NEONATAL BRAIN) - 018

Estetrol attenuates neonatal hypoxic-ischemic encephalopathy - preclinical studies

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Introduction: Brain hypoxia and ischemia due to systemic hypoxemia and reduced cerebral blood flow (CBF) are the primary causes of neonatal hypoxic-ischemic encephalopathy (HIE) accompanied by gray and white matter injuries occurring in neonates. Perinatal HIE still remains a challenge in perinatal medicine. About 20% of affected newborns die in the postnatal period, and an additional 25% will sustain childhood disabilities. So far no medical treatment provides important neuroprotection against HIE. Studies of new neuroprotective agents in animal models of HIE may have importance for the development of new compounds and treatment strategies for this pathological condition.
Estetrol (E4) is a recently described estrogen with four hydroxyl-groups that is synthesized exclusively during pregnancy by the human fetal liver. It has important antioxidative activity.
Materials and methods: To study the neuroprotective and therapeutic effects of E4 in vivo neonatal HIE model of 7-day-old newborn rat pups was used. Rat pups body temperatures were examined along with their body and brain weights. Brains were studied at the level of the hippocampus and cortex. Intact cell counting and expressions of markers for neuronal cell viability (microtubule-associated protein-2 (MAP-2)), neurogenesis (doublecortin (DCX)) and angiogenesis (vascular-endothelial growth factor (VEGF)) were evaluated by histo- and immunohistochemistry. The serum levels of brain damage markers (S100B and glial fibrillary acidic protein (GFAP)) were measured by ELISA.
Clinical cases and summary results: Our results demonstrate for the first time that E4 has a significant neuroprotective and therapeutic effects. It decreases the early gray matter loss and promotes neuro- and angiogenesis in vivo. Estetrol treatment has no effects on body weight, brain weight or body temperature.
Conclusion: Taken together, E4 might become an important safe and physiological substance to treat neonatal HIE.

Keywords: Estserol (E4), neonatal hypoxic-ischemic encephalopathy (hie), neurorpotection, neurogenesis, angiogenesis

056

Neuroinflammation and structural injury of the fetal ovine brain following intra-amniotic candida albicans exposure

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Introduction: Intra-amniotic Candida albicans infection is associated with preterm birth and high morbidity and mortality rates. Survivors are prone to adverse neurodevelopmental outcomes. The mechanisms leading to these adverse neonatal brain outcomes remain largely unknown. To better understand the mechanisms underlying Candida albicans-induced fetal brain injury, we studied immunological responses and structural changes of the fetal brain in a well-established translational ovine model of intra-amniotic Candida albicans infection. In addition, we tested whether these potential adverse outcomes of the fetal brain were improved in utero by antifungal treatment with Fluconazole.
Materials and methods: Pregnant ewes received an intra-amniotic injection of 107 colony forming units Candida albicans or saline (controls) at 3 or 5 days before preterm delivery at 0.8 of gestation (term∼150d). Fetal intra-amniotic/intra-peritoneal injections of Fluconazole or saline (controls) were administered 2 days after Candida albicans exposure. Post mortem analyses for fungal burden, peripheral immune activation, neuroinflammation and white matter/neuronal injury were performed to determine the effects of intra-amniotic Candida albicans and Fluconazole treatment.
Clinical cases and summary results: Intra-amniotic exposure to Candida albicans caused a severe systemic inflammatory response, illustrated by a robust increase of plasma IL-6 concentrations. Cerebrospinal fluid cultures were positive for Candida albicans in the majority of the 3-day *Candida albicans*-exposed animals whereas no positive cultures were present in the 5-day *Candida albicans*-exposed and Fluconazole treated animals. Although *Candida albicans* was not detected in the brain parenchyma, a neuroinflammatory response in the hippocampus and white matter was seen which was characterized by increased microglial and astrocyte activation. These neuroinflammatory changes were accompanied by structural white matter injury. Intra-amniotic Fluconazole reduced fetal mortality, but did not attenuate neuroinflammation and white matter injury.
Conclusion: Intra-amniotic Candida albicans exposure provoked acute systemic and neuroinflammatory responses with concomitant white matter injury. Fluconazole treatment prevented systemic inflammation without attenuating cerebral inflammation and injury.

Keywords: Chorioamnionitis, *Candida albicans*, fluconazole, inflammation, white matter injury, fetus, preterm

057

Blood hyperlactaemia as a predictor of morbidity and mortality in infants with hypoxic ischaemic encephalopathy

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Introduction: Hypoxic ischaemic encephalopathy (HIE) remains a significant challenge with high levels of morbidity and mortality. Accurate prognostication remains difficult. Hyperlactaemia may offer a potential biomarker to predict short and long term mortality and morbidity. The aim of this study is to assess the relationship of blood hyperlactaemia with short and long term mortality and morbidity in infants with neonatal encephalopathy due to hypoxic ischaemic injury.
Materials and methods: A total of 75 infants diagnosed with HIE were retrospectively recruited in a tertiary level neonatal unit from between 2010 and 2015. Medical records were reviewed to collect labour, delivery and post-natal data including all blood lactate levels from birth to 96 hours of age. Initial and peak lactate levels and the time taken for lactate to normalise from birth (TLN) were analysed with hyperlactaemia being defined as >5mmol/l. Infants were assessed for, and grouped according to their neurodevelopment outcome at follow up and their MRI results. These groups were then assessed in relation to each lactate value (initial, peak and TLN) using the Kruskal-Wallis test. The Mann-Whitney *U* test was then used to clarify the differences found. A *p*-value <0.05 was taken as statistically significant.
Clinical cases and summary results: Out of 75 infants, 69 had hyperlactaemia. 66 underwent therapeutic hypothermia. 36 (48%) had no neurological or developmental concerns, 11 (15%) had abnormal neurological exam or developmental concerns (cerebral palsy, learning difficulties, speech delay or visual/hearing problems), 12 (16%) died before discharge and 16 (21%) had incomplete outcome data. Both initial (χ^2 (3) = 20.28, $p < 0.001$) and peak lactate values (χ^2 (3) = 17.73, $p < 0.001$) were significantly elevated in babies who had abnormal neurodevelopment. 31% of infants' lactate levels failed to normalise until after 12 hours and TLN (χ^2 (3) = 8.569, $p < 0.05$) was found to be significantly longer in the group with poor neurodevelopmental outcome (Table 1). Poor MRI outcome was found to correlate with higher initial (χ^2 (5) = 21.404, $p < 0.001$) and peak plasma lactate values (χ^2 (5) = 17.941, $p < 0.003$). However, the TLN (χ^2 (5) = 8.328, $p = 0.139$) was not significantly different in relation to MRI outcome (Table 2).
Conclusion: Initial hyperlactaemia (over 20mmol/L) and peak lactate level (over 20mmol/L) predict poor neurodevelopmental outcome or death and correlate with severe injury on MRI scan. Time taken for lactate to normalise correlated with poor neurodevelopmental outcome. Hyperlactaemia and delayed lactate normalisation are promising predictors of morbidity and mortality in infants with HIE.

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Miscellaneous examples of intracranial hemorrhage in newborns

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Introduction: According to our experience for the period 2011-2015, our 42 patients had various types of hemorrhage: subdural (39%), primary subarachnoid (33%), intraventricular (10%), intracerebellar (10%), various intraparenchymal (8%). Origins of intraventricular hemorrhage was in chorioid plexus (55%), tumor of choroid plexus (9%), subependymal matrix (27%), intracerebral hemorrhage (9%). Usual clinical symptoms were prolonged scream (60%), convulsions (57%), full fontanelle (43%), iritability (30%), hypertonia with opisthotonus (27%), lack of spontaneous movements (23%), prolonged tremor (23%), febrility (17%). Uncommon clinical symptoms can be opened eye or infrequent blinking (17%), hypotonia (10%), conjugate bulbus deviation (7%), spontaneous Moro reflex (7%), eyelid ptosis, facialis paresis (7%), anizsocoria (7%), decorticated position (7%). Predisposing factors for intracranial hemorrhage in newborns (IHN) are pregnancy, delivery, gestational maturity, the occurrence of ''hypoxic'' event, trauma, the mode of resuscitation, neurologically impaired newborn, intracranial hypertension, discrete neurologic disorders.
Materials and methods: Localization of intracranial hemorrhage was diagnosed by neuroradiology methods: ultrasonography, CT scan and nuclear magnetic resonance. The finding of bloody cerebrospinal fluid (CSF) must be differentiated from ''traumatic'' lumbar puncture. CFS finding that indicate intracranial hemorrhage are xanthochromia, with elevated proteins level, hypoglycorrhachia and elevation of the number of red blood cells.
Clinical cases and summary results: In our article, we present clinical and neuroimaging findings of 8 patients with miscellaneous types of IHN: neonatal alloimmune thrombocytopenia (1), vitamin K deficiency (2), congenital protein C deficiency (1), congenital protein S deficiency (1), central neuros system tumor (1), venous-venous malformation, (1), vein of Galen aneurysmal malformation (1).
Conclusion: It is possible to prevent neonatal alloimmune thrombocythopenia during pregnancy and perinatal period. Vitamin K deficienency can be prevented with prolonged oral vitanim K.

Keywords: Intracranial hemorrhage of newborn, miscellaneus examples

Table 1: Relationship between neurodevelopmental outcome and initial lactate, peak lactate and TLN

	Normal	Abnormal	Died	No Follow Up	χ2	p	U	p
	(n=36)	(n=11)	(n=12)	(n=16)		(within groups)		(between normal & overall poor outcome)
Initial Lactate (mmol/L)	13.6 (1.5-20)	20.0 (6.7-30)	20.0 (11.2-25)	11.6 (2.0-26)	20.276	<0.001	126	<0.001
Peak Lactate (mmol/L)	14.65 (2.4-22)	20.0 (11.1-30)	21.0 (11.2-30)	13.8 (2.9-26)	17.731	<0.001	147.5	<0.001
TLN (hours)	7.0 (0.0-28)	14.0 (2.0-58)	57.0 (4.0-72)	10.5 (0.0-38)	8.569	0.036	147.5	0.011

Table 2: Relationship between MRI outcome and initial lactate, peak lactate and TLN

	Normal	Mild	Moderate	Severe	Died	No MRI	χ2	p	U	p
	(n=21)	(n=7)	(n=4)	(n=14)	(n=11)	(n=17)		(within groups)		(between normal & combined severe/died)
Initial Lactate (mmol/L)	11.15 (2.0-26)	17.6 (6.7-20)	12.1 (4.1-17)	20.0 (6.6-30)	20.0 (11.2-25)	14.0 (1.5-20)	21.404	0.001	83.5	<0.001
Peak Lactate (mmol/L)	13.4 (2.2-26)	18.5 (11.1-22)	16.0 (8.5-17)	20.0 (6.6-30)	22.0 (11.2-30)	14.0 (1.5-20)	17.941	0.003	106.5	0.001
TLN (hours)	6.5 (0.0-18)	7.0 (2.0-26)	9.0 (0.0-18)	14.5 (3.0-72)	44.0 (4.0-70)	9.0 (0.0-38)	8.328	0.139	86.5	0.007

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Prediction of cognitive and motor development in preterm infants using forward feature selection and linear regression on near-term regional white matter microstructure assessed with diffusion tensor imaging

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Introduction: Very-low-birth-weight preterm infants are at higher risk for developing cerebral palsy and other neurodevelopmental impairments. Early identification of preterm infants at risk for cognitive and motor impairment is essential to guide early intervention at a time of optimal neuroplasticity, when treatment can be most effective. This study examined near-term brain white matter (WM) microstructure assessed on diffusion tensor imaging (DTI) in relation to cognitive and motor development at 18-22 months in very-low-birth-weight (VLBW) preterm children. This prospective, longitudinal study employed linear regression analysis with forward feature selection, constrained to select no more than five features, and cross-validation to minimize overfitting, to identify near-term regional WM microstructure metrics that best predicted cognitive and motor development at 18-22 months. We hypothesized that a small number of optimal predictive features would explain considerable variance in cognitive and motor neurodevelopment as assessed by the Bayley Scales of Infant-Toddler Development, 3rd edition (BSID-III) score at toddler age.

Materials and methods: 102 VLBW neonates born preterm (BW$\leq$1500g, gestational age (GA)$\leq$32wks) admitted to the NICU at Lucile Packard Children's Hospital at Stanford were recruited to participate in a study of MRI and DTI from 2010-2011, 66/102 infants had DTI and 60 also had follow-up neurodevelopmental evaluation at 18-22 months adjusted age. DTI metrics of fractional anisotropy (FA) and mean diffusivity (MD) were used to assess the microstructure of developing right (R) and left (L) regional WM (DTI Studio and Diffeomap, John Hopkins University). DTI scalars were adjusted for postmenstrual age (PMA) at scan. Cognitive and motor development at 18-22 months adjusted age were assessed with the BSID-III. An automated forward feature selection of the available features was performed to obtain the subset of five regional near-term DTI metrics that best predicted the cognitive and motor development at toddler age using linear regression with leave-one-out cross-validation (LOOCV) and the highest adjusted R○2 as the selection criteria. Distinct regression models for cognitive and motor development were independently fitted using this technique. Results were obtained with Scikit-learn which is a machine learning toolbox for Python.

Clinical cases and summary results: Cognitive function was predicted by L PLIC MD, L ALIC MD, L ACR MD, L superior occipital gyrus FA, and R fusiform gyrus MD, which accounted for 28% of the variance in BSID-III Cognitive Composite Score (R^2=0.41, Adj. R^2=0.36, LOOCV R^2=0.28). Motor function was predicted by R supramarginal gyrus FA, L PLIC MD, L ALIC MD, L lingual gyrus MD, and R precuneus MD, which accounted for 39% of the variance in BSID-III Motor Composite score (R^2=0.50, Adj. R^2=0.46, LOOCV R^2=0.39). Fine motor function was predicted by L PLIC MD, R hippocampus MD, R supramarginal gyrus FA, R PLIC MD, and *R* superior parietal gyrus MD, which accounted for 30% of the variance in BSID-III Fine Motor Subscore (R^2=0.40, Adj. R^2=0.35, LOOCV R^2=0.30).

Gross motor function was predicted by L cuneus FA, L supramarginal gyrus FA, R precuneus MD, R cingulum (cingular part) MD, and L inferior temporal gyrus MD, which accounted for 30% of the variance in BSID-III Gross Motor Subscore (R^2=0.42, Adj. R^2=0.38, LOOCV R^2=0.30).

Results of an exhaustive search for the optimal set of three regional DTI metrics that best predicted outcome of cognitive (L PLIC MD, L ALIC MD, L ACR MD) and motor (R supramarginal gyrus FA, L PLIC MD, L ALIC MD) composite BSID-III, corroborated results obtained from forward feature selection linear regression with cross-validation.

Conclusion: Results of this exploratory analysis suggest that the selected features of near-term brain WM microstructure explained considerable variance in both cognitive and motor BSID-III scores at toddler age. Analysis in a larger population of preterm neonates can determine if linear regression models that include regional WM DTI metrics accurately identify high-risk neonates and inform therapeutic interventions that can improve neurodevelopment and quality of life for preterm children.

Acknowledgments: This research is supported by the Chiesi Foundation (Parma, Italy), the NIH Clinical and Translational Science Award UL1 RR025744 for the Stanford Center for Clinical and Translational Education and Research (Spectrum) and for the Stanford Center for Clinical Informatics and STRIDE (Stanford Translational Research Integrated Database Environment), the Lucile Packard Foundation for Children's Health, and the National Science Foundation Graduate Research Fellowship under Grant No. DGE-1147470.

Keywords: Preterm infant, brain white matter, diffusion tensor imaging, neurodevelopment

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Classification of high-risk preterm infants using forward feature selection and logistic regression on near-term regional white matter microstructure assessed with diffusion tensor imaging

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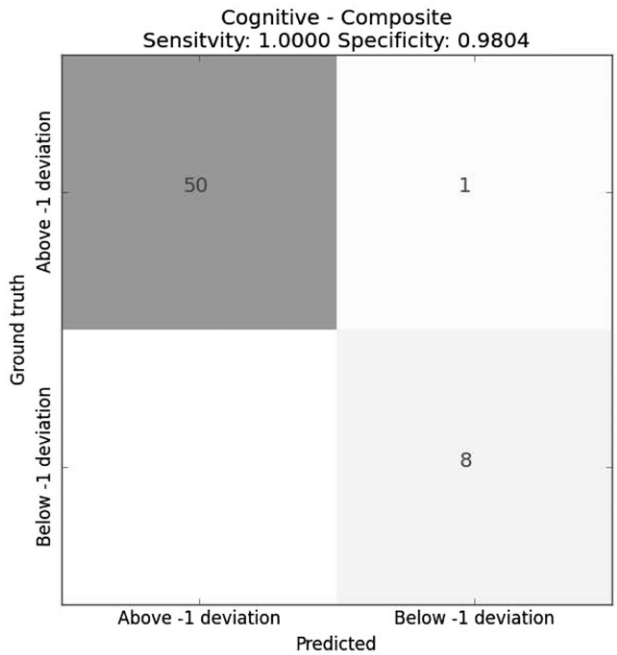
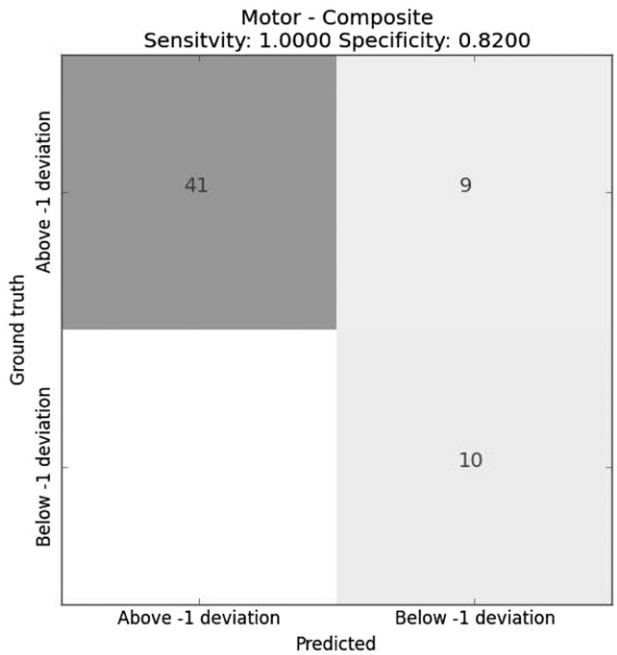
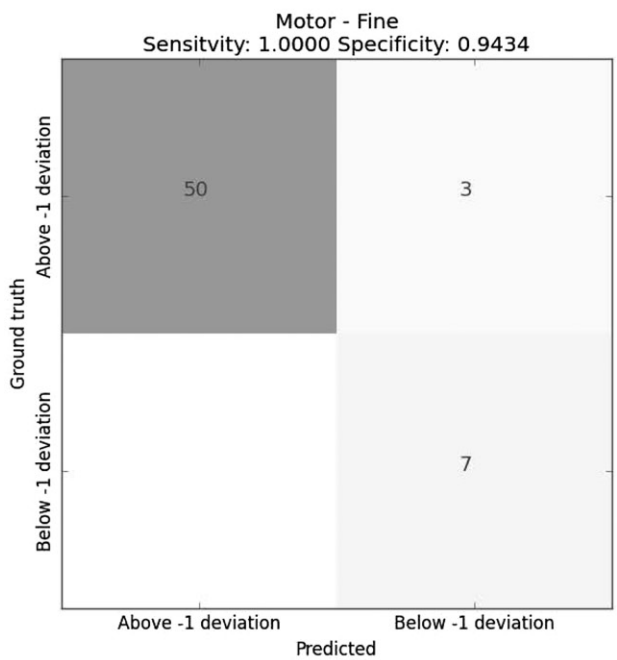
Introduction: Early identification of preterm infants at risk for cognitive and motor impairment is challenging, yet essential to guide early

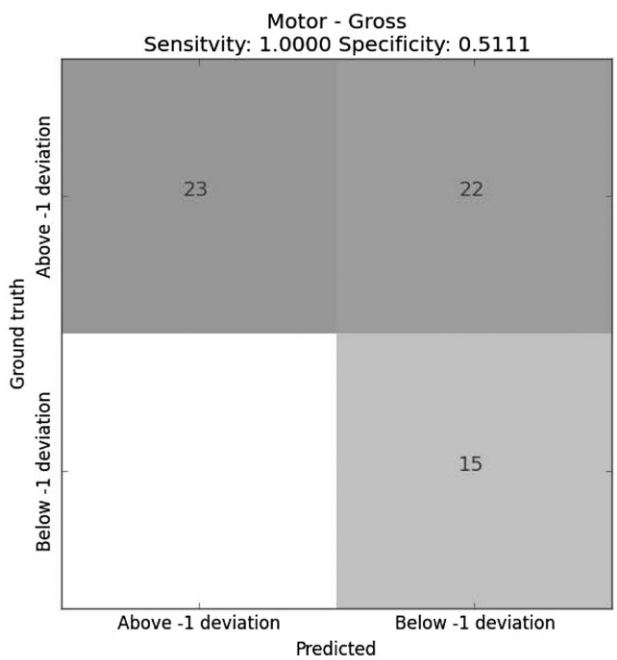
intervention at a time of optimal neuroplasticity. Advances in computational methods may offer an opportunity to identify more accurate prognostic factors compared to standard techniques. This study examined near-term brain white matter (WM) microstructure assessed on diffusion tensor imaging (DTI) in relation to cognitive and motor development at 18-22 months in very-low-birth-weight (VLBW) preterm children. This prospective, longitudinal study used logistic regression analysis with automated feature selection based on exhaustive search constrained to three features, and cross-validation to minimize overfitting to identify near-term regional WM microstructure metrics that best predicted cognitive and motor development at 18-22 months. We hypothesized that a small number of optimal predictive features would identify preterm infants at highest risk for cognitive and motor delay at toddler age.

Materials and methods: 102 VLBW neonates born preterm (BW≤1500g, gestational age (GA)≤32wks) admitted to the NICU at Lucile Packard Children's Hospital at Stanford were recruited to participate in a study of MRI and DTI from 2010-2011, 66/102 infants had DTI and 60 also had follow-up neurodevelopmental evaluation at 18-22 months adjusted age. DTI metrics of fractional anisotropy (FA) and mean diffusivity (MD) were used to assess the microstructure of developing right (R) and left (L) regional WM (DTI Studio and Diffeomap, JHU). DTI scalars were adjusted for postmenstrual age (PMA) at scan. Cognitive and motor development at 18-22 months adjusted age were assessed with the Bayley Scales of Infant-Toddler Development, 3rd edition (BSID-III). Children who scored below one standard deviation of the mean were considered to be high-risk for cognitive and motor delay. An automated exhaustive search of the available features was performed to obtain the subset of three regional near-term DTI metrics that best classified high-risk children using logistic regression with leave-one-out cross-validation (LOOCV) and the largest Area Under the Receiver Operating Characteristic Curve (ROC-AUC) as the selection criteria. Distinct classification models for cognitive and motor development were independently









fitted using this technique. The models cutpoints were optimized for maximum sensitivity. Results were obtained with Scikit-learn: Machine Learning toolbox for Python (Pedregosa et al., JMLR 12, 2011).
Clinical cases and summary results: High risk for cognitive delay at 18-22 months (BSID-III Cognitive Composite Score < 85) was predicted by the R cingulate gyrus MD, L caudate MD, and R middle temporal gyrus MD, classified with AUC=0.998 (Sensitivity=1.00 [8/8], Specificity=0.98 [50/51]). High risk for motor delay at 18-22 months, (BSID-III Motor Composite Score < 85) was predicted by R superior occipital gyrus MD, L precuneus FA, and R hippocampal FA, classified with AUC=0.912 (Sensitivity=1.00 [10/10], Specificity=0.82 [41/50]). High risk for fine motor delay (BSID-III Fine Motor Subscore < 7) was predicted by R angular gyrus MD, R tapetum MD, and R retrolenticular capsule FA, classified with AUC=0.960 (Sensitivity=1.00 [7/7], Specificity=0.94 [50/53]). High risk for gross motor delay (BSID-III Gross Motor Subscore < 7) was predicted by L lingual gyrus FA, L inferior temporal gyrus MD, and R fornix MD, classified with AUC=0.830 (Sensitivity=1.00 [15/15], Specificity=0.51 [23/45]).
Conclusion: Results of this exploratory analysis suggest that the selected features of near-term brain WM microstructure demonstrate high predictive value of both cognitive and motor outcomes. Application in a larger population of preterm neonates can determine if classification models that include regional WM DTI metrics accurately identify high-risk neonates to inform neuroprotective treatment and improve neurodevelopmental outcome and quality of life for preterm children.

Acknowledgments: This research is supported by the Chiesi Foundation (Parma, Italy), the NIH Clinical and Translational Science Award UL1 RR025744 for the Stanford Center for Clinical and Translational Education and Research (Spectrum) and for the Stanford Center for Clinical Informatics and STRIDE (Stanford Translational Research Integrated Database Environment), the Lucile Packard Foundation for Children's Health, and the National Science Foundation Graduate Research Fellowship under Grant No. DGE-1147470.

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Prenatal evaluation, imaging features, and neurodevelopmental outcome of prenatally diagnosed periventricular pseudocysts

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Introduction: Periventricular pseudocysts (PVPC) are cystic cavities that lack the ependymal cell lining found in true cysts. They are found in 0.5-5% of healthy term neonates using transfontanellar ultrasound (US) in the first days of life.They are usually located near the head of the caudate nucleus, in the caudothalamic groove, or in the lateral aspect of the frontal horns of the lateral ventricle. PVPC are associated with various pathological conditions including congenital infections, metabolic disorders, and chromosomal aberration. Nevertheless, PVPC have also been reported as an isolated finding. The growing use of prenatal imaging led to an increase in prenatal detection of PVPC. However, the significance of these finding is not well established. The aim of the present study is to characterize PVPC related factors and outcome.
Materials and methods:A retrospective study of PVPC detected prenatally on fetal MRI in 26 fetuses. The fetuses were divided into group A (n=8), which included cases with isolated PVPC, and Group B (n=18), which included cases of PVPC with additional findings. Cases were further subdivided into connatal cysts and SEPC. Data collected included: prenatal history, MRI features, sonographic follow up, and neurodevelopmental outcome.
Clinical cases and summary results: All cases in group A (n=8) had a normal outcome. In group B (n=18) six pregnancies were terminated and two had an abnormal outcome. 80% of the cases in the connatal cysts subgroup and 55% in the SEPC subgroup had a normal outcome. No significant association was found between the morphological features on MRI and the neurodevelopmental outcome.
Conclusion: Neurodevelopmental outcome in isolated PVPC detected prenatally appear to be normal. Additional findings on MRI, including mild to moderate dilated ventricles, asymmetrical ventricles, or T2 hyperintense signal in the white matter without other findings or major fetal abnormality, appear to be benign. Connatal cysts appear to be benign.

*Both authors contributed equally to this study.

Keywords: Periventricular Pseudocysts, Connatal Cysts, Frontal Horn Cysts, Subependymal Pseudocysts, Fetal Brain, Magnetic Resonance Imaging, Antenatal Evaluation, Neurodevelopmental Outcome

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Prediction of language development in preterm infants using forward feature selection and linear regression on near-term regional white matter microstructure assessed with diffusion tensor imaging

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Introduction: Very-low-birth-weight preterm infants have a higher rate of language delay and developmental language disorders compared to children born full-term. Early identification of preterm infants at risk for language delay is essential to guide early intervention at a time of optimal neuroplasticity, when treatment can be most effective. This study examined near-term brain white matter (WM) microstructure assessed on diffusion tensor imaging (DTI) in relation to expressive and receptive language development at 18-22 months in very-low-birth-weight (VLBW) preterm children. This prospective, longitudinal study employed linear regression analysis with forward feature selection, constrained to select no more than five features, and cross-validation to minimize overfitting, to identify near-term regional WM microstructure metrics that best predicted language development at 18-22 months. We hypothesized that a small number of optimal predictive features would explain considerable variance in language neurodevelopment as assessed by the Bayley Scales of

Infant-Toddler Development, 3rd edition (BSID-III) score at toddler age.

Materials and methods: 102 VLBW neonates born preterm (BW≤1500g, gestational age (GA) ≤32wks) admitted to the NICU at Lucile Packard Children's Hospital at Stanford were recruited to participate in a study of MRI and DTI from 2010-2011, 66/102 infants had DTI and 60 also had follow-up neurodevelopmental evaluation at 18-22 months adjusted age. DTI metrics of fractional anisotropy (FA) and mean diffusivity (MD) were used to assess the microstructure of developing right (R) and left (L) regional WM (DTI Studio and Diffeomap, John Hopkins University). DTI scalars were adjusted for post-menstrual age (PMA) at scan. Expressive and receptive language development at 18-22 months adjusted age were assessed with the BSID-III. An automated forward feature selection of the available features was performed to obtain the subset of five regional near-term DTI metrics that best predicted the expressive, receptive, and composite score for language development at toddler age using linear regression with leave-one-out cross-validation (LOOCV) and the highest adjusted R○2 as the selection criteria. Distinct regression models for receptive, expressive, and composite language scores were independently fitted using this technique. Results were obtained with Scikit-learn which is a machine learning toolbox for Python.

Clinical cases and summary results: Language function was predicted by *R* precuneus MD, *R* insular cortex FA, *R* stria terminalis MD, L cingulum (cingular part) MD, and L inferior temporal gyrus FA, which accounted for 27% of the variance in BSID-III Language Composite Score (R^2=0.40, Adj. R^2=0.35, LOOCV R^2=0.27). Expressive language function was predicted by R precuneus MD, *R* insular cortex FA, L lingual gyrus MD, L fusiform FA, and L superior temporal gyrus MD, which accounted for 30% of the variance in BSID-III Expressive Language Subscore (R^2=0.43, Adj. R^2=0.39, LOOCV R^2=0.30). Receptive language function was predicted by R precuneus MD, R middle occipital gyrus MD, L entorhinal cortex MD, R insular cortex FA, and R inferior fronto-occipital fasciculus FA, which accounted for 28% of the variance in BSID-III Receptive Language Subscore (R^2=0.42, Adj. R^2=0.38, LOOCV R^2=0.28).

Conclusion: Results of this exploratory analysis suggest that the selected features of near-term brain WM microstructure explained considerable variance in BSID-III language scores at toddler age. Analysis in a larger population of preterm neonates can determine if linear regression models that include regional WM DTI metrics accurately identify high-risk neonates and inform therapeutic interventions that can improve neurodevelopment and quality of life for preterm children. This research is supported by the Chiesi Foundation (Parma, Italy), the NIH Clinical and Translational Science Award UL1 RR025744 for the Stanford Center for Clinical and Translational Education and Research (Spectrum) and for the Stanford Center for Clinical Informatics and STRIDE (Stanford Translational Research Integrated Database Environment), the Lucile Packard Foundation for Children's Health, and the National Science Foundation Graduate Research Fellowship under Grant No. DGE-1147470.

Keywords: Very-low-birth-weight, diffusion tensor imaging, white matter microstructure, language development

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Therapeutic hypothermia in hipoxic-ischemic encephalopaty - a Portuguese NICU experience

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Introduction: Therapeutic Hypothermia (TH) as a neuroprotective strategy is established as standard of care in moderate/severe hypoxic - ischemic encephalopathy (HIE). It has been made available in Portugal since 2010. Herein we describe the experience, of a Portuguese referral center for TH in neonatal HIE, focusing on possible prognostic factors to impaired outcome in children aged at least 18 months.

Materials and methods: Cohort prospective study (June 2010 till September 2015) of term or near term newborns (NB) with HIE with criteria for TH: Apgar score <5 at 10 min or prolonged resuscitation or precocious (1st hour) ph16 mmol/L AND clinical moderate/severe encephalopathy (Sarnat II modified criteria). Patients underwent whole body cooling for 72 h with 33.5 °C as target core temperature, followed by slow re-warming. Data of medical charts were reviewed, concerning perinatal characteristics, evolution until discharge and outcome after at least 18 months of age. Unfavorable outcome was defined as death, cerebral palsy, mental and psychomotor developmental index <85 (BSID II) or sensory impairment

Clinical cases and summary results: Ninety nine newborns with HIE underwent TH, 9 of them with sudden unexpected collapse (SPUC), happening at a median of 1.4h of life. Of these patients, 7 died. Out of the other 90, uneventful pregnancy was described in 59 NB (59.6%). Median gestational age and birth weight were, respectively, 39 weeks and 3155 g. 58.6% of the patients were male and 73 (73.7%) were OUTBORN. Severe encephalopathy occurred in 48(48.5%) and death during hospitalization in 25 (25.3%). Sinus bradycardia and thrombocytopenia were the most frequent adverse effects. On follow up, 46 children were accessed. Neurodevelopment evaluation was normal in 33(71.7%). Unfavorable outcome was associated with severe encephalopathy at admission (OR, 11.9, 95% CI, 3.3-4.2, p<0.01), abnormal aEEG at 48h (OR 23, 95% CI, 5-98.9, p<0.01), impaired neurological evaluation at discharge (OR 15.7, 95% CI, 3.2-76.1, p<0.001) and abnormalities (BGT,WS) on cranial MRI (OR 45.5, 95% CI, 7.36-280, p<0.001).

Conclusion: Our experience with HT supports the benefits in HIE. Adverse effects of hypothermia were minimal. Abnormal aEEG at 48h and BGT/WS lesions in MRI were elements associated to impaired outcome in survivors followed till after at least 18 months of age.

Keywords: Therapeutic hypothermia, newborns, neuroprotection

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Cognition properties of sensorineural hearing-loss children without and with cochlear implants or hearing aids: neonatal hearing screening

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Introduction: The cognition level has been measured in sensorineural hearing-loss children. The first test group included specimens without any audio-habilitation means. The second and third groups covered children serviced with cochlear implants and hearing aids, respectively. The fourth group represented normally - hearing children. All these children were revealed of hearing disturbances and the immediate start of speech therapy practice, aiming to prevent thus speech, intellectual, emotional and developmental deficits in hard-of-hearing children. In the recent years, the hearing screening procedures in newborns as well as in small children have successfully been implemented in Georgia too.

Materials and methods: Three groups of hearing-loss children were selected for the research. In 25 examined children of the first group no technical means, particularly, cochlear implant or hearing aids were used for the hearing habilitation. In the second group the implant was used on one ear of 10 children.13 examined children of the third group appeared to be the regular users of the hearing aids on one or both ears. Fourth -control group was presented by 62 normally hearing children. In all children the cognitive function was determined by using Raven's colored progressive matrix procedure. The comparison of Raven's indices in different species was performed by Mann-Whitney's nonparametric test.
Clinical cases and summary results: The mean cognition value in hard-of-hearing children without any audio-habilitation device amounted to 42% while markedly, by 41%, and highly significantly lagged behind that in normally hearings., 83%. In children with similar ear-dysfunction but made use of cochlear implants or hearing aids the mean cognition signs equaled 62% and 73%, respectively. These values by only 21% and 10% were less of that in controls, the decline moreover being significant with respect to implanted but not to aided consumers. The variability of cognition indices in hearing-loss children without any habilitation tools amounted to 50 %. It substantially, by 39%, exceeded that in normally hearings, 11%. The variations appeared greater in implant and aid bearers also, 39% and 37%, respectively. With regard to controls the excess amounted thus to 28% and 26%, respectively, i.e. were smaller of that in hearing-loss individuals without audio-habilitation appliances.
Conclusion: The conclusion has been reached that the cognition properties in hearing-loss children are markedly lagged behind that in normally hearings while application of cochlear implants or hearing aids provides a lucky chance of attaining rational cognition ranks, the outcomes being although personally variable.The early estimation of hearing and immediate start of rehabilitation has thus a crucial significance.

Keywords: Hard-of-hearing children, cochlear implants, hearing aids, hearing screening, rehabilitation, abilitation

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Influence of maternal stress during pregnancy on the cognitive development of children

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Introduction: Since the emergence of fetal programming theory (Barker, 1995), it became clear the necessity to consider all factors that could disturb the intrauterine environment. One of these factors is maternal exposure to stress. There are studies showing consequences in the newborn from different types of stress, such as the death of a relative, everyday hassles, natural or human disasters, etc. Initially, it was thought that these consequences were only physical. However, it's being created a growing body of knowledge regarding the impact of stress during pregnancy on the fetus's neurological development, and consequently on child's cognitive ability, behavior or emotions. We focus on the effect on cognitive development because it is a key index to assess the neurological development.
Materials and methods: A systematic review of the literature was performed, after a comprehensive search in several medical databases (Scopus, Pubmed and Web of Science), quality of the studies was assessed applying a modified version of the Scottish Intercollegiate Guidelines Network (SIGN) methodology checklist for cohort studies, adapted by the authors. The results from the different studies included were summarized and analyzed, depending on the following factors: age of children, moment of exposure to stress, and kind of stress affecting mothers, to develop an overview of the effect of stress on children's cognitive ability and its development over time.
Clinical cases and summary results: The overall trend in children aged 3-24 months is that exposure of the mother to non-specific-of-pregnancy stress has negative consequences on children's cognitive development during the whole pregnancy, but especially during the second trimester, specific-of-pregnancy stress also seems to affect adversely, in particular during the third trimester. The undesirable consequences from stress can be seen as well in children aged 2 to 9 years, particularly non-specific-of-pregnancy stress, and primarily if exposure to stress occurs in the first and third trimesters of pregnancy. In children with 10 or more years only non-specific stress was studied, and it can be seen that exposure during the first trimester of pregnancy maintains its negative effects on cognitive development.
Conclusion: Regardless of the moment of pregnancy in which it may happen, an excessive exposure to stress of the mother, and consequently, the fetus (especially non-pregnancy-specific stress) can lead to undesirable consequences at the cognitive level throughout the child's life. We recommend the assessment of prenatal stress during routine care provided to pregnant women, this will allow us to take actions on those women with elevated stress to reduce it, in order to safeguard children's cognitive ability.

Keywords: Pregnancy, stress, fetal development, cognitive impairment, fetal programming

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Fetal speech movement response comparing the intravaginal emission of a monody with a single sustained pitch

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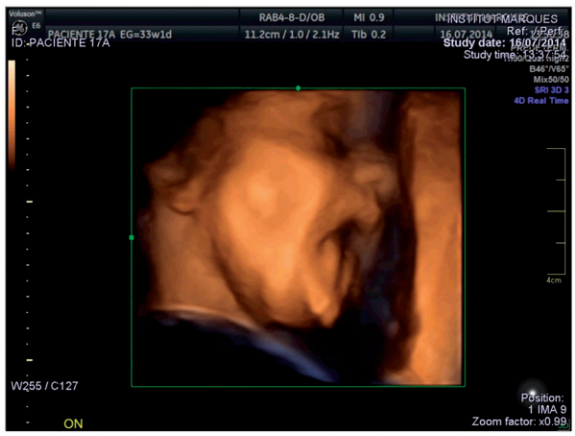
Introduction: Fetuses at 16-39 weeks of gestation respond to intravaginally emitted music with repetitive speech movements, that can be evaluated by transabdominal ultrasound.
The aim of this study was to analyze by 3D/4D ultrasound, fetal speech movements in response to an acoustic stimulus emitted vaginally, comparing an intravaginal flute monody (IVM) to an intravaginal flute sustained pitch (IVP).
Materials and methods: Sixty-two normal pregnancies between 16 and 38 weeks of gestation were randomized to 3D/4D ultrasound with: IVM with a specially designed device emitting at 53.7 dB, and IVP emitting at 55.2 dB with the same device . Fetal speech movements, including mouthing (MT) and tongue expulsion (TE), were quantified at baseline, during stimulation, and for 5 minutes after stimulation was discontinued.
Clinical cases and summary results: At baseline study, there were no significant differences in MT (33% in IVM versus 50% in IVP) and TE (7% in IVM versus 0% in IVP). IVM elicited MT and TE in 87% and 47% of fetuses respectively, with significant differences when compared with IVP both for MT (50%, $p= 0.002$) and TE (7%, $p = 0.0003$). After stimulation, there were only significant differences between IVM and IVP for TE (31% for IVM versus 0% for IVP, $p= 0.0006$), and not fot MT (31% for IMV versus 56% for IVP).
Conclusion: Fetuses over 16 weeks of gestation respond with a significant increase in speech movements when we apply IVM, but not when we use IVP, fetal response to IVP shows no differences in MT and TE during and after the stimulus, when compared to the baseline. Our

findings suggest that a single susitained pitch is not able to activate fetal neural pathways participating in the auditory-motor system, and that melody and rhythm could be the responsible for that fetal response.

Keywords: Fetal hearing, fetal behaviour, intravaginal music, ultrasound



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Hypoxic ischemic encephalopathy: as commom as we think

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Introduction: Perinatal hypoxic ischemic encephalopathy (HIE), is the main cause of dead, severe neurology morbidity and seizures in term infants. It is responsible of the 20% of childhood cerebral palsy. The objetive of our study is to describe prevalence of HIE in a Basical Hospital and perinatal characteristics of the patients diagnosed with HIE from Jan 2014 to Dec 2015.
Materials and methods: A restropective study was carried out. All newborns with neonatal encephalopathy or intrapartum asphyxia borned on weeks 36 th or after were identified. Different clinical measurements were collected.
Clinical cases and summary results: In the last two years 10 patient with hypoxic-ischaemic encephalopathy were found in our Hospital. 50% of them had risk factors such as placental abruption ,umbilical cord prolapse and dystocia. All of them had abnormalities in the cardiotocographic exam. 40% of the patients were transferred to a third level hospital for therapeutic hypothermia. All of them had pH <7 in the test from umbilical cord blood. Furthermore, all of them presented seizures in their first hours of life as well as intracranial abnormalities in the brain imaging (ultrasound). In the follow up, only one of them has presented clinical signs of cognitive impairment and lack of psychomotor development as well as abnormal neurological examination.
Conclusion: HIE is an uncommon diagnosis. In our opinion, its low prevalence shows the necessity of a centred and regionalized hypothermia program were this patients could be referred. A reference center could lead to ensure a high quality health care for this patients and it could help to optimised the resources availables.

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Intrathecal vancomycin as treatment for ventriculitis in preterm infants <28 weeks gestation - a study of cerebrospinal fluid (CSF) pharmacokinetics

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Introduction: Ventriculitis is a rare complication associated with repeated cerebrospinal fluid (CSF) drainage, in preterm infants with ventricular dilatation. Intrathecal vancomycin is used to treat Staphyloccoci related ventriculitis, however data is limited on its pharmacokinetics. We aimed to explore CSF vancomycin peak and trough levels pattern using 3mg, 5mg and 10mg models of intrathecal vancomycin, in babies <28 weeks gestation.
Materials and methods: This was a single centre, retrospective clinical case study. Data was collected on 7 babies, from 2009-2015. Ventriculitis was defined as elevated CSF WCC or positive CSF culture, on microbiology assessment, during daily CSF drainage. Following single dose intrathecal vancomycin administration (15 episodes in 7 infants), relationships between dose and available CSF vancomycin levels were analysed.
Clinical cases and summary results: Mean gestational age of study infants was 26 weeks (range 23 + 6 - 27 + 5 weeks) and mean birth weight was 821g (range 517-1130g). Ventriculitis, was diagnosed with elevated CSF WCC in 1/7 infant or positive CSF culture in 6/7 infants, at mean age of 64 days (range 26-164 days), and following daily CSF drainage using ventriculostomy catheter device, for a mean 21.1 days (range 4-43 days).
Conclusion: Our study demonstrates that adequate CSF vancomycin peak and trough levels can be achieved at intrathecal vancomycin doses of 3-10mg/dose. 24 hour monitoring of CSF vancomycin level is recommended.

Keywords: CSF vancomycin, ventriculitis

Table 1: CSF vancomycin pharmacokinetics:

Drug Dose(mg)	Mean Peak Concentration Timing (Hour)	Mean Peak Concentration (mg/L)	Mean Trough Concentration timing (Hour)	Mean Trough Concentration (mg/L)
3 (n=4)	20.5	23.7	63	8.6
5 (n=7)	28.3	60	64	12.7
10 (n=4)	29.5	58.9	98.6	9.8

382 (CASE REPORT)

Diagnosis of brain death in neonatology

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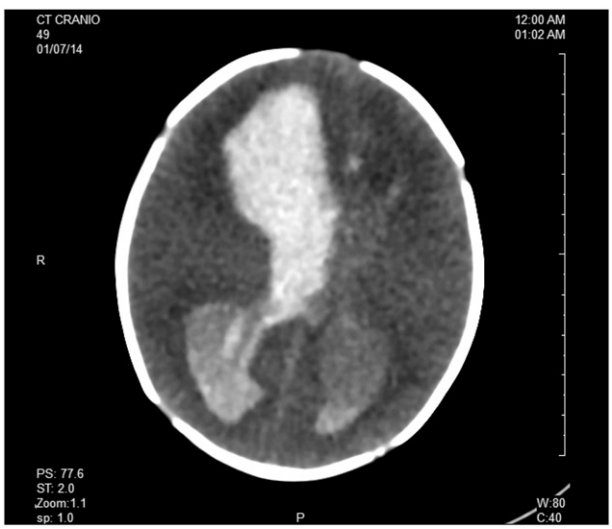
Introduction: Brain death is the total and irreversible absence of cerebral functions, including the function of the brianstem. In 1997 the Federal Council of Medicine in Brazil presented the 1408 resolution, adopting the criteria for diagnoses of brain death all over the country, covering also the neonatal period.
Clinical cases and summary results: A.L.S.S., term newborn, female, cesarean delivery, 2.055 kg, APGAR 8/9, healthy mother. Second day of life the baby had hypoglycemia, respiratory distress, needing intubation and antibiotic therapy, having an evolution for seism and bregma uplift, receiving phenobarbital. The ultrasound transfontanela showed important intraparenchymatous bleeding, confirmed with the CT, that further more pointed out a hemoventricle with dissection to the mildbrain. So baby was transported to a hospital of reference for her area, at that moment she was unconscious, unresponsive middle fixed pupils, without brainstream reflexes or cough reflex, absence of hemorrhagic suffusions or hematomas in any of other parts of her body - this clinic exam maintained till the end. So the baby was evaluated by several especialities, like neurosurgery, neuroloclinic, endocrinology (because she had diabetes insipidus too), hematology, ophthalmology, genetics, beyond neonatology. It was decided to open the protocol for brain death after the seventh day of life, which is known by the Brazilian law (Federal Council of Medicine) since 1997, that defines the criteria for the diagnosis of brain death, transplant and treatment, needing 2 clinical evaluations and 1 complementary exams. In this age group, following the current law, 2 clinical exams were made and 2 electroencephalograms with 48 hours gap, with no cerebral electric signal, determining the death and turning off the support that the patient was receiving.
Conclusion: Brain death is considered synonymous of death. So in this situation, it's occurrence and it's meaning should be well informed to the family and to the multidisciplinary team. From the moment that this diagnosis is established on, any attempt in taking longer the health care for the patient is an unjustified therapy, without any benefits for this patient or his/her family.

Keywords: Brain death, neonatology, Federal Council of Medicine



390 (CASE REPORT)

Neonatal hydrocephalus - case report

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Introduction: Hydrocephalus is the enlargement of cerebral ventricles. The cerebral substance suffers a regresion process due to volume increase of cerebrospinal fluid (CSF). This is not due to cerebral atrophy or dysgenesis. The mecanism of hydrocephalus is in relation with production, resorbtion and circulation of CSF. Hydrocephalus is caused by several factors: abnormal cerebral development, expanding processes, pre-, peri- and postnatal bacterial or parasitic infections, peri/intraventricular hemorrhage, CSF hyperproduction. Hydrocephalus used to be clasiffied into: communicating and noncommunicating (most frequent). Newest clasiffications are based on the age of the infant, ethiology and mecanis of hydrocephalus.
Clinical cases and summary results: We report the case of a premature newborn, gestational age 31 weeks, birth weight 1350 g. History: premature membrane rupter for more than 9 days. At birth the infant needed minimal resuscitation maneuvres, Apgar score 6/1 min, 6/5 min. He was admitted in the Neonatal Intensive Care Unit. General status evolved towards worsening 4 days after birth, he needed noninvasive respiratory support, he presented seizures. Cerebral ultrasound revealed peri- and intraventricular hemorrhage, bilateral fronto-parietal ischemia, bilateral progressive ventriculomegaly. The diagnose was confirmed by computer tomography. A surgical intervention was performed in order to place an external ventricular drainage system for 2 weeks, after that it was replaced with a ventriculo-peritoneal drainage tube. The seizures persisted. He also developed 2nd degree retinopathy.
Conclusion: Case particularity: the development of hydrocephalus at a high gestational age, increased birth weight, infectious context, favorable evolution after neurosurgical intervention, the follow-up investigations reveal no major sequelle.For neonatologysts the hydrocephalus secondary to infections, cerebral hemorrhages and ischemia is the most common and it supposes a complex and urgent establishment of the etiology and diagnose.

Keywords: Prematurity, infection, hydrocephalus

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Cerebral near infrared spectroscopy in premature infants with respiratory distress sindrome

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Introduction: Distress respiratory syndrome (RDS) caused by Surfactant deficiency is due to immature lungs. Clinically we have respiratory failure with onset in the first 4 hours of life, with a maximum severity degree until 48 hours. The incidence and severity of RDS increase

inversely related to the decrease of the gestational age (GA). The INVOS (In Vivo Optical Spectroscopy) System provides noninvasive information, continuous and real time monitoring of the brain oxygen saturation (regional oxygen saturation = rSO2).
Materials and methods: We investigated premature born infants GA = 24-31 weeks, who were admitted in the Neonatal Intensive Care Unit (NICU) in our hospital ("Bega" Neonatology Clinic Timisoara) between January 2013 - July 2014, they all had RDS due to Surfactant deficiency. The control lot included premature born infants GA = 32 weeks with no severe pathology. Inclusion criteria for the study lot: GA = 24 - 31 weeks, perinatal risk factors, Surfactant administration, respiratory support, other pathologies. Exclusion criteria: GA > 32 weeks, major congenital malformations, multiple birth, stillbirths. All the infants were monitored according our NICU protocols. In addition we used INVOS for cerebral oxygen monitoring from the first 4 hours of life and during 72 hours.
Clinical cases and summary results: We studied: behaviour during conventional ventilation, Surfactant administration, apnea episodes, cardiac arrhythmias, seizures, anemia, blood pressure fluctuations. We monitored: vital signs, blood gases, blood glucose, hemoglobin, hematocrit. Study lot included 2 categories: INSURE (intubation-surfactant-extubation) + nCPAP group, mechanical ventilation + pathology (patent ductus arteriosus, cerebral hemorrhages, anemia, seizures) group. We had no negative effects of INSURE procedure on the brain oxygenation, orotraheal intubation maneuvers decreased rSO2. Surfactant administration raised rSO2. There is an important relationship between severe RDS, low mean blood pressure and cerebral oxygenation. We had decreases of rSO2 with 20% below the critical ranges and increases over the superior reference value of 80%. We could calculate the cerebral tissue extracted fraction of oxygen (cFTOE).
Conclusion: A special category: premature infants with RDS and PDA. Ibuprofen administration determined rSO2 increase. NIRS is a noninvasive, real time method to monitor cerebral oxigen. rSO2 reflects the balance between the cerebral oxygen supply and metabolism. Main goal: to use NIRS for cerebral oxygen settle in premature infants (first 72 hours of life) and to guide our therapeutic interventions after the values of the rSO2 in order to reduce negative effects of hypoxia and hyperoxia on the brain.

Keywords: Cerebral oxymetri, near infrared spectroscopy, brain, prematurity

clinical case of a premature newborn who was monitored using NIRS which helped us to detect and correct oxygenation issues such as those associated with low cardiac output, shock, seizures, renal failure or neurologic damages. Gestational age 30 weeks, birth weight 1300 g. History: premature membrane rupture over 3 weeks, maternal infection with Escherichia Coli. Apgar score = 6/1′, 4/5 ′.
Materials and methods: Premature infant, gestational age 30 weeks, birth weight 1300 g. History: premature membrane rupture over 3 weeks, maternal infection with Escherichia Coli. Apgar score = 6/1′, 4/5′. He presented arterial ischemia at birth which affected his right arm and he needed cardiac and respiratory resuscitation. We monitored cerebral and somatic oxygenation using an INVOS device, we used neonatal sensors placed over the brain and abdomen area. At the same time we used sensors for preductal and postductal pulsoximetry.
Clinical cases and summary results: The infant presented arterial ischemia at birth which affected his right arm, he needed cardiac and respiratory resuscitation. We monitored cerebral and somatic oxygenation using an INVOS device (at 48 hours after birth and during 72 hours). At the same time we monitored preductal and postductal pulsoximetry. The INVOS device generates a vital sign called regional oxygen saturation (rSO2), which is a venous-weighted measure of the hemoglobin bound oxygen remaining after tissues have taken what they need. The lower and upper alarm limits have been set at 50 and 90%. Nurses have been trained to mark all the interventions. Transfontanelar ultrasound has been made before, during and after monitoring to detect brain injuries. There have been detected several periods of hypo or hyperoxia which have not been detected on time by pulsoximetry device or by laboratory investigations. Care team intervened by changing the ventilatory parameters, repositioning the baby or administering fluids.
Conclusion: Decreases in the venous reserve of oxyhemoglobin indicate increased ischemic risk and compromised tissue perfusion. It is very important to intervene at the right time in order to prevent or lessen ischemic complications and injury. Newborns are sensitive to minor changes in therapeutic management or manipulation this is why it is very important to take advantage of all the noninvasive methods of monitoring and diagnose to improve their outcome and NIRS gives us an important helping hand.

Keywords: Prematurity, cerebral, oximetry

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Clinical cerebral and somatic oximetry versus pulsoximetry for a better therapy management in neonatal care - case report

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Introduction: oninvasive procedures are eligible. The INVOS System is a noninvasive device which provides regional, oximetry by near infrared spectroscopy (NIRS). Often provides earlier warning than traditional measures such as pulsoximetry (SpO2). Our aim is to improve the clinical management of neonates in our care and so to take advantage of the newest technologies. We are presenting the

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Perinatal stroke in term-born neonates

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Introduction: Stroke is more likely to occur in the perinatal period than any other time in childhood. The incidence has been estimated at 1 in 1600-5000 births. Arterial ischaemic stroke (AIS) accounts for 80% of all perinatal strokes and the rest are either haemorrhagic or due to cerebro-venous sinus thrombosis (CVST). Diagnostic confirmation is typically based on neuroimaging findings. While a number of risk factors have been proposed, extensive investigations many times remain inconclusive.

Materials and methods: Four term neonates with perinatal stroke born in our maternity hospital during the four years period. Cranial ultrasound (cUS) and magnetic resonance imaging (MRI) of the brain were performed to all. Laboratory tests included blood count, platelet count, coagulation tests, protein C and protein S (level and activity), antithrombin III, fibrinogen, anti-phospholipid antibodies and homocistein (genetic-factor V Leiden and factor II 20210A, prothrombin, MTHFR).
Clinical cases and summary results: Two neonates had AIS due to the infarction of the middle cerebral artery, confirmed by both neuroimaging methods. One was a girl who had an apnoic event on the second day of life. Another was a boy with prenatally detected left sided ventriculomegaly, with mild abnormalities of muscle tone after birth. Two neonates had CVST. One manifested seizures on her third day of life. cUS showed left sided echodensity while MRI detected thrombosis of the sigmoid, transverse and superior sagittal sinus. Another patient presented with hypotonia and feeding difficulties on her second day of life. Left sided intracranial haemorrhage with thalamic laesion were detected by cUS, while thrombosis of the left sigmoid and transverse sinus was diagnosed by MRI. No maternal or placental disorders were found at any case. All infants were otherwise healthy. Sporadic laboratory abnormalities were transient. Treatment was symptomatic. The incidence of stroke in our population was approximatelly 1 in 4000 births.
Conclusion: Neurologic disturbances, even subtle, in term-born previously well-appearing newborn should be evaluated for perinatal stroke. Althought brain ultrasound remain basic neuroimaging method, MRI has to be done in all suspected cases. Individual approach in planning optimal timing for specific laboratory tests is recommended, depending on possible risk factors and based on clinical judgement.

Keywords: Perinatal stroke, neonatal neurologic disturbances, neuroimaging

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Coagulative hemostasis of full term and and preterm infants with hypoxic-ischemic lesions of the central nervous system

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Introduction: The researches of coagulative hemostasis of full term and preterm infants with hypoxic-ischemic lesions of the central nervous system are very important for carrying out precise differential diagnostics and choosing an adequate therapeutic approach.
Materials and methods: We examined (*n*=27) full term and (*n*=43) preterm infants (at the age of 4-7 days after the birth). All infantsl had hypoxic-ischemic lesion of the central nervous system. The parameters of hemostasis were searched by means of the Automated Blood Coagulation Analyzer CA 1500 (Sysmex Corporation, Japan). The following parameters were being diagnosted: prothrombin time (PT) - seconds , prothrombin time (PT) - seconds , prothrombin time - quick (PTq) - %, international normalized ratio (INR), activated partial thromboplastin time (APTT) - seconds, thrombin time (TT) - seconds , levels of fibrinogen (Fbg) - g/L). The non-parametric Wilcoxon-Mann-Whitney tests were used. The results are presented as follows - confidence interval for the mean (lower bound, upper bound).
Clinical cases and summary results: Preterm infants had the following measurements of coagulative hemastasis : PT 13.7(12.8-13.8), PTq 80.7(75.9-84.3), INR 1.2(1.15-1.2 2), APTT 44.07(39.8-48.4), TT 24.42 (22.28-26.56), Fbg 2.34 (2.15-2.53). Full term infants had : PT 12.06 (11.5-12.6), PTq 92.8 (85.2-100.3), INR 1.07(1.03-1.11), APTT 33.21(29.7-36.8), TT 25.64 (22.76-28.52), Fbg 3.56 (1.99-6.13). The differences between study groups of infants are determined according to the following parameters of coagulative hemostasis: PT,PTq, INR, ARTT (P0.05).
Conclusion: The obtained results prove the existance of differences in coagulative hemostasis potential, blood-coagulation factor capacity and concentration between study groups of full term and preterm infants. These results should be taken into the concederation during the diagnostication of different forms of perinatal affection of the central nervous system.

Keywords: Neonatology, hypoxic-ischemic lesion, preterm infants, hemostasis

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Non-pharmacological procedures to relieve pain during procedures in nicu, a pilot study

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Presenter: **Enkeleda Prifti**

Introduction: Effective management of procedural pain in neonates is required to minimize acute physiological and behavioral distress and may also improve acute and long-term outcomes. Neonates in the NICU often experience painful procedures during routine care, such as needle insertions, suctioning, gavage-tube placement, tape removal as well as stressful disruptions, including diaper changes, chest physical therapy, physical examinations, nursing evaluations, and exposure to environmental stimuli.
Aim: To compare the efficacy and safety of three interventions for relieving procedural pain associated with heel lances in term neonates prior painful procedures on pain responses.
Materials and methods: In a randomized controlled trial, 40 neonates were randomized to receive (a) sucrose (n = 13), (b)kangaroo position (n = 4), (c) non-nutritive sucking (pacifiers, n = 13), and no intervention group (control) (n = 10) to evaluate the efficacy (pain response) as assessed by physiological (heart rate (HR), respiratory rate, saturation of peripheral oxygen in the blood (SpO2), behavioural pain indicators (cry duration, proportion time crying, facial actions). Data were collected to determine efficacy and immediate and long-term adverse events. Data on clinical outcomes and neurobiological risk status were collected at 28 days or NICU discharge.
Clinical cases and summary results: There were not statistical differencies related to gestational age, birth weight and drilling time. Significant differences in pain response existed among treatment and control groups related to behavioural pain indicators (cry duration [p=0.002] and proportion time crying [p=0.017] but not for facial actions [p=0.09]). Significant differencies exist and for physiological response (heart rate (HR) [p=0.01], respiratory rate [p=0.01], saturation of peripheral oxygen in the blood (SpO2) [p=0.006]. No group differences existed for adverse events.
Conclusion: Consistent management of painful procedures with sucrose plus pacifier or kangaroo position was effective and safe for preterm neonates during their stay in the NICU. Further exploration of consistent pain management with sucrose on clinical, developmental, and neurobiological outcomes is required.

Keywords: Pain, newborn, NICU, routine procedure, pharmacologic and nonpharmacologic therapies

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The effect of perinatal asphyxia on cerebral palsy candidate gene transcription

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Presenter: **M. Barkhuizen**

Introduction: Cerebral palsy (CP) is a common, clinically heterogenous group of disorders affecting movement and posture. Whilst hypoxic ischemic encephalopathy due to perinatal asphyxia (PA) is a major contributor to cerebral palsy, only 13% of these infants later develop CP [1]. A recent whole-exome sequencing study suggested a similar percentage of CP cases had a potential genetic origin. KANK1, GAD1, ZC4H2, NKX2-1, TUBA1A, SCN8A, KDM5C, AGAP1, JHDM1D, MAST1, NAA35, RFX2, WIPI2, L1CAM, PAK3, CD99L2 and TENM1 were named as genetic candidates [1,2]. We investigated whether these genes are also mediated the acute neurological damage seen after PA.
Materials and methods: We analysed the effect of severe PA during birth [3] on the transcription the CP candidate genes [2] in a rat model of global PA. The transcriptome of a brain hemisphere was measured at 6 and 96 hours after birth with an Affymetrix Gene1.0ST chip (n = 5 per group). Data was analysed with the Bioconductor limma package [3]. P-values smaller than 0.05 were considered statistically significant.
Clinical cases and summary results: PA significantly increased the transcription of CD99L2 at 6 and 96 hours after birth (1.15 fold, $p<0.05$) and WIPI2 at 6 hours (1.09 fold, $p< 0.05$), but not 96 hours after birth. The expression of TUBA1A, SCN8A, AGAP1, MAST1, RFX2, L1CAM, PAK3, KANK1, GAD1, ZC4H2 and NKX2-1 was not significantly altered by PA. The remaining genes were not present in our array. CD99L2 and WIPI2 are both immune system associated genes. CD99L2 is involved in the extravascularization of leukocytes and WIPI2 is involved in autophagosome formation. CD99L2 is also associated with autism [4].
Conclusion: Genes with functions in the immune system may be involved in the neurodevelopmental pathology seen after PA. Further research is needed to determine whether these transcription changes are sustained long-term.

Keywords: Perinatal asphyxia, cerebral palsy, transcriptome

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538 (CASE REPORT)

Early infantile epileptic encephalopathy

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Introduction: Aim: To present a clinical case of early infantile epileptic encephalopathy (Ohtahara syndrome) with initiation of clinical symptoms in the early neonatal period
Clinical cases and summary results: Boy with gestational age 37 weeks, born from first twin pregnancy after in vitro fertilization.There was no evidence of perinatal asphyxia, only mild delay of cardiopulmonary adaptation. Neurological symptoms were noted on the first day of life: absence of primitive reflexes, no sucking and swallowing, muscle hypertonia, tonic seizures, respiratory pauses and apneas. The seizures were resistant to the treatment with phenobarbital and diazepam. Biochemical evaluation and metabolic screen showed no evidence of congenital error in metabolism, mitochondrial disease or pyridoxine dependency. MRI studies showed normal structure of the brain, cerebellum and brain stem, non dilated subarachnoid and intraventricular spaces. EEG - non-reactive burst suppression background activity. There was progressive impairment of consciousness, limited reactivity, reduced spontaneous movements,frequent spontaneous and provoked tonic spasms of the extremities and trunk, lasting 2-10 seconds. The infant was treated with supportive therapy, including mechanical ventilation, non - invasive respiratory support, parenteral nutrition and anticonvulsant drug - vigabatrin. The condition of the infant deteriorated progressively and the patient died at the age of six months. DNA analysis could not identify specific genetic mutation.
Conclusion: Early infantile epileptic encephalopathy can be presented immediately after birth as a idiopathic disease without structural brain disorders or metabolic abnormalities.

Keywords: Eally encephalopathy, neonatal epilepsy

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Neonatal hypoxic-ischaemic encephalopathy patterns demonstrated by magnetic resonance imaging

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Presenter: **Romina-Marina SIMA**

Introduction: Neonatal hypoxic ischemic encephalopathy (HIE) is a syndrome that evolves during a period of days or weeks, and leads to acute or subacute brain injury due to asphyxia. The diminishing of cerebral blood flow and reduced blood oxygenation lead to abnormal anaerobic oxidation of glucose with the activation of inflammatory mediators leading to acidosis and apoptosis. The location and extent of the lesions may be identified by Magnetic Resonance Imaging (MRI) which is an efficient modality for assessing brain injury in neonates and established their long time prognosis. The degree of

neonatal brain development is a factor of the extent of brain vulnerability to asphyxia, but other antepartum or intrapartum factors may influence the lesional patterns as described by MRI.
Materials and methods: Twenty-six neonates (15 male, 11 female) with diagnosed HIE have been investigated by cerebral MRI in our center, on a 1.5T machine between Jan 2013 and Dec 2015. The routine protocol of investigation included the following sequences: axial T2/PD SE, coronal 3DT1 FSPGR, DWI (EPI), paracoronal T1 IR, SWI. Several parameters were also noted, such as: gestation age, Apgar score, intubation at birth, acid-base equilibria and other perinatal events. The patients did not require sedation, and were examined with the standard head coil. Eighteen patients were followed up to one year and a clinical examination established overall condition. Writen consent was obtained from the parents or legal guardian, depending on the case, and medical ethics approval from the center's board was granted.
Clinical cases and summary results: The most common paterns of brain injury in HIE were organised into these categories: focal spot-like white matter anomaly, vascular border lesions (watershed), basal ganglia or brainstem, and generalised lesions. Gestation age is a main delineator of lesion location and extent, with full-term neonates showing lesions in the thalamus, posterior putamen, perirolandic cortex and watershed zones while preterm neonates developed lesions in the basal ganglia, thalamus, brainstem, cerebellum and the periventricular white matter. Germinal matrix hemorrhage was confirmed in two preterm neonates, with previos positive ultrasound. Spot-like white matter lesions with no other concurring patterns were found in five preterm and one full-term patients, and all showed a good outcome at one year follow-up. Single watershed lesions showed a favorable outcome, and were found in two fullterm neonates. Four preterm and two fullterm neonates demonstrated a diffuse involvement with poor prognostic.
Conclusion: MRI is an invaluable tool in the confirmation of HIE with a potential positive impact in managing the complications of hypoxic-ischemic brain injuries. Correct identification of the various imaging patterns of HIE may show insight to the extent of the injuries as well as a direct correlation to the long-term outcome. Although gestation age dictates predominantly affected areas, the correct morphological assessment is the warranty of a complete and thorough diagnosis.

Keywords: Neonatal hypoxic ischemic encephalopathy, MRI

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Holoprosencephaly, diagnosis by alpha-fetoprotein

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Presenter: **Maitane Urtasun**

Introduction: Holoprosencephaly is a developmental defect of the embryonic forebrain that results from incomplete development and separation of the midline central nervous system structures and has a spectrum of presentations. It is commonly associated with midfacial defects. The diagnosis is made by prenatal ultrasound.
The incidence is 1 per 10,000-15,000 birth Prognosis depends on the degree of the malformation, severe cases are not compatible with life. The clinical features are: some degree of intellectual disability or developmental delay, epilepsy, hydrocephalus, dystonia, movement disorder, autonomic dysfunction, and hypothalamic/pituitary dysfunction. The degree of patient care required generally differs based upon the severity of the condition but multidisciplinary approach is the best.
Clinical cases and summary results: We present the case of a 43 years old women. She had a history of four normal pregnancies with normal deliveries and healthy children, and she has been diagnosed with Gilbert syndrome. She had an spontaneous singleton pregnancy. In week 13 + 5, we do the first trimester ultrasound, sowing a singelton alive fetus, with a skull-rachis length 61.8 mm (normal for the gestational age) and a nuchal translucency of 3.1 mm. It does't have any morphological alterations. She do the combined screening, and she presents a risk of neural tube defects 1/552.
Genetics department notified for early scan in second trimester for an elevated alpha fetoproptein (73.8 ng/ml). We make a new ultrasound subjected in week 16 + 5 wherein we observed an alive fetus, suitable at gestational age (PFE 151gr.) But in this ultrasound, we diagnosed an holoprosencephaly with agenesis of the corpus callosum, central cleft lip and cleft palate. The patient decided to undergo a legal abortion in week 17.
Conclusion: Alpha-fetoprotein in maternal serum has been the primary screening test used to identify pregnancies at increased risk of open neural tube defects at 15 to 18 weeks of gestation. A value above 2.0 to 2.5 MoM is designated an abnormal result. If the elevation persists in a second analisis, the next step is to obtain a specialized ultrasound examination to further assess whether a neural tube defect, or other anomaly, is present.

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Neuromonitoring in neonatology - differential diagnostics of paroxysmal events in premature infants

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Presenter: **D. Kostiukova**

Introduction: Paroxysmal events in premature infants often remain unrecognized. Complete neuromonitoring provides differential diagnosis of paroxysmal conditions, timely treatment at the hospital, following-up premature infants for implementation of a system of early interdisciplinary intervention. To run a clinical and electroencephalographic diagnostics of paroxysmal epileptic and paroxysmal nonepileptic events (PNEs) in order to optimize treatment, neuromonitoring of premature infants risk groups of different gestational ages.
Materials and methods: Prospective cohort clinical study included 78 infants of gestational age (GA) 24-36 wk. with paroxysmal events aged 6 days to 3 months at the intensive care unit. Conducted clinical and electroencephalographic differential analysis of paroxysmal epileptic events and PNEs using standard electroencephalography by the computer complex BRAINTEST, DX-systems. The duration of the study ranged from 40 minutes to 6 hours according to the clinical features of paroxysmal states. Premature newborns were divided into groups of GA: 24-27 wk, 28-31 wk, 32-33 wk., 34-36 wk. Conformity assessment of maturity bioelectrical activity of the brain was performed according to the classification patterns of electrical activity of the brain by Ellingson R. (A - to 30 wk, B -30-35 wk, C - 37 wk, D - 39 wk)
Clinical cases and summary results: In the GA group of 24-27 wk. there were 23% of children, the GA group of 28-31 wk.- 57% of children, the GA group of 32-33 wk. - 10%, the GA group GA of 34-36 wk. - 10% Thanks to a timely conducted clinical and electroencephalographic monitoring group GA of 24-27 wk. paroxysmal epileptic events were

detected to 55.5% of children, paroxysmal nonepileptic events - 44.4%; GA group of 28-31 wk. - paroxysmal epileptic events to 72.7%, PNEe - 18.2%; GA group of 32-33 wk. - paroxysmal epileptic events to 50%, PNEe - 50%; GA group of 34-36 wk. - paroxysmal epileptic events to 66,6%, PNEe - to 33,3% . The clinical and electroencephalographic analysis of the risk of brain bioelectrical activity developmental delay was revealed in GA groups of 24-27 wk., GA 28-31 wk., GA 32-33 wk. In GA groups of 24-27 wk. and GA groups of 28-31 wk. maximum frequency abnormal patterns in the form of EEG seizures (over 50%), transient epileptiform graphic elements of diffuse and focal discharges were found. The GA group of 32-33 wk. had a high frequency of EEG seizures (50%) and transient epileptiform graphic elements according to EEG data. In the GA group of 24-27 wk. and 28-31 wk. the highest percentage of hemorrhagic lesions (intraventricular hemorrhage), periventricular leukomalacia and the combinated brain lesions were revealed. In the GA group of 32-33 wk. the highest incidence of hypoxic-ischemic encephalopathy was found.
Conclusion: The electroencephalography is necessary in electrophysiological methods of differential diagnostics of paroxysmal events in premature infants.The clinical and electroencephalographic analysis demonstrated a link between low GA and high risk of developmental delay of bioelectrical brain activity, confirming the need to monitor ontogenetic markers of brain bioelectrical activity.

Keywords: Neonatal seizures, premature infants, paroxysmal nonepileptical events, electroencephalography

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The possibilities of nirs for the detection of hyperoxemia in neonates

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Presenter: **D. Sankavets**

Introduction: Everyday neonatologists face a difficult task in balancing the risks of too little oxygen with those associated with excessive oxygen use. Measurements of the arterial oxygen partial pressure (PaO2) are considered the gold standard for assessing oxygenation. However, this technique requires invasive catheters. In clinical practice pulse oximetry provides immediate and non-invasive data about oxygenation and is now part of the standard of care for neonates receiving supplemental oxygen. The main physiological limitation of pulse oximetry is the inability to detect hyperoxemia in the higher SpO2 range due to the shape of the oxygen dissociation curve. Another non-invasive technique as Near-Infrared Spectroscopy (NIRS) may also help to detect conditions associated with hyperoxemia.
Materials and methods: We investigated the possibility of using NIRS for detection of hyperoxemia in neonates. In addition to standard monitoring of vital functions, carried out the measurement of regional cerebral oxygenation (crSO2) by NIRS with the INVOS 5100C tissue oximeter. Every time an arterial blood sample was taken in conditions of normothermia, the crSO2 readings were recorded at the moment the arterial blood was drawn into the syringe for analysis. Blood gas analysis was performed immediately after sampling in Radiometer ABL 800 blood gas analyzer. Statistical analysis was performed using the MedCalc.
Clinical cases and summary results: Eighty-one neonates (69 term/12 preterm) with a median GA of 37 (range 30-41) weeks and birth weight median of 3140 (range 1220-4770) grams were enrolled. All measurements were carried out during the first week of life. All neonates were mechanically ventilated, 24 of them needed high frequency ventilation. In total 321 blood gases samples were analyzed; 179 were hyperoxemia (PaO2 >80 mm Hg). At an upper alarm limit from 74% to 68%, tissue oximeter detected hyperoxemia with sensitivity from 80% to 88% and specificity 23% and 12% respectively.
Conclusion: NIRS monitored crSO2 may also be useful for detection of hyperoxemia in neonates. At an upper limit of cerebral hyperoxygenation 68% NIRS can detected hyperoxemia with 88% sensitivity.

Keywords: Hyperoxia, neonates, oxygen, near infrared spectroscopy

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Neuroimaging and outcome of isolated fetal ventriculomegaly

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Presenter: **Prakash Satodia**

Introduction: Fetal ventriculomegaly is defined as ventricular atrial width ≥10.0 mm across the atrium of the posterior or anterior horn undertaken at any gestation by ultrasound imaging (1). It is considered isolated if there are no associated fetal abnormalities. Neurodevelopmental outcomes depend on severity of ventricular enlargement, underlying brain malformations and the presence of other associated body malformations. Fetal magnetic resonance imaging (MRI) is being increasingly used to guide further management. Value of postnatal MRI in isolated mild ventriculomegaly confirmed by fetal MRI is unclear. The study aim was to evaluate the fetal and postnatal neuroimaging and short term outcome in a cohort of isolated fetal ventriculomegaly in our hospital.
Materials and methods: All women with fetal ventriculomegaly detected on antenatal ultrasound scan from 19 weeks of gestation onwards (January 2008 to May 2015, 7 years & 5 months) were identified from fetal medicine database. The ventriculomegaly was categorized into the following groups: mild ventriculomegaly 10-12 mm; moderate ventriculomegaly 12-15 mm; and severe ventriculomegaly > 15 mm (2). All cases were followed up with additional antenatal ultrasound scans and/or MRI. Retrospective review of medical charts and electronic medical records was carried out and data were collected on labour and delivery details, postnatal examinations, investigations and short term neurodevelopmental follow up.
Clinical cases and summary results: Out of 51 cases, 16 had non-isolated ventriculomegaly & were excluded. 35 cases had isolated ventriculomegaly (21 mild, 5 moderate & 9 severe). 32 were live births (M:F=18:14), 2 were MTOP & 1 was stillbirth.
18 had fetal MRI (7 mild, 3 moderate & 8 severe). In 7 cases (1 mild, 1 moderate & 5 severe) fetal MRI showed additional findings (absent corpus callosum, dilated 3rd ventricle). In 11 cases fetal MRI did not show additional findings compared to ultrasound.
Postnatal follow up was available in 30 cases up to 1 year of age. Of 21 mild ventriculomegaly cases, 14 resolved in utero & had normal development. Of rest 7 cases, 1 was stillbirth, 2 remained mild, 2 had normal postnatal US/MRI, 1 had external hydrocephalus at 11 months & 1 had cerebral palsy at 6 months. Postnatal US and/or MRI was abnormal in 12 (3 mild, 3 moderate & 6 severe) out of 23 cases (13 mild, 3 moderate and 7 severe). All babies with severe ventriculomegaly had delayed development at up to 1 year of age.
Conclusion: Fetal MRI provides additional information mainly in cases of isolated severe ventriculomegaly. Mild isolated fetal ventriculomegaly usually resolves and has normal short term postnatal outcome.

Keywords: Fetal MRI, Neurodevelopmental Outcome

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Dandy-Walker complex: according to a clinical case

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Presenter: **N. Abián Franco**

Introduction: The importance of ultrasound scan and magnetic resonance imaging (MRI) for the prenatal diagnosis of central nervous system (CNS) abnormalities is described in this clinical case presented. This sort of medical problem affects multiple atmospheres such as economical, political and social, and also requires an adequate and individualized management.
Clinical cases and summary results: A 25 year-old woman from Morocco, G3P0C2, with a healthy son and another son death from a cerebral malformation, consults for the first time at 31st week gestation with no other previous examinations. An ultrasound is practiced, estimating fetal weight in a 50 percentile, anterior placenta and normal amniotic fluid. However, and taking into account the difficulty of this technique due to maternal obesity, a this point a CNS malformation in the posterior fossa is suspected. The ultrasound scan was repeated in 32nd week gestation, confirming the suspicion of a CNS malformation, consisting of cuatricameral hydrocefalus with a 19 mm left lateral ventricle and 17 mm wright one, 15 mm of cavum and dilated anterior horns. The cortex measure was 6 mm and posterior fossa 25 mm, which is extended to the fourth ventricle and observing a small cyst on it. Cerebellum defined as hypoplasic and detailing the absence of the vermix. All this elements considered, the final diagnosis was indeed Dandy-Walker Complex. Afterwards, an amniocentesis was performed (results in process) and also a MRI in order to try to specify the fetal prognosis as precisely as possible. As a matter of fact, the MRI detected, furthermore, agenesis of the corpus callosumand and a diffused supra-infratentorial encephalic atrophy.
Conclusion: The patient applied for the voluntary termination of pregnancy, which was accepted by the appropriate committee. Foeticide and subsequent iterative cesarean section were proceeded smoothly. Prenatal diagnosis of Dandy-Walker Complex is substantially based on ultrasound scan. The MRI contributes to the accuracy of the vermix integrity definition, which actually represents the most crucial parameter for fetal neurological prognosis.

Keywords: Dandy-Walker Complex. Posterior fossa malformations. Central Nervous System malformations. Ultrasound scan and magnetic resonance imaging for prognosis

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Regional oximetry in preterm neonates in NICU

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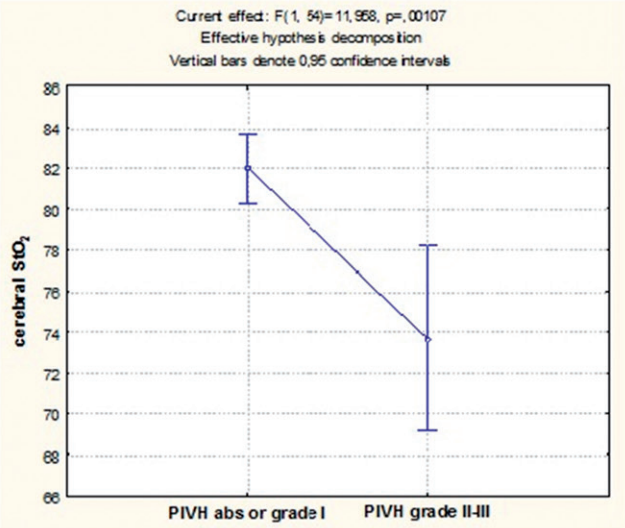
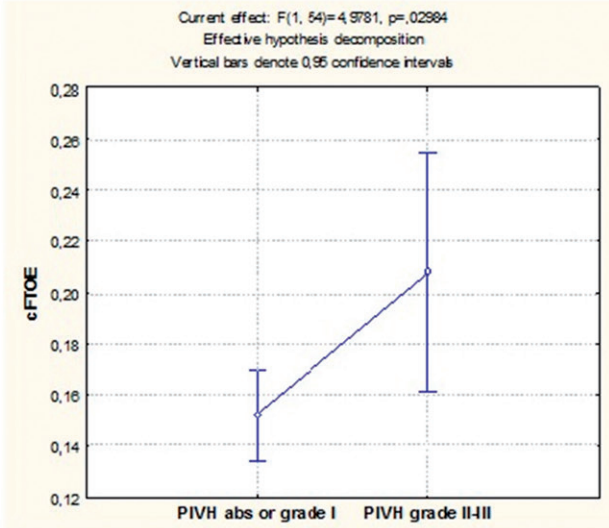
Presenter: **Olga Grebennikova**

Introduction: Survival of preterm infants has been improved over the last decades with implementation of sophisticated respiratory support modalities and other therapeutic strategies. But perinatal brain damage with adverse neurodevelopmental outcome still affects a considerable number of these infants. Hypoxia, hyperoxia and hemodynamic instability during the first days of life are important etiological factors of brain damage. Most of modern monitoring techniques of cerebral condition do not provide continuous information on the perfusion and oxygenation of the brain. Near infrared spectroscopy (NIRS) oximetry enables non-invasive estimation of regional tissue haemoglobin oxygen saturation.
Aim: To investigate regional tissue oxygen saturation in preterm newborns with different grades of PIVH
Materials and methods: This study contains analysis of 56 preterm newborns with gestational age (GA) 25-36 wks (32 [28; 34]) as a part of larger study comprising 99 babies of various GA in NICU at Moscow Municipal Hospital 24. For measuring the regional oxygen saturation we used Equanox Model 7600 device. Neonatal sensors were placed over the forehead for cerebral regional saturation (cStO2) and over the liver in the right upper quadrant of anterior abdominal wall for somatic regional saturation (sStO2). To investigate the balance between oxygen delivery and oxygen consumption, we used the relative cerebral fractional tissue oxygen extraction (cFTOE) as a ratio: (SaO2-cStO2)/SaO2. Statistical analysis was performed using Statistica 8, data are represented as Me [LQ; UQ].
Clinical cases and summary results: All preterm newborns were divided into 2 groups depending on presence/absence of high grade peri-intraventricular hemorrhage (PIVH) (Tab.) In group I 15 newborns (30,6%) didn't need any respiratory support, 10 (20,4%) received diffuse O2, 16 (32,7%) - continuous positive airway pressure (CPAP), 6 (12,2%) - assisted mechanical ventilation (IMV) and 2 (4,1%) - high frequency oscillatory ventilation (HFOV). In group II all patients received respiratory support: CPAP - 2 neonates (28,6%), IMV - 3 (42,9%) and HFOV - 2 (28,6%).
In patients with PIVH II-III cStO2 values were significantly lower than in patients without PIVH (F (1,54) = 11,958, p=0,001).
At the same time the cFTOE values in group II were significantly higher than in group I (F (1,54) = 4,978, p=0,03). (Pic.)
Evaluation of somatic oxygenation depending on PIVH grade showed significant reduction in sStO2 values in high grade PIVH infants in comparison with PIVH 0-I group (F(1,48)=13,231, p=0,0007
Conclusion: Cerebral StO2 monitoring could be an important part of the brain oriented protective strategy, preventing deleterious imbalance between oxygen delivery and consumption.
A decrease of cFTOE suggests a decrease of oxygen extraction of the brain because of less use of oxygen or a constant oxygen consumption of the brain with an increased oxygen delivery to the brain. It might be because of the higher speed of cerebral blood flow and imperfection of its autoregulation.

Keywords: NIRS, preterm neonates, PIVH, cerebral tissue saturation





	Preterm newborn patients	
	Group I PIVH abs (0) or grade I	**Group II** PIVH grade II-III
Number of children (n)	49	7
Birth weight, g	1850 [1420;2160]	1010 [880;1170]
GA	33 [30;34]	27 [25;28]
Apgar score at 1 min	7 [5;7]	4 [2;6]
Apgar score at 5 min	7 [6;7]	5 [3;7]
$cStO_2$	83 [79; 84,75]	73,75 [66,25; 82]
$sStO_2$	81,75 [74,5; 85,5]	34 [30; 75]
SaO_2	97,5 [95,5; 98,75]	94,75 [88,5; 98,5]
cFTOE	0,15 [0,12; 0,19]	0,18 [0,15; 0,27]

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Assessment of oxygen extraction in cerebral tissue in preterm infants using neonatal NIRS device

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Introduction: Monitoring oxygen metabolism in cerebral tissue is of relevance for the understanding mechanisms of complications such as intraventricular hemorrhage and leucomalacia. Optical techniques with near infrared spectroscopy (NIRS) allows assessment of oxygen consumption by non-invasive approach. In this study, we present results of measurements performed in a 10 preterm infants series with a neonatal NIRS device.
Materials and methods: The cerebral tissue oxygen saturation (ScO2) was measured by NIRS optical device (INVOS 3500, Covidien) and arterial oxygen saturation by pulse oxygen oxymetry. Other study variables were: Gender, Apgar score, respiratory support data, arterial blood gases, cranial ultrasound findings, functional echocardiographic data and arterial blood pressure. The infants of this study were classified in two groups depending of whether they had (1) a patent ductus arteriosus (PDA) or (2) a non-significant (nPDA) or closed ductus. Cerebral oxygen extraction fraction (OEF) was calculated using the relation: OEF (%) = 100*(SaO2-ScO2)/SaO2.
Statistical analysis: Variable description by mean (+/- SD) or median (range), relation description by linear correlation analysis and group comparison by t-test
Clinical cases and summary results: At total 10 preterm infants (4F/6M, 26-30 gestational weeks, birth weight 880-1790 g, postnatal age: mean 12 days and range, 1-25 days). At the time of cerebral NIRS exploration, 5 infants in 10 had a completly closed ductus while the 5 remaining infants had a PDA. In nPDA group ScO2 was 78.4% +/- 13 nPDA group vs 69.7% +/− 8.4 in PDA group. The OEFwas positively related with the left atrial-to-Aorta root diameter ratio (coeff=18.1, r=0.39, p=0.04) a classical criterion of ductal shunt severity. Two infants had EEG anomalies in PDA group and 3 had a grade IV intraventricular hemorrhage. In the group nPDA two patients had EEG anomalies, in whom one developed leucomalacia lesions subsequently.
Conclusion: NIRS belongs to new generation techniques for non-invasive monitoring of cerebral metabolism of oxygen. Our study found that NIRS is a safe and feasible technique for preterm infants. Cerebral oxygen extraction slightly greater in infants in PDA group than those in nPDA group. Appropriate models based on physiologic mechanisms are needed for a better interpretation of data from these new techniques. Larger populations are necessary before we to confirm definitively the findings of this study.

Keywords: NIRS, cerebral tissue saturation, neuro-hemodynamics, cerebral oxygen extraction

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Evolution of pregnancy in a patient with multiple sclerosis according to a case

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Presenter: **J. Barrenetxea**

Introduction: Multiple sclerosis (MS) is an immune mediated demyelinating disease of the central nervous system characterized by relapses and remissions of neurologic deficits. MS is a disease that affects more women than men by a ratio of 2:1. Pregnancy seems to decrease de disease activity, while the postpartum period is associated with an increase in MS activity. Overall, taking into a count de protective effect during pregnancy and the increased risk in the early postpartum, the net effect is that there is no increase in the risk of exacerbation.
Materials and methods: A 35 years old women (GOP0) with gestational desire was diagnosed of premature ovarian failure in 2006 (at the age of 26). Diagnosed of MS in 2009 with dysautonomic disorders (Neurogenic bladder treated by sacral neuromodulation with correct control of the disease). No other neurological disturbances. Gestation achieved by assisted reproductive technologies.
Clinical cases and summary results: In the 22nd gestational week the patient starts to show more dysautonomic disorders, this time she starts with defecatory disturbances (defecatory emergency). Following consultation of de Neurologist, no corticosteroid treatment is settled. There is no sensory disturbances nor motor disturbances.
In te 39 + 2 gestational the patient starts with regular contractions every 4-5 minutes and with cervical modifications. The process of labor goes with no disturbances. The aplication of a vacuum is decided for the expulsive due to inadequate descent of the presentation once the complete dilatation is achieved and after 2 hours of maternal struggles. Mild postpartum uterine atony that is resolved with uterine massage and the administration of 1000 micrograms of intrarectal Misoprostol. Correct puerperium with no neurological disturbances and no more outbreaks of the MS.
Conclusion: Multiple sclerosis is a neurological pathology that can affect women of childbearing age. During pregnancy it seems to decrease the disease activity, while the postpartum period is associated with an increase in MS activity. Acute MS relapses during pregnancy can be treated with intravenous glucocorticoids, which are not teratogénic. In this case no treatment was needed, and the pregnancy outbreak had a favorable resolution as the pregnancy itself.

Keywords: *Multiple Sclerosis, Dysautonomia, pregnancy outbreak*

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Colposcopic-cytological parallels in pregnant women with different intergenetic intervals

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Presenter: **O.Kolomiyets**

Introduction: More and more women want to realize their reproductive function after 30 years of age - for the first time or with prolonged intergenetic interval (more than 10 years between deliveries). The importance of this problem is supported by statistic data: portion of women with prolonged intergenetic interval in the total amount of pregnant women in Ukraine was 1.98% in 1987, 20 years later, in 2007, it increased to 10.7% and in 2010 - to 12.2%. The optimal interval between births is considered to be around 3-5 years. It is well known that pregnancy with the inherent physiological immunodeficiency has an unfavourable - stimulating effect on the clinical course of benign and premalignant diseases of the cervix, accelerating evolution of cancer.
Materials and methods: 162 pregnant women from 3 groups were examined: group 1 - 60 patients with prolonged intergenetic interval, group 2 - 60 nulliparous women, older than 30 years; group 3 - 42 patients with the optimal intergenetic interval. Examination included colposcopic and cytological methods. Colposcope Olympus OCS 500 was used. For data description and analysis, we used classification of colposcopic terminology adopted in Rio de Janeiro in 2011. Specimens were collected by brush and placed in a vial with preservative fluid. Automated, semi liquid-based cytology was then used as cytological method. The aim of the study was to determine the relationship between the character and the degree of colposcopic and morphological pathology of the cervix in pregnant women from different groups.
Clinical cases and summary results: During colposcopy normal findings (multilayered squamous epithelium) were in 56.7% of women in group 1, in 58.3% in group 2, and in 66.7% in group 3; benign cervical lesions (ectopy, gland openings, nabothian cysts, deciduosis) were found in 23.3% of patients in group 1, in 26.7% in group 2 and in 28.6% in group 3. Premalignant diseases of the cervix during colposcopy were diagnosed in 18.3% of cases in group 1, in 15.0% and 4.7% in groups 2 and 3 respectively. In one 44 year old patient from group 1 (1.7%) an invasive cancer of the cervix was detected by colposcopy and confirmed by cytology. Normal cytological findings were in 58.3% of women from group 1, in 60.0% from group 2, and in 71.4% from group 3. Benign cytological changes and ASCUS features were in 21.7% of patient in group 1, 25.0% in group 2 and in 26.2% in group 3. Premalignant diseases (LSIL + HSIL) were diagnosed in 18.3% of patients in group 1, in 15.0% and 2.4% in groups 2 and 3 respectively.
Conclusion: The rate of premalignant diseases of the cervix was significantly higher in women with prolonged intergenetic interval, then with optimal: 18.3% vs. 4.7% by colposcopy ($p<0,05$) and 19.9% vs. 2.4% by fluid cytology ($p<0,01$).The similar rate of premalignant diseases, found in women with prolonged intergenetic interval and in nulliparous women older than 30, could be probably explained by reduction of papillomavirus self-elimination with age, and thus increase of the risk of precancer and cancer.

Keywords: Pregnancy, prolonged intergenetic interval, cervical diseases

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Rupture of an hemi- uterus with a rudimentary horn on a 15 weeks pregnancy

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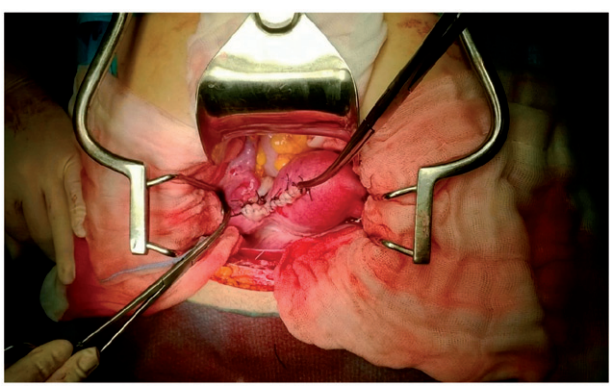
Presenter: **I. Reis**

Introduction: Congenital anomalies of the uterus are mostly assymptomatic and therefore its incidence is difficult to determine.
An hemi-uterus is defined as the unilateral uterine development; the contralateral part could be either incompletely formed or absent.
Clinical cases and summary results: A 30-year-old primipara, 15 weeks pregnant, resorted to the Emergency department mentioning abdominal pain with about 2 hours of evolution. As relevant background, she had been diagnosed with an hemi-uterus of normal characteristics and a rudimentary horn on the right.
The first trimester ultrasound (about 2 weeks before) showed an evolutionary pregnancy with a fetus of 13 weeks and 4 days located in the right uterine horn. She was informed about the risks of keeping this pregnancy, and it was proposed to terminate it, however, she declined that option.
At admission to the Emergency department she denoted very intense abdominal pain, with no history of trauma or blood loss. Ultrasound showed a fetus with no cardiac activity. Haemoglobin level was 10 g/dl on the blood count. During the two hours following the observation, a rapid deterioration of her general condition was observed, with hypotension and tachycardia, and the ultrasound revealed intra-abdominal fluid content in large quantities.
It was decided to perform an emergent laparotomy. The fetus and the amniotic sac were observed in the abdominal cavity, with a significant blood loss and rupture of the uterine hemi-cavity. The first gasimetry during surgery showed a level of haemoglobin of 4 g/dl.
A conservative approach was performed, with a metroplasty on the right uterine horn, preserving the normal hemi-uterus.
Clinical evolution was satisfactory and she was discharged from the hospital seven days after surgery.
Conclusion: Although pregnancy outcomes have been reported to be close to normal, some women do develop complications. This case highlights the significance of uterine malformations during pregnancy and the importance of prompt and correct diagnosis to minimize life threating events.

Keywords: Uterine rupture; rudimentary horn



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Deficiency of multiple acyl -coa dehydrogenase or glutaric acid-uria type II

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Presenter: **MIREYA TORRES MOLINER**

Introduction: The deficiency of multiple acyl CoA dehydrogenase or glutaric aciduria type II is a change in the oxidation of fatty acids and amino acids. The autosomal recessive inheritance is caused by mutations in genes ETF- A, ETF-B, and ETF-DH, encoding the alpha and beta subunits of the electron transfer flavoprotein (ETF), and ETF-coenzyme Q- oxidoreductase. It is a rare disease, presenting a clinically heterogeneous phenotype, ranging from causing serious neonatal deaths during the first weeks of life, to a mild disease of childhood or adulthood with intermittent episodes of metabolic decompensation.
Clinical cases and summary results: We present two cases of severe neonatal form confirmed by genetic diagnosis. Both have metabolic acidosis, hyperammonemia, hypoglycemia and hypotonia since the first hours of life; one with multiple organ failure and irreversible brain damage from birth for whom the limitation of therapeutic efforts is decided jointly with the family after seven days of life. The second case presents as a peculiarity, injuries consistent with glutaric aciduria type I based on neuroimaging, is stable in the supportive care until ten weeks of life, presenting metabolic decompensation in the context of respiratory infection with respiratory and progressive neurological impairment for which comfort measures are taken and the patient dies.
Conclusion: The glutaric aciduria type II is a rare life-threatening disease. The treatment is supported by a diet rich in carbohydrates, fats, proteins, and restrictive supplementation altered enzyme cofactors. The importance of the diagnostic confirmation in relation to genetic counseling should also be noted.

Keywords: The deficiency of multiple acyl CoA dehydrogenase or glutaric aciduria type II

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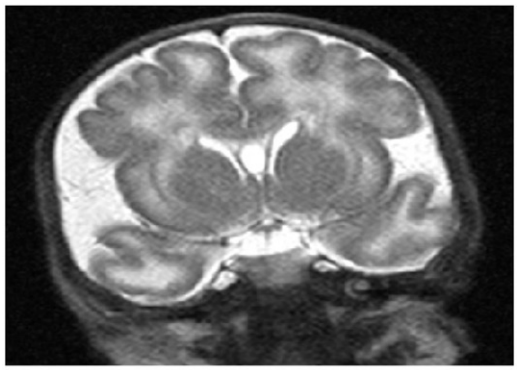

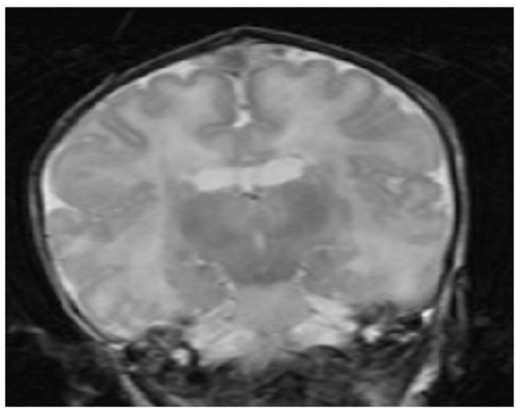

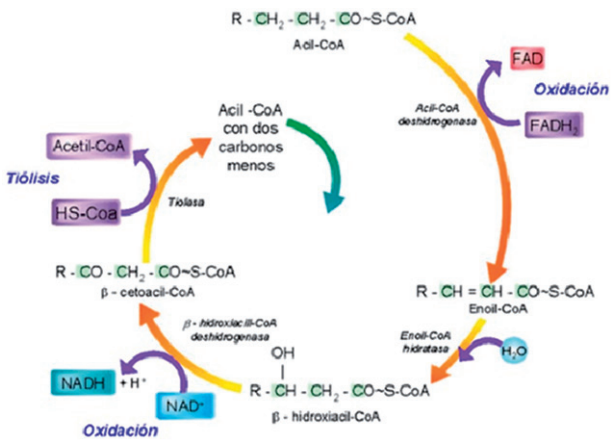

672 (CLINICAL CASE)

MASSIVE Pulmonary embolism in third trimester of pregnancy

M. Kiseli[1], G.S. Caglar[1], N. Ogan[2], A.Y. Gursoy[1], H. Yilmaz[3], S.D. Cengiz[1], and R. Pabuccu[1]

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Presenter: **Mine Kiseli**

Introduction: Pregnancy is a hypercoagulable state with a high risk of tromboembolic complications. Pulmonary embolism (PE) is a leading cause of maternal mortality in developed countries, contributing to the death of approximately 2 women per 100,000 live births each year. Cardiovascular collapse associated with a massive PE may require immediate aggressive intervention to save the mother and fetus. Management of delivery deserves attention and should be attended by an experienced multidisciplinary team. Here we present management of a case of massive pulmonary embolism at 35 weeks of pregnancy suffering from trombocytopenia.
Clinical cases and summary results: 31 year-old woman admitted with left inguinal pain at 35 weeks of pregnancy. Ultrasonography revealed live fetus with normal amniotic fluid. Due to left leg swelling and pain, Doppler venous ultrasonography was planned. An acute thrombus in left main femoral vein and subacute thrombus in the left deep femoral vein was demonstrated. Therapeutic low molecular weight heparin and leg elevation was initiated. Emerging shortness of breath and decrease in oxygen saturation and hypoxia/hypocarbia in arterial blood gas analyses suggested a PE. Echocardiography revealed right ventricular dysfunction. Emergency cesarean section was planned and 2300 gr healthy newborn was delivered. Postoperatively, massive thromboembolic lesions were demonstrated in the pulmonary angiography with computerized tomography. During the early postoperative period, the platelet number decreased up to 47000 k/μL and intravenous heparin could not be started until postoperative 24 h. Because of the refractoriness to the heparin infusion (no-increase in aptt), warfarin treatment was started at the second day. On postpartum 17th day, the patient was discharged with warfarin therapy.
Conclusion: Treatment of massive PE in patients with hemodynamic compromise especially during labour and delivery remains controversial. In the case presented here severe thrombocytopenia hinders thrombolytic therapy and laboratory refractoriness to heparin futher limited the treatment options. Even if emergent cesarean section complicates postoperative management in third tirmester massive PE, none of the treatment options assure fetal and maternal well-being.

Keywords: Pulmonary embolism, heparin

748

Healthy live-born child with trisomy 22: when the amniotic cells tell the truth?

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Introduction: Trisomy 22 (T22) is a rare chromosomal disorder characterized by the presence of an extra copy of the chromosome 22. This case is not compatible with life; in fact, it is associated with early spontaneous miscarriage or death after birth unlike mosaic trisomy 22.
Materials and methods: Here we report on a case of mosaic trisomy 22 prenatally diagnosed on amniotic cells at 17 weeks of gestation. Conventional and molecular cytogenetic analysis of the fetal and parental cells were performed simultaneously.
Clinical cases and summary results: Amniocentesis showed de Novo supernumerary chromosome marker (SMC) present in mosaic. R-banding allowed classifying this SMC as a chromosome 22. FISH Analysis performed on amniotic cells confirmed this result. The proband's karyotype is mos 47, XY, +mar .ish der 22 (WCP 22*3) [6]/46, XY [13]. At 21 weeks of gestation, ultrasound showed no morphological abnormality except mild bilateral pelvicalyceal dilatation. Despite the presence of an extra copy of chromosome 22 in 31, 5% of cells, the fetus showed none of the T22 features or congenital malformations.: Interestingly, postnatal Karyotype on lymphocytes was normal.
Conclusion: Nevertheless, a karyotype on fibroblasts is necessary to confirm the prenatal mosaicism found in the amniotic fluid. Indeed, certain chromosomal abnormalities cannot be seen on the blood cells but may be present in other tissues such as skin. Several studies emphasize the importance of fibroblasts exploration for better diagnosis of mosaic trisomy 22. Our case confirm that amniotic fluid cells alone are not sufficient to predict mosaic trisomy 22 outcome.

Keywords: Mosaic trismoy 22, Amniocentesis, ultrasound, FISH

PERINATAL NUTRITION - 009

High osmolality of fortifier human milk adding with vitamin (ADEC)

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Background: Fortifying human milk with energy, protein, mineral, vitamins AEDC and iron is essential in order to improve the infant's growth. In order to reach nutritional purposes, human milk has to reach 2 g/dL. In 2013, Lafeber states that when women's milk is fortified up to 2 g/dL, it may increase it's osmolality up to 500 mosm/kg. He also said to be care fulfull when adding a drug or vitamins into the milk.
Aim: We studied for the first time the impact on a women's fortified milk osmolality, when adding multivitamins (ADEC).
Materials and methods: The osmolality of 36pasteurized fortified human milk samples was measured with an advanced micro-osmometer model (Fiske® Modèle 210 (FISKE® ASSOCIATES, Norwood, Massachusetts, USA). The method was the freezing point measurement with a precision of 1 mosm/kg. Measures were made in triplicates. The amount of milk required as a solvent to maintain osmolality below 500mosm/kg was then determined.
Results: The 2mL fortified human's milk reached up to 750mosl/kg when the 0.3ml of multivitamins ADEC was added. The osmolality decreased proportionately with the solution dilution. It is only with 20 mL of milk that the osmolality comes down to its initial rate 430mosm/kg. Stronger the milk's fortification is, the bigger impact it has on the milk osmolality.
Conclusion: New nutritional recommendations for premature infants are needed. In the meantime, when the fortified milk intake is under 20 mL, it is preferable to extend parenteral intakes with fat-soluble vitamins. Also, we should use enriched women's milk as fortifier and be cautious with fortification ''à la carte'' or when adding drugs and electrolyte solutions.

Keywords: Human milk osmolality, human milk fortifier, vitamin D, preterm, nutrition

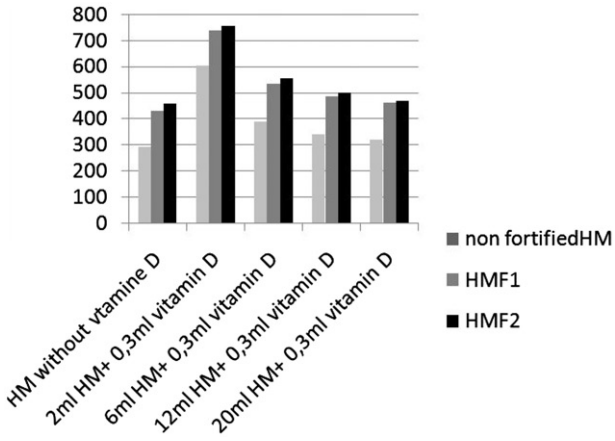

Figure 1. Osmolality (mosm/kg H2O) of human milk with or without different process of fortification unfortified milk (HM), HM with a 4% human milk fortified (HMF) containing whole protein, dextrin and mineral (suppletine, milupafrench) and 0.5% of a exclusively whole protein fortified (HMF 1) and anotherone with 4% HMF and 0.5% of a exclusively whole protein fortified (HFM2). Different volume (2, 6, 12 and 20) of each HM was added with vitamin D (0.3ml).

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Breastfeeding support on the tendencies of breastfeeding rates in the hospital Estadual da Mâe - Baixada Fluminense - Rio de Janeiro - RJ, Brazil in 2015

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Introduction: Breast feeding is fundamental for the babýs health. Today, it is advised to discharge patients on a regime of exclusive breast feeding. The Hospital Estadual da Mãe has this policy with all the women, including the vaginal births and the cesarean section, 6688 in 2015, with a 24% of cesarean rate.
Materials and methods: A special team, called ''Breast Feeding Support and Incentive Commission - Mesquista Regional Complex - Maternity and Womeńs Clinics'', including obstetrician, nurses, physiotherapist, nutritionist, pediatrician, phonologist and psychologist was constituted to support the patients that have delivered in the Hospital Estadual da Mãe, Mesquista, Rio de Janeiro, RJ, Brazil. The place is a very large one, with 3 500 000 inhabitants and 11 counties. The maternity is reference for low risk pregnancy and has 70 beds for mothers and 8 intermediate neonatal care. The exclusive breast feeding rate is assessed at different moments with different populations: at the discharge, at the return 6 weeks later (from the group of our inner patients and outer ones, with and without prenatal care). There is some exclusion criteria such as fetal death, abortions and HIV positive patients.
Clinical cases and summary results: In the group of hospital discharge, the exclusive breast feeding rate was 98.93%, although only 78.97% had joined the discharge group, when they receive the final instructions. In this same group when they came back 6 weeks after birth, the rate was 88.16% if they were cared in our hospital during the prenatal period.
Conclusion: A multiprofessional team was able to support and encourage exclusive breastfeeeding in almost all the patients, a fundamental starting point to keep breastfeeding for at least 6 weeks.

Keywords: Breastfeeding, Perinatal Nutrition

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Impact of probiotic treatment on breast milk jaundice

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Introduction: Breast milk jaundice (BMJ) is the most common cause of prolonged jaundice and develops in 2-15% of all newborns. Many theories concerning its pathogenesis have been formed, however mechanisms leading to BMJ have not been yet fully understood. There are no treatment options for BMJ, thus it continues to be a concerning situation for both families and pediatricians. Recent studies have suggested that breast milk microbial content and infantile intestinal flora may play a role in development of BMJ. Aim of this study is to investigate the relationship between BMJ and microorganisms in breast milk and infantile gut, and the impact of probiotic treatment on jaundice.
Materials and methods: This study includes term and near-term babies who applied to Uludağ University Neonatology outpatient clinic with prolonged jaundice and diagnosed as breast milk jaundice, and is designed randomized and prospectively. With 77 babies with breast milk jaundice and 35 healty babies as control group, a total of 112 babies are enrolled in the study. Probiotic treatment was applied to 37 of jaundice patients for a week. Quantitative DNA measurement of *Lactobacillus rhamnosus*, *Lactobacillus gasseri, Lactobacillus plantorum*, *Bifidobacterium longum*, *Bifidobacterium bifidum* and *Bifidobacterium* adolescentis species was performed in breast milk and fecal samples of all patients at application and once more in fecal samples of patients with jaundice a week later. Breast milk and fecal microbial content, impact of probiotic treatmet on breast milk and fecal microbial content, bilirubin levels, rate of decline in bilirubin levels, weight gain and fecal microbial content was compared among groups.
Clinical cases and summary results: Patients with breast milk jaundice had significiantly lower amounts of *L. rhamnosus, L. gasseri, L. plantorum, B. longum* and *B. bifidum* in breast milk as well as significantly lower amounts of *L. gasseri, L. plantorum* and *B. bifidum* in fecal samples compared to control group (p=0.05). Additionally, time for resolution of jaundice was significantly shorter in probiotic treatment group (p<0.05). Weight gain was also significantly higher in probiotic group.
Conclusion: There is growing evidence that breast milk microbial content and infantile intestinal flora may play a role in development of jaundice. Reduced amounts of breast milk and fecal probiotic bacteries in patients with jaundice, and reducing effect of probiotics on bilirubin levels and duration suggest that probiotic replacement may be a treatment option for babies with breast milk jaundice. Further investigation is required for determination of ideal content, treatment duraiton and dose of probiotics in breast milk jaundice.

Keywords: Breast milk jaundice, probiotic

Impact of breast milk microbial content and infantile intestinal flora on development of breast milk jaundice

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Introduction: Breast milk jaundice (BMJ) is the most common cause of prolonged jaundice and develops in 2-15% of all newborns. Many theories concerning its pathogenesis have been formed, however mechanisms leading to BMJ have not been yet fully understood. There are no treatment options for BMJ, thus it continues to be a concerning situation for both families and pediatricians. Recent studies have suggested that breast milk microbial content and infantile intestinal flora may play a role in development of BMJ. Aim of this study is to investigate the relationship between BMJ and microorganisms in breast milk and infantile gut.
Materials and methods: This study includes term and near-term babies who applied to Uludağ University Neonatology outpatient clinic with prolonged jaundice and diagnosed as breast milk jaundice, and is designed randomized and prospectively. With 77 babies with breast milk jaundice and 35 healty babies as control group, a total of 112 babies are enrolled in the study. Quantitative DNA measurement of Lactobacillus rhamnosus, Lactobacillus gasseri, Lactobacillus plantorum, Bifidobacterium longum, Bifidobacterium bifidum and Bifidobacterium adolescentis species was performed with real time-PCR in breast milk and fecal samples of all cases. Relationship between breast milk-fecal microbial content and bilirubin levels was investigated among groups.
Clinical cases and summary results: Patients with breast milk jaundice had significiantly lower amounts of L. rhamnosus, L. gasseri, L. plantorum, B. longum and B. bifidum in breast milk as well as significantly lower amounts of L. gasseri, L. plantorum and B. bifidum in fecal samples compared to control group ($p<0.05$).
Conclusion: There is growing evidence that breast milk microbial content and infantile intestinal flora may play a role in development of jaundice. Reduced amounts of breast milk and fecal probiotic bacteries in patients with jaundice suggest that probiotic replacement may be a treatment option for babies with breast milk jaundice.

Keywords: Breast milk, jaundice

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The effect of reflexology to lactation hormones in early period of postpartum

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Introduction: Breastfeeding is the most appropriate method for the healthy growth and development of the infants. Lactation is the process of making breast milk. In this process, hormones are thought to be effective. We aimed to look at the state and continuous anxiety levels with oxytocin, prolactin, and noradrenalin levels in order to examine the effect of reflexology, which is performed on hypophysis and reproductive organs and lumbosacral area in the early postpartum period, on the lactation hormones.
Materials and methods: This study was conducted at Celal Bayar University Health High School and Hafsa Sultan Hospital Ward of Obstetrics and Gynecology. A questionnaire form comprising the information about the sociodemographic, pregnancy and delivery backgrounds and State and Trait Anxiety Scale were applied to the control group comprising 30 people and the reflexology applied group comprising 60 people (hypophysis and reproductive organs in the 1st group and lumbosacral in the 2nd group) and prolactin, oxytocin and noradrenalin levels in the collected blood of these groups were measured using Elisa method.
Clinical cases and summary results: There was not any statistically significant difference between the experimental groups 1 and 2 and the control group in terms of sociodemographic, fertility features, body mass index and visual analog scale ($p<0.05$). In group 1 and 2 had a statistically significant increase in their oxytocin and prolactin levels when compared to the control group. Noradrenalin levels statistically decreased in the group 1, but increased in the group 2 when compared to the control group. While there was not any difference between the experimental group 1 and 2 and the control group in terms of state anxiety scale score average, there was a statistical difference in the continuous anxiety scale score average ($p<0.05$).
Conclusion: Since regularly made reflexology will increase the hormones affecting lactation, there will be no need for nutritional supplements for the development of the infant, breast milk alone will be sufficient. Thus, healthier individuals will grow.

Keywords: Postpartum Period, Reflexology, Oxytocin, Prolactin, Noradrenalin

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Effect of fortification on the osmolality of artificial milk

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Introduction: To evaluate osmolarity of different infant milk formula before and after the supplementation of Dextrin maltose, Dextrose solution and EOPROTINE®, at different concentrations.
Materials and methods: We underwent an experimental study within the department of intensive care and Neonatal Medicine Teaching hospital of Monastir. Therefore, Osmolarity was calculated on different artificial milks formula fortified separately by EOPROTINE®, 10% Dextrose solutions and maltodextrin at different concentrations (1% to 6%). Osmolarity analysis were done in the Laboratory of Pharmaceutics of the University of Pharmacy of Monastir
Clinical cases and summary results: The study of the osmolarity was performed on 384 samples. Powder capacity of measuring spoon showed an excessive percentage which varied between 1.15 and 34.1%. The different infant milk formula had different osmolarities according to the nature and concentration of the supplement. Some brands of milk exceeded 400 mOsmol/l at addition of EOPROTINE® or maltose dextrin and all of them had exceeded this threshold value at the addition of Dextrose solution and for some types of infant milk formula even at low concentrations.

Conclusion: Taking in account of osmolarity schedule during the artificial milk supplementation is essential to prevent digestive disorders for newborns.

Keywords: Newborn, enteral feeding, infant formula, fortified milk, osmolarity

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Importance of breastfeeding interms of public health

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Introduction: Supporting the process of breastfeeding is emphasized to be a necessary public health priority by the policies determined by the 2012 American Academy of Pediatrics (AAP). In addition, medical studies support health benefits of breastmilk and community programs. With the development of the social consciousness, breastfeeding is no longer perceived as just a form of nutrition for newborn. However, breastfeeding continuesto be a public health issue that needs to be solved.To identify significant threats to public health and to plan goals to reduce those threats, Healty People Initiative was organized at the national level for health promotion and for prevention of dieseases.
Materials and methods: Healthy People 2020 Breastfeeding Goals be with the 2010 goals with regard to the improvement of public health. The American Public Health Association (APHA) on the basis of scientific evidences agree that human milk is the best food for all infants. In this context, some obstacles for breastfeeding are reported to be. The continuation of breastfeeding is seen as of important preventive health measure. It is accepted that not breastfeeding has health risks including chronic diseases for both them other and the infant. However, promotion of the use of Formula instead of breastmilk in the media threatens breastfeeding. The media also states that breastfeeding is not supported in a continuous and a ccurate way.
Clinical cases and summary results: APHA recommends health care professionals, researchers and politicians all over the world that breastfeeding should be considered as one of the issues of public health. Investments with regard to support breastfeeding women will improve their quality of life and lead to the reduction of acute and chronic diseases in children. In making investments in the field of public health, in the short term there might be a scarcity of economic resources but in the long term it is certain that there will be potential financial gains of these investments.
Conclusion: Routine and preventive visits made at an early time by doctors working in primary care are noted to increase breastfeeding. Home visits made by midwives and nurses are also stated to increase breastfeeding initiation rates. In this context, it is possible to say that breastfeeding has an an indispensable importance in terms of public health and should be among public health priorities that must be accomplished.

Keywords: Breastfeeding, public health

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Breastfeeding and maternal educational level: presentation of the current trend in the neonatal intensive care unit (NICU) of Archibishop Makarios III Hospital.

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Introduction: The objective of the study was the recording of the breastfeeding rates in infants hospitalized in the Neonatal Intensive Care Unit (NICU) during the period March 2013-March 2014 and the capture of the trend in relation to the educational level of their mothers. Our NICU hosts all hospitalized preterm neonates nationwide.
Materials and methods: The study lasted for the period March 2013-March 2014 and involved 531 infants. The data collection was done by filling out standardized questionnaires which were completed by the researcher in collaboration with parents. The educational level of mothers was recorded as follows: elementary-school graduate mothers(M1), high school graduates (M2) ,College-University graduates (M3). The educational level of the mother was associated with the administration exclusively of breast milk, mixed feeding and exclusively formula milk for premature neonates.
Clinical cases and summary results: Data from 531/640 hospitalized neonates 83% were collected. 312 male (54.60%) and 259 female neonates (45.40%) were included. The educational level of mothers was: M1 n: 67 (10,5%), M2 n: 210 32,8%, M3 281 43,9%. The analysis showed:

(I) Breastmilk 120/531, M1 9/67, M2 41/201, M3 70/263
(II) Formula milk for premature neonates 148/531, M1 28/67, M2 62/201, M3 56/263
(III) Mixed nutrition 263/531, M1 28 / 67, M2 98/201, M3 137/263

Mothers in M1 group give their babies exclusively breast milk in extremely low degree. Mothers M2 give exclusively breast milk more than the mothers M1 but less than M3. M3 mothers have the highest rates of exclusive breast milk delivery (p=0,001) while clearly there is a larger percentage of the choice of a mixed diet versus exclusive administration of formula than in the other groups of mothers.
Conclusion: The prevailing trend in our NICU is an increase in the exclusive administration of breastmilk in neonates born to mothers with a higher educational level.

Keywords: Breast milk, mother, education

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Effect of feeding protocol on gastroschisis neonatal outcome

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Introduction: Various factors predicting neonatal outcome of gastroschisis are reported in the literature. Sonographic predictors (bowel thickness and dilatation) and surgery procedures are the main factors discussed because they may reflect bowel damages. There is a controversy regarding which factors most accurately predict neonatal outcomes and feeding strategy was rarely investigated. We aim to assess the benefit of a feeding protocol specifically designed for gastroschisis, irrespective of ultrasound risk factors and surgical procedures.
Materials and methods: Data from patients with gastroschisis born between January 2008 and December 2015 in a single institution were prospectively collected. Prenatal sonographic data collected were bowel or gastric dilatation, bowel wall thickness, peristaltism and oligoamnios. Feeding protocol consisted in minimal enteral feeding (1 ml of breast milk administered as hourly bolus) for at least five days initiated five days after bowel reintegration. Feeding amount was increased 12 to 24 ml/kg per day according to feed tolerance until full feeding. This was coupled with the stimulation of transit by enema. The main outcome was the duration of parenteral nutrition (PN).
Clinical cases and summary results: Forty-four patients were included with median gestational age of 35.9 weeks (31.3-37.3) and median birth weight of 2462 g (1285-3200). 20.5% had growth restriction and 25% had at least one ultrasound predictor of adverse outcome. None infant died. Perivisceritis was present in 38.6% of patients. 79.5% had primary closure, 20.5% had a silo. Four infants had a stoma. First stools were at median age 5 days (2-17). Total PN lasted 28.5 days (18-94 days). Length of hospitalization was 43.5 days (27-108 days). In univariate analysis, factors associated with PN duration of more than one month were birth weight < 2500g (p=0.01), perivisceritis (p=0.05) and surgery (p=0.01). In multivariate analysis, only birth weight was significantly associated with PN duration of more than one month (OR 4.4 (1.1-18.4), p=0.03).
Conclusion: Neither antenatal factors linked to adverse outcome nor surgical procedures influence PN duration in neonates when using this specific nutrition protocol. Only birth weight seemed to be associated with longer PN duration. A large prospective study is needed to confirm the benefit of this feeding protocol.

Keywords: Gastroschisis, outcomes, enteral feeding, parenteral nutrition

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Postnatal growth rate in preterm infants hospitalized in NICU

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Introduction: The aim of this study was to interprete postnatal growth rate of preterm infants, in dependancy of gestational age, condition at the birth, initiation of enteral feeding, respiratory support, duration of parenteral nutrition and types of enteral feeding (mother milk with fortification or preterm formula).
Materials and methods: Postnatal growth was analyzed in 100 preterm infants hospitalized in NICU: GW7 days (168 hours) and were free of major congenital anomalies. Standard statistical methods were used.
Clinical cases and summary results: Average time of achiving full enteral feeding in infants <28GW was 25,0 days (21,0-29,5), in infants 29-32 weeks 12,0 days (9,0-21), and in infants 33-36 GW 11,0 days (8,0-14). At time of discharge 26,7% infants with GA <28 weeks had body weight <5p. Birth weight of infants with APGAR score <5 was statistically lower at 14. day (p <0,05) and 28. postnatal day (p <0,05). In infants with initiation of enteral feeding within first 3 days, body weight was statistically higher at 14. day, 28. day and at discharge comparing with infants with initiation of enteral feeding after 3 days. In infants with less tolerance of enteral feeding, including NEC, body weight at 14. day was signifiucantly lower (p <0,05) at 28. day (p <0,05) and at discharge (p <0,01). Duration of respiratory support is shown to be associated with postanatal growth rate at 14. day (p <0,05) and 28. day after birth (p <0,01), without significant diferrence at time of discharge. Infants fed with mother milk with fortification had higher body weight at time of discharge (p <0,01) comparing with those fed with infant formula.
Conclusion: Postnatal growth rate of preterm infants depends not only of conditions affecting growth but also nutritional management practice. Achiving optimal postnatal growth rate is very important, since it improve long term outcome of preterm infants.

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The relationship between vitamin d levels and the nausea and vomiting of pregnancy

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Gazi University, Department of Obstetrics and Gynecology

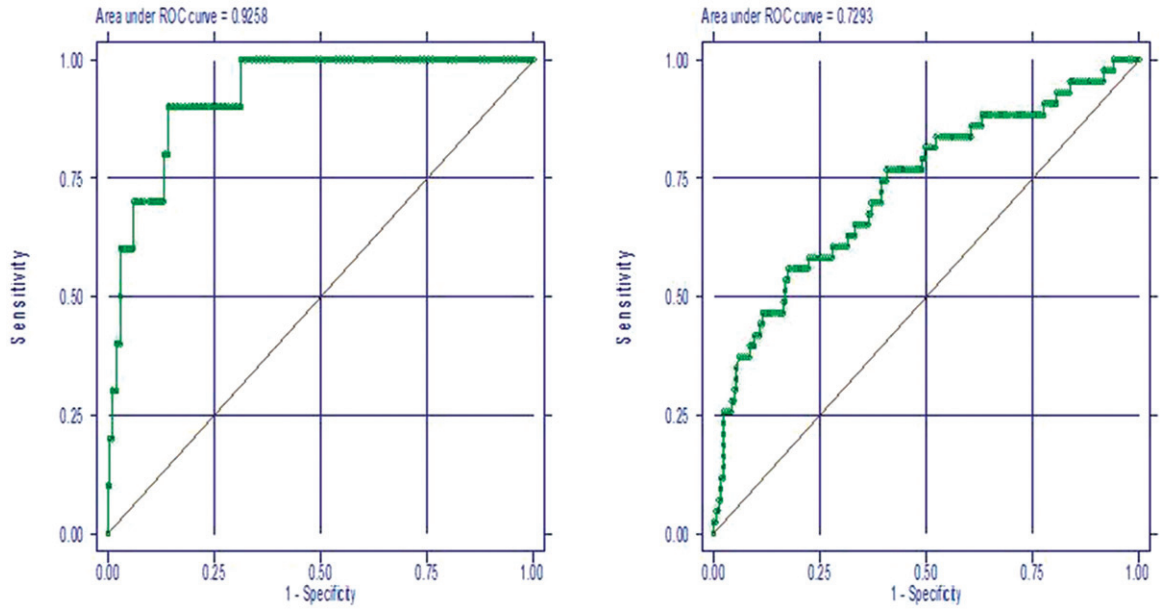
Presenter: **M.A. Ozek**

Introduction: Nausea and vomiting of pregnancy; and hyperemesis gravidarum (HG), is seen commonly and typically in the first trimester of the pregnancy. The physical and psychological burden of these symptoms can be so high. It constitutes much of the first trimester hospital admissions. There is evidence for a link between vitamin D availability and the prevalence of immune mediated diseases, especially inflammatory bowel disease (IBD). It has been shown that, in VDR knock-out mice, pathogenic T cells contributed to the development of gastrointestinal inflammation. In this study, we aimed to reveal the relationship between low vitamin D levels and severe cases of nausea and vomitting of pregnancy and hyperemesis gravidarum.
Materials and methods: Two hundred patients whom admitted with complaints of newly onset nausea and vomiting in pregnancy, between 1st of June and 30th of November 2015 were enrolled. The history of vomiting was evaluated with the 'Pregnancy Unique Quantification of Emesis Scoring System (PUQE) and participants were divided into two groups, mild and moderate/severe disease. Factors that has been proven to alter vitamin D levels, such as skin type and dressing habits, has also been questioned whether they have a significant relationship with PUQE scores. Maternal serum vitamin D levels are obtained. Cases were classified according to their serum vitamin D levels; normal (>30 ng/mL), deficient (10-30 ng/mL) and severe deficient (<10 ng/mL).
Clinical cases and summary results: Mean age of the participants was 28,5 (18-42). 47,5% (n: 95) had veiling habits. 37% (n: 74) had darker skin. According to PUQE; 147 patients (73,5%) had moderate/high

Results

Oleic acid ROC for the whole population; n=7/296

ROC at 34 weeks = 0•926; n = 9/287, (p<0•000), term = 0•729 (p<0•000)



Change in fatty acid profile
Biomagnification of SFA

	Recruit (R)	n=139	Delivery (D)	n=82	Cord(C)	n=58
	Mean	± SD	Mean	± SD	Mean	± SD
Saturates	40·3	± 1·89	42·3	± 3·40	49.2	± 4.99^^^***
Mufa	19·1	± 2·25	20·50	± 2·32	15·4	± 1·62^^^***
ω6	29·9	± 2·56	27·4	± 3·35	25·5	± 4·54^^^*
ω6LC	16·5	± 2·05	14·74	± 2·76	21·0	± 4·54^^^***
ω3	7·48	± 1·62	6·42	± 1·76	5·89	± 1·51^^^
ω3LC	7·11	± 1·59	6·16	± 1·70	5·80	± 1·53^^^
AA/DHA	2·76	± 0·75	2·76	± 0·74	3·22	± 0·73^^^***
22:5ω6/22:4ω6	0·15	± 0·06	0·22	± 0·06	0·32	± 0·10^^^***
ω6/ω3	4·19	± 0·99	4·66	± 1·65	4·51	± 0·99
ω6LC/ω3LC	2·43	± 0·60	2·55	± 0·71	3·74	± 0·81^^^***
Omega3 Index	5·40	± 1·39	4·66	± 1·35	5·16	± 1·44

scores. Only 4% of the cases had normal serum vitamin D levels whereas 68% was vitamin D deficient, 28% had severe vitamin D deficiency. Among moderate/high PUQE score group, median serum vitamin D level was significantly lower. It was observed that; cases with veiling habits and darker skin had significantly higher PUQE scores. The median PUQE scores of the women with veiling habits was 9 (5-13) compared with 7 (3-10) in cases without veiling habits. The fair-skinned group had median PUQE score of 7 (4-9) since it was 9 (6-12) for the darker-skinned population.

Conclusion: The lower vitamin D levels and the higher PUQE scores did show a statistically significant relationship. The risk factors related with vitamin D deficiency in previous studies, such as covered-dressing habits and the darker-skin types, also had a significant relationship with higher PUQE scores. We are in the opinion that, much earlier prophylactic vitamin D supplementation in the high risk group, could prevent or alleviate nausea and vomiting of pregnancy and HG.

Keywords: Vitamin D, deficiency, pregnancy, nausea, vomiting, hyperemesis gravidarum

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Monounsaturated fatty acids in early pregnancy and preterm birth

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Presenter: **Enitan OGUNDIPE**

Introduction: With respect to preterm labour, many trials on supplementation of fatty acids have focused on docosahexaenoic acid (DHA), an omega-3 fatty acid (ω-3 FA), with supplementation during pregnancy linked to increased gestation and birth weight. Recent meta-analysis refuted the above. However, does not dispute the demand for long chain super-unsaturated FAs for brain growth. Most fetal neurogenesis occurs early with neurons in place to migrate to form the cortex by the time of first antenatal visit.
Materials and methods: 300 pregnant women in high risk pregnancies were randomised blindly to receive 'fish oil' supplement or placebo from early in pregnancy.
Erythrocyte total lipids were extracted by the Folch method at 3 time points, recruitment, delivery and cord blood. Fatty acids composition were analysed by capillary gas chromatography. The fatty acid profiles were correlated to the pregnancy and infant outcomes.
Clinical cases and summary results: Oleic acid and mono-unsaturated fatty acids (MUFA) levels at recruitment predicted preterm birth at 34 and 30 weeks and low birthweight. AA and DHA sum correlated with: birthweight (r=0.286, p< 0.000); birthweight below 3,200g (r= 0.467 p<0.000) and gestational age (r=0.383, p<0.000). Lipid profile changes from recruitment to delivery and cord blood showed significant bio-magnification of saturated fatty acids (SFA) (16.0 and 18.0) from mother to fetus and converse with MUFAs
Conclusion: We report novel and unexpected findings that significantly impact our knowledge of nutrition at conception and early pregnancy,
The impact on birthweight, gestational age and fatty acid biology understanding are shown. Oleic acid and MUFA at recruitment predicts adverse pregnancy outcome. Biomagnification of SFA correlated to pregnancy outcomes. The sum of PUFAs; AA and DHA were predictive of pregnancy outcomes. Hence 'tissue is the issue' and FA profiles appear more important in prediction.

Keywords: Preterm birth, monounsaturated fatty acids, pregnancy outcomes, fish oil

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Limited amount of formula may facilitate breastfeeding - a randomized controlled trial

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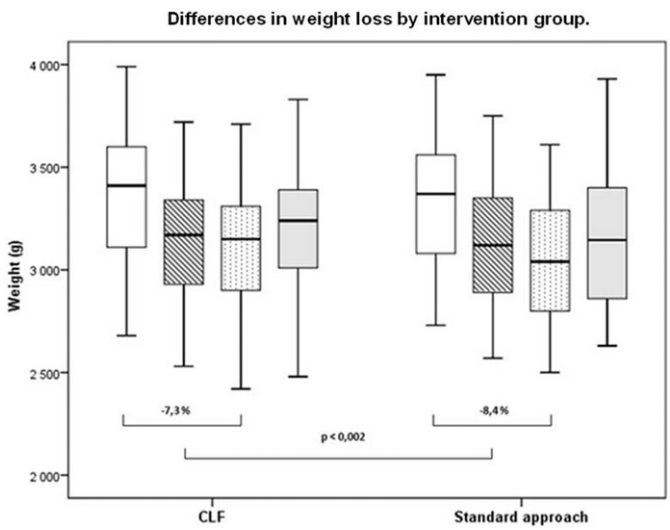
Presenter: **Simona Feyereislová**

Introduction: Breastfeeding is known to reduce infant morbidity and improve well-being. Nevertheless, breastfeeding rates remain low despite public health efforts. Our study aims to investigate the effect of controlled limited formula usage during birth hospitalisation on breastfeeding, using the primary hypothesis that early limited formula feeds in infants with early weight loss will not adversely affect the rate of exclusive or any breastfeeding as measured at discharge, 3 and 6 months of the infants' age.
Materials and methods: We randomly assigned 104 newborns, 24 to 48 hours old, with ≥5% loss of birth weight to controlled limited formula (CLF) intervention (10 ml formula by syringe after each breastfeeding, discontinued at onset of lactation) or control group (standard approach - exclusive breastfeeding unless supplemental feeds were indicated, SA). Only healthy, singleton, appropriate for gestational age (AGA) term neonates, born after uncomplicated pregnancy and delivery, who had no severe congenital defects were enrolled. All participating mothers were educated by a specialised nurse regarding breastfeeding and planned to breastfeed over long term. Groups were compared for demographic data and breastfeeding rates at discharge, 3 months and 6 months of age (p-values adjusted for multiple testing).
Clinical cases and summary results: Fifty newborns were analysed in CLF and 50 in SA group. There were no differences in demographic data or clinical characteristics between the groups. We found no evidence of difference between treatment groups in the rates of exclusive as well as any breastfeeding at discharge (p-value 0.2 and >0.99 respectively), 3 months (p-value 0.12 and 0.10) and 6 months (p-value 0.45 and 0.34 respectively) of infants' age. The rates of exclusive breastfeeding at discharge, 3 and 6 months of age were not affected by the mode of delivery (vaginal versus cesarean section) or presence/absence of skin to skin contact in delivery room. The percentage weight loss during hospitalisation was significantly higher in the SA group (7.3% in CLF group, 8.4% in SA group, p = 0.002).
Conclusion: The study shows that controlled limited formula use does not have an adverse effect on rates of breastfeeding in the short and long term. Larger studies are needed to confirm a possible potential in controlled limited formula use to support establishing breastfeeding and to help to improve the rates of breastfeeding overall.

Keywords: Breastfeeding, controlled limited formula feeding, newborn



Breastfeeding rates by study group
P-values adjusted for multiple testing using Bonferroni correction

	Controlled and limited formula (Intervention group, n=50)	Standard approach (Control group, n=50)	P-value	Adjusted p-value	Odds ratio	95% Confidence Interval
Exclusive breastfeeding at discharge, n (%)	49 (98)	44 (88)	0.11	0.22	6.68	0.77-57.69
Breastfeeding at discharge, n (%)	50 (100)	49 (98)	>0.99	>0.99	Not applicable	Not applicable
Exclusive breastfeeding at 3 months, n (%)	42 (84)	34 (68)	0.06	0.12	2.47	0.94-6.46
Breastfeeding at 3 months, n (%)	46 (92)	39 (78)	0.05	0.10	3.24	0.96-11.00
Exclusive breastfeeding at 6 months, n (%)	32 (64)	26 (52)	0.22	0.45	1.64	0.74-3.66
Breastfeeding at 6 months, n (%)	40 (80)	34 (68)	0.17	0.34	1.88	0.76-4.69

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Body composition and hormonal status at term equivalent age in preterm infants of small and appropriate weight for gestational age

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Presenter: **I. Belyaeva**

Introduction: SGA preterm infants are likely to suffer from the high risk of body composition abnormalities in case of not optimal nutrition that may cause in the high risk for hypertonia, heart diseases and interconnected mortality, type 2 diabetes mellitus and obesity at adult age. The study aim was to estimate body composition and growth hormones of preterm infants of small- (SGA) and appropriate gestational age (AGA) at term equivalent age (38-42 weeks PCA).
Materials and methods: In the prospective study there was included: a) 140 newborn preterm AGA (birth weight from 10th and 90th percentile of the standardized growth scale) infants; b) 28 SGA (birth weight < 10th percentile) infants. Growth hormones (insulin, insulin-like growth factor-1 (IGF-1), somatotrophic hormone, C-peptide, cortisol) and body composition of preterm infants were estimated by air plethysmography at term equivalent age.
Clinical cases and summary results: SGA preterm infants had less length and body weight and Z-score in comparison with AGA preterm infants ($p<0,01$) in term equivalent age. Significant differences between head circumference in SGA and AGA infants at the term gestational age were not found. Estimated of body composition components showed equivalently high fat mass concentration (Fat mass, kg, %) in both groups of preterm infants. Higher concentration of insulin, IGF-1, C-peptide and cortisol in the blood sample was noted in SGA preterm infants ($p<0,001$). Moreover, SGA preterm infants had less concentration of somatotropin hormone having counterinsular and anabolic action in the blood sample comparing to AGA preterm infants ($p<0,001$).
Conclusion: In the neonatal period, plastic processes happening against early beginning of "aggressive" nutrition in both SGA and AGA preterm infants is characterized by the clear trend to strengthening adiponeogenesis.

Keywords: Preterm infants, nutrition, body composition, SGA

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Can mothers beyond one year of lactation be donors of human milk for premature infants

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Presenter: **Urszula Bernatowicz-Łojko**

Introduction: The percentage of preterm infants - beneficiaries of the Human Milk Bank of Ludwik Rydygier's Provincial Polyclinical Hospital in Torun is 75% on average. The donors are usually women in the first year after delivery on time, or mothers of premature infants. In the Kuyavian- Pomeranian Voivodeship the percentage of women breastfeeding till 16-24 months after delivery is 5%. We decided to find out if their milk is also valuable for preemies.
Materials and methods: We have analysed the macronutrients and energy contents in 132 samples of expressed milk from 21 preemies' mothers, 96 samples from 12 term infants' mothers in the first 2-6 weeks of lactation, and 144 samples from 30 mothers beyond one year of lactation. We compared the results concerning fat, total nitrogen, carbohydrates and energy contents, using a human milk analyser (MIRIS).
Clinical cases and summary results: Our results showed that concentration of fat in milk samples from compared groups was significantly different. Amount of fat in milk samples from mothers over one year of lactation was higher than in milk samples from preterm infants' mothers (5.36 vs. 3.98 g/dL) or term mothers' (5.36 vs. 3.98 g/dL). Total nitrogen concentration significantly varied among compared groups. Total nitrogen content in term infants' mothers' milk was significantly lower than in preterm infants' mothers' milk (1.22 vs. 1.72 g.dL) and from mothers over one year of lactation (1.22 vs. 1.71 g/dL). In case of energy contents we also observed significant differences among compared groups. The energy contents in milk samples from mothers over one year of lactation was significantly higher than in both other groups - preterm infants' mothers (82.41 vs. 70.13 kcal) and term infants' mothers (82.41 vs. 61.59 kcal). Carbohydrates content showed no significant differences between all analyzed groups.
Conclusion: The results allow to conclude, that women beyond one year of lactation shouldn't be rejected as donors because the macronutrient value of their milk is appropriate to the needs of premature infants. In addition, our results highlight the value of breastfeeding for as long as World Health Organization recommend. It is desirable to conduct further research to evaluate bioactive content in milk obtained from such a subgroup of donors.

Keywords: Donor's milk, premature, human milk, nutrition

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Exploring the link between maternal dietary protein intake and the metabolomic profile of second trimester amniotic fluid

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Presenter: **A.P. Athanasiadis**

Introduction: The aim of the present study was to examine the link between maternal habitual dietary protein intake and second trimester amniotic fluid (AF) metabolomic profile.
Materials and methods: Sixty-five women, undergoing second trimester amniocentesis for prenatal diagnosis, participated in the study. Dietary assessment was carried out using a semi-quantitative food frequency questionnaire. Hierarchical cluster analysis was used to identify homogenous groups of women on the basis of habitual protein intake. A holistic NMR metabolomics approach was applied using the CPMG pulse sequence to suppress protein signals. NMR spectra were phase and baseline corrected, reduced into spectral buckets of 0.0001 ppm and aligned using the MestReNova software. Multivariate data analysis was performed with the SIMCA-P 14.0 software. S-line plots pinpointed the important metabolites for sample classification. External data set, permutation testing, and ROC curves validated the OPLS-DA models.
Clinical cases and summary results: A 2-group interpretable and statistically significant clustering of participants was identified and characterized on the basis of protein intake (% of energy intake) from different food groups. A total of 29 women were in cluster 1 (C1) and 36 in cluster 2 (C2). C1 was characterized by a significantly higher energy contribution from sweets and confectionery proteins, while C2 had a higher energy contribution from meat/meat products, whole milk, and yellow cheeses proteins. The implementation of Chemometrics on the AF NMR spectral data allowed the identification of metabolites associated with different protein intake. Specifically, NMR data indicated that AF specimens of women in C2 were characterized by increased creatine, histidine, and branched-chain amino acids concentrations.
Conclusion: The data presented in this study suggest that maternal habitual dietary protein intake may be reflected in the AF metabolomic profile.
This research has been co-financed by the European Union (European Social Fund - ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: Thales. Investing in knowledge society through the European Social Fund.

Keywords: Amniotic fluid, maternal habitual dietary protein intake, metabolomics

PREECLAMPSIA - 026

Preeclampsia and amyloidosis type A

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Introduction: Preeclampsia is defined as the onset of arterial hypertension associated with proteinuria, after 20 weeks of gestation. However, this association can also correspond to a pre-existing renal disease that, if not diagnosed and treated, can progress and worsen. After birth, proteinuria may persist in 30% of cases, in which case it may be an important indicator of underlying renal disease (e.g. membranoproliferative glomerulonephritis, IgA nephropathy, or amyloidosis). Amyloidosis is a rare and progressive disease in which normally soluble proteins are abnormally processed, becoming insoluble and accumulating in several organs (kidney, liver, heart). There are different types, associated with the accumulation of different proteins. The most common is type A amyloidosis, associated with chronic inflammatory or infectious diseases. Renal function is affected in more than 90% of cases. Amyloid A is an acute phase protein, present in the placenta; studies reveal that its levels are increased in preeclampsia, hypothesizing its role in its pathogenesis.
Clinical cases and summary results: Pregnant woman of 28 years old, with a high risk pregnancy due to bicornate uterus. The pregnancy was uneventful until 30 weeks of gestation, when hypertension was diagnosed; it complicated at 34 weeks, with mild preeclampsia. Because of the diagnosis of fetal growth restriction, labor was induced at 36 weeks, with fetal distress motivating a cesarean delivery. Three years later, the woman was diagnosed with chronic arterial hypertension, secondary to renal failure, with proteinuria in the nephrotic range. The renal biopsy showed type A amyloidosis. Nowadays, after five years, the disease has evolved into chronic kidney disease (stage 5), requiring peritoneal dialysis. The results of the genetic study for familial Mediterranean fever are pending.
Conclusion: When preeclampsia is diagnosed, one must be alert to other possible diagnoses, and reassess postpartum.

Keywords: Amyloidosis, preeclampsia

168 (CASE REPORT)

Severe preeclampsia: according to a clinical case

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Introduction: Preeclampsia represents a multi-system disorder characterized by the new onset of hypertension and proteinuria or end-organ dysfunction or both in the last half of pregnancy. Although most affected pregnancies deliver at term or near term with good maternal and fetal outcomes, these pregnancies are at increased risk for maternal and/or fetal serious morbidity and mortality. This disease is estimated to occur in 4.6 percent of pregnancies worldwide, and late onset disease after 34 weeks is more prevalent than early onset before 34 weeks. We describe a representative clinical case of this pathology.

Clinical cases and summary results: A 41 year-old asymptomatic woman, in her second pregnancy at 32 + 5 weeks gestation, is admitted after an incidental finding of intrauterine growth restriction, 1240 grams as fetal weight estimation. she had a history of preeclampsia in her first pregnancy four years ago, with induction of labor at 31 + 3 weeks and cesarian delivery due to risk of loss of fetal wellbeing. During hospitalization, fetal pulmonary maturation with betamethasone was performed. fetal ultrasound monitoring revealed disturbances in doppler velocimetry with an umbilical artery pulsatility index higher than 95th centile, cerebroplacental doppler ratio less than 5th centile, preserving normal ductus venosus. Meanwhile, the patient manifested mild headache and epigastric pain, with blood pressure (bp) maintained around 145/95. on the suspicion of severe preeclampsia disease with maternal general health worsening, it was decided to finish pregnancy, and using cervical ripening ballon at 33 + 2 weeks. peripartum intravenous magnesium sulphate was also administered for fetal and maternal neuroprotection. Unstable fetal presentation during labor was verified, and delivery was performed by cesarean section owing to breech presentation. birth weight 1280 grams.the patient was discharged with thromboprophylaxis and one antihypertensive drug, attaining in 8 days normal bp range.
Conclusion: Severe preeclampsia implies a serious threat to the lives of both mother and fetus. The aims of management should be: confirmation of diagnosis, control of BP, prevention of convulsions and a decision regarding timely delivery balancing neonatal development with maternal risk.

Keywords: Preeclampsia, intrauterine growth restriction, cerebroplacental doppler ratio

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Umbilical arter copeptin level is related to severity of preeclampsia

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Introduction: Since copetin seems a indicator of inflamation, we aimed to measure and compare copeptin levels of maternal venous blood (MVB), umbilical artery (UA) and umbilical vein (UV) copeptin levels in healthy pregnants and in pregnancies with mild and severe preeclampsia.
Materials and methods: Seventy two pregnant women in the third trimester of pregnancy were included into the study. They were divided into three groups: 22 coplicated with mild preeclampsia, 28 coplicated with severe preeclampsia and 22 healthy pregnancies. MVB samples were drawn just before birth. The fetal blood samples were obtained from the UA and UV just after the birth.
Clinical cases and summary results: Copeptin levels in MVB and UV were not significantly different between three groups . But copeptin level in UA was significantly higher in severe preeclampsia group compared with control group.
Conclusion: Maternal copeptin levels seem not related to preeclampsia and its severity. However, UA copeptin level seems related to severity of preeclampsia.

Keywords: Copeptin, preeclampsia

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Biochemical parameters of the first trimester of pregnancy in the early and late preeclampsia

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Introduction: Preeclampsia is a specific disease related to pregnancy with unclear etiopathogenesis. Since it occurs independently from the presence of fetus in the uterus and can occur in the abdominal and of pregnancy, it is assumed that the pathophysiological root of this disorder lies in the abnormalities in the development and maturation of placenta.

Keywords: *Aim of study*: was to determine whether there is a difference in biochemical parameters in serum of the first trimester of pregnancy (between 11 and 14 weeks of gestation) in pregnant women who developed early preeclampsia during the current pregnancy (before 34 weeks of gestation) compared to the late pre-eclampsia (≥34 weeks of gestation) .
Materials and methods: The study included 42 pregnant women whose current pregnancy was diagnosed with preeclampsia and who agreed to participate in the survey. The subjects were divided into two groups: The first group was composed of pregnant women (n = 17) who were diagnosed with early preeclampsia and another group (n = 25) who were diagnosed with late preeclampsia. To all pregnant women between 11 and 14 weeks of gestation were determined specific hsCRP (immunoturbidimetric method), uric acid (enzymatic color test), PAPP-A (modification Resolved Immuno methods), CBC (by flow cytometry), fibrinogen (coagulation method of Clauss-in) and lipid status (standard enzymatic method).
Clinical cases and summary results: Pregnant women in first group had significantly higher values of -hsCRP ($p < 0.05$), uric acid ($p < 0.001$) and triglyceride values ($p < 0.05$), while other women in other group had statistically significantly higher values of PAPP-A ($p < 0.05$). Among other observed parameters there were not noticed statistically significant differences between the observed groups.
Conclusion: The results of this study could indicate a certain degree of differences in the pathophysiological mechanisms of early and late preeclampsia, respectively higher values of hsCRP and uric acid can point that in the early pre-eclampsia there is a greater degree of endothelial activation of mother and a higher level of oxidative stress, while lower values of PAPP-A in early preeclampsia indicate greater damage of placental mechanisms of growth and development .

Keywords: Preeclampsia, biochemical parameters, first trimester of pregnancy

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Preditors of cardiovascular events in pregnant women

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Introduction: Hypertension remains a major cause of morbidity and maternal and fetal mortality. However there is still no universally validated risk score to identify the increased risk of maternofetal event during pregnancy, maternal death or major hypertensive-related complications.
Materials and methods: Prospective and observational study which included 139 pregnant women designed from the Obstetrics appointment to the HT appointment, having done the ambulatory blood pressure monitoring (ABPM), between January 2007 and June 2015. A sub group was submitted a Echocardiographie. The follow-up in pregnancy occured until the child-birth (262 ± 28 days). Events was defined: mother, fetal or neonatal dead, pre-eclampsia, eclampsia, gestational diabetes, prematurity and fetal growth restriction.
Clinical cases and summary results: The study included 139 pregnant women with the age of 32 ± 6 years, 58% with cronic HT, 42% with gestacional HT. In the follow-up, were detected 71 events. In relation to ABPM, Systolic Blood Pressure dipping pattern (SBP): 87 were Dipper (D) and 51 non-Dipper (ND). Comparing D versus ND, the D pattern had statisticaly significant less events (X2, p <0,017). In a Kaplan-Meier analysis of curves survivor free of events, the ND patter was associated with worst curves of survivor free of events (log rank 6.22, p <0,01). When we analysed the echocardiographic data, Eco showed that non dipper patients compared to dipper had an average ratio E / a lower, ratio E / E' higher, greater mass and a greater degree of hypertrophy. The long term follow-up detected four cases of maternal death and major hypertensive-related complications.
Conclusion: The non dipper profile seems to be an important predictor of maternofetal and cardiovascular events. The authors consider that ABPM is a essencial tool for pregnant with HT, because this is the only method available for the analysys of sistolic blood pressure dipping, which seems to be predictive of risk in pregnancy and also is a associated a much more organ lesions.

Keywords: Hypertension in pregnancy, maternofetal event, ambulatory blood pressure monitoring

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Remote prenatal follow-up of patients at risk for gestational hypertensive dissorders: maternal & neonatal outcomes

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Introduction: Gestational hypertensive disorders (GHD) are major contributors to maternal mortality worldwide. In Ziekenhuis Oost-Limburg (Genk, Belgium), an interventional study started in January 2015 to evaluate the relevance of a remote monitoring (RM) program for women at risk for developing GHD. RM is a relatively new approach that broadly can be defined as the application of telecommunication technologies in interchanging medical data, information and service between healthcare providers and patients.
Materials and methods: A retrospective study was conducted in 44 pregnant women who developed GHD and had a RM prenatal follow up. They sent twice daily blood pressure measurements and once daily weight measurements to our Clinical Call Center. Those patients were compared with 98 patients with confirmed GHD in routine care (RC). The inclusion period started at the first of January 2015 and ended 31 December 2015. All the interchanged data were analyzed in detail. Primary endpoints were: number of prenatal consultations and Maternal Intensive Care (MIC) admissions. Secondary endpoints were: maternal and neonatal outcomes. SPSS was used for statistical analysis.
Clinical cases and summary results: Between the two groups, there is no difference in maternal demographics, gestational age at the first prenatal visit, the total number of prenatal visits, CTG's and echo's during pregnancy, or amount of days admitted to the MIC. In RM versus RC, the total number of MIC admissions (29% versus 74%, $p<0.01$) and the number of birthing admissions to the MIC (18% versus 64%, $p<0.01$) were lower. Maternal and neonatal outcomes were not different for gestational age at delivery, birthweight, birthweight percentile, length, Apgar at 1 minute or at 5 minutes and pH arterial or venous. In RM versus RC, the number of spontaneous deliveries is higher (47% versus 27%, p= 0.01) and the number of admissions to the NIC was lower (11.3% versus 29.2%, p= 0.02).
Conclusion: RM is useful to detect GHD in pregnant women at home. A lower number of admissions to the MIC and NIC departments is shown of RM patients. These results invite to further explore clinical- and cost-effectiveness of RM in prenatal care for women at risk for GHD.

Keywords: Gestational hypertensive dissorders, preeclampsia, remote monitoring

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Diagnostic value of ceruloplasmin and antioxidative enzymes in pre-eclampsia

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Introduction: Oxidative stress and the generation of reactive oxygen species (ROS) have been implicated in a pathophysiological processes in variety of diseases including pre-eclampsia.The objective of our

study was to evaluate diagnostic value of ceruloplasmin together with other enzymatic and non-enzymatic antioxidants (Cu, Zn-Superoxide dismutase (SOD-1), glutathione peroxidase GSH-Px) and uric acid) and to evaluate the level of oxidative stress in patients with pre-eclampsia and compare it with normal pregnancy.
Materials and methods: In this prospective study, antioxidative markers were investigated in two groups of pregnant women: patients with preeclampsia (n=32) and the healthy pregnant women (n=60). The following anti-oxidative markers were evaluated: serum ceruloplasmin levels, uric acid, SOD-1 and GSH-Px.Serum ceruloplasmin levels were measured by automated immunoturbidimetric assay using Beckman Coulter kits (Galway, Ireland). SOD-1 and GSH-Px activity were measured with RanSOD commercial colorimetric tests (RanSOD, Randox, Ireland).Serum uric acid levels were measured by standardized enzymatic PAP-method with uricase and peroxidase, using commercial Beckman Coulter kits (Galway, Ireland).
Clinical cases and summary results: Serum levels of ceruloplasmin, uric acid and SOD-1 were significantly higher in the PE group compared to the control group (471.2 ± 87.2 vs404.4 ±74.5mg/L, 315.4 ±79.3 versus 219.1 ± 51.4 μmol/L, 29.9 ± 21.8 versus 20.5 ± 14.7 IU/ml respectively, p <0,05). Serum levels of GSH-Px were not significantly higher in the PE group compared to the control group (1000.6 ± 520.9 vs.813.5 ±214.8 IU/L). ROC analysis showed the that serum ceruloplasmin (plot area 0,886) and serum uric acid (plot area 0,855), have the best diagnostic accuracy for PE and are more accurate when compared to antioxidative enzymes SOD-1 (plot area 0,679) and esspecialy more accurate than GSH-Px (plot area 0,504).
Conclusion: Serum ceruloplasmin level may have significant role as the markers of oxidative stress in pre-eclampsia especially when used in combination with uric acid levels.

Keywords: Ceruloplasmin, antioxidative enzymes, preeclampsia

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The global pregnancy collaboration database: a powerful tool for cooperative international preeclampsia research

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Introduction: Preeclampsia is a syndrome, now recognized to be the end stage of multiple patho-etiological processes. Further understanding is difficult to develop because very large datasets are needed for analytical power. To be realistic, they can only be achieved by individual patient data meta-analyses. But inconsistencies between the content and format of different data collections are major impediments. They can be prospectively minimised by the use of a single database format which meets the needs of most researchers but preserves data compatibility between different studies. Here we describe such a database which is available to all researchers interested in using their data in big collaborative preeclampsia studies.
Materials and methods: The database captures data formatted to comply with the minimal and optimal preeclampsia standard datasets specified by Myatt et al (Hypertension 2014,63:1293-301). It is adapted from the well-tested SCOPE database to meet the following criteria:

(1) On-line data input using WiFi, G3 or G4 connections from PCs or tablets.
(2) Highest standards of security and confidentiality
(3) Standard data format for future use in large merged datasets
(4) Generic flexible structure to encompass cohort and case control studies.
(5) Modular structure to allow expansion for specific research interests
(6) Inventory system for sample storage and retrieval
(7) Appropriate for use in low, middle or high income countries.
(8) Low cost
(9) Adaptable to study other pregnancy conditions or for use in clinical trials.

Clinical cases and summary results: The database has been built by MedSciNet (www.medscinet.com) who also provide secure and confidential data storage. The development has been funded by the Bill and Melinda Gates Foundation through the Global Pregnancy Collaboration:
Translation for use in different languages is available at a modest cost. The database is available to low and middle income researchers centres and new investigators at minimal or reduced cost. Users in high income countries will be charged $1200/year .
The data are returned to the owners at the end of the research and remains their own property under their exclusive control.
A service is also available at modest cost to convert existing databases to this format.
Modules are under development for use in studies of other adverse pregnancy outcomes,
Conclusion: The CoLab database is ready to use now. There is no requirement to become involved in collaborative studies but it is hoped that users will discover the advantages and power of the facility to do so. Sharing will be greatly simplified and enhanced by the use of a common database format worldwide.
Enquiries to - Ms. Lee Rager, Project Manager, srager@mwri.magee.edu Phone +1 412-641-1427

Keywords: Preeclampsia, collaborative studies, global database

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Postpartum dexamethasone for women with hellp (hemolysis, elevated liver enzymes, and low)

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Introduction: HELLP ((hemolysis, elevated liver enzymes, and low platelets) syndrome is thought a severe form of preeclampsia. The effectiveness of postpartum dexamethasone treatment has not been clearly demonstrated yet. So this study was undertaken to determine the efectiveness of postpartum dexamethasone treatment in patients with (HELLP) syndrome.
Materials and methods: This prospective, open randomized controlled study was conducted in which 69 women with HELLP syndrome. Women were randomly assigned two groups as treatment or no treatment groups following delivery. The effects of dexamethasone

treatment on laboratory and clinical parameters, maternal morbidity and duration of hospital stay were evaluated.
Clinical cases and summary results: There were 30 women in dexamethasone treatment group while 39 women in no treatment group. Demographic characteristics, clinical and laboratory parameters were similar in two groups at the beginning of the study. There were also no difference in duration of hospitalization and the need for the use of blood products between groups. There were no significant differences between groups for using blood products and antihypertensive drugs and the pattern of of platelet count recovery, aspartate aminotransferase, lactate dehydrogenase, hemoglobin, or diuresis.
Conclusion: Our findings do not support the use of dexamethasone in the postpartum period for recovery of patients with HELLP syndrome.

Keywords: HELLP syndrome,dexamethasone, randomized controlled trial

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Diagnostic value of ceruloplasmin and antioxidative enzymes in pre-eclampsia

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Introduction: Oxidative stress and the generation of reactive oxygen species (ROS) have been implicated in a pathophysiological processes in variety of diseases including pre-eclampsia. The objective of our study was to evaluate diagnostic value of ceruloplasmin together with other enzymatic and non-enzymatic antioxidants (Cu, Zn-Superoxide dismutase (SOD-1), glutathione peroxidase GSH-Px) and uric acid) and to evaluate the level of oxidative stress in patients with pre-eclampsia and compare it with normal pregnancy.
Materials and methods: In this prospective study, antioxidative markers were investigated in two groups of pregnant women: patients with preeclampsia (n=32) and the healthy pregnant women (n=60). The following anti-oxidative markers were evaluated: serum ceruloplasmin levels, uric acid, SOD-1 and GSH-Px. Serum ceruloplasmin levels were measured by automated immunoturbidimetric assay using Beckman Coulter kits (Galway, Ireland). SOD-1 and GSH-Px activity were measured with RanSOD commercial colorimetric tests (RanSOD, Randox, Ireland). Serum uric acid levels were measured by standardized enzymatic PAP-method with uricase and peroxidase, using commercial Beckman Coulter kits (Galway, Ireland).
Clinical cases and summary results: Serum levels of ceruloplasmin, uric acid and SOD-1 were significantly higher in the PE group compared to the control group (471.2 ± 87.2 versus 404.4 ± 74.5mg/L, 315.4 ± 79.3 versus 219.1 ± 51.4 μmol/L, 29.9 ± 21.8 versus 20.5 ± 14.7 IU/ml respectively, p <0,05). Serum levels of GSH-Px were not significantly higher in the PE group compared to the control group (1000.6 ± 520.9 versus 813.5 ± 214.8 IU/L). ROC analysis showed the that serum ceruloplasmin (plot area 0,886) and serum uric acid (plot area 0,855), have the best diagnostic accuracy for PE and are more accurate when compared to antioxidative enzymes SOD-1 (plot area 0.679) and esspecialy more accurate than GSH-Px (plot area 0.504).
Conclusion: Serum ceruloplasmin level may have significant role as the markers of oxidative stress in pre-eclampsia especially when used in combination with uric acid levels.

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Congenital thrombotic thrombocytopenic purpura during pregnancy

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Introduction: Moschcowitz syndrome, also known as thrombotic trombocytopenic purpura (TTP) is a disorder of the blood-coagulation system, in which extensive microscopic clots form in the small vessels throughout the body. Most cases arise from the autoantibodies inhibition of ADAMTS13, a metalloprotease responsible for splitting large multimers of von Willebrand factor. It is a rare condition, affecting women 2-3 times more often than men. Pregnancy is regarded as a predisposing factor for inducing or recurrence of the disease. TTP is a severe, life-threatening disease that needs urgent diagnosis. Preterm delivery and intrauterine fetal demise are frequent complications of TTP.
Clinical cases and summary results: A 34-year-old woman was admitted to Hematology Institute at 21st week of third gestation due to thrombocytopenia and rapidly worsened at 23rd week of gestation. Neurological symptoms, consciousness disorders and memory loss occured. It was followed by the increase of blood pressure, anuria and respiratory failure. Decreasing concentration of platelets (49000), increased LDH 954 and creatinine 269 umol/l was found. US revealed placental abruption with intrauterine fetal demise. Differential diagnosis included HELLP syndrome and TTP - ADAMTS13 concentration was evaluated. Due to a life threatening condition cesarean section and plasmapheresis was performed. Normal platelet count was achieved after 8 plasma exchanges. On the 9th day she developed cardiac and respiratory failure, requiring mechanical ventilation and catecholamine administration. Differential diagnosis included TRALI and fluid overload. Plasmapheresis was implemented again and her condition improved on the 19th day.
Conclusion: TTP was diagnosed basing on clinical presentation and laboratory results. It is a rare disease that can be induced by or reoccur during pregnancy. Differential diagnosis of TTP should include HELLP, preeclampsia and DIC. Decisions regarding treatment should be based on the concentration of ADAMTS13. Undiagnosed TTP may pose a major risk for gestation and the pregnant patient. Plasmapheresis is the treatment of choice, in contrast to contra-indicated transfusion of platelets

Keywords: Thrombotic trombocytopenic purpura (TTP), pregnancy

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Continuous positive airway pressure in the management of preeclampsia with low cardiac output: a pilot study

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Introduction: Continuous positive airway pressure (CPAP) is considered a safe treatment in pregnant women with sleep disordered breathing, which cardiovascular effects are known to be similar to gestational induced hypertensive diseases. As CPAP results in an increasing cardiac output (CO), it might be suggested as a treatment for maternal low-CO related gestational diseases such as intra-uterine growth retardation and preeclampsia. The aim of this pilot study was to evaluate the effect of autoCPAP on maternal CO in pregnancies complicated with IUGR and/or gestational hypertensive diseases.
Materials and methods: Patients admitted for hypertensive disorders and/or intra-uterine growth retardation were considered for inclusion. Cardiovascular parameters were obtained using impedance cardiography (ICG). Only patients with a CO <7.5L/min were asked to participate in the study (see figure). After a 2-hours habituation process at daytime (day 0), patients were asked to use the CPAP-device every night till discharge or termination of pregnancy. ICG measurements were performed at day 0, day 1 and from then every other day during the CPAP treatment.
Clinical cases and summary results: 43 patients were eligible for inclusion. In 17/43 (39.5%) patients, valid data were obtained (see figure). The maximal participation time was 7 days (n=1). Cardiovascular parameters are presented in table 1 (data presented as median and interquartile ranges): CO showed a small but significant increase (Z=−2.22, p=0.026) and diastolic blood pressure and mean arterial pressure decreased (Z=−2.39, p=0.017 and Z=−2.38, p=0.017) after the first night of therapy. No differences were found for heart rate, systolic blood pressure and stroke volume. Overall, there was no difference of any parameter at day 3 and 5 (p>0.097). These observations were seen both in women with and without hypertension.
Conclusion: Although there is a temporary small increase of CO in pregnant women with hypertension or IUGR, performing CPAP as a maintenance therapy seems difficult once gestational complications have occurred. CPAP may be a safe and non-invasive method to increase maternal CO, but needs further investigation.

Keywords: Cardicac output, maternal hemodynamics, CPAP

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Cigarette smoke and the production of SFLT-1 in pregnant mice and the possible role of AHR in protective effect of cigarette smoke

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Introduction: The aryl hydrocarbon receptor (AhR), a ligand-dependent transcription factor, mediates a variety of biological processes including xenobiotic metabolism, dioxin toxicity and vascular development. AhR has been extensively studied as a receptor for environmental toxicants such as 2,3,7,8-tetrachlorodibenzo-p-dioxin, which is present cigarette smoke. AhR has been known to be present in placenta, especially in syncytiotrophoblasts, and also seen in endothelium of large blood vessels in villi and endothelium of umbilical cord arteries and veins, implying the important role of AhR in maintaining trophoblast development. The aim of this study was to evaluate the effect of smoking on the expression of sFlt-1 in pregnant mice and investigate the involvement of AhR in this process.
Materials and methods: Pregnant CD-1 mice were exposed to cigarette smoke (1 or 2 cigarettes/day, 5 days/week) (smoke group) or sham exposed (control group) throughout the pregnancy. To evaluate the role of AhR, pregnant mice were treated with AhR agonist only (AhR-agonist group) or antagonist only (AhR-antagonist group) and with antagonist prior to cigarette smoke exposure (AhR-antagonist+smoke group) throughout the pregnancy. From the 5 treatment groups (control, smoke, AhR-agonist, AhR-antagonist and AhR-antagonist+smoke group), serum and placental levels of sFlt-1 were measured with ELISA and western blots analysis, respectively.
Clinical cases and summary results: Compared to control group, smoke group had significantly lower serum sFlt-1 level. Smoke exposure significantly decreased protein expression of sFlt-1 in placentas from smoke exposure group compared to those from control. The serum sFlt-1 level was lower in AhR-agonist group compared with control and AhR-antagonist group. However, there was no difference in serum sFlt-1 level between AhR-antagonist group and AhR-anatagonist+smoke group.
Conclusion: Smoking throughout pregnancy was associated with a lower production of sFlt-1, and this protective effect of smoke is most likely to be contributed to the activation of AhR system. Further studies are needed to evaluate the possibility that extraneous and endogenous AhR ligands without toxicity could be potentially used as a prophylactic or therapeutic tool for preeclampsia.

Keywords: Preeclampsia, cigarette

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Serum zonulin is decreased in preeclampsia

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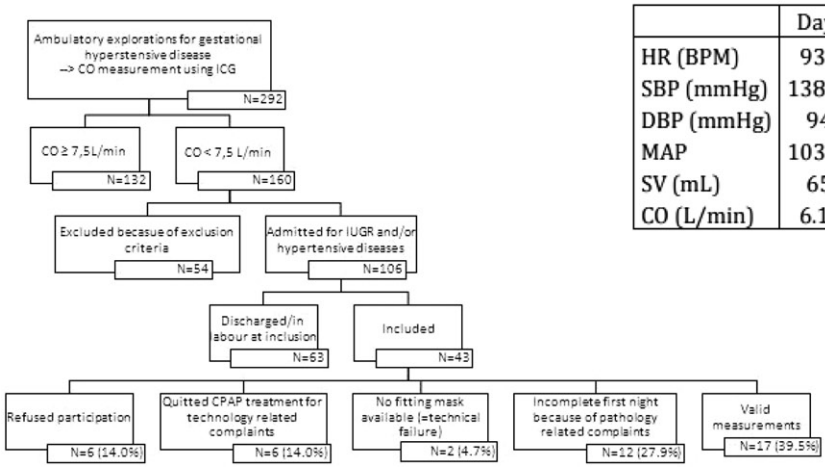
Introduction: The aim of the study is to examine zonulin levels, which is an intestinal epithelial permeability marker, in preeclampsia, to investigate its associations with the cellular immune response marker soluble interleukin-2 receptor (sIL-2R) and exogenous antigen load marker lipopolysaccharide binding protein (LBP) and to evaluate the implications of these findings in the etiopathogenesis of preeclampsia.
Materials and methods: We designed a cross-sectional case-control study and enrolled 22 women diagnosed with preeclampsia and 22 healthy pregnant controls. Plasma zonulin levels were determined by ELISA. Serum sIL-2R and LBP levels were assessed by chemiluminescent immunometric method.
Clinical cases and summary results: Women with preeclampsia had lower levels of plasma zonulin and serum LBP than normotensive healthy controls (p <0.05). The difference in serum sIL-2R levels between women with preeclampsia and healthy controls was not



	Day 0 (n=17)	p-value	Day 1 (n=17)
HR (BPM)	93 (83; 104)	0.691	95 (85;104)
SBP (mmHg)	138 (125; 147)	0.485	135 (127;141)
DBP (mmHg)	94 (88; 97)	0.017	89 (83; 96)
MAP	103 (100; 109)	0.017	102 (95; 106)
SV (mL)	65 (54; 75)	0.142	70 (59; 78)
CO (L/min)	6.1 (5,5; 6.7)	0.026	6.5 (5.8; 6.8)

significant (*p*: 0.751). There was a negative correlation between plasma zonulin and serum urea (r: -0.319, p: 0.035) and a positive correlation between serum sIL-2R and ALT (r: 0.335, p: 0.026) or AST (r: 0.319, p: 0.035).
Conclusion: We found that zonulin and LBP, but not sIL-2R, levels were significantly lower in women with preeclampsia as compared with healthy pregnant controls. Reduced intestinal permeability in preeclampsia might be, in part, associated with a lower fat mass, malnutrition or impaired immune system functions. Further studies are needed to elucidate the exact pathogenetic role of intestinal permeability in preeclampsia.

Keywords: Preeclampsia, intestinal permeability, zonulin, lipopolysaccharide binding protein, IL-2 receptor

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Is preeclampsia itself a risk factor for the development of metabolic syndrome in the postpartum period?

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Introduction: The aim of this study was to determine the association between preeclampsia and the development of metabolic syndrome after delivery, based on pre-pregnancy status.
Materials and methods: We enrolled Korean women who had their first delivery between January 1, 2011 and December 31, 2012 and had undergone a national health screening examination (NHSE) through the National Health Insurance Corporation 1-2 years before their first delivery and again had an NHSE within 2 years after their first delivery.
Clinical cases and summary results: Among 49 065 participants, preeclampsia developed in 3391 participants (6.9%). The postpartum prevalence of metabolic syndrome was higher in women with preeclampsia than in women without preeclampsia (4.9% versus 2.7%, respectively, $p < 0.001$). Through the pre-pregnancy to postpartum period, women with preeclampsia had a greater increase in gestational weight retention, body mass index, waist circumference, systolic blood pressure, and triglycerides, and a greater decrease in high-density lipoprotein cholesterol, than women without preeclampsia. Preeclampsia was associated with an increased risk of development of metabolic syndrome in the postpartum period in women without pre-pregnancy metabolic syndrome (odds ratio [OR]: 1.28, 95% confidence interval [CI]: 1.05-1.56). However, preeclampsia was not associated with the development of metabolic syndrome in the postpartum period in women with pre-pregnancy metabolic syndrome or 2 components of metabolic syndrome.
Conclusion: In this study, preeclampsia itself led to the development of metabolic syndrome in the postpartum period in women without pre-pregnancy metabolic syndrome. However, the effects were attenuated by predisposing risk factors in the pre-pregnancy period.

Keywords: Preeclampsia, metabolic syndrome, risk factor

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Is there a role for echocardiography in the management of hypertensive disorders in pregnancy? Results from a systematic review

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Presenter: **J. Castleman**

Introduction: Echocardiography is commonly used to direct the management of hypertensive disorders in medical patients, but its application in pregnancy is unclear. Our objective was to define the use of echocardiography in pregnancies complicated by gestational hypertension (GH) and preeclampsia (PET).

Materials and methods: We performed a systematic review of articles using an electronic search of bibliographic databases from inception to March 2015, prospectively registered with PROSPERO (CRD42015015700). Studies of pregnant women with GH or PET evaluated by echocardiography, regardless of study design, were eligible.
Clinical cases and summary results: The search strategy identified 36 studies, including 745 women with GH and 815 women with PET. The populations were heterogeneous with respect to clinical characteristics, parity and risk of bias. Increased vascular resistance and left-ventricular (LV) mass were the most consistent findings in GH and PET. Differentiating features from normal pregnancy were LV wall thickness $\geq$1.0cm, exaggerated reduction in E/A (the ratio of the early to late ventricular filling velocities) and lateral e' (early diastolic mitral annular velocity) <14cm/s. There was disagreement between studies with regard to cardiac output due to the timing of echocardiography, although reduced stroke volume was an indicator of adverse prognosis. Diastolic dysfunction and left ventricular remodelling are most marked in severe and early-onset PET, but are also markers of PET before clinical manifestation, and are associated with adverse outcomes.
Conclusion: Echocardiography is a valuable tool to stratify risk and can guide management and counselling in the preclinical and clinical phases of GH and PET. Changes in cardiac function and morphology are recognisable at an asymptomatic early stage and correlate with disease severity and adverse outcomes.

Keywords: Pregnancy, hypertension, preeclampsia, echocardiography, review

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Increased CD14++CD16-CCR2+ (MON1) monocytes in pregnant women with previous hypertension

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Presenter: **J. Castleman**

Introduction: Individual monocyte subsets play distinct roles in the pathogenesis of cardiovascular disease, but their implications in hypertension in pregnancy are unclear. Our objective was to examine the difference in monocyte subsets between pregnant women with or without previous gestational hypertension (GH) or preeclampsia (PET) and non-pregnant controls.
Materials and methods: CD14++CD16-CCR2+ (Mon1), CD14++CD16+CCR2+ (Mon2) and CD14+CD16++CCR2- (Mon3) monocyte subsets were analysed by flow cytometry in 17 pregnant women with previous hypertension in pregnancy, 42 pregnant women without previous gestational hypertension and 27 healthy, non-pregnant controls. All women had blood pressure <140/90mmHg at the time of the study.
Clinical cases and summary results: The groups were well-matched for age, body mass index and ethnicity ($p>0.05$ for all). The pregnant women were studied at 13±1 weeks gestation. Total monocyte and Mon1 counts were higher in women with a history of GH or PET compared to other groups ($p<0.001$ for both) (Table). Mon3 were higher in both groups of pregnant women compared to non-pregnant controls (p=0.002). Blood pressure and parity were significantly higher in the group with previous GH/PET. A previous pregnancy affected by GH/PET was the only significant predictor of increased Mon1 count (B±SE -0.46±21.8, $p<0.001$).
Conclusion: Mon1 are increased at the beginning of the second trimester of pregnancy in women with a previous hypertensive pregnancy. Mon3 are increased in pregnancy irrespective of a history of hypertension. Possible (patho)physiological and clinical effects of the changes in monocytes subsets in pregnancy will need to be established in the future.

Keywords: Monocytes, hypertension, preeclampsia, pregnancy

Table: Monocyte counts in the study groups

Monocytes (cells/μl)	Pregnant; Hypertension in previous pregnancy	Pregnant; No previous hypertension	Non-pregnant controls	p
Mon 1	441 (376-512)*†	357 (309-457)†	323 (277-397)	<0.001
Mon 2	15 (9-49)	19 (10-41)	22 (10-41)	0.99
Mon 3	51 (38-62)†	38 (29-58)†	26 (20-40)	0.002
Total	545 (455-592)*†	425 (374-514)†	378 (293-463)	<0.001

Data expressed as median (interquartile range). Dunn's post hoc testing: *p<0.05 vs group without previous gestational hypertension; †p<0.05 vs non-pregnant controls.

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Pulmonary acute edema as an outcome of puerperal preeclampsia

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Presenter: **Bebia-Conesa, V**

Introduction: The development of preeclampsia is not a unique feature of an ongoing pregnancy, whilst onset of preeclampsia within puerperium may be a challenge for the clinician, regarding diagnosis and management, as the overall frequency of this complication is low. Generally, most patients affected by preeclampsia experiment a significant improvement of their clinical features after delivery. Besides, in patients who suffered severe preeclampsia, the return to pregestational BP figures may last up to 3 to 6 months. This group of patients can suffer from the same complications seen in patients with ongoing pregnancy and severe preeclampsia.
We would like to present a clinical case of a pulmonary acute edema diagnosed and managed after induction of labour because of severe preeclampsia.
Clinical cases and summary results: A gravida 2, para 1, 40-y-o pregnant with no significant obstetrical history was admitted to our labour ward at 36 + 3 GW because of high BP (192/99 mmHg), headache, and elevated transaminases. With a diagnosis of severe preeclampsia, we started induction of labour, as well as infusion of hidralazine and MgSO4 iv. The second stage of labour was assited with Thierry's spatulae, obtaining a healthy newborn.
During the 3rd day of puerperium, the patient experimented high BP and moderate effort dyspnea. SaO2 was 94%, while the pulmonary auscultation and chest X-ray showed signs suggestive of pulmonary acute edema.
The patient was admitted to ICU, where the echocardiography findings were compatible with mild congestive cardiac insufficiency. It was necessary to increase the antihypertensive medication up to 4 different types, proceeding to decrease as the BP levels normalized.
The patient was dismissed 13 days after delivery, asymptomatic and with normal BP levels and normal transaminases.
Conclusion: Although the overall frequency of puerperal complications of preeclampsia is low, it can evolve into life-threatening

conditions that require an intense and proactive management. Among the clinical features showed by our patient, given the high risk of thrombosis of puerperium and preeclampsia, we also considered pulmonary embolism as differencial diagnosis, which was ruled out by normal angio-CT. As clinician, it is important to be wide aware of this kind of situations in abnormal puerperium.

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Sysyemic vascular resitance evolution during normal pregnancy demonstrated by impedance cardiography

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Presenter: **Romina-Marina SIMA**

Introduction: Normal pregnancy is characterized by increased circulating blood volume, changes in maternal heart rate (HR), stroke volume (SV), cardiac output (CO) and systemic vascular resistance (SVR). The maternal heart is enlarged due to an increase in venous filling. Hemodynamic alterations related to pregnancy are different in women who have normal pregnancy compared to those who develop pregnancy complications. Impedance cardiography (ICG) is a diagnostic method based on measurement of the electrical properties of the biological tissues applied to the thorax region. Many authors concluded that ICG may be the most appropriate and accurate technique to measure normal hemodynamic changes during pregnancy and postpartum.
Materials and methods: The routine protocol of investigation included the following steps: we obtained a detailed medical history of the patient, we measured patient's weigh, height, blood pressure, we obtained a usual blood sample, we realized obstetric ultrasound and we performed hemodynamic investigation using impedance cardiography. The patients did not require sedation or any other type of anesthesia for cardiovascular monitoring. We evaluated pregnant patients in each trimester of pregnancy. The patient were included into the study in the first trimester of pregnancy and there was a follow up during pregnancy and postpartum. In parallel we obtained the same parameters to a nonpregnant healthy women group. This study is concerned on systemic vascular resistance changes during pregnancy.
Clinical cases and summary results: This study enrolled 161 persons. Among this 141 were pregnant women from the first to the last trimester of pregnancy and postpartum. The control group was formed from 20 nonpregnant women. For study group mean age was 28.37 years (standard deviation 5.6 and CI: 17.39; 39.35). The majority patients had vaginal delivery (62.4%). Mean birth weight of the fetus was 3230 g and mean gestational age at the birth time was 38.4 weeks. Regarding addictive behavior we observed that 63.5% patients were nonsmokers. We observed that systemic vascular resistance was about 1593.09 dyne.cm.sec-5 and it decreased in the second trimester of pregnancy to a mean value of 910.89 dyne.cm.sec-5 ($Z= -7.174$, $p<0.0001$). The mean value of this hemodynamic parameter increased in the third trimester of pregnancy reaching a value of 1098.72 ($Z= -5.154$, $p<0.0001$). In postpartum it had a lower value compared with the first trimester ($Z= -7.217$, $p<0.0001$) and third trimester of pregnancy ($Z= -5.776$, $p<0.0001$).
Conclusion: Impedance cardiography is an important method that can illustrate the hemodynamic profile of pregnancy, with its ability to identify the correct trend of systemic vascular resistance during pregnancy. Correct identification of the normal cardiovascular parameters may allow the usage of this noninvasive tool for evaluation of hemodynamic changes in different pathologies. The most important aspect is represented by identification of early hemodynamic subclinical changes in preeclampsia.

Keywords: Impedance cardiography, systemic vascular resistance

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Are we able to influence pulsatility index values of uterine arteries in patients at risk of preeclampsia?

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Presenter: **K.Preis**

Introduction: Uterine artery pulsatility index (Ut -PI) diminishes with gestational age, its values are reduced with growing maternal age and rise in the 3rd trimester. In the population of patients monitored for PE, we were able to confirm positive influence on uterine artery pulsatility index (reduction) in patients with abnormal Ut-PI after 26 weeks of gestation (over 1.2), accompanied by vitamin D3 deficiency of less than 30 ng/ml and other concomitant risk factors predisposing to preeclampsia.The aim of this paper was to examine potentially beneficial effect of vitamin D3 on uterine arterial flow and to establish effective therapeutic dosage of said vitamin in patients predisposed to preeclampsia.
Clinical cases and summary results: 3 clinical cases
Case 1
1st pregnancy, week 24, elevated arterial blood pressure 145/95
In routine examination of uterine artery blood flow, pulsatility index was observed to be elevated in excess of reference values (Tab-1.) . In view of these abnormalities and with consent of the patient, oral supplementation of vitamin D3 was commenced at the dose of 2000 units. After 2 weeks of follow-up, uterine flow values clinically improved and serum levels of vitamin D3 increased. In subsequent 2 weeks of observation, despite continued vitamin D3 supplementation at the dose of 2000 units, its serum levels were found to drop and pulsatility index values were fluctuating. With this in mind, supplementation dose was raised to 4000 units a day.
After another week of supplementing vitamin D3 at the level of 4000 units per day, we were able to obtain therapeutic serum levels of D3 and to improve uterine pulsatility index values.
Case 2. . .
Conclusion: Taking into account clinical observations reported by the authors, it seems vitamin D3 deserves further investigation as a likely contributor to the maintenance of normal arterial blood pressure, and as a possible factor normalizing pulsatility index values in uterine arteries of patients. The described correlation between the dose of vitamin D3, change in pulsatility index and BP suggests the need for future population-based research.

Keywords: Preeclampsia, vitamin D3, uterine pulsatility index

Week of gestation	LUA	notch	RUA	notch	D3 levels	BP	BMI	D3 supplementation
24	1.84	minus	2.24	plus	24.1	145/95	23.0	2000
26	1.6	minus	1.25	minus	24.87	121/82	23.3	2000
28	1.1	minus	1.8	minus	21.5	130/89	24.0	4000
29	1.25	minus	0.81	minus	34.85	125/90	24.1	5000

723 (CASE REPORT)

Mirror syndrome associated with eclampsia

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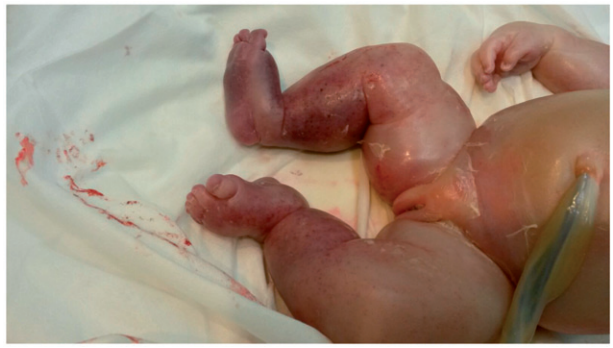
Presenter: **M. Navarro**

Introduction: Mirror Syndrome or Ballantyne Syndrome is described as a triple edema, because it associates maternal, fetal and placental edema. This rare syndrome has been related with different causes of fetal hydrops. The pathogenesis is not clear. Some studies have considered this disease as a form of severe preclampsia; however, others suggest that they aren't the same disease because mirror syndrome has hemodilution instead of hemoconcentration. In addition, some publications evidence an alteration in the balance between angiogenic and antiangiogenic factors in the mirror syndrome similar to the inbalance observed in preeclampsia.The diagnosis is usually difficult and it can cause serious consequences for mother and fetus.
Clinical cases and summary results: We report the case of a 17-year-old woman at 30 + 1 weeks of gestation who presents regular contractions, preterm premature rupture of membranes and vaginal bleeding. Fetal hydrops secondary to a severe myocardiopaty with fatal prognosis has been previously diagnosed. Vaginal delivery required Simpson's forceps indicated for second stage arrest. The result was a 2.465 gr stillbirth female with generalized edema. The placental study reveled a 726 gr placenta with thickened areas. In the second day after delivery, the woman presented peripheral edema, severe hypertension, headache, blurred vision, progressive visual neglect, cortical blindness, hemodilution and proteinuria. A posterior reversible encephalopathy syndrome is suspected, but on the fourth day, the patient presents a new onset, generalized tonic-clonic seizure, and requires intensive unit care admisssion. Analytical, diuresis and clinical resolution is complete on the eighth day
Conclusion: The onset of generalized maternal edema and hypertension in pregnancy or postpartum with fetal hydrops should be considered as a severe sign of preeclampsia.
Preeclampsia in a mirror syndrome setting, usually behaves as an atypical preeclampsia. Early diagnosis and treatment of mirror syndrome improves maternal and fetal outcomes. Eclampsia prevention with magnesium sulfate should de used until clinical and diuresis resolution.

Keywords: Eclampsia, mirror syndrome, hydrops fetalis



PRETERM BIRTH/THE PRETERM INFANT - 037

Circadian dynamics of heart rate and qtc interval in very low-birth-weight and extremely low-birth-weight newborns according to 24-h Ecg monitoring

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Introduction: Analyses of chronotropic characteristics of heart rate and the dynamics of QTc interval in extremely low-birth-weight and very low-birth-weight newborns at the post-conceptual age of 37-42 weeks.
Materials and Methods: Analyses of chronotropic characteristics of heart rate and the dynamics of QTc interval in very ELBW and VLBW newborns at the post-conceptual age of 37-42 weeks.
Clinical cases and summary results: The heart rate dynamics in the investigated groups is presented in the Table 1. Significantly higher maximum heart rate during sleep was observed in the group of very low birth weight infants (Dunnett's test). This is probably due to the fact that there were more infants with significant bradyarrhythmia episodes while sleeping in the ELBW group. Circadian index in newborns of investigated groups did not show the significant difference and amounted (median (3-97percentile) to 113% (105-117) in VLBW newborns, and to 111% (102-119) in ELBW newborns. No significant differences between groups on being investigated values were obtained (Table 2). However, there is a tendency to increasing of values of QTc interval in VLBW infants at the post-conceptual age of 37-42 weeks, that is, this group of newborns shows dysadaption opportunities of the electrical function of the myocardium (lengthening of repolarization) that can predispose to the occurrence of lifethreating heart rhythm disorders. The time factor is likely to be taken into consideration during the maturation of the cardio respiratory system of premature infants, as ELBW infants live more prolonged time period reaching 37-42 weeks of their post-conceptual age.
Conclusion: The significant difference of the circadian dynamics index of heart rhythm both in ELBW and VLBW newborns at the post-conceptual age of 37-42 weeks has not been found. Premature newborns with ELBW are subject to clinical examination at the age of 37-42 weeks that requires the compulsory 24-h ECG monitoring with the parallel recording reopneumogram (in case of impossibility of fragmented ECG).

Keywords: Extremely low-birth-weight, very low-birth-weight newborns, QTc, heart rate

The values QTc interval in preterm infants at the post-conceptual age of 37-42 weeks according to the 24-h ECG monitoring (ms).

	QTc minimum HR (median, ms)	QTc average 24-h (median, ms)	QTc maximum 24-h (median, ms)
VLBW	444 (min HR 122')	452	472
ELBW	436 (min HR 121')	442	464

Table 1 Circadian dynamics of heart rate in VLBW and ELBW newborns in the post-conceptual period of 37-42 weeks.

*$P = 0.023$	VLBW newborns (n=20) (Med (%3-97))	ELBW newborns (n=27) (Med (%3-97))
Average heart rate in waking	168 (151-178)	163 (147-181)
Heart rate min in waking	119 (84-143)	125 (101-153)
Heart rate max in waking	210 (196-236)	210 (185-231)
Average heart rate in sleeping	149 (133-163)	149 (129-165)
Heart rate min in sleeping	124 (60-144)	120 (104-148)
Heart rate max in sleeping	198* (175-228)	190 (166-210)
24 h average heart rate	157 (141-167)	153 (139-171)

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Trajectories in parenting stress for mothers of very preterm infants to 2 years

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Introduction: Parenting stress has been reported to be somewhat higher in mothers of preterm infants, though others have not found any difference. The aim of the study was to examine levels of parenting stress in mothers of preterm and term infants when the children were 2 years old and to determine the trajectory of stress over 3 time periods. The association of maternal and neonatal factors and developmental outcomes with parenting stress was also examined.
Materials and methods: Participants were families who took part in a longitudinal study of parenting stress with outcomes at 4 and 12 months previously established. At 2 years, 79 preterm mothers (96 babies) who delivered at <31 weeks gestation and 64 term mothers (77 babies) participated. The mothers completed the Parenting Stress Index-Short Form (PSI-SF), the Depression Anxiety Stress Scale (DASS) and the Child Behaviour Checklist (CBCL). The infants had medical and developmental (Bayley-3) assessments.
Clinical cases and summary results: The mean total PSI-SF at 2 years was significantly higher for the preterm group (74.0 ± 21.7) compared to the term group (64.7 ± 16.1) of mothers (p=0.002). There was a significant increase in the mean total PSI over time. For mothers at 2 years, there was an association with high levels of parenting stress and abnormal scores on the DASS and high total T-scores on the CBCL. There was no association between parenting stress and maternal demographic or neonatal factors or Bayley-3 results.
Conclusion: Parenting stress in mothers of very preterm infants continues to be high at 2 years having increased over time. Maternal mental health and infant behavioural issues contribute to the stress.

Keywords: Preterm, parenting stress, trajectories

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Effect of maternal age on preterm delivery rate in singleton pregnancies

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Introduction: The demographic shift towards later childbearing is a major clinical and public health problem since according to some data in literature advanced maternal age (AMA) ≥35 years is associated with more frequent complications and worsened pregnancy outcome. Provision of adequate medical care and counseling in these cases depends on appropriate evaluation of the particular risks. The aim of the study was to evaluate the impact of AMA ≥ 35 years on preterm delivery (PD) rate - overall, iatrogenic/induced and early, in singleton pregnancies.
Materials and methods: 4078 women from the State University Hospital "Maichin Dom" in Sofia with singleton pregnancy and known pregnancy outcome were enrolled in the study between 01/2010 and 12/2012. They were divided in 3 age groups (AG) - AG-1 - ≤34 years, AG-2 - between 35-39 years and AG-3 - ≥40 years at the time of delivery. The following parameters were compared between the AG: overall PD (oPD) rate before 37 completed weeks of gestation (w.g.), iatrogenic/induced pretem delivery (iPD) rate and early PD (ePD) rate before 32 w.g. Information about pregnancy outcome was retrieved from the electronic hospital records. Data were processed with SPSS 13.0 statistical package. Descriptive and comparative analysis was performed. The statistical hypotheses about different tested effects are assessed based on the appropriate statistical algorithms (Chi-square Fisher exact test, Kolmogorov-Smirnov test, Shapiro-Wilk test, Student t-test, Mann-Whitney U test, Rearson and Spearman correlations, ROC chart analysis). P values 2.0 considered clinically significant. Thus, with $p < 0.05$ and adjOR > 2.0 the differences were considered both statistically and clinically significant.
Results: Maternal age ≥40 years was associated with statistically significant increase of overall PD rate - from 11.7% (265/2256) in AG-1 to 13.4% (202/1511) in AG-2 and to 17.4% (54/311) in AG-3 (p=0.1387, p=0.0049 and p=0.0.0649 for AG 1-2, AG 1-3 and AG 2-3 respectively). However, the differences between the groups were not clinically significant (adjOR 0.86, CI 0.71-1.04 and 0.63, CI 0.46-0.87 for AG1-2 and for AG 1-3 respectively). As for iPD rate, it was 35.8% (95/265) in AG-1, 45.5% (92/202) in AG-2 and 55.6% (30/54) - in AG-3, the differences being statistically significant (p=0.0341, p=0.0069 and p=0.1907 respectively when comparing AG 1-2, AG 1-3 and AG 2-3). There was also a clinically significant difference in iPD rate when comparing AG-1 and AG-3 (adjOR 2.23, CI 1.24-4.04). AMA ≥35 years was found to be associated with some increase in ePD rate < 32 w.g. It was 23.8% (63/265) in AG-1, 28.2% (57/202) in AG_2 and 35.2% (19/54) in AG-3. However, the differences were not statistically significant (p=0.2762, p=0.0803 and p=0.3195 for AG1-2, AG 1-3 and AG2-3 respectively).
Conclusions: Maternal age ≥40 years was associated with statistically, but not clinically significant increase in overall PD rate. Iatrogenic PD rate was statistically significantly increased after the age of 35 and was both statistically and clinically significantly increased after the age of 40 compared to the age ≤34. Early PD rate was increased with AMA but the differences were not significantly different.

Keywords: Preterm delivery, maternal age

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A 5-year retrospective study on the outcome of antenatal dexamethasone administration on premature infants

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Introduction: In low/middle-income countries where preterm birth is more common, yet adequate neonatal care is often unavailable, antenatal steroid administration has been identified as an essential and feasible intervention that could be of enormous public health benefit. Sadly, studies from low/middle-income countries are scarce, and there is none from South Asia. This study aimed to determine the outcome of premature infants whose mothers received antenatal dexamethasone.
Materials and methods: The charts of preterm infants, 24 - 34 weeks by Ballard Score, delivered at Gov. Celestino Gallares Memorial Hospital from January 2006 to December 2010 were reviewed alongside the charts of their respective mothers. The dose of antenatal dexamethasone given to the mothers was duly noted. The length of survival in terms of days after birth was determined.
Clinical cases and summary results: Only 65% of mothers in preterm labor were given antenatal dexamethasone. Data gathered showed that the administration of dexamethasone, even in incomplete dosage, improves the length of survival of preterm infants. This is supported by the p value of 0.001 in the comparison of the length of survival of preterm infants with incomplete antenatal dexamethasone against those without antenatal dexamethasone. Moreover, a complete antenatal dexamethasone dosage further improves the length of survival, as evidenced by a *p* value of 0.000 in the comparison of the length of survival between preterm infants who had complete antenatal dexamethasone against those with incomplete antenatal dexamethasone.
Conclusion: Antenatal dexamethasone improves the length of survival of preterm neonates born in Gov. Celestino Gallares Memorial Hospital. The length of survival is better even if incomplete dosage of antenatal dexamethasone is administered.

Keywords: Antenatal dexamethasone, length of survival, prematurity

Table 3. *t*-Test of association between the length of survival and the antenatal dexamethasone dosage.

Variables	Mean	SD	*t*	df	*p* Value	Decision at 0.05
Complete versus Incomplete	4.833	3.365	6.094	17	0.000	Reject null
Complete versus None	6.278	4.376	6.086	17	0.000	Reject null
Incomplete versus None	1.444	1.617	3.790	17	0.001	Reject null

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The risk of retinopathy of prematurity (ROP) and compairing series igf1 levels and clinical score system

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Introduction: Aim: Retinopathy of prematurity (ROP) is the most common disease that cause blindness in preterm patients. Screening criterias of ROP change in all countries, the recommendations of American Academia of Pedaitrics are used in our country. Inadequate screening may cause blindness in this high risk population. In this study, we aimed to develop a clinical risk scoring system in order to define screening criteria for Turkey.
Materials and methods: A prospective, randomized, clinical study was conducted in Bahcesehir University, Medicl Park Goztepe Hospital Neonatal Intensive Care Unite with total of 127 preterm infants. Blood samples were obtained for Insulin-like growth factor 1 (IGF-1) in the 1st day of life, 1st week, 2nd week, 3rd week and 4th week of life. All preterms were examined for ROP in the 4th weeks of life and demographic characteritics were noted. Risk factors and IGF-1 levels were compared on ROP group (ROP+) and non-ROP group (non-ROP). The score was established after logistic regression, considering the impact of each variable on the occurrences of any stage ROP.
Clinical cases and summary results: Total 127 preterms were included to the study. 43 had ROP, 84 did not have. Birth weight and gestational weeks were lower and also severe RDS, BPD, NEC and nasocomial sepisis were more frequent and duration of mechanical ventilation and oxygen supplementation were longer and the ratio of breast milk usage was lower in ROP + group ($p<0.05$). Treatment required ROP ratio was 4.7%. Serum IGF-1 levels of ROP and non-ROP groups were not different. In addition, less than 1000 gr birthweight increases the risk of ROP 2.9 times and IVH and using formule milk increase 4.7 times respectively.
Conclusion: In conclusion, ROP risk is higher in the preterms, gestational weeks are less than weeks, IVH and lack of breast milk groups. Preterms that has this risks should be examined earlier and more carefully to prevent ROP devolopment.

Keywords: Retinopaty of prematurity, IGF-1, risk factors

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PAMG-1 biomarker test (PARTOSURE) in combination with transvaginal ultrasound for improved assessment of spontaneous preterm birth in patients with threatened preterm labor

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Introduction: Patients presenting to the hospital with signs and symptoms of preterm labor undergo cervical length measurement via transvaginal ultrasound (CL) to evaluate the risk of imminent spontaneous birth. However, it has been shown that CL <25 mm alone has limited value in prediction of PTB, and may benefit from an addition of a biomarker when cervical length is equivocal (15-30 mm). PARTOSURE, based on PAMG-1 biomarker, is a novel test that has been shown to improve diagnostic accuracy in patients with tPTL and a short cervix (<30 mm).
Materials and methods:Patients presenting between 20 and 37 weeks of gestation, with clinically intact membranes and cervical dilation <3 cm were recruited. CL measurement via TVU was performed as standard of care, while clinicians were blinded to the PARTOSURE test result. Performance metrics were calculated for PARTOSURE to predict delivery within 7 days of presentation, separately for patients between 24 and 35 weeks of gestation, as well as in combination with CL stratification.
Clinical cases and summary results: A total of 71 patients enrolled after providing informed consent. Average GA at presentation was 28 weeks. While 59 (83%) patients had a cervix <25 mm, only 8 (11%) delivered within 7 days of presentation, PARTOSURE was positive in 11 (15%) patients. The positive predictive value (PPV) and negative predictive value (NPV) for predicting delivery within 7 days for PARTOSURE were 55% and 97%, respectively, the PPV and NPV for CL <25 mm for the same endpoint were 14% and 100%, respectively. 47 (66%) patients were between 24 and 35 weeks of gestation, the PPV and NPV for delivery within 7 days of testing for PARTOSURE were 67% and 100%, respectively, while CL <25 mm for the same endpoint were 11% and 100%, respectively. 35 (74%) patients in the same group had an equivocal CL (15-30 mm), for which the PPV and NPV for PARTOSURE were 60% and 100%, respectively, while CL <25mm had 11% and 100%, respectively, for the same end point. 6 (8%) patients had a cerclage in place at the time of testing and PARTOSURE gave an accurate result in all 6 cases, with 5 true negatives and 1 true positive.
Conclusion: PARTOSURE is a useful test in predicting preterm birth and has a higher positive predictive value than cervical length alone. PARTOSURE is most useful when used in combination with CL measurement to predict imminent spontaneous delivery in patients with symptoms of preterm labor and CL <30 mm. A combination of CL measurement and PARTOSURE may lead to a reduction of unnecessary hospitalization and treatment by up to 80% compared to admitting based on a short cervix (<25 mm) alone.

Keywords: Preterm labor, PAMG-1, PARTOSURE, preterm birth, cervical length

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Expectant management of PPROM

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Introduction: PPROM occurs in approximately 2% of all pregnancies and responsible for one third of all preterm births. PPROM is an important cause of prematurity. PPROM is associated with both maternal and neonatal morbidity such as chorioamnionitis, preterm birth, severe necrotizing enterocolitis, respiratory distress syndrome, sepsis, placental abruption, retained placenta, postpartum endometritis. We report a case with PPROM which managed approximately 8 weeks from 25th gestational weeks.
Materials and methods: A 30-year-old woman G1P0 at 25 weeks of gestation admitted to our outpatient clinic for vaginal bleeding and discharge of fluid. In ultrasonographic examination, 650 g weighted, appropriate for gestational age, vital fetus was detected. The laboratoary findings of the pregnant were normal. Vital findings were normal. Firstly, we started prophylactic ampicillin-sulbactam (1 g every 6 hours) for prevention of chorioamnionitis. We also gave Betamethasone in two doses 24 h apart to stimulate lung maturation for anticipation of possible preterm delivery. During expectant management, the findings of chorioamnionitis were followed, we did not performed digital examination until active labor. 20 days after the consultation with the infectious diseases specialist oral treatment of amoxicillin/CA (1 g, two timesper day) and vaginal treatment of 2% clindamycin phosphate (twice a day, vaginally) was applied.
Clinical cases and summary results: Fifty- six days later, a cesarean section was performed onset of subfebrile fever that continued for 24 hours and elevated white blood count. APGAR scores of the female newborn were 7 at 1st minute and 9 at 5th minute, weight. The weight was 1935g. The patient was discharged on the 3th post-operative day without any infectious complications. The newborn stayed 12 days in the intensive care unit and was discharged from the hospital on the 15th postpartum day.
Conclusion: In rare and selected cases, fetal, neonatal and maternal outcomes can be increased with prolonged intensive expectant management.

Keywords: PPROM, expectant management

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Delayed-interval delivery in triplet pregnancy: according to a clinical case

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Introduction: Multifetal pregnancies are often complicated by spontaneous preterm delivery. Typically, all fetuses of a multiple gestation deliver within a short interval, however, in selected cases, the preterm birth of one fetus may not require delivery of the other fetus.
Clinical cases and summary results: A 35 year-old woman, G2P1, dichorionic triamniotic spontaneous triplet pregnancy, refered contractions at 23 + 4 weeks gestation. Physical examination revealed first amniotic sac prolapsed in the vagina and first fetus in transverse. Considering information supplied, parents decided wait-and-see approach until 24th week. Contractions were vanished, but the rupture of the fist amniotic sac spontaneously occurred, and intravenous antibiotic therapy was initiated. At 23 + 5 weeks, a visible prolapse outside the vulva of the umbilical cord belonging to the first fetus was evinced, verifying cardiac beating until three days later. At 24 + 1 weeks, fetal pulmonary maturation was performed and the external part of the cord was cut and reduced to minimize possibilities of infection. At 24 + 2 weeks, contractions reappeared and, once infection excluded, intravenous atosiban and magnesium sulphate was established. Nevertheless, delivery of first dead fetus was inminent, and a consensus decision was taken to delayed delivery, maintaining atosiban. Clinical and analytical signs of infection appeared, suspending atosiban. Parents were informed about poor prognosis for survivorship and high risk for severe morbidity due to extreme prematurity. Vaginal delivery was recommended, despite intrapartum mortality. Delivery of both fetus occurred also at 24 + 2, with a non significant delayed interval of 12 hours. The first fetus was stillborn, and the second one passed away within the first day of life.
Conclusion: Delayed-interval delivery may be an option when some fetuses of a multiple gestation at a previable gestational age are in risk of deliver, and concurrent delivery of fetuses unaffected would likely result in their death or severe morbidity. Length of latency is important since achieving an extended time interval, not possible in this case due to subclinical choriamnionitis, between births of siblings at critical gestational ages is the basis to improve neonatal survival and reduced morbidity.

Keywords: Delayed-interval delivery, Triplet pregnancy, Extreme prematurity

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Cervical pessary in prevention of preterm birth: a case series

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Introduction: Pessary is a device fitted into the vagina to provide structural support to pelvic organs. It has been predominantly used as support for pelvic organ prolapse until it was first postulated by Vitsky in 1961 that the incompetent cervix is aligned centrally, with no support except the nonresistant vagina, and a lever pessary, however, would change the inclination of the cervical canal deviating it more posteriorly, which in pregnancy, can thereby direct the weight of the pregnancy more on to the anterior lower segment. (2) This case series aims to report on three cases in our institution supporting the effectiveness of pessary in preventing preterm birth.
Clinical cases and summary results: This case series aims to report on three cases in our institution supporting the effectiveness of pessary in preventing preterm birth.
CASE 1
C.A.B. is a 35- year-old Gravida 2 Para 0 (0010) pregnancy uterine, admitted in our institution at 25 weeks and 3 days for short cervical length finding on ultrasound. At 26 weeks age of gestation, a hodge pessary was inserted. Pregnancy was prolonged until 34 weeks 3 days age of gestation and patient delivered to a live preterm male Apgar score 9.9 birth weight 2085g birth length 50cm Ballard's score 35 weeks AGA via normal spontaneous vaginal delivery.
CASE 2
M.J.C is a 34 year old gravida 2 para 1 (0101) pregnancy uterine, admitted in our institution at 31 weeks age of gestation for an incidental finding of short cervix on ultrasound. Seventeen days after pessary insertion, patient at 34 weeks age of gestation, delivered via normal spontaneous vaginal delivery to a live preterm male Apgar score 9.9 birth weight 2010g birth length 44cm Ballard's score 34 weeks AGA.
CASE 3
S.B. is a 34 year old gravida 4 para 3 (3003) admitted in our institution at 17 weeks and 6 days for vaginal bleeding. With a finding of short cervix, a hodge pessary was placed at 19 3/7 weeks age of gestation. At 33 2/7 weeks age of gestation, the patient underwent repeat cesarean section for breech in preterm labor and delivered to a live preterm female Apgar score 8.9 birth weight 1950g birth length 44cm Ballards score 35 weeks AGA.
Conclusion: In the search for strategies to prevent preterm birth, pessary has promising results. It is an affordable and safe alternative management of preterm birth which may be employed in our setting. Future clinical trials may be helpful in strengthening this evidence.

Keywords: Pessary, preterm birth, cervical incompetence

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Social class inequalities in perinatal health in Umbria (Italy), 2014

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Introduction: Low birth weight (LBW) and preterm birth (PTB) are the main determinants for neonatal and infant death. High birth weight (HBW) is associated with negative outcomes in the long term and in the adulthood. The objective of this research is to examine social class inequalities in adverse perinatal events.
Materials and methods: The data was obtained from a population based study using routine maternity discharge data. This study consists of 7441 babies born in Umbria, an Italian Region, during 2014. Adverse perinatal events, such as PTB(<37 weeks' gestation), LBW (<2500gr) and HBW (>4000 gr) in relation to various mother's social covariates (citizenship, education) and to various mother's clinical covariates (parity, lack of fetal growth, assisted procreation)

are included too. Logistic regression models were used to analyse the magnitude of each factor with respect to adverse perinatal indicators.
Clinical cases and summary results: There were 517 (6.9%) PTB, 472 (6.4%) LBW and 474 (6.4%) HBW. In multivariate analysis, the results showed that maternal clinical characteristics are highly associated with preterm birth and birth weight. For clinical aspect, PTB was found associated with assisted procreation (OR 5.99, 4.43 <IC<8.11) and lack of fetal growth. LBW was associated with assisted procreation (OR7.59, 5.58<IC<10.33), lack of fetal and multiple pregnancy (OR 34.36, 25.75 <IC< 45.83). HBW was associated with pluriparous women (OR 0.58, 0.40 <IC 40 years old is LBW, while the 6.9% is HBW.
Conclusion: Social class factors have a substantial impact on the risk of newborns health status. Policies measures aimed at social-demographic inequalities will reduce adverse perinatal events.

Keywords: Social class inequalities, perinatal health, LBW, HBW, PTB, Italy

Table 1. Social class characteristics and perinatal health, Umbria (Italy), 2014.

	PTB	LBW	HBW
ITALIAN vs. FOREIGN WOMEN	7,4% vs. 7,2%	5,9% vs. 6,8%	6,0% vs. 7,5% OR 0,79 IC 0,65-0,97
LOW EDUCATIONAL LEVEL vs. HIGH EDUCATIONAL LEVEL	7,4% vs. 6,9%	6,0% vs. 6,4%	6,7% vs. 6,3%
NULLIPAROUS vs. PLURIPAROUS	7,5% vs. 6,0% OR 1,27 IC 1,5-1,54	6,8% vs. 5,6%	4,8% vs. 8,7% OR 0,58 IC 0,48-0,69
MULTIPLE PREGNANCY vs. SINGOL PREGNANCY	62,5% vs. 5,1% OR 30,42 IC 22,95-0,34	62,8% vs. 4,5% OR 34,36 IC 25,75-45,83	0,0% vs. 6,5%

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The obstetric outcome of IVF Singletons

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Introduction: IVF singletons alone have worse perinatal outcome when compared to spontaneously conceived singletons, especially in terms of preterm birth and its complications. Underlying cause of subfertility seems to be a risk factor of worse perinatal outcome.
Materials and methods: Observational retrospective case control study included 644 women in singleton pregnancies who delivered after completed 22 weeks of gestation at the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw, Poland, between 2004 and 2014. The study group comprised of 336 patients who conceived by means of in vitro fertilization (IVF or ICSI). The control group consisted of 308 women who conceived spontaneouslyand delivered within the same time period. Collected data included maternal characteristics (age, parity, pre-pregnancy BMI, gestational weight gain), incidence of pregnancy complications, time and mode of delivery with indications for cesarean section, neonatal outcome at delivery and the cause of infertility in the study group.
Clinical cases and summary results: The two study groups were initially matched by age and parity and were also similar with regard to BMI, gestational weight gain and the history of hypothyroidism. The overall rate of pregnancy complications in IVF singletons was 46.4% in comparison to 40.2% (p=0.13). IVF treatment increased the odds of having vaginal bleeding in the first trimester (OR 1.68, 95% CI 1.0-2.86), placenta previa (OR 5.15, 95% CI 1.1-33.9), preterm delivery (OR 2.06, 95% CI 1.16-3.68), newborn's low birth weight (OR 2.27, 95% CI 1.19-4.36) and elective cesarean section (OR 2.39, 95% CI 1.7-3.4). The analysis of the causes of infertility and their influence on gestational complications did not show any significant relations.
Conclusion: The results of the presented study are in accordance with latest reports on increased pregnancy complications in IVF singletons. The course of pregnancy after IVF does not differ in many factors from the pregnancy after natural conception. Preterm birth remains the major concern in IVF pregnancies, making them higher risk. Infertility treatment is more often associated with an elective CS, which sometimes seems to result from psychological aspects and anxiety only.

Keywords: IVF pregnancy, pregnancy complications, preterm delivery, high-risk pregnancy, perinatal outcome

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Premature infant - incidence, risk factors, complications

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Introduction: Prematurity is the leading cause of neonatal morbidity and mortality. Premature newborn is the child born under 37 weeks gestational age. The risk factors involved in the occurrence of premature birth include: socioeconomic factors and family, medical factors (obstetric, acute and chronic maternal and fetal disorders). As gestational age is lower, the worst may be complications that can occur to preterm infants.
Materials and methods: The study was conducted over a 6 year period, and were included preterm infants with gestational age below 37 weeks, born at the Maternity Bega Timisoara.
Clinical cases and summary results: Of the total number of 13 976 newborns in this period, 1045 were premature newborns. The incidence depending on gestational age was 24-26 weeks - 5%, 27 to 29 weeks - 9%, between 30-32 weeks - 25%, between 33-35 weeks - 48% and 36 weeks - 13%. The incidence of preterm birth weight depending was: under 1000g - 7% 1000-1499g - 16%, from 1500 to 1999 g - 27%, from 2000 to 2490 - 35% and premature infants weighing over 2500 g were in proportion of 15%. From the total number of premature births, 105 mothers had hypertension, 41 mothers had placenta praevia, 12 presented the HELLP Syndrome, 20 had premature ruptured membrane, 17 presented infectious pathology, six mothers had diabetes, two mothers had thrombophilia and 20 cases had other maternal diseases. From the total number of preterm, 230 were from multiple pregnancies. From the complications of prematurity, 49 preterm developed retinopathy of prematurity, 2 preterm had hydrocephalus and 11 presented periventricular leukomalacia.
Conclusion: Premature infants represents a category of newborns with increased risk of morbidity and mortality. It shows a higher incidence of premature babies between 33-35 weeks gestational age and birth weight between 2000 to 2490 g. Maternal risk factors involved in causing the premature birth more common are hypertension, placenta praevia and infectious pathology. Complications of prematurity increase the risk of sequelae and unfavorable prognosis.

Keywords: preterm infants, maternal risk factors, complications

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Predictors of pregnancy outcomes for emergency cerclage

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Introduction: The aim of the present study was to evaluate the factors associated with successful pregnancy (delivery after 34 weeks) following emergency cervical cerclage in pregnant women with single gestations.
Materials and methods: A retrospective study of pregnant woman who underwent emergency cerclage from 2010 to 2014 was performed. The inclusion criteria for the study consisted of (1) a singleton pregnancies between 16 + 0 weeks and 27 + 6 gestational weeks, (2) no regular painful contractions (3) no premature rupture of membranes, and (4) cervical length was less than 2cm. Successful pregnancy was defined as delivery after 34 weeks. Univariate and multivariate logistic regression analysis were used to evaluate the factors associated with successful pregnancy. The cutoff value(s) of significant factor(s) with successful pregnancy was(were) decided using Receiver operating curve, and survival analysis and linear regression test were constructed for significant factor(s) with successful pregnancy.
Clinical cases and summary results: Fifty-nine pregnant women with complete data were available for analysis. According to univariate regression analysis, maternal age, BMI, gestational age at cerclage, cervical length at cerclage and cervical length after cerclage were significant factors associated with successful pregnancy. However, by multivariate logistic regression analysis, cervical length after cerclage was an independent predictor of success pregnancy. Linear regression analysis showed that there was significant correlation between gestational age of delivery and cervical length after cerclage (p=0.0000). The cutoff value of 1.84 cm in cervical length after cerclage predicted successful pregnancy with a sensitivity of 73.3% and specificity of 88.1%. Women with cervix length measuring $<$1.84 cm after cerclage delivered at an earlier gestational age compared with women whose cervix length was $\geq$1.84 cm according to the survival analysis (p $<$0.0001).
Conclusion: Among various factors, cervical length after emergency cerclage was identified as an independent predictor of successful pregnancy.

Keywords: Emergency cervical cerclage, cervical length, single pregnancy, predictors of outcomes, successful pregnancy

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Risk factors and outcome of preterm births caused by preeclampsia

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Introduction: Preterm birth is a leading cause of neonatal death worldwide. It leads to complication not only in early life but also in later life. Preterm birth is associated with many pregnancy complications. Preterm birth is divided into spontaneous and provider-initiated preterm births. One of the leading causes of provider-initiated preterm birth is preeclampsia. Indonesia is a low developing country that ranked 5th as the greatest number of preterm births. As one of the tertiary hospital in Indonesia, dr. Cipto Mangunkusumo National Hospital received many referrals from other hospitals nationwide. We aim to know the prevalence of preeclampsia in preterm births, its maternal characteristics, and also its maternal and neonatal outcome.
Materials and methods: This study is a retrospective descriptive study and was done in Obstetrics and Gynaecology Department of dr. Cipto Mangunkusumo National Hospital. The inclusion criteria are women with singleton live preterm births. Multiple pregnancy and patients with incomplete data records were excluded in this study. Time of this study was from January 1st 2015 until December 31st 2015. The data obtained were demographic, maternal and neonatal outcome data. All data were a secondary data collected from medical records. The data were then analyzed using SPSS version 19.
Clinical cases and summary results: A total of 750 women with preterm births were documented during the year of 2015 in dr. Cipto Mangunkusumo National Hospital. The inclusion criteria were met by 632 of them. Overall, the prevalence of preeclampsia in all preterm births documented was 27.2%. Maternal age (Adjusted OR 0.14 95% CI 0.04-0.44) and parity (Adjusted OR 0.65 95% CI 0.45-0.94) was found statistically significant in the maternal characteristics. Low Apgar score was found higher in the preeclamptic group (21.5%) rather than in the non-preeclamptic group (15.4%). NICU admission was also higher in the preeclamptic group (26.2%) rather than in the non-preeclamptic group (20%). Maternal outcome such as ICU admission (Adjusted OR 26.52 95% CI 11.7-59.96) and mode of delivery (Adjusted OR 0.35 95% CI 0.22-0.54) were found statistically significant.
Conclusion: Preterm births indicated by preeclampsia give worse maternal and neonatal outcome rather than preterm births caused by others. ICU admission and caesarean section as a mode of delivery were found higher in preeclamptic patients with preterm births. Decision making in the provider-initiated preterm birth by pre-eclampsia must be resolve and analyze to minimize poor maternal and neonatal outcome.

Keywords: Preterm birth, preeclampsia

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Impact of high risk for antenatal depressive disorders and preterm birth

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Introduction: Preterm birth is defined as birth prior 37 weeks of gestation. It is the main risk factor for neonatal morbidity and mortality. In 2013 the rate of preterm birth was 7.2% in Switzerland. Established risk factors leading to preterm birth are previous preterm birth, premature rupture of membranes and premature contractions. Several publications mentioned, that antenatal depressive disorders can also be associated with preterm birth. Investigations showed that new-borns from depressive mothers had worse outcomes with lower birth weight and lower APGAR scores. Aim of this study was to assess the association of high risk for depression in pregnancy and preterm birth respectively complications that are connected with preterm birth.

Materials and methods: Out of a multicentre study including 500 symptomatic patients with threating preterm labour and intact membranes we assessed a sample of 104 women between 24 and 34 weeks of gestation at the University Hospital Basel. Depression was messured by using the Edinburgh Postnatal Depression Scale (EPDS), a 10-item self-reporting questionnaire, developed to identify ante- and postnatal depressions. With a sensitivity of 0.955, a specifity of 1.000 and a positîve predictive value of 1.000 we chosed to regard an EPDS score $\geq$10 as indicating depression (Bergant A.M. et al., Deutschsprachige Fassung und Validierung der ''dinburg postnatal depression scale'', Dtsch. Med. Wschr. 1998, 123: 35-40).
Clinical cases and summary results: Out of 104 included women 83 completed the questionnaire including 20 twin pregnancies and 63 singeltons. 25% (21/83) had an EPDS score $\geq$10. Delivery prior 37 weeks of gestation occured in 33% (28/83). There was no difference in age, gravidity, parity and days of hospitalisation between the collective. We found no significant difference between antenatal depressive disorders and rate of birth complications defined as PPH, preeclampsia and amniotic infection syndrom. In our collective 38% (8/12) with an EPDS $\geq$10 gave birth preterm compared to 32% (20/41) who gave preterm birth with an EPDS $\leq$10. Concerning birth complications women with an EPDS >10 and EPDS <10 had the same complication rate of 19%. Moreover there was no significant difference between EPDS scores when compared according to neonatal out come (24% in both groups).
Conclusion: According to the results of the study we could not confirm a high EPDS was predictive for preterm birth and maternal and neonatal complications. Considering the small number of patients it's not representative to draw final conclusions. Further studies including higher numbers of symptomatic woman and a control group with term birth are mandatory.

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Association of educational level of the mother with the birth weight of hospitalized newborns in the NICU

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Introduction: We investigated the correlation between the educational level of the mother with the birth weight (BW) of the hospitalized newborns at the only tertiary Neonatal Intensive Care Unit (NICU) in Cyprus.
Materials and methods: The study was conducted in the Neonatal Intensive Care Unit where all newborns in the country in need of intensive care are hospitalized during the period March 2013-March 2014. The study included 526/640 premature neonates (82.2%). 312 male (54.60%) and 259 female newborns (45.40%). Educational level: Mothers elementary-school graduates (M1) *n*: 67 (10,5%), high school graduates (M2) n: 210 (32,8%), College/University graduates (M3) 281 (43.9%). We investigated whether there is a correlation between the educational level of mothers and the birth weight of hospitalized newborns. Neonates were classified into three groups: small for gestational age neonates (SGA), appropriate for gestational age (AGA) and large for gestational age (LGA) according to their birth weight.
Clinical cases and summary results: M1 Group: AGA 45 (69,2%), SGA 18 infants (27.7%) and LGA 2 (3,1%). M2 Group: AGA 151 (74,4%), SGA 43 (21,2%) and LGA 9 (4,4%). M3 Group: AGA 184 (71,3%), SGA 62 (24,0%) and LGA 12 (4,7%). Statistical analysis showed a proportionately higher rate of SGA newborns in the M1 compared to M2 and M3 but the difference was not statistically significant.
Conclusion: There appears to be a positive effect of the higher level of education of mothers on the birth of AGA newborns in Cyprus. Our results are compatible with other international reports. Larger studies are needed to support our results.

Keywords: Birth weight, small for gestational age

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Association of the educational level of the mothers of the hospitalized neonates with the degrree of prematurity

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Introduction: Although the literature recognizes the positive correlation between low socio-economic/educational level and infant health level, evidence is not clear. The purpose of this study is to investigate the correlation of the educational level of the mother with the degree of prematurity.
Materials and methods: The study was conducted in the Neonatal Intensive Care Unit of Archibishop Makarios Hospital from March 2013 till March 2014. During that period of time, 312 male (54.60%) and 259 female newborns (45.40%) were hospitalized in our NICU. The educational level of mothers was recorded as follows: elementary-school graduates (M1) n: 67 (10,5%), high school graduates (M2) n: 210 (32,8%), College- University graduates (M3) 281 (43.9%). We investigated whether there is a correlation between the educational level of mothers and the gestational age of hospitalized newborns.
Clinical cases and summary results: Mothers M1 gave birth to 0 infants 24-26 weeks of gestational age (GA) (0%), 5 27-29 (7.5%), 13 30-32 (19.4%), 25 33-36 (37.3%), 21 37-40 (31.3%) and 3 40-42 (4.5%). Mothers M2 gave birth to 4 neonates 24-26 weeks (2.0%), 13 27 - 29 (6.3%), 24 30-32 (11.7%) 99 33-36 (48.3%), 60 37-40 (29.3%) and 5 40-42 (2.4%). Mothers M3 gave birth to 4 neonates 24-26 weeks (1.5%), 18 27- 29 (6.8%), 40 30-32 (15.0%), 118 33-36 (44.4%), 79 37-40 (29.7%) and 7 40-42 (2.6%). M1 mothers appear to give birth to more premature neonates than M2 and M3 mothers but the difference is not statistically significant.
Conclusion: The educational level of the mother appears to correlate with the degree of prematurity of newborns. In our NICU the better-educated mothers give birth to greater gestational age newborns. Larger studies are needed to support our results.

Keywords: Prematuriy, mother, education

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Vaginal pH value in prediction of preterm delivery in women diagnosed with preterm labor

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Introduction: Evaluate sensitivity and specificity in prediction of preterm delivery in 2, 7 and 14 days from the time of the testing in cases diagnosed with preterm labor for vaginal pH value bigger than 4,5 and cervical length equal or shorter than 2,5 cm.
Materials and methods: Prospective, observational study performed at the University Clinic of Obstetrics and Gynecology in Skopje. 83 pregnant women between 200/7 and 366/7 weeks of gestation with symptoms of preterm labor, with clinically intact amniotic membranes and cervical dilatation ≤2,5 cm were recruited in the trial. Vaginal pH value was determined before the CL measuring and pH >4,5 was considered pathologic. Patients were treated according to the protocol with: antibiotics, tocolitics and corticosteroids and the time from the testing to the delivery was assessed.
Clinical cases and summary results: The vaginal pH >4,5 predicted delivery within 2 days with 80% sensitivity, 35% specificity, 7% positive predicted value and 96% negative predictive value. pH >4,5 predicted delivery in 7 days with 91% sensitivity, 38% specificity, 19% positive predicted value and 96% negative predictive value. pH >4,5 predicted delivery in 14 days with 83% sensitivity, 39% specificity, 28% positive predictive value and 89% negative predictive value.
Conclusion: Vaginal pH >4,5 in patients with symptoms of preterm labor, with intact membranes and cervical dilatation ≤2,5 cm indicates that delivery within 7 days is quite probable despite the therapy. A normal vaginal pH value, furthermore, indicates that delivery within 7 days is highly unlikely.

Keywords: Vaginal pH, cervical length, preterm delivery

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Utilization of a novel biomarker test (PARTOSURE PAMG-1) to reduce the length of stay in patients with threatened preterm labor and a short cervix

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Introduction: Patients with a short cervix of ≤25 mm via transvaginal ultrasound are often admitted to the hospital due to increased risk of imminent spontaneous delivery. However, it is well known that the majority of patients with a short cervix do not go on to deliver within the next 7 days. The objective of this study was to evaluate the utility of the PartoSure test to reduce the length of stay after these patients had been admitted to the hospital with a short cervix and signs and symptoms of threatened preterm labor.
Materials and methods: 45 patients were recruited in this prospective observational study. Patients presented with symptoms of preterm labor between Jul 2015 - Feb 2016. The patients were between 24 + 0 and 34 + 6 wks of GA, minimal cervical dilation and clinically intact membranes. Cervical length was measured using transvaginal ultrasound upon presentation. Patients with a short cervix of ≤25 mm were admitted to the hospital for observation and/or treatment based on the standard of care of the hospital. A PartoSure test was performed approx..one day after admission and the decision was made to discharge the patient or keep them at the hospital for observation. Calculations to determine the performance of the PartoSure test and the associated average length of stay for these patients were performed retrospectively.
Clinical cases and summary results: All 45 patients in the analysis had a short cervix of ≤25 mm measured using transvaginal ultrasound and a PartoSure test was performed approximately one day after admission (mean 34 hours, mode 24 hours). 11% (5) of patients had a PartoSure positive test, 89% (40) of patients had a negative PartoSure test, wherein 60% (24) of patients were not discharged and continued their stay for extended monitoring and 40% (16) were discharged. Admitted patients were treated based on local guidelines of the facility and clinician judgement: 70% (17) received corticosteroid therapy, 100% (24) received tocolytic therapy and 8% (2) received antibiotics and none of these patients delivered within the next 7 days or 14 days. The PPV for Cervical Length of ≤25 mm was 7%. The PartoSure test had a Sensitivity 100%, Specificity 95%, Positive Predictive Value 60% and Negative Predictive Value 100% for delivery within both 7 and 14 days. A retrospective analysis showed the average length of stay of the patients who were admitted was of 8.4 days, mode 13 days.
Conclusion: Patients with tPTL and CL ≤25 mm are often admitted for treatment or observation, but majority don't go into labor, using resources such as bed space and unnecessary treatment. PartoSure may help to stratify high risk patients and assess their risk of delivery within 7 or 14 days. A negative PartoSure in conjunction with clinical judgment may be useful to identify patients that can be safely discharged after 24 hrs of observation, reducing their length of stay and burden on hospital resources.

Keywords: Preterm labor, PAMG-1, Partosure, preterm birth, cervical length

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Peritoneal dialysis in very low birth weight neonates

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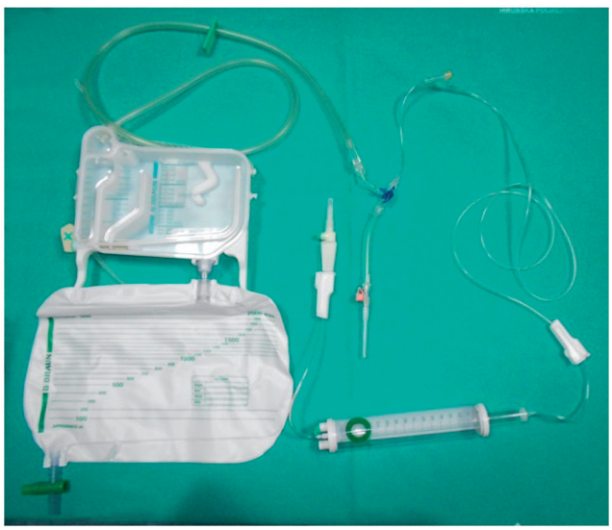
Introduction: Starting peritoneal dialysis (PD) early also reduces mortality and morbidity of newborns with AKI. The goal of this retrospective study is to evaluate the characteristics of 10 very small birth weight (VLBW) neonates, who are treated with PD.
Materials and methods: A retrospective study has included 10 VLBW neonates, who required peritoneal dialysis. Intravenous (IV) cannula and umbilical vein catheter were used for the peritoneal access
Clinical cases and summary results: Mean age in the moment of starting PD was 14.9 ± 9.32 days. Mean body weight was 825 ±

215.31g. The average gestational age was 26.3 ± 1.15. The average duration of dialysis was 20.5 ± 14.75h. The exchanges were done every 10-60 minutes. The average UF was 7.71 ± 4.19ml/kg/h. In average they had a fluid overload 302 ± 317.93g higher (12%). The dialysate leak was registered in 2 patients, one patient had peritonitis and one patient had a blockade of IV cannula. The overall mortality was 80%.

Conclusion: The timely start of PD is of a crucial importance for the survival of newborns in AKI. PD represents one of the transitioning measures until there is a renal function recovery. In acute situations in VLBW neonates, PD can be performed by improvised catheters.

Keywords: IV cannula, peritoneal dialysis, preterm neonate



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Data mining technique in detection of coagulative hemostasis disorders of term and preterm infants with hypoxic-ischemic lesions of the central nervous system and various manifestations of hemorragic syndrome

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Introduction: Using data mining technique lets determine undetected ties in existing data and carry out expended analysis. It is supposed to be one of the most promising directions for the modern medcine development.

Materials and methods: We examined (*n*=27) term and (*n*=43) preterm neonates with various manifestations of haemorragic syndrome (at age of 4-7 days after the birth). Investigation of the indicators of hemostasis was performed among infants with cephalohematoma, intradermal hemorrhage. The parameters of hemostasis were searched by means of the Automated Blood Coagulation Analyzer CA 1500 (Sysmex Corporation, Japan). The following parameters were being diagnosted: prothrombin time, prothrombin time (quick), international normalized ratio (INR), activated partial thromboplastin time (APTT), thrombin time, levels of fibrinogen. Linear dependencies were explored using Principal Components Analysis. Artificial neural nets, logistic regression and decision trees were used to predict the disease.

Clinical cases and summary results: Using Principal Components Analysis, distinctions between term and preterm neonates were discovered on the following parameters: prothrombin time (quick), activated partial thromboplastin time, prothrombin time, international normalized ratio. In the model of logistic regression the following predictors had the highest discrimination power: prothrombin time, prothrombin time (quick), INR. The most significant variables in decision tree model: prothrombin time, (APTT), age, INR. The sensitivity and the specificity of classifiers of term and preterm neonates according to the coagulative hemostasis parameters built by three different methods are 75% and 70% for artificial neural nets, 90% and 60% for decision tree, 85% and 90% for logistic regression accordingly.

Conclusion: Using data mining technique provides precise differential diagnostics of coagulative hemostasis disorders of term and preterm neonates and appropriate (early) treatment.

Keywords: Preterm infant, haemorragic syndrome, hemostasis, hypoxic-ischemic lesion

433 (CASE REPORT)

Recurrent severe metabolic acidosis in a prematurely born infant - case report

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Introduction: Metabolic acidosis (MA) is not a disease but rather a biochemical abnormality due to disorder of the acid-alkaline homeostasis. Untreated, severe MA is urgent condition for patients at any age and can lead to myocardial depression, convulsions, shock, and multiorgan failure. Common causes of MA in the neonates are sepsis, necrotizing enterocolitis, hypothermia, asphyxia, intracranial haemorrhages, persistent ductus arteriosus, shock, and drugs. Rare causes are inborn errors of metabolism, renal tubular acidosis, increased loss of bicarbonates through the unstable stools due to malabsorbtion, starvation.

Clinical cases and summary results: We present a case of severe recurrent MA in a newborn of risk pregnancy (43-aged mother, in vitro conception), born prematurely with symmetric intrauterine growth restriction. The early neonatal period was compromised by necrotizing enterocolitis with small intestine perforation. Surgery intervention was performed on the 12th postnatal day (partial small intestine resection and outputting of anus praeter iliacus). Congenital heart anomaly (atrial septal defect) as an accompanying disease manifested by cardiac failure in the first weeks. Toxic lever injury with cholestasis due to prolonged parenteral nutrition and difficulties in enteral nutrition aggravated additionally clinical course. The incidents of decompensate MA came forward after 6th postnatal (41st postconceptual) week and high doses of bicarbonate were needed for adequate correction.

Conclusion: After excluding other causes for MA in this patients, its condition was interpreted as result of high bicarbonate losses by diarrheic stools through the anus iliacus. The acid-alkaline balance was stabilized by administering of regular peroral intake of

bicarbonate up to definitively surgery recovery of the normal bowel passage at the age of 6 months.

Keywords: Acid-alkaline homeostasis, metabolic acidosis, newborn

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The maternal infection and perinatal outcomes in preterm birth

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Introduction: Infection history of the mother, inflammatory diseases during pregnancy, infectious complications of pregnancy affect the outcome of preterm birth. The main cause of both early preterm delivery and late spontaneous abortion is the premature rupture of membranes (PROM) with amniorrhea to the onset of labor, which is detected in the period 22-37 weeks of gestation in 0.7-2.1% of all flowing delivery. In the structure of preterm labor at a fraction of this complication, according to various authors, falls from 34.9% to 56%. This complication is very dangerous not only for the fetus, but also for the mother due to the connection or exacerbation of infection and subsequent development placentitis, chorioamnionitis and septic conditions that may ultimately lead to the death of the woman.
Materials and methods: The aim of our study was to identify the infectious aspects of perinatal CNS lesions in preterm newborns. We especially appreciated the anamnesis 96 women with preterm labor and birth of children with perinatal lesions of CNS varying degrees, pregnancy complications, and infectious complications in children. A control group of 30 women with timely delivery and healthy children were included. Pregnant women with preterm labor, depending on the gestational age deliveries were divided into 4 groups: 22-25 + 6 (days) weeks, 26-28 + 6 (days) weeks 29-32 + 6 weeks, 33-36 weeks. Attention is drawn to the high rate of chronic inflammatory diseases of the respiratory system - 27 (28.1%, OR = 3.22, CI = 0.39-26.6) and urinary system - 28 (14.28%, OR = 4, 25, CI = 0.32-26.6).
Clinical cases and summary results: Diseases associated with Ureaplasma spp. / Micoplasma hominis were diagnosed in 59 (38.82%) in pregnant women with preterm labor and in 3 (10%) women in the control group with the association the pathological changes of the cervix: cervicitis, LSIL, cervical leukoplakia that accompanied by a subsequent long-term medical and instrumental treatment. There is a high percentage of infection for 22-25 weeks and 26-28 weeks. In the structure of the viral infection was more frequent CMV infection: 1-st subgroup - 6 (23.07%) in the third subgroup - 4 (22%) in the first sub-4 - 6 (23.07%) the second subgroup - CMV infection is not detected. Ureo- and mycoplasma infection was significantly more frequent in the 3 rd - 6 (33.33%) and 4 th - 9 (34.62%) subgroups. Only women in preterm labor group 4 and more marked pregnancy - 43 (21.94%, OR = 5.48, CI = 0.30-98.91) is 4 or more and 14 genera (7.14%, OR = 2.45, CI = 0.29-20.7). In the analysis and comparison of four subgroups more pregnancies were observed in the 4th subgroup - 14 (53.85%). In 65 (67.86%) cases during pregnancy, premature birth ended, the woman suffered an infectious process (in class 1 - 20 (76.92%), the subgroup 2 - 10 (38.46%) in the subgroup 3 - 15 (83.3%) in the subgroup 4 - 22 (84.62%)). In the structure of infectious diseases in the comparison group deserve special attention respiratorno-viral infections and genital infections subgroup 3 - 15 (83.3%) in the subgroup 4 - 22 (84.62%)).
Conclusion: All newborns of all subgroups in the survey revealed signs of congenital pneumonia, 96 (100%). Patients 3rd, 4th subgroup infection as realized folliculitis - 20 (76.92%) and 14 (77.78%) of cases. As there was a high percentage of congenital conjunctivitis - 18 (69.23%) and 12 (66.67%) children. In the 2nd subgroup of congenital conjunctivitis prevailed - in 25 (96.15%) patients, the percentage was significantly lower folliculitis 6 (23.08%).

Keywords: preterm birth, sexual transmitted diseases, neotatal infections

447 (CASE REPORT)

A case of severe influenza leading to ards and preterm labour

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Introduction: Influenza carries high risk of morbidity and mortality for pregnant women and their unborn children. There are risks of developing severe pneumonia, meningitis, encephalitis, septic shock and pregnancy complications such as pre term labour, lower birth weight and perinatal mortality. In the UK between 2009 and 2012 nearly one in ten women who die during pregnancy were due to flu. Universal flu vaccination is recommended in the UK. The reported vaccine effectiveness ranged from 50-60% in overall population. Flu vaccination to pregnant women is up to 92% effective in preventing flu in first 6 months of life. Inactivated influenza vaccine is safe in any trimester of pregnancy. If a pregnant woman is suspected of having influenza, it's important that she receive prompt antiviral treatment.
Clinical cases and summary results: A 36 years old Indian woman, BMI 34, para1 (previous normal delivery at term), with history of hypothyroidism, had a flu jab at 6 weeks of gestation. The woman developed persistent cough at 26 weeks of gestation and was treated with amoxicillin by the GP. But her condition didn't improve. A throat swab was PCR +ve for influenza A. The patient was started on Oseltamivir. She was also diagnosed with gestational diabetes mellitus at 28 weeks. At 29 weeks she was admitted with pyrexia, tachypnoea, tachycardia, low O2 saturation of 93% in air, uterine contractions and spontaneous rupture of membrane. A chest X ray confirmed pneumonia. Patient was started on amoxicillin and clarithromycin along with Oseltamivir. Antenatal steroids were given. MgSo4 was administered for the foetus. In view of persistent pyrexia after discussion with a microbiologist amoxicillin was changed to merapenum. On speculum examination cervical os was 3cm dilated. But an ultrasound scan confirmed footling presentation. LSCS was performed under general anaesthesia. Patient was admitted to ICU with features of ARDS. After 4 days in the intensive care unit patient transferred to the ward. Baby was kept under close surveillance and it did not develop flu morbidity. Maternal condition gradually improved and after 7 days of delivery patient was discharged home.
Conclusion: We noticed rapid deterioration of an influenza infected pregnant woman with development of pneumonia, ADRS and preterm labour, though, the mother did receive a flu shot early in pregnancy. The patient needed multidisciplinary intensive care to ensure optimum recovery for the mother and the baby.

Keywords: Influenza, ARDS, pretem labour

456 (CASE REPORT)

Severe complications of osteopenia of prematurity in ELBWI - case reports

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Introduction: Preterm infants are at increased risk of impaired bone metabolism and osteopenia during the neonatal period. We report on 3 ELBW infants with osteopenia of prematurity resulting in fracture of the long bones.
Clinical cases and summary results: 3 ELBWI who were admitted to the NICU at University Hospital of Obstetrics and Gynecology "Maichin dom" between May 2015 and January 2016 are included.Vitamin D intake starts from 10 day of age in dose1000IU/d. Case1: A baby girl weighing 410g was born at 28 g.w. She had severe RDS, prolonged assisted ventilation and nitric oxide therapy.She received ventilatory support for a 156 days. During this period severe BPD was observed,and she received 3 courses of dexamethasone. During the 11th week of age she had swelling and pain of the both legs. X-ray confirmed fractures of both femurs. The biochemical indicators were - AP538 IU/L, P-1.2 mmol/l, PTH-165.3 pg/ml, 25-OHD - 73.3nmol/l, Ca^{++} 1.5mmol/l. Case 2: A baby boy weighing 930g was born at 28g w. He developed severe RDS, assisted ventilation-28 day, nitric oxide therapy. He received due to BPD 2 courses of dexamethasone. At 13 weeks of age was diagnosed fractura femoris dextra. The changes were: AP-417IU/L, P-1.8mmol/l, PTH - 193.9pg/ml, 25-OHD - 79.8nmol/l, Ca^{++} 1.2mmol/l. Case 3: a baby boy weighing 560g was born at 24 g w. He developed severe RDS and assisted ventilation - 48 days. He received 2 courses of dexamethasone. At 7 week of age was noticed swelling, reduced movement of his right arm. X-ray showed fracture of the right humerus. The changes were: AP-413 IU/L, P - 1.4mmol/l, PTH - 120.9pg/ml, 25-OHD 111.7nmol/l, Ca^{++}0.7 mmol/l. The fractures were treated with extreme caution in handling, and increasing the dose of D3 - 1500 IU/d. Satisfactory healing occurred without sequelae.
Conclusion: These three cases demonstrate the fragility of the bones of premature infants. Screening of bone metabolic indicators especially 25-OHD, parathyroid hormone and serum phosphorus can predict osteopenia.

Keywords: ELBWI, osteopenia, fractures

PRETERM BIRTH/THE PRETERM INFANT - 470

Bottle or spoon? Which method is best to preserve breastfeeding in moderate prematures after discharge?

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Introduction: Breastfeeding is one of the major goals in neonates feeding. Most of prematures admitted in neonatal units (NU) are fed with mother's milk combined with different amounts of formula, usually given by bottles. In term infants, bottles are not recommended because of a probably worse latch to breast and it's thought that spoon could be a better way for getting final direct breastfeeding. There's no evidence for the same affirmation in moderate premature babies.
The objective of the study was to assess which is the best method to achieve direct breastfeeding, comparing bottle to spoon in moderate preterm babies. Initial hypothesis was that using bottle in moderate prematures did not interfere with breastfeeding success.
Materials and methods: A prospective study was performed in a iiird level hospital NU from December 2012 to May 2014. Moderate prematures (from 34,0 to 36,6 weeks of gestational age) who were admitted for any reason and who took any amount of mother's milk at discharge were randomized to either spoon or bottle. Informed consent was signed by parents. The hospital ethics committee approved the study. Statistical descriptive studies were used.
Proportion of milk and administration method were collected at discharge.
Epidemiological mother and newborn factors were included. Follow up data were obtained at 1 and 3 months afther discharge by phone calls. Deviation from the study was considered when parents decided to go out from the randomisation group before discharge.
Clinical cases & summary results: A total of 46 moderate prematures entered the study. About two thirds of the mothers had a high educational level (university). 26,1% of mothers had previous children, and 90.9% of them had been breastfed. 39,1% of the neonates were twins. The median birth weight was 2190 g and the median gestational age at birth 35,6 weeks.
Discharge took place at a median of 7 days, with a median postmenstrual age of 36,4 weeks and a median weight at discharge of 2145 g. 19 children were randomized to spoon and 27 to bottle.
At discharge, 89,1% of neonates took combined breastfeeding and only 10,9% took exclusive breastfeeding; the methods were spoon in 38,6% and bottle in 61,4%. 7 cases were deviated.
In 3 months exclusive breastfeeding increased from 0 to 18,4% and exclusive formula from 0 to 42,1%. 15,8% of children got direct breastfeeding and 36,8% got exclusive formula by bottle.
Spoon showed more coordination problems (p=0,024) and less acceptance among parents (p=0,01) and among nurses (p<0,01) than bottle. 6 children moved to exclusive breastfeeding (50% from spoon and 50% from bottle). At 3 months 57,9% of children mantained any amount of breastfeeding.
Conclusion: According to the results of that study, the feeding method used at discharge in moderate premature babies doesn't seem to influence the future quality or amount of breastfeeding at 3 months of age. Parents and nurses feel more confortable with bottles. The use of spoons or other methods different from bottles doesn't offer any significant advantage.

Keywords: Bottle, Spoon, Breastfeeding, Premature

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Developmental centered care in mexican neonatal units, 2015 an approach through social networks

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Introduction: The objective of Developmental Centered Care (DCC) is to favor the neurosensorial and emotional development of the newborn and to decrease the stress associated to neonatal care and the pain related to diagnostic tests and invasive treatments.
To describe the implementation extent of the DCC in the Neonatal Intensive Care Units (NICU) in Mexico.
Materials and methods: Cross sectional, observational and descriptive study. A questionnaire focused on DCC was sent via online to personnel working in NICUs that attend more than 50 children weighting less than 1.500 gr every year.
Clinical cases and summary results: A total of 39 NICUs were studied: 31% use covers as a mean of protection from light, 10% use methods of noise measurement, 36% employ pain assessment scales. The access to the units is 2-3 hours per day (56%); 13% of the units have a room exclusively for parents available inside the unit, and 36% allow the Kangaroo Care Method to be performed.
Conclusion: A lack of strategies is noted to raise the coverage of these care methods in the NICUs, to improve the education of the parents respecting the measures used in this program, and to achieve that the DCC is applied in every region due to its low cost and great benefit.

Keywords: Developmental Centered Care, Kangaroo care, Neonatology, Prematurity

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Predisposing factors in newborns with acute kidney injury

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Presenter: **S. Naunova Timovska**;

Introduction: Acute kidney injury is a serious condition which damages the kidney as a central mediator of the homeostasis of bodily fluids and electrolytes. It is not a rare problem in the intensive care units, particularly in the neonatal population. Perinatal asphyxia is a common predisposing factor associated to neonatal kidney injury. The aim of this study was to determine the characteristics of acute kidney injury in newborn from neonatal intensive care unit and to explore the association with perinatal asphyxia
Materials and methods: The study was conducted at the Children's University Hospital in Skopje, R. Macedonia. It was a clinical, prospective study. In the period of two years (January 2014 to December 2015) 29 patients hospitalized at the NICU with documented neonatal kidney injury were analyzed. Medical data records of admitted neonates with kidney injury were analyzed. The material was statistically analyzed using methods of descriptive statistics.
Clinical cases and summary results: We evaluated 29 neonates with documented acute kidney injury who at the period of 2 years were treated in NICU. The prevalence of kidney injury was 6.4%. Most of involved neonates were born at term 66%. Prerenal injury was evaluated in 80% of cases. Perinatal asphyxia was the most common predisposing factors for kidney injury in our study revealed in 56% cases with predication of term infants and male. Sepsis was present in 44% cases, prematurity in 34%, and congenital malformation in 27% of cases. Mortality rate was 27.5% and it was higher in patients with assisted ventilation and sepsis
Conclusion: Perinatal asphyxia is a dominant predisposing factor associated with neonatal kidney injury. Often, the occurrence of kidney damage in the neonatal population is multifactorial (more than 40%) and caused by several associated comorbidities

Keywords: Acute kidney injury, newborn, perinatal asphyxia

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Mortality and major morbidity in premature neonates under 28 gestational age between 2006 and 2015

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Presenter: **K. Ben Ameur**

Introduction: Extremely preterm (EP) infants (under 28 weeks' gestation) are at high risk for mortality, neonatal morbidity and adverse neurodevelopmental outcomes in survivors. Further, the cost of health care of EP infants in terms of neonatal intensive care and, for some, lifelong support, is weighing heavily on the savings of families and the economy of state in our context. An assessment of management and outcome of EP infants in our unit was, not yet performed.
Aims: To assess the neonatal care, morbidity and mortality among EP infants supported at Neonatal Resuscitation and Intensive Care Unit of the Military Hospital of Tunis over the past 10years, in order to develop a thoughtful management strategy.
Materials and methods: STUDY DESIGN: Prospective and descriptive study.
Setting, subjects: We identified infants born at 22 to 27 weeks' gestation and supported in Resuscitation and Intensive Care Unit of Neonatology of Military Hospital of Tunis between 2006 and 2015.
EXPOSURE: Extremely preterm birth.
Main outcomes and measures: Perinatal characteristics, neonatal care, morbidities, and survival. Major morbidities, reported for infants who survived more than 12 hours, were hyaline membrane disease necrotizing enterocolitis, infection, bronchopulmonary dysplasia, intracranial hemorrhage, periventricular leukomalacia, and/or retinopathy of prematurity.

Clinical cases and summary results: We identified 73 EP infants, 17.8% were intubated in the delivery room. The average term was 26 gestational age (GA). The mean birth weight was 903 gr. Morbidity was represented as follows: hyaline membrane disease in 56%. Hemodynamic disorders were noted in 54%. Maternal-fetal infections were noted in 23%. Nosocomial infection was noted in 36.7% of survivors more than 3 days. Neurological damage affected 21% of EP. The rate of ulcerative enterocolitis necrotizing was 8,2%. Assisted ventilation was used in 71%. The overall survival rate was 19%.
Survival increase between the first and the last five years of study was statistically non significant: 10% [3 of 29] to 25% [11 of 44]; RR 1.2 [95% CI, 0.97-1.48]). All seven infants under 25 GA dead. Survival rate was 17.4% (19 of 23) in infants aged between 25 and 26 GA, and 23.2% at 27 GA. The average length of stay for survivors was 61 days. The lowest weight and term in survivors were respectively 25 GA and 860 gr. Bronchopulmonary dysplasia was noted in three of 14 survivors more than 28 days. Two EP infants developed cerebral palsy (2.7%) and one develop retinopathy of prematurity.
Conclusion: Limit of this study was the small of sampling. We observed high rates of mortality and morbidity in EP infants. Several axes need to been promoted in the management of risk pregnancies, neonatal care and prevention of nosocomial infections. Infants born near the limit of viability (22 to 24 GA) are at high risk for death and pose the ethic problem of therapeutic obstinacy. These findings may be valuable in counseling families and developing novel interventions.

Keywords: Extremely preterm, infants; mortality, morbidity

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Enteral nutrition of extremely low birth weight infants

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Presenter: **V. Atanasova**

Introduction: Enteral nutrition of newborns with extremely low birth weight (ELBW) still presents as a challenge for the clinician. Establishment of good nutritive tolerance requires time and patience and prolongs parenteral nutrition. Breast milk is an ideal food for all newborns including those with ELBW but it is not always available or is insufficient. Therefore we rely on formulas designed for premature infants. These formulas are modified so that their composition is similar to breast milk and are able to satisfy growth requirements of the preterm infants. The goal is to achieve anthropometric indices which are relevant to postconceptual age and intrauterine fetal growth.
Purpose: To investigate growth rates of ELBW newborns feeding with partially hydrolyzed preterm formula.
Materials and methods: Nineteen babies with birth weight $\leq$1000 g were examined. Fenton growth charts for boys and girls, 2013 was used as fetal growth standard. The following indices were determined: presence of intrauterine growth restriction, duration of parenteral nutrition, development of clinical complication (intraventricular hemorrhage, patent ductus arteriosus, necrotizing enterocolitis, bronchopulmonary dysplasia, nosocomial infection, osteopenia of prematurity, toxic hepatitis with cholestasis), time of achievement of good nutritive tolerance (100 mL formula/kg/day), postconceptual age to discharge.
Clinical cases and summary results: Results: The weight gain in the first postnatal month was suboptimal (7,3±3,6 g/kg/day) which was compensated by greater weight gain in the second and third month of life (13,7±4,0 and 12,7±2,8 g/kg/day respectively). Despite of this, the overwhelming majority (14 of 19 babies – 73%) was characterized by anthropometric indices below 3rd percentile according to Fenton chart data for similar postconceptual age; 3 babies (16%) covered 3rd – 10th percentile and only 2 babies (11%) reached normal growth indices. All babies below 3rd percentile suffered from complications of their clinical course while others were not complicated.
Conclusion: There is not an ideal formula for ELBW newborns.
The anthropometric status of these patients to the discharge depends not only on enteral feeding but also on various complications during their hospital stay in NICU.

Keywords: Enteral nutrition, newborn, extremely low birth weight

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Stress biomarkers and psychosocial factors used as predictos of preterm labour

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Presenter: **Verónica Serrano de la Cruz Delgado**

Introduction: Psychosocial and biological stress-related factors are apparently associated with prematurity, which is a primary cause of neonatal mortality and morbidity. Despite advances in neonatal care and reduction of preterm infant mortality, morbidity still remains a considerable challenge for caregivers. Among the causes of preterm labor, the role of maternal stress has become increasingly relevant in the last decades. Nowadays, the simultaneous influence of both these factors has not been previously studied. Therefore, prediction of preterm labor based on multiple stress-related factors still remains a challenge.
Materials and methods: Prospective observational cohort study carried out during12months in a regional referral center. We recruited101-women who were diagnosed preterm labour between24-31weeks gestation and then they were classified in two groups according to the gestational age at delivery(term or not). Exclusion criteria were:gestational age between32-36 + 6weeks, major medical disorders or severe obstetric complications during pregnancy. The morning after admission, questionnaires addressing social functioning,anxiety,and depression were filled out. Saliva samples to determinate cortisol and α-amylase were collected. Mann-Whitneytest was performed to compare potential diagnosis variables, and if they showed significance, were introduced in logistic regression model to predict the prematurity.
Clinical cases and summary results: Mothers who had a preterm labor showed higher anxiety trait (p=0.030), lower social support (p=0,016), lower partner support (p=0,021), and higher cortisol levels (p less than 0,001) than mothers who had a term labor. Logistic regression model indicated that partner support and cortisol level the morning of admission to the hospital, were the best predictors of prematurity. (R2=0,342, p=0,001).
Conclusion: Psychosocial conditions and stress biomarkers are relevant factors for women who go into threatened preterm labour. A combination of these variables related with stress could differentiate between vulnerable women or resilient women. Vunerable women are specially related to women who simultaneusly show low partner support and high cortisol level. Therefore, this multivariable stress model could be taken into account to identify the risk of prematurity and prompt the initiation of early therapy.

Keywords: α-amylase, biomarkers, cortisol, prematurity, stress, threatened preterm labour

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The effect of routine immunisation on heart rate characteristics index

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Presenter: **Sujoy Banerjee**

Introduction: Heart Rate Characteristics index (HRCi) is a numerical score derived from a mathematical model of electrocardiogram analysis of heart rate variability, asymmetry and entropy to predict clinical deterioration. Displaying the HRCi to clinicians reduced mortality in very low birth weight infants, primarily due to reduction in late onset sepsis related mortality. However, HRCi can be affected by a number of other factors including acute respiratory deterioration, inflammation and drugs. Routine immunisation is known to be associated with respiratory instability and raised inflammatory markers but its effect on HRCi is not known. This study examines if HRCi is significantly affected by immunisation.
Materials and methods: A prospective observational study was undertaken at Singleton Hospital, Swansea, UK where HRCi monitoring is routine. Infants receiving planned immunisation as per the national immunisation schedule between May 2014 and January 2015 were included. Infants were excluded if discharged before the end of the study observation period or if HRCi scores were unavailable. Hourly HRCi and relevant clinical data were recorded 24 hours before and after the immunisation. Pre-immunisation median HRCi score over 24 hours (baseline) was compared for statistical difference with post-immunisation median HRCi in 6-hourly epochs by a non-parametric one- way ANOVA test for repeated measures (Friedman) on Graph Pad Prism 7.0 for Windows. A $p<0.05$ was used to indicate statistically significant difference.
Clinical cases and summary results: Twelve infants were immunised during their inpatient stay. One infant was excluded due to inadequate baseline data. The mean gestation and birth weight were 26.1 weeks (95%CI 25.1- 27.2) and 863 grams (95%CI, 742-986) respectively and immunisation was given at a mean gestation of 34.6 weeks (95%CI 33.7-35.5). Clinically notable increase in the HRCi scores ($\geq$2) was noted in 2 infants in the 24 hours after immunisations; both had concomitant respiratory deterioration. No culture positive sepsis was identified. A post-hoc group comparison following the Friedman test showed no statistically significant difference between the baseline median HRCi and any of the post- immunisation epochs. Statistically significant differences ($p<0.01$) in median HRCi were identified between some of the post-immunisation epochs. Very few HRCi scores reached clinical threshold for concern without associated respiratory deterioration.
Conclusion: HRCi was not affected by routine immunisation in neonates unless associated with overt respiratory deterioration. Any change in HRCi following immunisation must not be ascribed to immunisation only but other causes of rising HRCi such as sepsis or impending respiratory deterioration must be explored.

Keywords: Preterm, immunisation, heart rate characteristics index

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Effect of oropharyngeal colostrum administration in tumor necrosis factors-A, interleukin-6 and interleukin-8 levels in preterm newborns

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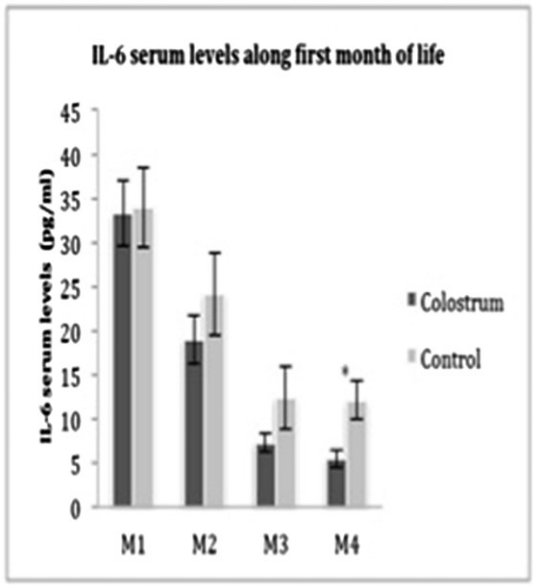
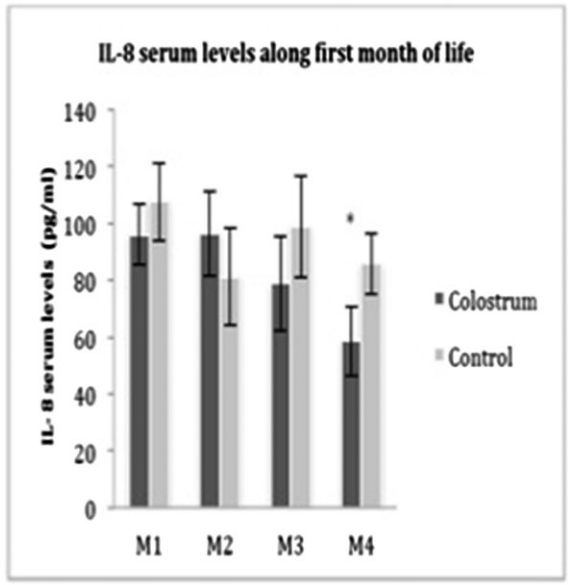
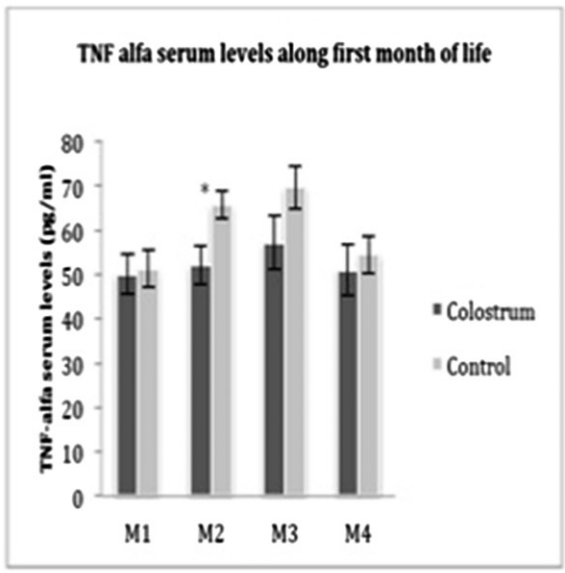
Presenter: **E. Martin Alvarez**

Introduction: Very low birth weight (VLBW) newborns have an immature immune system and also disrupted defense natural barriers. Colostrum contains increased concentrations of secretory immunoglobulin A, growth factors, lactoferrin, anti-inflammatory cytokines, pro-inflammatory cytokines and other protective components, compared with mature breast milk. Preterm colostrum may be especially protective during the first days of life when VLBW infants are the sickest and at highest risk for acquiring an infection.
This study aimed to evaluate the inmunologic effects of oropharyngeal colostrum adminstration to VLBW infants in their first two weeks of life, by assessing Tumor Necrosis Factors-α (TNF-α), Interleukin-6 (IL-6) and Interleukin-8 (IL-8) serum levels evolution up to one month of life.
Materials and methods: An interventional, no randomized, controlled trial recruiting newborns $\leq 32+6$ gestational weeks and/or < 1500 g at birth was developed. 38 newborns were enrolled. Subjects received 0,2ml of their mother colostrum every 4 hours administered oropharyngeally. The intervention was started in the first 24 hours of life, and it followed for a 15 days period. TNF-α, IL-6 and IL-8 serum levels were measured at birth (M1), 3 (M2), 15 (M3) and 30 (M4) days of life using Milliplex MAP technology. Perinatal and neonatal data for the first month of life were registered. Stadistic programa: SPPS vs 20.
Clinical cases and summary results: During colostrum administration a increased of TNF-α serum levels was observed in control group (M1 51,4 pg/ml vs M3 69,7 pg/ml; $p<0,01$), while this concentration remained stable in newborns who recived colostrum oropharyngeally (M1 50,1 pg/ml vs M3 57,2 pg/ml; p=0,33). Along the first month of life a decrease in IL-6 and IL-8 levels was found in colostrum group (IL-6: M1 33,3 pg/ml vs M4 5,5 pg/ml, $p<0,001$; IL-8: M1 96,1 pg/ml vs M4 58,7 pg/ml, $p<0,03$) and in control group (IL-6: M1 34,0 pg/ml vs M4 12,1pg/ml, $p<0,001$; IL-8: M1 107,7 pg/ml vs M4 85,9 pg/ml, p=0,15). IL-6 and IL-8 levels were statistically lower in colostrum group, regarding control group at one month of age (p=0,01; p=0,02).
Conclusion: Our data suggest that oropharyngeal colostrum administration might facilitate the development of immune system in VLWB infants along the first month of life, due to lower TNF-α serum concentration during the intervention and decreasing IL-6 and IL-8 serum levels at one month. These cytokines play an important role in pro-inflammatory response.

Keywords: Preterm, colostrum, interleukine 6, interleukine-8, Tumor Necrosis Factors-α







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Premature rupture of membranes acording to a clinical case

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Presenter: **J. Barrenetxea**

Introduction: Membrane rupture before 37 weeks of gestation is referred to as preterm premature rupture of membranes (PROM). Management is influenced by gestational age and the presence of complicating factors, such as clinical infection, labor, or nonreassuring fetal status. An accurate assessment of gestational age and knowledge of the maternal, fetal, and neonatal risks are essential to appropriate evaluation, counseling, and care of patients with PROM.

Clinical cases and summary results: A women in her 29 + 4 gestational week comes to the emergency service because she has ruptured the membranes. At the exploration, premature rupture of membranes (PROM) is confirmed. Cervicometry shows a 18mm cervix. Antibiotic treatment is settled. Once that an infectious outback is discarded tocolytic treatment is initiated due to contractions. Satisfactory NST. Contractions have ceased. After 24 hours maternal clinical situation shows no change (abscence of chorioamnionitis), but a severe oligoamnios is discovered by ultrasonography. In the NST decelerations in the FHR start to occur. Urgent fetal extraction is decided because off risk of loss of fetal wellbeing. A cesarean fetal extraction is performed.Uterine response is insatisfactory so 1000 mcg of Misoprostol are administrated intrarectally. Even so uterine tone is poor so a ''B-Lynch'' mode hemostatic suture is performed. Correct uterine tone is achieved. The evolution of the patient in the post anesthesia recovery unit is correct.

Conclusion: Preterm premature rupture of membranes is a quite common obstetrical entity. It forces us to settle antibiotic treatment. Once that infectious outback is discarded, fetal pulmonary maduration is important. We also need to check the fetal wellbeing by NST

and sonography techniques. With a maternal and fetal wellness situation there is no need to finalize pregnancy. If Maternal or fetal wellbeing can not be guaranteed the end of the gestation by the safest way is the procedure to make.

Keywords: Preterm, rupture of membranes, atony

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Twin pregnancy. Gestational age. Previous pregnancies matter

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Presenter: **C Larrañaga-Azcarate**

Introduction: Prematutity is common in twin pregnancies. Previous pregnancy could be a factor which matters on the average of age at delivery of actual twin pregnancy.
Materials and methods: A retrospective analysis on 1340 twin pregnancies atended at CHN during 10 years (2006-2015). Gestational age (GA) at delivery is study depending on previous parity, maternal age and medical induction of labor or spontaneous labor.
Clinical cases and summary results: 872 (65%) pregnant women are in their first pregnancy, 646 (35%) had a one or more previous pregnancies. 4 women had their parity data loss. Median GA in women without previous pregnancy 248 days, and in those with another pregnancy before 253 days. The difference between medians is 4,37 days (95% CI 6,7-2,7) (p= 0,0000). Preterm delivery (<37 weeks) concern 56% of pregnant women without previous pregnancy versus 48% of those with a previous pregnancy (p=0,000). For deliveries < 35 weeks the numbers are 36% and 23% (p=0,000) respectively, and for deliveries <30 weeks differences are 10% vs 7% (p=0;000), respectively. If the analysis is done for GA <26 weeks, numbers are 0,6% for first pregnancies and 0,4% for women with previous pregnancy, no significant differences (p =0,73). When deliveries start spontaneosly, median GA at delivery is 255 days, and if they are medicaly finish median GA at delivery is 242 days, difference between medians is 12,7 days (95% CI 110,6-14,8) (p0=0000). When analysis is focus in pregnancies which start spontaneously, GA at delivery for women without previous pregnancy is 238 days, and 248 days for those with previous pregnancy, difference between medians 9,5 days (95% CI 5,9-13,1) (p= 0,0000).
Conclusion: Previous pregnancy is a protective factor for prematurity in twin pregnancy, and minimizes medical indicated deliveries.

Keywords: Prematurity, Twin pregnancy

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Safety and success rate of performing early mris in very preterm born infants

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Presenter: **R van Diepen**

Introduction: Early cerebral MRI scans at around 30 weeks' post-menstrual age is becoming standard care for very preterm born infants. Routine early MRI in preterm infants is restricted to those who are hemodynamically stable and do not require more respiratory support than nCPAP. The aim of this study was to evaluate the safety and success rate of an early MRI in very preterm infants using an MR-compatible incubator.
Materials and methods: A retrospective chart review was conducted to evaluate the digital data on vital signs of preterm infants (<32 weeks gestational age (GA)) who underwent an early MRI. The digital data were collected at six fixed time points from 24 hours before the MRI until 24 hours after the MRI with eight-hour intervals. In addition, adverse cardiorespiratory events including apneas, tachypneas, desaturations, bradycardias and tachycardias that occurred within the predefined 48-hour period were collected. Additionally, data of the use of oral chloral hydrate and quality of MRI scans were registered.
Clinical cases and summary results: 98 infants (GA 27.1 (± 1.7) weeks) underwent an early MRI at 31.1 (± 1.2) weeks PMA. 54% were sedated with oral chloral hydrate (44.2 ± 7.6 mg/kg) during the MRI. The scan quality was assessed as good in 47% and sufficient in 53%. There was no significant relation between the use of sedation and the quality of the MRI scan. Respiration rate and rectal temperature showed no significant difference. Respiratory support was increased in nine infants and decreased in one. There was a significant, but not clinically relevant, difference between saturation (median pre 92, median post 91, p=0.041) and heart frequency (median pre 165, median post 161, p=0.015,). After MRI more infants with tachypneas (p=.02), desaturations (p=.01), and bradycardias (p=.03) were observed. However, less apneas (p=.001) and tachycardias (p=.01) were noted. There was a significant, not clinically relevant, association between sedation and the number of infants with a relative increase of these events after the MRI (p=.02).

	N (%)	GA delivery (days)	<37 w (%)	<35 w (%)	<35 w (%)	<26 w (%)	Spont Labour (days)
No Previous P	872 (65)	248	56	36	10	0,6	238
Previous P	646 (35)	253	48	23	7	0,4	248

Conclusion: Early MRI in preterm infants is associated with statistically significant yet small and therefore not clinically relevant, differences in vital signs. Baseline characteristics were not significantly different, indicating that differences may be the result of sedatives. The number of events in sedated infants is significantly higher, but not of clinical relevance, compared to unsedated infants, whereas scan quality did not differ. Therefore, an early MRI without the use of sedation is recommended

Keywords: Preterm infant, MRI, safety

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Monitoring fetal motility using wearable sensors: an activity tracker for your unborn baby?

N. Geusens[1], M. Altini[2], J. Germeys[3], A. van den Hoogen[3], D. Lanssens[1,3], J. Penders[2], L. Grieten[1,3], and W. Gyselaers[1,3]

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Presenter: **Nele Geusens**

Introduction: Activity trackers are used today to quantify the level of activity and are able to quantify health status. This concept is applicable to unborn children. In order to reduce poor perinatal outcome, a sensitive and effective measuring tool to asses fetal activity and wellbeing is needed. Fetal distress can result in a decrease in fetal motility. Nowadays, kick charts, ultrasound, . . . are used to measure fetal movement, but they have their limitations. We previously reported the use off on-body accelerometers to detect fetal activity. Based on this, Belli, a wearable sensor with a single highly sensitive accelerometer, was developed by Bloom Technologies. Here we report the use of Belli, to detect fetal movements and to distinguish between maternal movements.

Clinical cases and summary results: A primigravida was admitted to the intensive care unit at 34 weeks of gestation. Ultrasound examination revealed a lateral positioned placenta. Belli was attached beneath the umbilicus, on a supine positioned mother. Figure 1A shows motion intensity as detected in Belli. During the first 7 minutes, maternal motion was detected by Belli but not identified as fetal activity. Figure 1B shows the output of the algorithm, some false positive fetal activities were identified (Fig 1B, green bars). After 7.5 minutes the mother rubbed her belly to wake the baby. This can be seen in Figure 1A and shows an increase in activity. After rubbing an increase in fetal activity was observed. This activity was annotated by the mother based on her perception. The majority of these activities were fetal kicks, the algorithm was able to identify these as such. After 3.5 minutes of intense activity the fetus returned to sleep. The mother did not annotate any activity from this point on.

Conclusion: These results indicate that the Belli sensor, with a single high sensitivity accelerometer can be used to detect fetal kick-activity. Furthermore, the sensor was able to demonstrate a good sensitivity and selectivity to detect fetal activity and differentiate from maternal activity. It is clear that such a novel monitoring technology has the potential to deliver more information on maternal and fetal health by providing quantitative measures which are unavailable today.

Keywords: Fetal movement, kicks

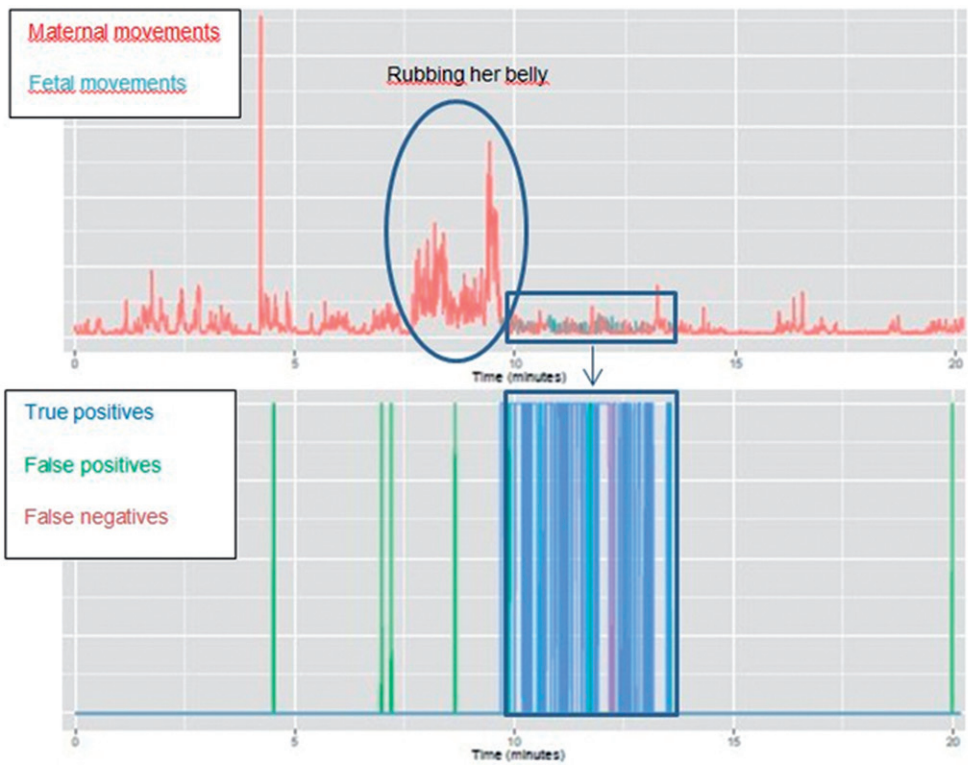

Figure 1: **A**: Motion intensity in function of time (0-20 min) detected in the sensor. Red trace segments indicates maternal movement, blue trace segments indicates fetal movement. **B**: The output of the fetal activity algorithms represented in a "digital kick chart". True positives (blue trace segments), false positives (green trace segments), false negatives (red trace segments)

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A wearable patch for the detection of fetal activity

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Presenter: **Nele Geusens**

Introduction: Fetal monitoring stays an obstacle in obstetrics. A decrease in fetal movements could be an indication of fetal distress. It is currently tracked via maternal perception, which is a subjective method with a poor reliability. Other techniques (ultrasound - tocodynamometry) has limitations. Despite these technologies, there is a lack for a sensitive and effective measuring tool to assess fetal activity and wellbeing, in order to reduce poor perinatal outcome. Accelerometers are proven to be successful, preliminary results, based on a set of 4 analog accelerometers, showed a true detection rate range of 78%-80% against ultrasound . Our goal is to assess if a single accelerometer patch-type wearable sensor can be compared to a high-end multi-channel bench-top device.
Materials and methods: A feasibility study was performed where a wearable patch sensor with a single high sensitive accelerometer (Belli, Bloom Technologies) was compared to a high end table-top multichannel system (TMSi, The Netherlands). In order to differentiate maternal motion from fetal motion, one accelerometer from the TMSi device was attached on the back while the rest was attached in a star-pattern on the abdomen. The belli patch was attached under the navel area. Expecting, singleton mothers, with a minimum gestational age of 20 weeks, were included and placed in a supine position and monitored for a period of 20 minutes. Perception of fetal activity was annotated by the mother using an annotation tool. Afterwards data was processed and interpreted to detect fetal activity.
Clinical cases and summary results: In total 22 mothers were included with a mean gestational age of 28w2d (range: 19w1d-39w2d) and an average BMI of 27.6kg +/- 5.9kg. Placenta position was as following: 9 placenta anterior, 9 placenta posterior, 1 fundal, 1 lateral, 1 previa and 1 unknown position.
After cross-comparison of the ability to detect fetal activity using the multi-channel, a sensitivity of 77% was observed compared to the single accelerometer with sensitivity of 66% percent. Since maternal movement impacts the overall performance of the activity sensitive sensors, a selection was made while the mother was in a steady position. Positive predicted value (PPV) of the TMSI is 52%, while the PPV of the sensor is 51%, which is due to an underestimation of the kicks detected by the patients.
Conclusion: Results indicate that accelerometers can be used to detect fetal kick-activity. However, the system is sensitive to maternal motion. In the ideal condition (i.e. resting positions or sleep) high quality data was available with already a higher sensitivity than currently used kick chart. Belli is able to match the same performance as a TMSi. This indicates that Belli could become a useful tool in the quantification of fetal activity over time to provide novel insights.

Keywords: Accelerometers, fetal movement

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Outcome of late preterm infants at the university hospital central of Asturias (Spain)

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Presenter: **B. Fernandez Colomer**

Introduction: Late preterms infants (LP) are those born at a gestational age between 34 and 37 weeks. This subgroup of premature babies has taken great interest in recent years because of its increasing incidence. Also LP have a higher morbidity and mortality than term infants that implies a higher rate of admission and hospital stay. Moreover the rate of readmissions in the first months of life is high for these children.
Objective: To determine the outcome of LP at the University Hospital Central of Asturias (Spain) over a 5-year period (2008-2012).
Materials and methods: A retrospective, descriptive study was performed. Data were extracted from the maternal and neonatal medical records of 996 LP born in the study period. Also the evolution in the first 2 years of life was analyzed.
Clinical cases and summary results: There was an overall incidence of 7.6% (996 LP of 13,113 births), accounting for 67.2% of all preterm in our hospital (996/1,483). LP rate decreased from 9.4% to 6.5% in the study period and also the percentage of LP respect to the total of preterm infant born (71.6% to 65.5%). The 56.7% of LP were admitted to the neonatal unit. Metabolic pathology, mostly jaundice, was the most frequently found (51,2% of all LP) followed for respiratory diseases, mainly transient tachypnea. Hospital stay was higher at lower gestational age. Readmission rate beyond the neonatal period was 26.7% and bronchiolitis was the cause of almost half of readmissions (40.9%). There was no statistically significant difference in readmission between LP previously admitted to neonatal period and those who were not admitted. Mortality rate in our hospital was 0.8% (8/996 LP).
Conclusion: LP rate in our hospital has decreased from 9.4% to 6.4% from 2008 to 2012. Jaundice was the most common pathology diagnosed. More than a half of LP required admission in the neonatal period. Readmission beyond neonatal period occurred frequently, with Bronchiolitis as the main diagnostic found. No relationship was found between neonatal period admission and subsequent readmission.

Keywords: Late preterm infant, prematurity, outcome, complications

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The difference human milk bank can make in a baby-friendly hospital

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Presenter: **Urszula Bernatowicz-Łojko**

Introduction: There is still a lack of information on the health benefits for preemies and the economic effects, resulting from the implementation of the procedure of donor's milk supplementation (DMS-procedure) in neonatal wards.The main objectives of our research was to ascertain if the DMS-procedure introduction in neonatal ward makes a difference in the health of preterm newborns and in the hospital budget. We focused on the baby-friendly hospital(BFH)-works acording to the recommendations (''Ten steps to successful breastfeeding'') of the World Health Organization
Materials and methods: We investigated two groups of preemies ?33 gestation age, admitted to the Department of the Newborn and NICU in L.Rydygier's Provincial Polyclinical Hospital in Torun in 2012-14: group 1-65 prematures admitted before and group 2-79 prem. admitted after the implementation of DMS-procedure. We analysed the length of the period of hospitalization, antibioticotherapy,the parenteral nutrition, the minimal enteral feeding introduction, the occurrence of the infection, the bronchopulmonary dysplasia(BPD), the kind of enteral feeding (formula, human milk: mother's or donor's milk) during the hospitalization period and at the day od discharge, We assessed the spending (per one prem,) on antibiotics, immunoglobulins, parenteral nutrition and preterm formula consumption in these groups.
Clinical cases and summary results: In group 2 there was earlier minimal enteral feeding introduction and shortened parenteral nutrition duration compared to group 1 (statistically significant). Late onset sepsis was significantly reduced, however we observed more episodes of milder infections (statistically nonsignificant). There was one case of necrotizing enterocolitis before and one after DMS-procedure implementation. BPD cases decreased but insignificantly. The percentage of the exclusively human milk feeding prematures during the stay in hospital increased, but the percentage of any mother's milk-feeding preemies at the day of discharge didn't change significantly. The expenses on antibiotics, immunoglobulins, parenteral nutrition were significantly reduced. Preterm formula consumption decreased by 48%.
Conclusion: The implementation of DMS-procedure provided tangible benefits both to prematures' health and the hospital budget, even in BFH before.

Keywords: Prematurity, nutrition, donor's milk, baby-friendly hospital

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Early outcome of preterm infants less than 32 weeks gestational age in a NICU level III in Tunisia

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Presenter: **Jihene Methlouthi**

Introduction: Advances in obstetrical and neonatal care have increased the survival of infants born <32 weeks of amenorrhea (WA). Objective: establish the birth rate, mortality and morbidity of neonates born <32WA and analyze risk factors associated with poor outcome.
Materials and methods: Retrospective study including all live born preterm infants born less than 32 WA, in our NICU, from 1st June 2009 to 31 May 2011.
Clinical cases and summary results: 372 infants with gestational age (GA) <32 WA were admitted during the period of the study. The mean gestational age was 29.7 weeks (range, 26-31.9 weeks). The mean weight birth was 1420 g (range, 510-2860 g). Respiratory distress syndrome was occurred in 46.5% of infants and 39.4% of them have required exogenous surfactant therapy. The overall incidence of nosocomial infection was 29.8%, of anemia requiring transfusion 43.6% and 3.5% has presented necrotizing enterocolitis. Chronic lung disease occurred in 4.8% of survivor infants. The overall survival rate was 73%. Birth weight less than 750g and nosocomial infection were the independent risks factors for death.
Conclusion: Antenatal corticotherapy, surfactant and ventilation have contributed to improve the outcome of preterm infants. More efforts have to be performed in order to decrease factors leading to IVH and to prevent nosocomial infections which remains the mean cause of death.

Keywords: Preterm birth, epidemiology, outcome

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Inguinal hernia and prematyrity

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Presenter: **V. Sideri**

Introduction: Inguinal hernia is common in former premature infants, with an incidence of 13% in infants born before 32 weeks of gestational age(GA) and up to 30% in infants born less than 1 kg. Premature infants may also have a high risk of recurrence on the contralateral side.
Factors that contribute to the increased risk for inguinal hernia in premature infants include a persistent processus vaginalis, male sex, gestational age, low birth weight, and prolonged mechanical ventilation.
Materials and methods: Retrospectively, we studied newborns admitted to our iNICU and had inguinal hernia, during 2015.
Clinical cases and summary results: During 2015, 184 neonates admitted to the NICU. Four neonates had inguinal hernia (2.17% of all newborns, and 30.8% among premature infants with GA <32 weeks).
All, they were boys, with gestational age between 25 + 4 and 29 weeks, and birth weight between 700gr - 1285gr. The ƒ of neonates had bilateral hernia.
All neonates due RDS, had received surfactant and the ƒ needed mechanical ventilation.
The ƒ of neonates with bilateral localization had BPD.
The infant with unilateral localization (right) showed a sudden constriction of the inguinal hernia, during the 51st day of life. The infant also had RDS and had received surfactant, and remained in n CPAP for three days. It was the infant with the greatest gestational age and birth weight. All, they successfully treated surgically.
Conclusion: There is clearly an increased incidence of inguinal hernia in very premature newborns, and even the birth weight below 1 kgr. It appears that RDS, mechanical ventilation and BPD increases the risk of inguinal hernia. Obviously, the number of cases is limited and required additional cases for the documentation of findings.

Keywords: Premature neonates, inguinal hernia

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Effect of ''early'' feeding of ELBW and VLBW

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Presenter: **S.S. Khasanova**

Introduction: The incidence of NEC is inversely proportional to birth weight. In general, the age of onset is inversely proportional to gestation; therefore smaller babies present later. 90% of babies with NEC are preterm. The mortality rate of NEC is 20-40%. In spite of extensive research, the disease remains unsolved. The aims of this paper are to present the risk factors of NEC and study the role of early enteral feeding on decreasing NEC. A Cochrane review of early or late commencement of progressive enteral feeds for preterm infants published in 2008 identified 3 small trials with 115 participants. All infants were preterm and low birth weight but were not specifically SGA or IUGR.''Early'' feeds were started within 4 days of birth, and ''late'' feeds between 5 and 10 days.
Materials and methods: No difference was seen in rates of NEC, but the authors concluded that the available data were insufficient to inform clinical practice. Unfants with gestation below 32 weeks, birth weight below 1500,0g, were randomly allocated to commence enteral feeds ''early,'' on first 6 hours, or ''late,'' on day 2 (after 24 hours). Gradual increase in feeds was guided by a ''feeding prescription'' with rate of increase the same for both groups. Primary outcomes were time to achieve full enteral feeding sustained for 72 hours and NEC.In our study early feeds started in first 30 min after birth -a few drops of colostrum put for cheek, then it repeated in 3 hours and bolus feeds started in a 6 hours after birth. Control group -start feeds after 24 hours after birth (this practice we had several years ago)
Clinical cases and summary results: 68 infants were randomly assigned from Republican Perinatal center of Uzbekistan (34 to each group). Median gestation was 29 weeks. Full, sustained, enteral feeding was achieved at an earlier age in the early group: median age was 19 days compared with 30 days (hazard ratio: 1.36 [95% confidence interval: 1.11-1.67]). The incidence of NEC was 18% in the early group and 21% in the late group (relative risk: 1.2 [95% confidence interval: 0.77-1.87]). Early feeding resulted in shorter duration of parenteral nutrition, lower incidence of feeding intolerancy
Conclusion: Early introduction of enteral feeds in preterm infants with ELBW and VLDW results in earlier achievement of full enteral feeding and does not appear to increase the risk of NEC.

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Mortality and impact of prenatal diagnosis of severe complex congenital heart disease in a country with limited surgical resources

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Presenter: **Ramush Bejiqi**

Introduction: Complex congenital heart disease(CCHD)are a leading cause of infant mortality and morbidity in developed countries. Neonates without an antenatal diagnosis are at risk of discharge without their condition being identified, despite routine baby checks. Where the child is affected by major congenital heart disease that is essentially unstable, this can lead to haemodynamic compromise and result in emergency admission. Similarly, access to surgical intervention may be delayed, or else undertaken with the patient in a suboptimal condition.The aim is to describe mortality rate of patients prenatally diagnosed with complex congenital heart disease (CCHD) in the prenatal and postnatal settings and to evaluate the impact of associated pathology in Kosovo as country with limited surgical resources
Materials and methods: Study comprised a retrospective analysis of database research of 83 patients prenatally diagnosed with CCHD, between January 2002 and December 2015. CCHD were divided in 8 groups: tetralogy of Fallot (TOF, N6), atrioventricular defect (AVD, N8), tricuspid atresia (TA, N14), hypoplastic left heart syndrome (HLHS, N16) transposition of great arteries (TGA, N12) and pulmonary atresia with intact interventricular septum (N11), aortic coarctation (CoAo, N12) and isomerism (N4). In 22 pregnancies (26.5%) amniocentesis was performed and in 16 of them chromosomal abnormalities were detected (12 with trisomy 21, all with AVSD and 4 with 22q11.2 deletion, two with TOF and one TA).
Clinical cases and summary results: In all foetuses diagnosis was made prenatally. Overall, HLHS was most frequent (19%), followed by TA (16.8%), TGA and CoAo (14%). Termination of pregnancy (TOP) was carried out in 33% (all foetuses with chromosomal abnormalities -19% and foetuses with UVH - 14%). The overall survival was 67% with higher survival rate for patients with TGA, TOF, AVSD and TA. In the reason of absent cardiac surgery services in Kosovo spontaneous preoperative death was noted in 7 neonates (three with HLHS and four with CoAo). Successful Rashkind procedure in ICU, followed by echo, was done in 17 neonates. 48 patients underwent surgical treatments abroad Kosovo with an overall survival of 95%.
Conclusion: The overall survival rate after diagnosis and surgical intervention was 55% with important differences between pathology groups. Prenatal diagnosis is associated with a high incidence of TOP. Despite insufficient organisation of prenatal screening for CHD and absent of surgical services in Kosovo survival rate after surgery was high

Keywords: Complex congenital heart disease, prenatal diagnosis, chromosomal abnormalities

680 (CASE REPORT)

Pregnancy with large intraabdominal tumor

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Presenter: **Gabriela Bushinoska-Ivanova**

Introduction: In some cases, pregnancy can occur with large tumor mass in the abdomen. This compromises the pregnancy and asks for premature delivery or abortion, depending on when the tumor mass is diagnosed. The abdominal tumors which occur during pregnancy may be of gynecologic origin, other abdominal tumors, lymphomas or other undiagnosed abdominal masses. These masses need to be operated as soon as the pregnancy ends. It's often difficult to diagnose them unless there are symptoms like pressure on the bowels, ileus, vomiting, weight loss and circulation problems.
Clinical cases and summary results: Pregnancy with large abdominal tumor, diagnosed in 32 g.w. Pacient with symptoms including collapsing, and sudden and extreme vomiting.
She was hospitalized at the Clinic of Obstetrics and Gynecology in Skopje, after collapsing, abdominal pain and extreme vomiting. Anemia, Leucocitosis and Trombocitosis with elevated CRP was

presented. Eutrophic fetus in normal amniotic fluid, placenta on the front wall of the uterus and normal Doppler flow. A large intra-abdominal tumor mass - 165 X 105 mm - above the uterus and below the gaster was diagnosed, with hyper-echogenic tracks inside and splenomegalia.

- Serologic and infective disease examination - negative.
- Tumor markers: Increased Ca 72-4 = 231,4 U/ml.

MRI-A large polycystic tumor mass was detected in the central and left part of the abdomen. This mass (165x135x105mm), located under the liver and gaster, Doppler with mixed internal and pathologic signals.

A pretermdelivery was planned with a surgeon after maturation of fetus. The patient gave birth 21 days after her hospitalization with a cesarean section She gave birth to a living 2200 g male, 44 cm long with APGAR score 7/8.

The cesarean section was followed by abdominal tumorectomy.When tumor was removed, anastomosis of the intestines was conducted and the tumor mass was sent to pathohystologic examination.

The pathohystologic diagnosis was:Adenocarcinoma intestini crassi pTNM pT4pNo pMx G2 L1 V1 NG2

Conclusion: Good primary Health care service were future mothers are regularly examined, The entire pregnancy period should be carefully observed, too, since the symptoms can sometimes lead to interdisciplinary examinations and consultations with other specialists. Up to her 32nd g.w. the patient in this case report was only examined by her local gynecologist and was not submitted to secondary or tertial obstetrics examination, hence her condition couldn't be diagnosed sooner

Keywords: Pregnancy, Abdominal Tumor, Preterm delivery

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Effect of oropharyngeal colostrum administration on immunoglobulin a, lactoferrin and resistin levels in preterm newborns

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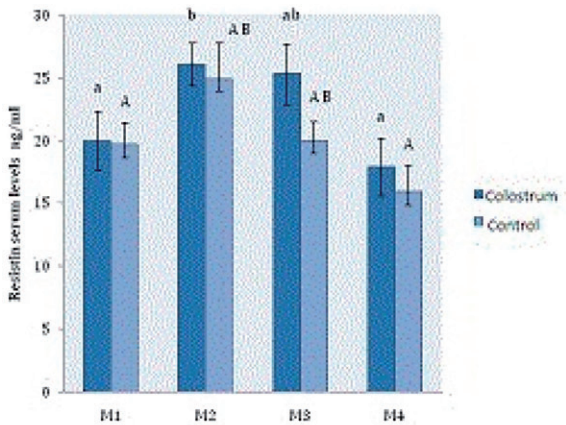
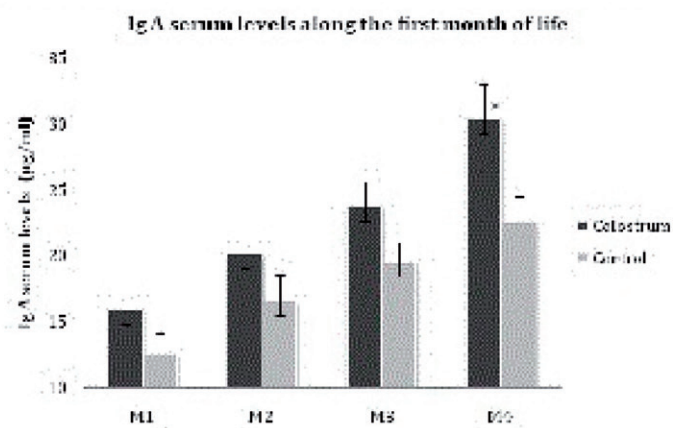
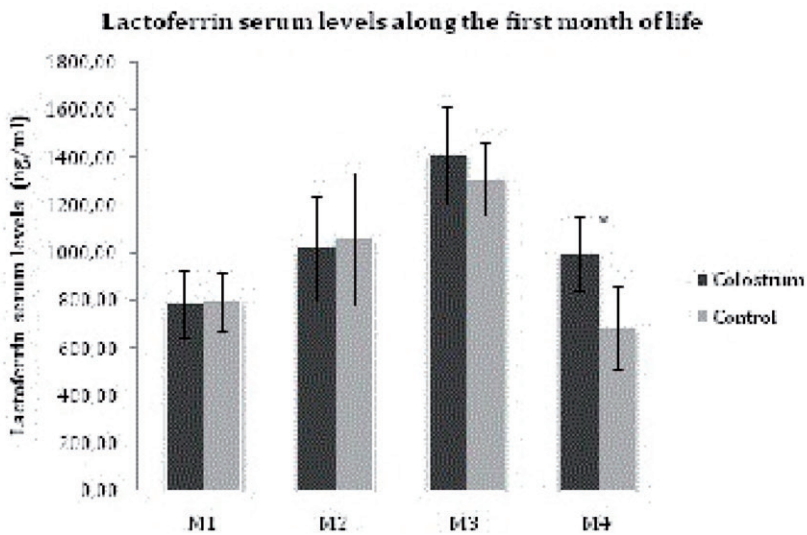
Presenter: **Laura Serrano López**

Introduction: Very low birth weight (VLBW) newborns have an immature immune system and also disrupted defense natural barriers. Colostrum contains increased concentrations of secretory immunoglobulin A, growth factors, lactoferrin, anti-inflammatory cytokines, pro-inflammatory cytokines and other protective components, compared with mature breast milk. Preterm colostrums may be especially protective during the first days of life when VLBW infants are the sickest and at highest risk for acquiring an infection.







This study aimed to evaluate the immunologic effects of oropharyngeal colostrums administration to VLBW infants in their first two weeks of life, by assessing IgA serum, lactoferrin and resistin levels evolution up to one month of life.
Materials and methods: An interventional, no randomized, controlled trial recruiting newborns $\leq 32+6$ gestational weeks and/or <1500g at birth was developed. 38 newborns were enrolled. Subjects received 0,2ml of their mother colostrums every 4 hours administered oropharyngeally. The intervention was started in the first 24 hours of life, and it followed for a 15 days period. IgA, lactoferrin and resistin serum levels were measured at birth (M1), 3(M2), 15(M3) and 30(M4) days of life by ELISA-Kit for Immunoglobulin A and Milliplex MAP technology. Perinatal and neonatal data for the first month of life were registered. Stadistic programa: SPPS vs 20.
Clinical cases and summary results: Along the first month of life an increase in IgA levels was found in colostrums group (M1 5,84 μg/ml vs M4 30,34μg/ml, p0,001) and in control group (M1 12,48μg/ml, M4 22,48μg/ml, p0,001). IgA serum levels were statistically increased in colostrums group, regarding control group at one month of age (p 0,026). During the intervention lactoferrin levels were increased in both groups (colostrum: M1 784,58ng/ml vs M3 1406,33 ng/ml (p<0,01); control:M1 795,33ng/ml vs M3 306,39ng/ml (p<0,01). A significant decrease in lactoferrin concentration was observed in control group at one month; at these moment lactoferrin levels in colostrums group were significantly higher (p=0,014).Resistin levels increased in both groups at 3 days of life, this difference was statistical significantly only in intervention group (colostrum: M1 20 ng/ml vs M2 26,1 ng/ml, p<0,01; control M1 19,7ng/ml vs M2 24,9ng/ml, p=0,06).Not differences in resistin concentration were registered at 15 days and 1 month.
Conclusion: Our data suggest that oropharyngeal colostrums administration might facilitate the development of immune system in VLWB infants at one month of age, by increasing IgA and lactoferrin serum levels. Regarding our results, this intervention might play a role in resistin concentration, wich has been related with inflammatory response in preterm infants.

Keywords: Preterm infants, immune system, colostrum, lactoferrin, resistin, Inmunoglobulin A

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The importance of intensive care management in neurological complications of premature newborns

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Presenter: **A. M. Manea**

Introduction: Premature birth, is one of the most important determinants of neonatal morbidity and mortality with long-term negative consequences.
Development of modern methods in neonatal intensive care led to increased survival rates among premature newborns.
These procedures that generally aim the survival and immediate recovery of the premature are known to have a negative impact on cerebral blood flow at very low premature and can generate hypoxic/ischemic modification at the level of CNS, with potential for lesions, leading to neurological complications with major impact on neonatal mortality.
Objective: The study wants to establish the impact of procedures in the neonatal intensive care unit on the neurological status of newborn with extreme low birth weight.
Materials and methods: The study was carried out in our Department over a period of 2 years .
The study included a group of 213 premature babies and a control group consisting of 88 term newborns.
Clinical cases and summary results: The study confirmed the impact of immediate neonatal adaptation and of certain techniques and therapeutic procedures in the general neonatal management on the neurological outcome of premature newborn.
There are significant differences between the 4 groups according to the presence of neurological complications. In the group of ELBW preterm the rate of complications was present in a proportion of 85.7%
Conclusion: The objective analysis of the particularities of premature newborns leads to the early interpretion of the warning signs in a way that detecting neurological complications allows promptly clinical and therapeutic approach.

Keywords: Premature, intensive care, neurological complications

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Case report: closure of patent ductus arteriosus with oral paracetamol in extreme prematurity

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Presenter: **Geraldo Fernandes**

Introduction: Case report of an extremely premature newborn with patent ductus arteriosus with contraindication to the use of ibuprofen. Extremely premature female newborn, born in the Regional Hospital of Sobradinho (HRS), Brasília - Brazil, on 27/01/2016. Primiparous mother, 18 years-old, 24th gestational week according to the last menstruation period (LMP). Born from natural birth, cephalic presentation, rupture of membranes during labour, birth weight of 850g, Apgar score 7/9.
Clinical cases and summary results: The mother began premature labour without defined cause, didn't receive corticosteroide or antibiotics. The newborn received profilatic pulmonary surfactant (100ml/kg), therapy with Ampicilin and Gentamicin, IV hydration therapy, analgesia and general care. Due to hypotension, on the 12th hour of life the newborn received dopamine, which maintained the hemodynamic stability for the first five days. On the 5th day, the persistence of hypotension and the development of systolic murmur and bounding pulse led to the association of dobutamine, furosemide and hydric restriction. On the 7th day, an echocardiogram revealed Patent Ductus Arteriosus (1.4mm) with moderate hemodynamic repercussion. The use of Ibuprofen was contraindicated due to cerebral hemorrhage, so a three-day therapy with oral paracetamol (15 mg/kg every 6 hours) was started. On the 11th day of life, the newborn was hemodynamically stable without vasoactive drugs and the echocardiogram revealed a closed ductus arteriosus.
Conclusion: Paracetamol has been reported as an alternative treatment for patent ductus arteriosus in the contraindication of Ibuprofen. Further clinical studies are needed to confirm this association.

Keywords: Premature, ductus arteriosus, paracetamol

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Validation of outpatient management of preterm premature rupture of membranes

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Presenter: **L. Giménez**

Introduction: Preterm premature rupture of membranes (PPROM) refers to rupture of membranes without uterine contractions before the 37 weeks of gestation. Multiple etiologies are probably involved (intra-amniotic infection, uterine distention, invasive procedures, etc.), but the pathogenesis is not well understood. PPROM complicates 1-4% of all pregnancies and is often followed by spontaneus delivery or labor induction, so it is associated with significant maternal, fetal and neonatal morbidity and mortality.

The optimal approach to clinical management remains controversial. In selected circumstances outpatient management can be considered, so we analized ambulatory management after intravenous antibiotic treatment in our center.

Materials and methods: We designed a retrospective observational study. We recruited 69 patients with PPROM in our center from January 2013 to December 2015.

All the women were treated with intravenous antibiotic during 7 days and received corticosteroids for lung maturation. 46 patients (group 1) remained admitted at hospital after antibiotic treatment, and 23 (group 2) received outpatient management.

We included pregnancies between 24 + 0 and 33 + 0 weeks with fetal cephalic presentation and maximum pool of amniotic fluid >10mm. The exclusion criteria were fetal malformation, chorioamnionitis, metrorrhagia and non-cephalic presentation.

Clinical cases and summary results: We didn't observe differences between women age, positive culture and leukocytes levels at the moment of the PPROM in both groups. Mean gestational age in weeks at PPROM was earlier in group 2 (26 + 6) than in group 1 (30 + 6), $p<0.001$

The period of time until delivery was significantly higher in women with outpatient management than in the group admitted at hospital ($p<0.001$). The presence of neonatal sepsis in women with outpatient management (21.7%) was higher than in the other group (6.5%), but the days admitted in neonatal intensive care unit (NICU) rate was similar in both groups. We didn't observe differences in leukocytes levels control, gestational age and fetal weight at delivery between both groups.

Conclusion: Women with outpatient management presented PPROM earlier than patients admitted at hospital, and the time until delivery was higher in this group.

Although the presence of neonatal infections after outpatient management was higher, the mean of days admitted in NICU was similar in both groups and there wasn't any death due to sepsis.

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Comparison of two nifedipine formulations for inhibition of preterm labor

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Presenter: **LAURA SALAZAR**

Introduction: The relative safety, maternal tolerance, ease of administration and reduction in adverse neonatal outcomes by significantly delaying delivery, support the use of nifedipine as a first choice for inhibition of preterm labor. Recently, the Spanish Agency of Medicines and Devices (AEMPS) approved a new oral solution of nifedipine specially designed to be used in preterm labor management. The aim of this study was to compare the use, perinatal outcomes and side-effects between these two nifedipine formulations used in the clinical practice

Materials and methods: Retrospective study in a tertiary center between January 2012 and December 2015 including women admitted because of preterm labor, in which nifedipine was the first tocolytic agent used. Only singleton pregnancies were included. Maternal and perinatal outcomes were compared based on whether nifedipine capsules or nifedipine oral solution were used for tocolysis. A descriptive study was carried out on qualitative and quantitative variables to characterize the study population. X2 tests or two-sided Fisher test and Student's t-test or Mann-Whitney U-test, were used when appropriate.

Clinical cases and summary results: 98 women were evaluated (65 treated with nifedipine capsules and 33 treated with nifedipine oral solution). No differences in gestational age, percentage of rupture of membranes, mean cervical length and cervical dilatation at admission were found between both groups. Rate of previous preterm delivery was similar in both groups too.

There were 2 cases in each group in which tocolysis was discontinued because of suspected chorioamnionitis or loss of fetal wellbeing. No statistical differences were found in the need of an alternative tocolytic therapy; neither in the need of rescue doses within the first 6 hours or the total dose of medication received during admission.

No differences in gestational age at delivery or perinatal outcomes were observed. The maternal side effects in the nifedipine capsules group were 36,9% and in the nifedipine oral solution were 12.1%, which showed a statistically significant difference ($p=0.01$). No serious maternal complications were observed in any of both groups.

Conclusion: In this retrospective study both nifedipine formulations appear to be equally effective for acute tocolysis. The maternal side effects were higher with nifedipine capsules.

Keywords: Preterm labor, tocolysis, nifedipine

	NIFEDIPINE CAPSULES n= 65	NIFEDIPINE ORAL SOLUTION n=33	p
Discontinuation of tocolysis	2 (3.1 %)	2 (6.1 %)	0.481
*Chorioamnionitis	2 (3.1%)	1 (3%)	
* Loss of fetal well-being		1 (3%)	
Alternative tocolytic therapy	21 (32.3%)	10 (30.3%)	0.840
*Failure of treatment	18 (27.7%)	7 (21.2%)	
*Maternal intolerance	2 (3.1%)	2 (3%)	
Dose administered within first 6h (mg)	21.1 (CI 95%: 20-22.2)	19.7 (CI 95% 17.2-22.2)	0.228
Total dose administered in hospital (mg)	130 (CI 95% 106-154)	112 (CI 95% 75.8-147.5)	0.382
GA at delivery (w.d)	34 (CI 95% 33-35)	35 (CI 95% 33.6 – 36)	0.277
- **GA at delivery < 37**	33 (71.7%)	21 (72.4%)	
			0.949
Apgar at 5' <7	1 (2.17%)	1 (3.45%)	0.999
Maternal side-effects	34 (36.9 %)	7 (12.1%)	0.010
*Rash	1 (1.8%)		
*Nausea	2 (3.6%)		
*Vomits	2 (3.6%)		
*Abdominal pain	4 (7.1%)		
* Cephalea	3 (5.4%)	3 (9.1%)	
* Flushing	1 (1.8%)		
*Hypotension	11 (19.6%)	2 (6.1%)	
*Tachycardia	10 (17.9%)	2 (6.1%)	

Data are shown in n(%) or mean (CI 95%) where appropriate

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Caffeine usage in Vlbw infants: a survey of practice at a single neonatal unit

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Presenter: **Charles Roehr**

Introduction: Caffeine has become the most commonly used respiratory stimulant in preterm infants. However, there is still variability in its usage amongst neonatologists worldwide. Current evidence suggests that starting caffeine early (<3 days of life) has beneficial effects on neonatal outcomes. The aim of this study was to establish the compliance with current guidelines and assess the time of initiation of caffeine therapy in preterm infants.
Materials and methods: We performed a retrospective chart review in one of the UK largest regional Level III Neonatal Intensive Care Unit (NICU), the John Radcliffe University Hospital, Oxford, UK. All very low birth weight infants (VLBWIs) (birth weight < 1500g) who were admitted between April and December 2014 were included. We analyzed the timing of initiation and discontinuation of caffeine as well as dosage regimens.
Clinical cases and summary results: Between April and December 2014, 80 VLBWIs were treated as inpatients at our NICU. In our local NICU, caffeine was consistently administered as caffeine citrate (CC) to all VLBWIs by giving a "loading dose", followed by a maintenance dose (10mg/kg/day). CC was initiated within the first 4 hours of life (mean administration time: 1.92 hr). In 19 of the 80 VLBWIs (23%) CC was administered after 4 hours, with a mean of 15.4 hrs. A CC "loading dose" was inconsistently given and was often given in 2 divided portions at a 12-hour interval (66.2% of cases). A maintenance dose at 10 mg/kg/day is adhered to in all cases. Despite a clear unit policy, there is no clear line of practice in the unit on when and how the CC dose was to be increased. Furthermore, the timing of discontinuation of CC was very variable, ranging between 31 and 41 weeks gestation.
Conclusion: In spite of the current evidence and clear practice recommendations, there is still significant variation in CC prescription practices amongst neonatologists at our unit. Comparisons with other units' practices would help to highlight what the prescription practice in the "real world" looks like. Comparisons of outcomes between infants receiving very early CC with those who received CC later seem warranted.

746 (CLINICAL CASE)

Acute tocolisys with atosiban after high misoprostol oral dosis

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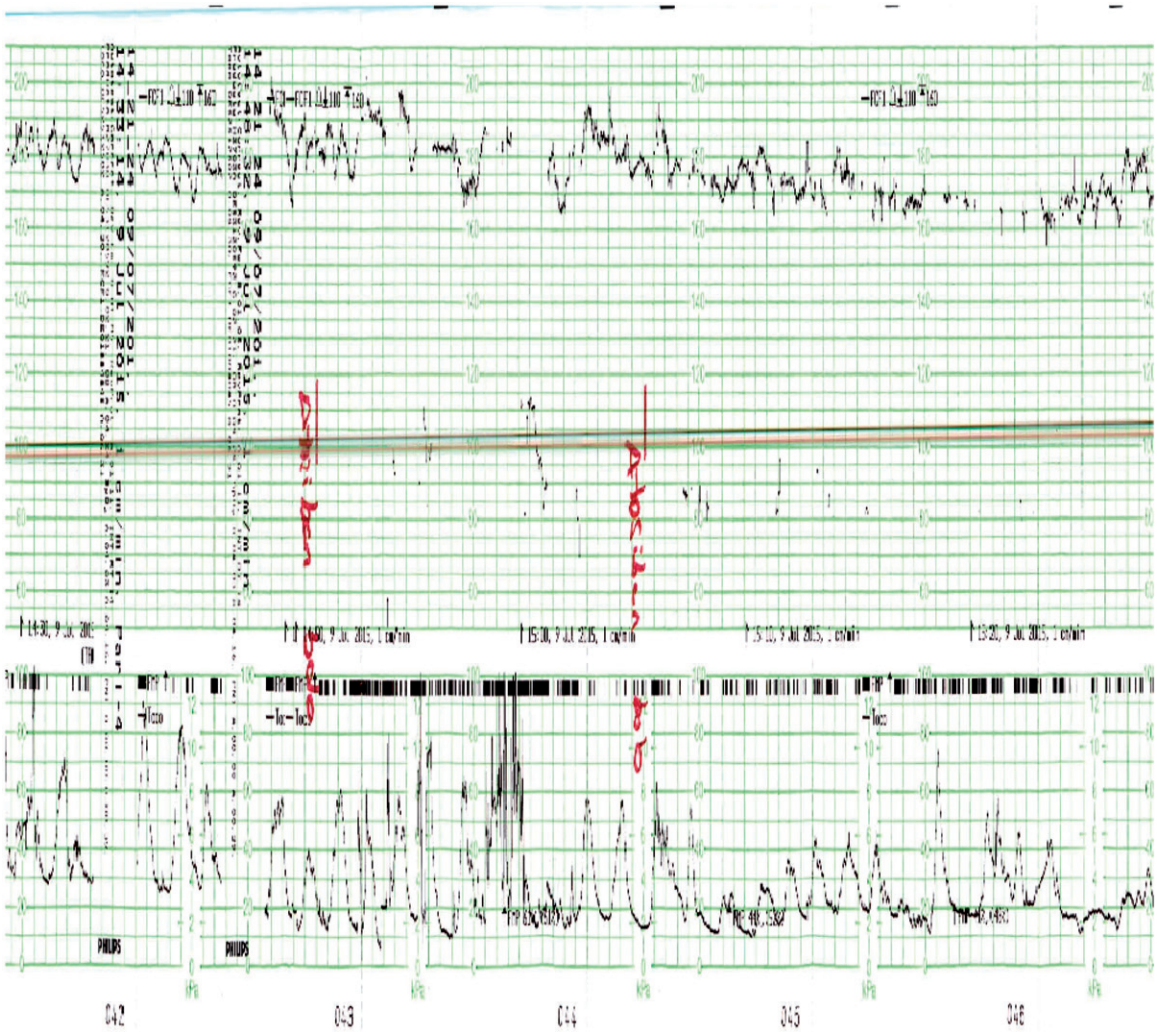
Presenter: **M. Navarro**

Introduction: Unsafe abortion is associated with increase maternal morbidity and mortality, and has large economic cost. Reality shows that when women want to terminate an unwanted pregnancy, taking misoprostol is one of the most common method to use. When that happens in late second trimester or early third trimester when the fetus is viable, the consequences may be dramatic. Induced tachisitolia may result in fetal hipoxemia, acidosis and the preterm delivery of an early neonatal death or very damaged infant.
Atosiban is a selective oxytocin-vasopressin receptor antagonist. Theoretically, atosiban should be more effective at later gestational



ages since oxytocin receptor concentration and uterine responsiveness to oxytocin increase with advancing gestation.

Clinical cases and summary results: A 28 weeks pregnant came to the emergency department after ingestion of 20 tablets of 200 micrograms of oral misoprostol three hours ago. She presented nausea, vomits, abdominal pain and signs of agitation. Formerly, the pregnancy coursed with a selective feticide of one twin with a severe brain malformation. In the Emergency, positive cardiac activity was documented on ultrasound. Fetal cardiotocography test showed tachysistolia, fetal tachycardia, absent variability late and variable decelerations (NICHD, Category III). Two 6,75 mg atosiban bolus and posterior 300 mcg/min infusion were administrated with an acute tocolisys intention. Ten minutes later after the first bolus tachysistolia began to diminish and category III converted to category II and category I. Simultaneously, corticosteroid therapy for reduction of neonatal morbidity was administrated. Seven hours later, the woman delivered vaginally. Neonatal general appearance and vital signs were normal according to fetal gestational age.Posterior evolution was satisfactory with no severe impairment at one year.

Conclusion: Manage of tachysistolia secondary to overdose of misoprostol is a difficult clinic setting with an unpredictable evolution.

Atosiban showed as an effective acute tocolytic to revert a NICHD III fetal heart rate category, secondary to tachysistolia.

Atosiban was not effective enough to stop preterm labour for more than 48 hours, after high doses of oral misoprostol in early third trimester.

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Utilization of conventional radiography in a regional neonatal intensive care unit in Ireland

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Introduction: Conventional radiography is widely used in neonatal units for the initial patient evaluation, assessment during acute clinical deterioration and in specific clinical situations such as after intubation, placement of umbilical lines or per-cutaneous indwelling venous access.

There is very little published literature available on the demand of conventional radiography in neonates especially involving premature infants. Extremely premature and very sick infants are often exposed to multiple X-rays during their stay in intensive care units.

This study quantifies the demand and direct operational cost for the provision of conventional radiography on a 24/7 basis for a European regional neonatal unit in a stand-alone university maternity hospital.
Materials and methods: A retrospective observational study was done of all radiographs performed on newborn infants admitted to the NICU in UMHL for two years (1st April 2013 to 31st March 2015). Information was obtained from the prospectively recorded and manually entered neonatal radiography record book, X-ray software package - National Integrated Medical Image System (NIMIS®) used to order and view radiographs and the patient admission record in NICU. Pearson's and Spearman's correlation coefficients were used to measure the strength of the association between numeric variables. A 5% level of significance was used for all hypothesis tests.Approval to conduct the study was obtained from the Maternity Hospital audit committee.
Clinical cases and summary results: 1405 radiographs were performed on 506 infants. 153.5 radiographs per 1000 live births was the observed demand and 44% were done out of hours. 29 infants (5.7%) were < 1000g (Extremely Low Birth Weight, ELBW) and 54 (10.7%) were between 1000-1500g (Very Low Birth Weights, VLBW). 47% of radiographs were performed on infants < 1500g. Median number of radiographs per infant was one (IQR 1- 2). Significant negative correlation was observed between number of radiographs and gestational age. Mean lung radiation doses estimated using published values for normal weight (>2500g), VLBW and ELBW infants based on the median number of chest X-rays were 31.7μGym 84.66μGy and 232.75μGy respectively.
Conclusion: Conventional radiography remains a key diagnostic tool in neonatology and is invaluable in supporting timely clinical decision making. Clinicians should be aware of the cost and potential hazards of neonatal radiography, limit unnecessary usage and seek out opportunities for alternative imaging modalities such as sonography.

Keywords: Neonatal intensive care unit (NICU), X-ray, radiation, very low birth weight (VLBW), extremely low birth weight (ELBW), health economics

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Congenital tuberculosis after in vitro fertilization: case report

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Introduction: Congenital tuberculosis (CTB) is a rare manifestations of this dangerous disease.We report a case of CTB in an infant born at 24 weeks of GA to mother with uncontrolled seizures during preterm labor. Maternal TB was initially verified by placental pathology, and later confirmed by isolation of Mycobacterium tuberculosis in urine, gastric aspirates and sputum. Full screening was performed on the newborn, and treatment for TB with a four-drug regimen was started in both the mother and infant.
Clinical cases and summary results: 37-year-old woman with normal medical history underwent an IVF. At 24 + 3 weeks of GA she presented with a generalized seizure and went to precipitous labour. Male infant was delivered by spontaneous vaginal delivery with APGAR scores on 4, 6, and 6 minutes respectively.
Resuscitation of infant included intubation, ventilation with up 100% oxygen, surfactant administration. High Frequency Oscillation Ventilation (HFOV) was started in the case room.
Mother was admitted to Intensive Care Unit and had thorough workup of her seizures. Initial diagnosis of TB was done by placental pathology that showed necrotizing granulomatous deciduitis and subchorionitis with acid-fast bacilli (AFB) inclusion. Growth of Mycobacterium tuberculosis in both sputum and urine culture was detected on day 15 and 17 of incubation. Her brain MRI showed innumerable small ring-enhancing lesions in both cerebral and cerebellar hemispheres consistent with TB.
Immediately after discovery of maternal TB infant had full screening for TB (repeated AFB culture of blood, CSF, endotracheal aspirates, gastric aspirates, urine and stools and started on course of isoniazid, rifampin, pyrazinamide, and ethambutol . Even all cultures were negative, decision was done to complete 2 months course of 4 anti -TB medications, and continue with 10 months of isoniazid and rifampin. At the age of 36 weeks of CGA he grows appropriately, doesn't have active clinical issues except for chronic lung disease CPAP
Conclusion: This case report underlines the need to rule out the diagnosis of TB in an infertile woman, as well as establishing timely therapy in neonate. Genital TB is a known cause of infertility in women belonging to high-risk ethnic groups. With rise of global migration incidence of TB grow in the developed countries. IVF is a common treatment for infertility;number of babies conceived through IVF is increasing. it is not routine practice to evaluate women from high-risk groups for possible TB.

Keywords: IVF, placental pathology, extreme prematurity, tuberculosis

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Vitamin D binding protein in cervicovaginal fluid as predictors of intra-amniotic infection and impending preterm delivery in preterm labor or preterm premature rupture of membranes

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Introduction: To determine whether vitamin D binding protein (VDBP) in cervicovaginal fluid (CVF) is predictive of intra-amniotic infection and imminent spontaneous preterm delivery (SPTD) in women with preterm labor with intact membranes (PTL) or preterm premature rupture of membranes (PPROM).
Materials and methods: This is a single-center retrospective cohort study. CVF samples for VDBP assays were obtained and maternal serum C-reactive protein (CRP) were determined immediately after amniocentesis in consecutive women with PTL (n=148) or PPROM (n=103) between 23.0 and 34.0 weeks of gestation. CVF VDBP levels were determined by ELISA kits. The primary outcome measures were positive amniotic fluid cultures (defined as intra-amniotic infection) and SPTD within 48 hours of sampling.
Clinical cases and summary results: In the multivariable analysis, elevated levels of CVF VDBP in PTL women were significantly associated with intra-amniotic infection and delivery within 48 hours, even after adjusting for potential confounders (e.g., gestational age at sampling, parity and serum CRP). However, these relationships were not found in women with PPROM. In women with preterm labor, the areas under the curves of CVF VDBP for predicting intra-amniotic infection and imminent preterm delivery were 0.66 and 0.71, with cut-off values of 1.76 μg/mL (sensitivity of 64.3% and specificity of 78.4%) and 1.37 μg/mL (sensitivity of 64.3% and

specificity of 72.6), respectively. CVF VDBP levels were significantly higher in women with PPROM than those with PTL.
Conclusion: VDBP in the CVF is independently but moderately predictive of intra-amniotic infection and imminent preterm delivery in women with PTL, whereas in women with PPROM it is not associated with increased risks of these two outcome variables.

Keywords: VDBP, Cervicovaginal fluid, preterm labor, preterm premature rupture of membrane

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Kazakhstan's experience in reducing infant and child mortality

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Introduction: Attaching special importance to the timely achievement of the Millennium Development Goals (MDGs), Ministry of Healthcare of the Republic of Kazakhstan analyzed the causes of infant and child mortality in the country on results of 2000. Results of the analysis have been the starting basis for further reforms in the field of maternal and child health, "State Programm Development and Reforming of Healthcare in the Republic of Kazakhstan for 2005-2010" approved by the Decree of the President of the Republic of Kazakhstan dated September 13, 2004, No. 1438 and "Programmes to reduce maternal and child mortality in the Republic of Kazakhstan for 2008-2010", approved by the Government of the Republic of Kazakhstan dated December 28, 2007 No. 1325.
Clinical cases and summary results: In accordance with the Plan of realization the State program, in 2007 was completed its 1st stage, aimed at massive investment in the industry: technical modernization, infrastructure development, were solved the problems of strengthening primary care, formation of healthy lifestyle, improving the quality of medical services. Generally, Kazakhstan has created an adequate legislature and the regulatory framework and the full commitment of the Government to provide the reducing child mortality in the country by 2015 by 65%.
Conclusion: Healthcare reforms contributed to the implementation of MDG 4 in Kazakhstan, which was confirmed by conclusion of Interagency United Nations Evaluation Group of assessment of mortality rate (2014): "Kazakhstan, since 1990, made significant progress in reducing infant and child mortality by 64% and 65%, respectively. The country has fulfilled the MDG 4 on reducing child mortality from 0 to 5 years by 2014".

Keywords: Neonatal and child mortality, medical services, healthcare reforms

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Neonatal intermediate care unitat the hospital Estadual da Mãe-Mesquita-RJ-Brazil

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Introduction: The Federal Government decided for the policy of building two big maternities (>5000 births/year each), one for low and medium risk pregnancies: Hospital Estadual da Mãe (Motheŕs State Hospital) - RJ - Brazil and another for high risk pregnancies: Hospital da Mulher (Womeńs Hospital) - RJ - Brazil, in Baixada Fluminense, an area with 3 500 000 inhabitants and 11 counties - Rio de Janeiro State - BR.
Materials and methods: Cross-sectional study, assessing the prevalence of neonatal who needintermediate care and the characteristics of the newborn.
Clinical cases and summary results: In 2015, from January to September, 5628 deliveries were assisted at the Hospital Estadual da Mãe and 424 (7.53%) need intermediate neonatal care. The newborn were 171 (40.33%) female, 206 (48.58%) male and 47 (11%) were missing. The range of the gestational age was from 24 to 42 weeks, the weight ranged from 636 to 4380 g, the nutritional evaluations showed 259 (61.08%) adequate for the gestational age, 39 (9.19%) small for the gestational age, 11 (2.59%) big for gestational age and 115 (27.12%) missing. The newborn didn't show any associated disease in 262 (61.79%), but 162 (38.20%) showed some. The mother didńt show any intercurrence in 134 (31.60%) cases, but they showed some in 241 (56.83%), with interference with the baby, and 49 (11.55%) were missing. The babies were asphyctic (Apgar index<7 at 5 minutes) in 18 (4.24%). After a mean period of 5.11 days (range 0-49), 252 (252/424=59.43%) babies were discharged, 151 (151/424=35.61%) were transferred to different neonatal intensive care units(NICU) and 15 died (15/424=3.53%). The rate of death from the transferred was unknown.
Conclusion: Although the maternity is reference for low risk pregnancies, as it accepts patients from other hospital and even in emergency, the profile is not so easy to deal with. Besides, the neonatal intermediate care unit is not provided with all the facilities, what justify the transferences and not so good results

Keywords: Neonatal intensive care: preterm, neonatal network

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Pharmaceutical care implementation in the Hospital da Mãe

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Introduction: In mid-2013 Mother of Hospital Pharmacists team saw the need of the newborn monitoring in antibiotic use for the purpose of adherence to treatment, rational use of antibiotics and to identify, resolve and prevent the occurrence of pharmacotherapeutic problems. Today we aim to achieve 100% of patients in the unit.

Keywords: *Goals*: elucidating the actions for implementing the clinical pharmaceutical service in Hospital da Mãe in Mesquita - Rio de Janeiro, aiming at reaching 100% of the patients in this unity.

Materials and methods: Participation of the entire team of pharmacists from the hospital in the medical rounds, prescription analyses, having pharmacists visit the patients, collecting data through the medical records and clinical examinations, the filling in of pharmaceutical attention forms to be electronically available on the MVPEP system, the evolution of each visited patient available on the system as well, implementing the pharmaceutical follow-up for mothers and babies who have syphilis, neurosyphilis, toxoplasmosis and HIV, by means of visiting them in order to give proper orientation about the usage of medication and taking part in their discharges.
Clinical cases and summary results: Expected Results: fostering the rational use of the medicine available in the institution, maximizing the clinical effects of medication, that is, using the most effective treatment for each type of patient, minimizing the risks of side effects and medication incompatibilities, providing the medical staff with information about the medications, promoting the medication reconciliation and reducing the hospitalization time. Demonstrating that the clinical pharmaceutical action is significant for the promotion of adequate use of drugs, which results in the improvement of the pacient's quality of life and the management of costs associated with health care.
Conclusion: We expect to improve health care with this approach.

Keywords: Pharmaceutical care, drugs management, cost effectiveness

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The impact of EBM in clinical practice on improvement of perinatal indicators: the northern-slovakia experience over the period 2006-2015

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Introduction: The symbiosis in organization of health care, basic and applied clinical research together with improved technical equipment and introducing guidelines into obstetric praxis has prepared the background which led to immense improvement in the perinatal outcomes in the northern part of Slovakia during the last two decades. Precautions in clinical management together with appropriate decisiveness led to deliveries of ''perspective'' neonates, even many times at the edge of viability. Such prepared deliveries in line with modern technical equipment in neonate resuscitation, ventilation or circulatory support could result in decrease of perinatal mortality and neonatal morbidity.
Materials and methods: Authors in retrospective analysis present detailed view on main perinatology outcomes for last decade (2006-2015) and point on their positive experiences in perinatal outcome in Northern part of Slovakia, Zilina district, managed through the Martin perinatology center.
Clinical cases and summary results: A 68 459 births have been reviewed. Over the time we have observed decrease in perinatal and early neonatal mortality from 6.61 to 3.6‰, and 2.57 to 0.85‰, respectively, significant shortening of mechanic ventilation from 14 to 4.5 days, decrease in need for mechanic ventilation, incidence of necrotizing enterocolitis and bronchopulmonary dysplasia in preterm neonates ($p < 0.05$). Additionally, we have noted decreasing trend in operative deliveries in last 5 years ($p < 0.05$), and stable rate of preterm labor varying about 6%. Moreover, when compared regional data with similar ones to Slovak republic, a difference in quality management was observed.
Conclusion: These positive perinatal indicators are result of strict centralization of high risk pregnancies, in-utero transport of fetuses at risk and individual management of each patient with appropriate decisiveness in line with EBM guidelines led to deliveries of ''perspective'' neonates, even many times at the edge of viability.

Keywords: Perinatal care, improvements

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Developmental dysplasia of hips in newborns

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Introduction: DDH is an important asymptomatic neonatal congenital condition which should be detectable during routine screening examination at birth.
Incidence: around 1.5/1000 births in the UK
Aims:
(1) To ensure all babies with clinically detectable hip problems (and those at high risk) are identified.
(2) To find out if local guidelines and time-frames are being adhered for appropriate investigations and referrals needed for probable interventions.

Objectives:
(1) To evaluate our ability to detect/suspect DDH in the newborn on the basis of hip screening examination and by identification of risk factors.
(2) Ensure appropriate orthopaedic referral within time limits
(3) To identify true positive DDH patients with associated risk factors and the number of false negatives

Materials and methods: Sample: Population at risk of DDH identified using PAS and data collected from Euroking, Windip and ICE databases
Sample size 130
Time frame audited: 01/04/2010 to 31/03/2015 (5 years)
Exclusions were made for patients who were duplicated in the PAS system
Analysis done by using Microsoft excel
Clinical cases and summary results:
Total number of patients minus duplicates : 130
Detection:
Number of abnormal 1st exams: 57 (36 dislocated/dislocatable, 21 clicky)
Proportion of these which were radiologically confirmed: 39 (68%)
Dislocatable hips seen by senior: 22 out of 36 (61%)
No of recorded senior paediatric reviews: 28 (49%)
Also Noted:
Total number of radiologically confirmed hip DDH (from PACS): 58 (45%)
Of these, how many were abnormal on 1st exam: 37 (63%)
Investigation:
Babies who required 2 week USS and orthopaedic referral according to trust guidelines (i-e those with clinically dislocated /dislocatable hips) : 36
Babies who received USS within 2 weeks : 28 (78%)
Referral:
Babies who received 2 wk referrals to orthopaedics : 18(50%)
Babies without adequate follow up : 2 (1st exam midwife led. No further follow up recorded)
Conclusion: Trust guidelines in terms of senior review are either not being adequately followed or not adequately recorded. 63% of children with clinically confirmed DDH were detected at their first exam. The remaining 37% were either picked later, suggesting that it was missed by the examining clinician. Of the 57 abnormal first exams, 68% were radiologically confirmed.

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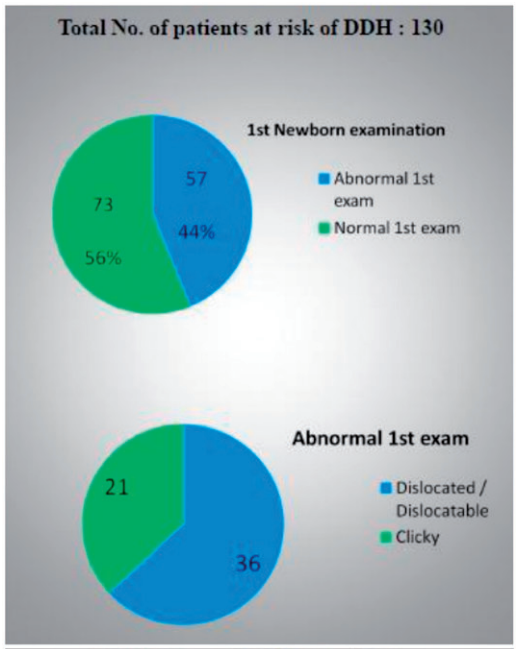
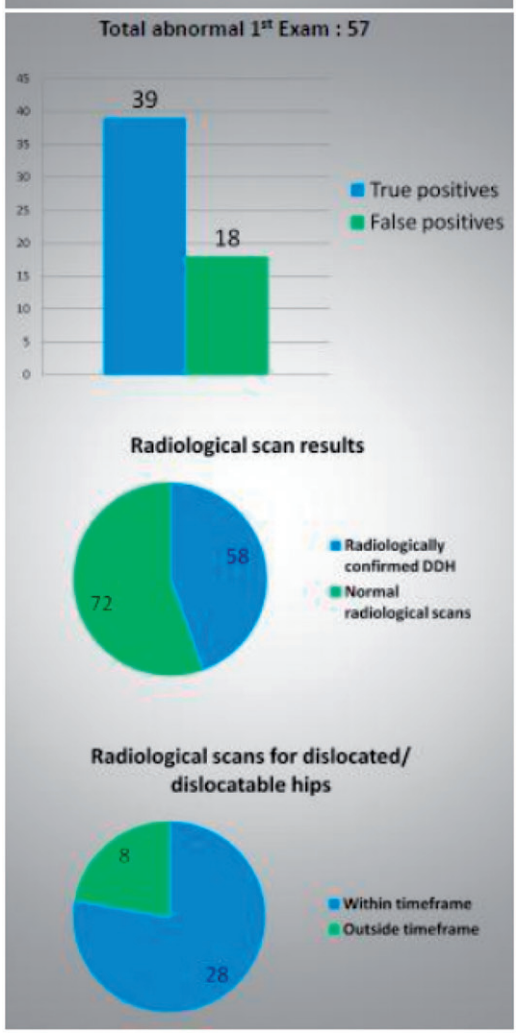
Investigation + Referral: 78% of those deemed to require 2 week USS as per local hospital guidelines were scanned within that time frame

Keywords: Developmental dysplasia of hips





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Interactive medical intelligence in obstetrics

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Introduction: The report by the Institute of Medicine in 2000, ''To Err is Human, building a safer Health System'' indicated that up to 90,000 Americans die from medical errors. The vast majority of electronic medical systems today are used to track billing, and inventory issues. No system has a checking system to assist the clinician in determining if a medical mistake has occurred or to identify medical risks for the fetus or mother. An interactive medical intelligence (IMI) has the ability to assist the clinician to accurately, and efficiently deliver obstetrical care and dramatically reduce, medical errors by using evidenced based algorithms in real time during the pregnancy. Risks are identified and reminders issued. An IMI system was able to identify 388 errors out of 1000 pregnancies.
Materials and methods: Seven busy obstetrical practices were selected to transfer the patient clinical information from their system, both paper and electronic based, into the interactive medical intelligence system. Over a 1000 pregnancies were followed until delivery. The number of omissions or inactions identified by the interactive medical intelligence system were determined and tabulated. These were compared to the risks identified by the traditional methods and some of the standard commercial electronic medical record systems.
Clinical cases and summary results: Seven obstetrical practices and 1,000 patients were enrolled into the study. 388 errors or omissions were detected when patient records were transferred to an IMI system. This would extrapolate to 1,668,400 obstetrical error annually in the USA. One can only imagine what this number might be if extrapolated globally.
Conclusion: 4.3 million births each year in the United States, with ~1 668 000 omissions or inactions occur in the care of the pregnant patient. The dream has been to utilize computer technology to help humans identify mistakes and take corrective actions. An IMI collects data during the history and physical exam. Risks are identified and diagnostics are suggested. The system never forgets, and reminds the clinician of outstanding results or if another test needs to be ordered. Quality is improved.

Keywords: Interactive medical intelligence

Missed by Obstetrical Practices

Category	# omissions/inactions per 1,000	Annually in USA 4.3 M
History of HSV infection not noted	8	34,400
History of LEEP	7	30,100
Maternal blood type not obtained	4	17,200
IVF not noted	7	30,100
Previous myomectomy	3	12,900
Sickle cell trait ignored	1	4,300
USG of Cervix not measured in High Risk for PTL	8	34,400
(+) Group B Streptococcus culture not noted	6	25,800
Family History or Autism, no Fragile X ordered	4	17,200
Short interpregnancy interval not noted	11	47,300

Missed by Obstetrical Practices

Category	# omissions/ inactions per 1,000	Annually in USA 4.3 M
Low MCV recorded but no action taken	8	34,400
Missing fields in chart	106	455,800
No maternal height recorded	90	387,000
No fundal height recorded	64	275,200
Elevated initial BP not acted on	15	64,500
Elevated BMI for appreciated for risk dystocia	11	47,300
Elevated BMI for appreciated for risk PTL	11	47,300
Short maternal stature not appreciated as risk for dystocia	5	21,500
At risk for GDM not offered early Glucose screening	12	51,600
History multiple abortions not noted as risk for PTL	7	30,100
Total	**388**	**1,668,400**

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Perinatal comparison of patients with and without intrahepatic cholestasis of pregnancy among women presenting with symptoms and signs implicative of a hepatic problem

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Introduction: Intrahepatic cholestasis of pregnancy (ICP) is the most common pregnancy specific liver disease classically presenting in the third trimester with pruritus, abnormal liver function tests and raised serum bile acid (sBA) levels, the latter being the most sensitive and specific marker for diagnosis. Gestations with ICP are associated with higher incidence of adverse pregnancy outcomes when compared to non-problematic normal ones. However, there is hardly any data regarding the effect of ICP in a group of patients presenting with symptoms and signs highly implicative of a hepatic problem such as, incidental detection of elevated liver enzymes, pruritus in the absence of a rash or intractable abdominal discomfort together with nausea and vomiting unattributable to other causes.
Materials and methods: Patients who were admitted to Ankara University Obstetrics Clinic between May 2010 and September 2015 were retrospectively evaluated. Among those, women presenting with symptoms and signs implicative of a hepatic problem with documented sBA levels and perinatal outcomes were selected. They were grouped into three according to sBA levels (μmol/L): Not-ICP (<10.0), mild ICP (10.0-39.9) and severe ICP (≥40.0) groups. The groups were compared in terms of maternal demographics, obstetric and medical history, biochemical parameters (transaminases, bilirubin levels), pregnancy outcomes, preterm birth and cesarean section (without an obstetrical indication) rates, meconium staining of amniotic fluid, need for neonatal intensive care unit (NICU), duration of stay at NICU and fetal/neonatal loss.
Clinical cases and summary results: Among 100 patients meeting the inclusion criteria of the study, 57 (57.0%) were diagnosed to be ICP, 42 (73.7%) were mild and 15 (26.3%) were severe. The ''not-ICP'', ''mild ICP'' and ''severe ICP'' groups were statistically similar in terms of maternal age, number of gravida, fetal gender, gestational week at the time of diagnosis, coexistence of chronic maternal diseases, preeclampsia and gestational diabetes and duration of newborn stay at NICU if needed. Coexistence of elevated transaminase levels, preterm (<37 weeks) and early preterm (<34 weeks) delivery cases, cesarean delivery rates without obstetrical indication upon maternal request or physician anxiety, meconium staining of amniotic fluid and need for admission of the newborn to NICU were documented to be increasing in frequency in not-ICP, mild ICP and severe ICP groups respectively and the differences were statistically significant (Table 1). Median gestational week at delivery was 35.6 (29.4-39.6) weeks in severe ICP group and this was significantly lower than the other groups (p <0.001). There was no case of fetal/neonatal demise in all groups.
Conclusion: The results support that ICP, depending on severity, is associated with a higher incidence of some perinatal problems when compared not only to normal non-problematic pregnancies, but also to a selected group risky for hepatic disturbance. Recent debate in literature about the late preterm or early term delivery of ICP patients seems to aggravate physician and thus patient anxiety leading to increased preterm and cesarean delivery rates.

Keywords: Intrahepatic cholestasis of pregnancy, perinatal outcome, serum bile acids

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Health status surveillance system of neonates with diffrent clinical forms of perinatal defeats of the central nervous system when transporting

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Presenter: **E. Ivchenko**

Introduction: Health status of neonates with diffrent clinical forms of perinatal defeats of the central nervous system must be constantly monitored during their transportation. This problem becomes especially important when it is a case of a long distance and long time of care delivery.
Materials and methods: Full term and preterm neonates with different clinical forms of perinatal defeats of the central nervous system. Health status surveillance system includes Principal Component Analysis, Artificial neural networks, logistic regression, cloud computing, 35 measures of Hematology Analyzer, 32 clinical signs of mother's and neonate's health status. A maximum distance of neonates transportation is 475 kms, while maximum time - 7 hours.
Clinical cases and summary results: Using health status surveillance system of neonates with different clinical forms of perinatal defeats of the central nervous system during their transportation lets decrease

expenses on medical maintenance twice due to the modern computer technologies.
Conclusion: Health status monitoring survey of neonates during their transportation based on different computer technologies is a promising branch of perinatal medicine.

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Study of stress biomarkers and way of delivery in term pregnancies. a prospective observational study

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Presenter: **Verónica Serrano de la Cruz Delgado**

Introduction: Nowadays more obstetricians say yes to maternal request for elective caesarean section, but at the moment evidence is not enough to talk about it as a safe practise. An increasing number of expectant mothers want to avoid the traumatic experience of birth, and this has led to the wide acceptance of elective caesarean section. Vaginal birth and caesarean have advantages and disadvantages, but, most guides claim vaginal birth is the first option to finish pregnancy. Once morbidity and mortality have been reduced, mental health is becoming more and more outstanding. Pregnancy is a stressing situation for woman and sometimes this stress can go to the bad birth outcomes. Elucidate if vaginal birth or cesarean is more stressfull is gaining importance in the middle of this controversy.
Materials and methods: We designed a prospective observational descriptive study. We recruited low risk patients in their 38 week of pregnancy, who have carried out anodyne gestations, from February-September 2015, and we got 101patients(82 vaginal deliveries-18 intrumented-,19 cesarean). We studied our sample characteristics:age, conception, parity, way of delivery and startup type of delivery. We mesured 48h after delivery mothers' stress with biomarkers in blood as: cortisol, acute stress biomarker; and α-amylase, chronic stress biomarker. Furthermore we measured psychosocial stress in interviews and by questionnaires, but we have not had conclusions yet because we are still analysing the obtained figures. Our objective was elucidating which of the delivery ways is more stressfull.
Clinical cases and summary results: Mothers who finished pregnancy by cesarean (8,173±6,931?g/dl) had cortisol levels higher than mothers whose delivery was vaginal (5,631±6,075 ?g/dl)(p=0,020) fourty-eight hours after delivery. Either instrumented or spontaneous deliveries had similars levels of cortisol and α-amylase (Espontaneous: cortisol 5,631±6.075?g/dl and α-amylase 90,289±66,110 U/L; instrumented: cortisol 6,673±5,361 ?g/dl and α-amylase 74,83±85,677 U/L) fourty-eight hours after delivery.
Conclusion: Patients who deliver by cesarean show higher levels of blood cortisol (acute stress biomarker) than those patients who finish pregnancy by vaginal spontaneous or instrumental birth. However, with blood α-amilasa (chronic stress biomarker), it is exactly the opposite, levels are higher when the delivery is vaginal. We do not find any differences between spontaneous and instrumental vaginal birth.

Keywords: Stress, biomarkers, vaginal birth, cesarean

624

5 years of ERT - quality assurance in east-tallinn central hospital, gestational diabetes

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Presenter: **Ferenc Szirko**

Introduction: The comission on ERT (Ebasoovitavate Ravitulemuste komisjon) was founded five years ago in order to investigate in depth the near miss cases in obstetrics and gynaecology and to answer the treatment related complaints of the patients. A detailed list was created of cases to report to the commission. It includes deliveries with new-borns with low pH, trauma, NICU hospitalisation or stillbirth; blood loss over 1500 ml, eclampsia or other severe maternal morbidities (rare or requiring ICU treatment); surgical complications - unplanned organ removal, neighbouring organ injury or electro surgery complications; patients treatment related complaints.
Materials and methods: In 2016 a survey on the screening of gestational diabetes (GD) was carried out to look into effectiveness of prevention of births with large for gestation age new-borns. In ETCH glucose tolerance test is performed in the first trimester based on anamnestic and anthropometric findings. If negative, the test is repeated in the second trimester.
Clinical cases and summary results: During 2014-2015 611 cases of GD were diagnosed, 10,8% of all pregnant delivered in the hospital. The yield of first trimester testing was 37%, the second - 41% and the third 22% respectively. Ten term babies were born weighing over 4,5 kg - 1,8%. At the same time the ratio of large babies born to healthy (or undiagnosed with gestation diabetes) was 2,4%.
Conclusion: Because shoulder dystocia is a potentially life threatening event, a third trimester foetal weight estimating ultrasound screening commencing is currently under discussion.

Keywords: Gestational diabetes, large for gestation age

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5 Years of ERT - quality assurance in east-tallinn central hospital, SGA

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Presenter: **Ferenc Szirko**

Introduction: East-Tallinn Central Hospital is the largest maternity home in Estonia with number of deliveries reaching 4000 per year. It was recognized that apart of morning rounds, ex consilio and perinatal meetings a body is needed to work on quality improvement. The commission on ERT (Ebasoovitavate Ravitulemuste komisjon) was founded five years ago in order to investigate in depth the near miss cases in obstetrics and gynaecology and to answer the treatment related complaints of the patients.
Materials and methods: In 2015 a survey on the diagnosis of SGA was carried out to find out, whether there is room for improvement. Five doctors accessed the relevant electronic patient record and collected the data on delivery details including gestation at delivery, mode of delivery, last ultrasound examination, weight of the newborn and the Apgar score.

Clinical cases and summary results: Out of 3798 new-borns 112 (3%) were diagnosed SGA, of them 75 below 5-th percentile (2%). There were 8 pairs of twins among them (11,4% of 70 pairs of twins born 2014). In 58,7% of the cases the diagnosis was established before, respectively in 41,3% after delivery. In two thirds of undiagnosed cases an ultrasound examination was performed on 33-38-th pregnancy week.
Conclusion: The commission decided to initiate negotiation with the hospital laboratory to start serum PlGF testing to incorporate it in preeclampsia and SGA first trimester combined screening along with PAPPA and uterine artery PI measurement. Another survey was performed later in order to evaluate the skills of obstetricians in performing ultrasound examination.

Keywords: Quality assurance, small for gestational age, foetal ultrasound

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Pragmatic criteria of ''Neonatal near miss''

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Presenter: **V.A.Bushtyrev**

Introduction: The number of newborns that were affected by serious diseases and survived are always several times more than the number of died. This heavy contingent of newborns received the name 'neonatal near miss'. Currently there is still no standard definition of 'neonatal near miss' - 'almost died', but, by analogy with the definition of near miss in obstetrics, these include neonates, who nearly died but survived, overcoming serious complications during pregnancy, childbirth or within the first 7 days of extrauterine life [Pileggi-Castro C., et al., 2014]. Model of 'Neonatal near miss' is considered to be a tool to determine the risk factors associated with neonatal mortality.
Materials and methods: We conducted a prospective study in Rostov State Perinatal Center for the period from 2011 to 2014, in which 17267 infants were included (17089 of them were born in Perinatal Center and 178 were evacuated from other health facilities). The number of neonatal deaths in the early neonatal period was 46 (2.67 per 1000 live births) for 4-year period. We used pragmatic markers of 'neonatal near miss' proposed by Pileggi-Castro C. et al, 2010: birthweight less than 1750 grams, Apgar score at 5 minutes of life less than 7 points, and gestational age at birth less than 33 weeks. All infants who survived the neonatal period and have at least one of the selected variables were classified as cases of neonatal 'near miss' (1540 newborns). Logistic regression statistical method was used.
Clinical cases and summary results: Among 17276 newborns with 5-minute Apgar score less than 7 points, 41 children died and 1260 survived; among children with 5-minute Apgar score more than 7 points, 15961 survived and only 5 newborns died. The statistical analysis revealed that the newborn evaluated by Apgar score at 5 minutes less than 7 points had a 103.87-fold higher risk of death in the early neonatal period (OR=103.87, CI 40.97-263.32). The sensitivity of this pragmatic marker was 89.1%, specificity - 92.7%. The probability of neonatal death of neonate with birthweight of 1750 grams is 102.67 times higher. The sensitivity of this marker is 87%, specificity - 93.5%. The chance of neonatal death of neonate with gestational age of 33 weeks is 95.84 times higher (CI 40.55-226.53). This marker has the same sensitivity and specificity as well as body weight less than 1750 grams (Se 87.0%, Sp 93.5%). If a newborn has any of the three pragmatic markers (Apgar score at 5 minutes less than 7 points, birth weight less than 1750 grams and gestational age less than 33 weeks) the probability of neonatal death is higher (OR 145.95; CI 45.23 - 470.99), thus, this test has high sensitivity (Se 93,5%) and specificity (Sp 91,1%).
Conclusion: Thus, the analysis of the three markers (birth weight less than 1750 grams, Apgar score at 5 minutes of life less than 7 points, and gestational age at birth less than 33 weeks) in our study showed that the presence of one of the three pragmatic markers in newborn increases the risk of death by 145.95 times. The sensitivity Se 93,5 of this test shows that these symptoms may be the main criteria for prediction of neonatal death.

Keywords: Neonatal near miss, Apgar score, birthweight, neonatal mortality, neonatal intensive care unit

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Development of analytical methodology to determination of endocrine disrupting chemicals in human milk: preliminary results

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Introduction: Endocrine Disrupting Chemicals (EDCs) are substances able of inducing changes to endocrine system due of its estrogenic character. The population is continually exposed to EDCs: As bisphenols (A, F and S), parabens (MP, EP, PP and BP) and benzophenone (BP- 1 to BP-8 and 4-hydroxybenzophenone) due to its presence in products such as cosmetics. Breast milk is considered the main way of exposure to EDCs in neonates.
The aim of the study was to validate an analytical methodology to quantify levels of a selection of EDCs in breast milk. Results of a pilot study in samples of donor milk to a Milk Bank.
Materials and methods: Human milk samples were donated by 15 donor milk, which was applied an epidemiological questionnaire. A new procedure based on a sample treatment by dispersive liquid-liquid microextraction(DLLME) for the extraction of three bisphenols, four parabens and six benzophenones in human milk samples followed by high performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) analysis was validated. The method was satisfactorily applied for the determination of target compounds in human milk samples from 15 randomly selected individuals.
Clinical cases and summary results: The method Dispersive liquid-liquid microextraction was validated and optimized.
The following data were obtained: (table 1)
The compound MP was detected more frequently in the analyzed samples milk (11/15), followed by BP-3 (9/15), PP(6/15), EP(5/15), BPA (4/15) and BP and BP-1 (1/15). No samples showed detectable levels of BPS, BPF, BP -2, BP -6, BP -8 or 4 - OHBP.
Conclusion: A new analytical method for quantification of endocrine disruptors non-persistent chemicals in human breast milk samples was achieved. The results of the initial study show frequent exposure to certain EDCs. Future studies to deep the study of the levels of exposure in the general population, as well as the possible effects of it are needed.

Compound	Detected n (%)	Concentrations (ng/mL)
Bisfenol A	4 (26,7%)	1,9-2,3
BPS	0 (0%)	-
BPF	0 (0%)	-
Metilparabenos	11 (73,3%)	1,9-18,6
EP	5 (33,3%)	5,3-6,8
PP	6 (40%)	0,7-3,8
BP	1 (6,7%)	-
Benzofenona 1	1 (6,7%)	0,6
BP-2	0 (0%)	-
Benzofenona 3	9 (60%)	0,7-1,5
BP-6	0 (0%)	-
4OH-BP	0 (0%)	-

Concentration EDCs in Samples of Donor Milk

TWINS - 027

A new indicator representing the efficiency of vascular anastomoses in monochorionic twin placentas

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Introduction: We established the ratio of placental territory discordance ratio and fetal weight discordance ratio in monochorionic twin placentas (PFR), and study whether PFR represents the efficiency of vascular anastomoses in monochorionic twin placentas.
Materials and methods: 172 monochorionic diamniotic placentas were studied with dye injection in Peking University Third Hospital from 1st April 2013 to 1st May 2015. We set 4 study groups: A. 49 placentas of nMcT, B. 52 placentas of sIUGR, C. 38 placentas of TTTS and D. 8 placentas of TAPS. We conduct a spearman correlation analysis between PFR and the number as well as the diameter of different types of vascular anastomoses, we also compare PFR among the 4 groups.
Clinical cases and summary results: In the normal McT group, TTTS group and sIUGR group, PFR were correlated with the total diameter of all the anastomoses respectively (Spearman = 0.413/0.514/0.583, P=0.003/0.001/0.000). PFR in the normal McT group was larger than that in the TTTS group and TAPS group(2.35(0.88, 12.44) vs 1.03(0.12, 15.17) vs 0.75(0.29, 2.40), *p*=0.000/0.008).
Conclusion: We consider PFR correlates with the total diameter of all the vascular anastomoses in monochorionic twin placentas and could be a good indicator representing the efficiency of vascular anastomoses.

Keywords: Vascular anastomoses, monochorionic twins, placenta, twin to twin transfusion syndrome, selective intrauterine growth restriction

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Frequency of premature births in twin pregnancies in Kosovo

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Aim: To determine the frequency of premature births in twin pregnancies.

Keywords: *Materials and Methods*: This was a retrospective study, of twin births, undertaken from December 2013 back to January 1, 2013, in Obstetrics and Gynecology Clinic/University Clinical Centre of Kosovo.
Clinical cases and summary results: Out of 10 286 the births in Obstetrics and Gynecology Clinic, 270 (2.63%) were twin pregnancies. The incidence of twin pregnancies was, 26.3 twins per 1000 births. Fifty three percent (*n*=143) of infants were born at term, while 47% (*n* = 127) of infants born preterm or before 37 weeks of gestation. Thirty per cent of the twin pregnancies were conceived through the use of assisted reproduction technology, while 70 percent were by spontaneous conception. The average maternal age was 30.8 years, while the average gestational age at birth was 32.9 weeks. About

Table. Crude and adjusted odds ratios (OR) of maternal asthma as risk factors of pregnancy, delivery and fetal outcomes with 95% confidence interval (CI)

Maternal and fetal outcomes	Crude		Adjusted	
	OR	CI	OR	CI
Gestational diabetes mellitus [1]	2.35	1.32- 4.20	2.64	1.45- 4.78
Gestational hypertension	3.79	2.13- 6.75	3.79	2.10- 6.70
Abnormal vaginal bleeding [2]	4.28	1.82- 10.09	3.75	1.54- 9.10
Fetal death [3]	2.87	1.30- 6.37	1.53	0.57- 4.12
Preterm delivery [4]	2.14	1.43- 3.20	1.74	1.14- 2.65
PROM [5]	2.14	1.35- 3.38	2.17	1.36- 3.47
Cesarean section [6]	2.21	1.56- 3.12	2.08	1.43- 3.02
Low birth weight [7]	2.24	1.39- 3.62	1.78	1.07- 2.94
Being small for gestational age [8]	3.41	1.94- 6.00	2.86	1.46- 5.60

1. OR adjusted for age
2. OR adjusted for education, gestational diabetes and gestational age.
3. OR adjusted for PROM and gestational age.
4. OR adjusted for gestational hypertension, abnormal vaginal bleeding, PROM and age.
5. OR adjusted for preterm delivery.
6. OR adjusted for gestational hypertension, preterm delivery, low birth weight, small for gestational age and PROM.
7. OR adjusted for abnormal vaginal bleeding and gestational hypertension.
8. OR adjusted for gestational hypertension, preterm delivery and low birth weight.

7.8% (*n*=10) were born before week 28 gestational, 23.6% (*n*=30) before 32 weeks, 68.6% (*n*=87) were born between weeks 32 and 36 + 6 gestation. Averages birth weight of the premature twins was 2010 grams, 8.9% (*n*=24) were born with less than 1000 grams, 14.1% (*n*=38) ≤1500 grams, 53.7% (*n*=145) ≤2500, and 23.3% (*n*=63) ≥2500 grams. Sixty-three percent were delivered through section caesarean, while 37% were through vaginal delivery. The Apgar test scoring average for the group: Gem I was 6.5, while for group: Gem II was 6.4. The most common pathologies associated with premature births were: preterm premature rupture of membranes (27.5%), status post section caesarean with pain (13.4%), maternal hypertensive disease (12.5%), death of the fetus in utero (10%), and cervical insufficiency (9.5%), and other pathologies in small percentages: IUGR, umbilical cord accidents, abruption placenta, polyhydramnios etc.
Conclusion: The frequency of 47% premature births in twin pregnancies in Kosovo. Sixty three percent of the preterm twin pregnancies were delivered through section caesarian. The average gestational age at birth was 32.9 weeks, while averages birth weight of the premature twins was 2010 grams.

Keywords: Preterm births, twin pregnancies, Kosovo

041

The prenatal ultrasound and mri for the assessment of fetal brain damage in twin-to-twin transfusion syndrome

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Introduction: Twin-to-twin transfusion syndrome (TTTS) is a specific complication of monochorionicity, based on the imbalanced interfetal blood flow, chronic feto-fetal transfusion and increased risk of chronic brain damage, both in the donor and the recipient. The purpose of the study is to assess the improvement that MRI brings to ultrasound (US) examination in order to evaluate TTTS complications.
Materials and methods: The study is conducted in five tertiary care referral centers for a period of three years, including 17 cases of twin pregnancies with TTTS. Diagnosis and classification of TTTS were made according to Quintero, Cincinnati or combined criteria. First trimester screening for all cases. Maternal-fetal Doppler hemodynamic profile assessment in all cases. Second trimester ultrasound scanning and fetal MRI after diagnosis of TTTS.
Clinical cases and summary results: MRI evaluation followed second trimester ultrasound. US and MRI findings: overall brain abnormalities - 5 cases (29.41%). Ventriculomegaly in donor twin (*n*=3, 17.64%), cerebral ischemia and hemorrhage (*n*=2, 11.76%), porencephaly in the recipient twin (n=1, 5.88%), perhaps by ischemic flow and thrombotic showers, cerebral venous sinus dilatation (*n*=3, 17.64%). Other MRI findings: white matter necrosis, hemorrhage along the germinal matrix, cerebellar volume loss in hypovolemic donor, extensive cerebral parenchymal thinning, abnormal decreased signal in the basal ganglia. Associated anomalies diagnosed by complementary contribution of the MRI to US: upper urinary tract abnormalities (*n*=11, 64.7%), lung abnormalities (5.88%).
Conclusion: NT is a good predictor for the development of TTTS. NT above the 95th centile in one of fetuses predispose to severe TTTS with brain injuries. MRI is helpful in TTTS induced brain lessions. MRI sometimes contributes decisively to the diagnosis of extracerebral lesions TTTS induced. MRI may be an important component in counseling prior to intervention in TTTS. MRI is complementary to US. To the extent that the costs will emerge as more accessible, MRI will become a more useful and friendly equipment in the assessment of maternal-fetal outcome in multiple pregnancy.

Keywords: Multiple pregnancy, cerebral, hemorrhage, outcome

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Perinatal outcomes of twin and singleton pregnancies

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Introduction: The rate of twin pregnancies is increasing worldwide. Twin pregnancies are usually at greater risk of maternal, fetal and neonatal complications. The aim of this study was to compare the perinatal outcomes of twin and singleton pregnancies at a single institution in Brazil.
Materials and methods: We performed a case-control study. All twin pregnancies born between January 2010 and December 2012 were included as case. For the control group we considered 2 pregnant women who gave birth immediately after the case.
Clinical cases and summary results: During the study period, there were 10 734 births. 130 patients had twin pregnancy, whose data were compared with 260 patients with single pregnancy. Among twins, 91 were dichorionic, 28 monochorionic diamniotic, and 2 monochorionic monoamniotic. In 9 cases the chorionicity was not reported. There was no statistical difference between groups with respect to demographic variables except age, in which pregnant women in twin group were older (27.2 versus 25.2 years old (p=0.004). Twin pregnancies had more complications during pregnancy (OR 4.1, 95% CI 2.6-6.4, p=0.001), especially preeclampsia (24% versus 10.3%, OR 2.7, 95% CI 1.6-4.8, p=0.001), intrauterine growth restriction (10.1 versus 2.7%, OR 4.1, 95% CI 1.6-10.5, p=0.003) and preterm labor (27.9% versus 5.4%, OR 6.8, 95% CI 3.5-13.2, p<0.001), and required more cesarean sections (84.6% versus 45.1%, OR 0.15, 95% CI 0.08-0.25). Neonatal outcomes were also significantly worse in twins. There was a higher proportion of premature infants less than 37 weeks of pregnancy (63% versus 11.7%, OR 15.38, 95% IC 9.54-24.77, p<0.001) and also less than 34 weeks (26.8% vs 1.6%, OR 23.58, 95% IC 8.46-65.71, p<0.001), lower birth weight (2.234g ± 634 versus 3.261g ± 588, p<0.001), more newborns with 5 minutes Apgar score ≤ 7 (5.8% versus 1.9%, OR 3.12 95% IC 1.12-8.72, p<0.001), higher need for resuscitation (36.5% versus 14.1%, OR 3.13 95% IC 2.03-4.83, p<0.001), and increased admission to the neonatal ICU (47.3% versus 10.3%, OR 7.71 95% IC 4.84-12.31, p<0.001). There were 2 stillbirths and 8 neonatal deaths in the the twin group and 1 neonatal death in the control group.

Conclusion: The results of this study confirm a higher rate of adverse perinatal outcomes in twin pregnancies compared to singleton. These pregnancies require a differentiated perinatal care.

Keywords: Twin pregnancy, neonatal outcome

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Amniotic bands, anorectal and bladder agenesis an unique association in a twin pregnancy with fetus papyraceus

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Introduction: Poor cloacal development and an inadequate septation can generate a wide range of genitourinary and terminal portions of the digestive tract malformations. The bladder agenesis is an extremely rare congenital genitourinary anomaly. Successful treatment and the long-term prognosis are usually poor because of the associated abnormalities.
Clinical cases and summary results: We report an uncommon case relating to cloacal maldevelopment, a complex association of urogenital and hingut abnormalities in a tween pregnancy with fetus papyraceus (mummified) and amniotic bands. A twin pregnancy with one fetus stopped evolving at 12 weeks of gestation and another fetus that has continued to develop up to 23 weeks. The birth occurred at 23 weeks and we extracted a mummified fetus of 45 grams and a nonviable female fetus weighed 420 g with multiple malformations. Clinical, anatomopathological evaluation and embryological review are made to explain the concomitant occurrence of these rare malformations. Survival will depend on the extension of the cloacal exstrophy and the genitourinary and intestinal defect.
Conclusion: Early prenatal diagnosis is required, serial scans are necessary and it is also helpful to plan the appropriate perinatal management. The surgical management is typically undertaken in the postnatal period (48 to 72 hours) as a multidisciplinary approach involving neonatologists, pediatric surgeon, pediatric urologist, pediatric neurosurgeons, genetic specialist. The prognosis of infants with cloacal abnormalities is variable, depending on the severity of the structural defects.

Keywords: Bladder agenesis, ectopic ureter, OEIS complex, amniotic bands, twin pregnancy with fetus papiraceus

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Donor demise in twin-to-twin transfusion syndrome: better of the worst

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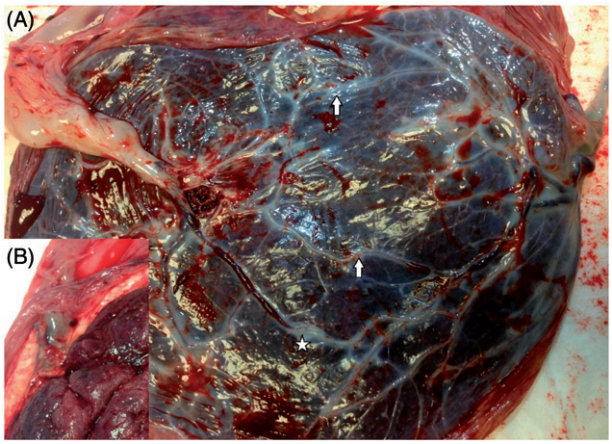
Introduction: Twin-to-twin transfusion syndrome (TTTS) complicates 10-15% of monochorionic multiple gestations with an incidence of 1-3 per 10 000 pregnancies. TTTS results from progressive unbalanced blood sharing from donor to recipient through placental vascular anastomoses. TTTS typically arises in the second trimester between 15 and 26 weeks and carries a high perinatal mortality reaching up to 90% if left untreated. Fetoscopic laser photocoagulation of anastomoses is the first line treatment modality. However, approach to single intrauterine fetal demise, at gestational weeks when the surviving co-twin is accepted to be viable, is under debate. Hereby, we present spontaneous donor demise in TTTS providing us the necessary time to re-evaluate the recipient and get prepared for peripartum interventions.
Clinical cases and summary results: 28-year-old gravida 4 woman was followed biweekly due to a monochorionic diamniotic twin pregnancy. Serial evaluations were unproblematic including detailed mid-trimester scan. Sonographic evaluation at 25 weeks revealed stage 1 TTTS which rapidly progressed to stage 2 in one week. Umbilical cord of the donor was adhering to the very edge of common anterior placenta. She was hospitalized and antenatal steroid prophylaxis was administered. The parents refused laser and 2100 ml of amniodrainage was performed. At 27 weeks 6 days, she applied due to absence of fetal movements for 24 hours. The donor was dead. Doppler of the recipient depicted absence of diastolic flow in umbilical artery, reverse a-wave in ductus venosus and increased peak systolic velocity in middle cerebral artery (1.94 MoM) interpreted as recipient myocardial dysfunction together with anemia due to exsanguination into donor. Following preparations, 970 g male baby was born via cesarean seciton with a hemoglobin value of 10.7 g/dL. He died 12 days postpartum due to cardiac dysfunction and prematurity. Placental macroscopy revealed several vascular anastomoses, the major of which is arteriovenous, and marginal semi-velamentous insertion of donor umbilical cord being a prognostic indicator endangering donor survival (Figure 1).
Conclusion: In TTTS cases ineligible for laser therapy, clues threatening the fetuses should be thoroughly evaluated. Donor death may offer a favorable prognosis for the recipient. Doppler scans may be helpful for evaluating myocardial performance and anemia of the surviving recipient but not for placental anastomoses. Although donor death may provide considerable time for re-evaluation of the recipient, the angioarchitecture of monochorionic placenta is the deciding authority on the fate of surviving twin.

Keywords: Twin-to-twin transfusion syndrome, donor death



TWINS - 512 (CASE REPORT)

Delayed-interval delivery in dichorionic twin pregnancies-two case reports

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Presenter: **Marcia Marinho**

Introduction: The emergence of assisted reproductive techniques (ART) increased the number of delayed- interval delivery (DID) cases in multiple pregnancies.
Reports have shown that such pregnancies can be continued with good outcome when properly managed. Each case is an unique medical situation that must be individually managed.
Prolonged bed rest, cervical cerclage, tocolysis, antibiotic prophylaxis and corticosteroids are managing possibilities but frequently debatable issues.
There is no consensus still on how to best manage DID of remaining fetus/fetuses because such cases are still relatively rare.
Gestational age at delivery is an important factor in neonatal survival, as well as prolonged delayed birth of the second twin.''
Clinical cases and summary results: We report two cases of DID of dichorionic twin pregnancies conceived after ART, admitted to our emergency department at 19 weeks and 24 + 2 weeks of gestation.
In both cases first twin's placenta was left in place and high ligament of umbilical cord was performed. There was no first twin survival. Both patients received antibiotic therapy and bed rest was instituted. This approach allowed a delaying duration in delivery of the remaining twin of 125 and 10 days, respectively. Both second twins survived with good outcome.
Conclusion: Preterm delivery is the most common complication of multiple gestations. Although delivery of the first fetus is inevitable, successful delaying of the co-twin is sometimes feasible and lifesaving.
Management of DID represents a great challenge to clinicians by its paucity and the inexistence of an universally accepted management protocol. It allows better neonatal outcomes for the second twin. Our cases illustrate the variability on the mean duration of delay, as described in the literature.

Keywords: Delayed-Interval Delivery; twin pregnancy

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Prenatal diagnosis of hemiacardius acephalus: a rare presentation of twin reversed arterial perfusion sequence

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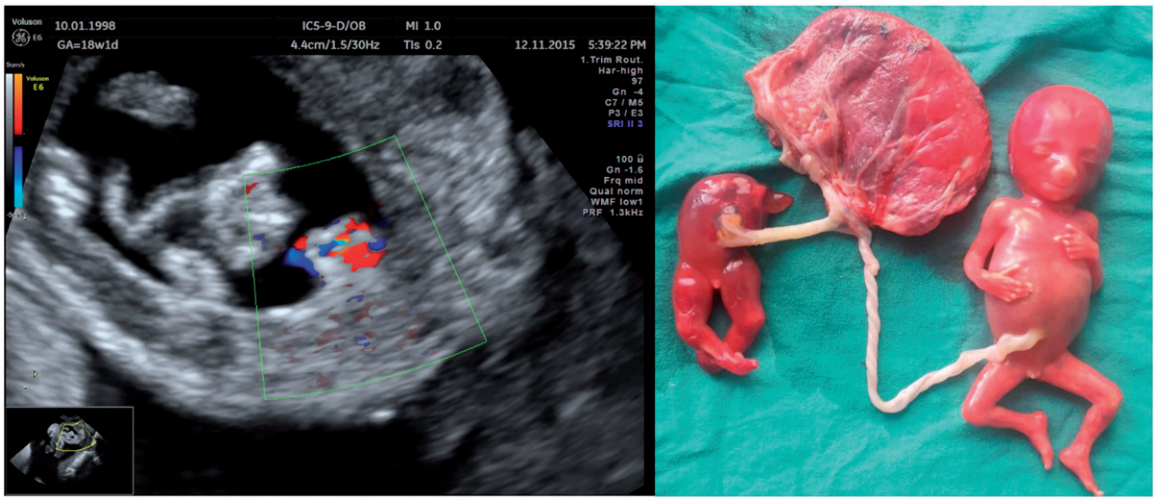
Presenter: **D. C. Katlan**

Introduction: Twin reversed arterial perfusion (TRAP) sequence, occurs in 1/35,000 births and 1% of monozygotic twins. Defective early embryonic placental vascular development leads one twin to lose its own placental share and to become solely dependent on the retrograde flow of deoxygenated blood of its co-twin through its umbilical arteries. The perinatal outcome is poor if left untreated. Under sonography one fetus appears normal and other one lacks apparent cardiac structures. Acardiac twins are classified into 4 types: Acephalus (presence of lower body), Anceps (well-developed body and partially formed head), Acormus (presence of only head) and Amorphous (no recognizable anatomy). Hereby, we report a rare presentation of TRAP sequence with a functioning heart in an anomalous twin of acephalus type.
Clinical cases and summary results: A 17-year-old primigravid woman was referred due to a twin gestation complicated by an anomalous fetus. Detailed sonographic examination at 18th week confirmed the presence of monochorionic diamniotic female twins one of which had an unremarkable anatomic survey. The other co-twin was severely deformed. The upper body parts including the head, thorax and upper extremities were completely absent. Anomalous spine, ending with bi-cystic fluid-filled sacs, was reaching up to lower thoracal segments; lower extremities were motile but deformed; some of the abdominal viscera like kidneys, intestines were vaguely visible and an anechoic, probably cystic, area reaching to defective anterior abdominal wall was noticeable. A single-artery-umbilical cord was originating from a very adjacent area to the placental insertion site of the cord of normal co-twin. Doppler imaging revealed a reversed pulsatile flow in that umbilical artery. A rudimentary but pumping heart with visible blood flow under Doppler scan was localized at the upper edge of the half-developed trunk. The parents opted for termination of pregnancy. Postpartum examination confirmed prenatal findings (Figure).
Conclusion: Although the majority of perfused co-twins are really acardiac, some may have rudimentary cardiac tissue (hemiacardius) most of which are nonfunctional. Almost all, of the few reports of hemiacardius twins are anceps. Presence of a functional heart in acephalus type of perfused twin is an unexpected coincidence which may be misclassified or misdiagnosed. Recognizing the spectrum of potential sonographic appearances is important to prevent misclassification, and thus, misleading counseling.



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Active second stage management in twin deliveries improves obstetrics outcomes

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Presenter: **J. Adánez**

Introduction: Our objective was to compare obstetric and neonatal outcomes in twin deliveries in two different periods with different obstetrical practices. In the first period we attempted a trial of vaginal delivery when the presentation of both twins were cephalic. In the second period, a cephalic presenting first twin was enough to indicate a planned vaginal delivery. To achieve this goal, we implemented a protocol that included active management of the second twin. Competency in obstetric maneuvers were acquired after adequate training on birth simulator. The presence of a formerly trained expert on internal maneuvers was always required.
Materials and methods: A retrospective cohort study of 276 twin deliveries was undertaken in a level III University Maternity. We included all the twins deliveries ≥32 weeks, assisted in our hospital between January 2008 and March 2016. We established two different periods 2008-2010 (A) and 2010-16 (B) considering that our protocol was implemented in May 2010. During 2012 and 2013 the protocol was not applied. The protocol included the presence of an skilled expert on active second stage management of the second twin, or availability on and on-call expert. A delivery training program on internal maneuvers skills that included didactic sessions and simulation training was required before the procedure was practiced on theatre. Active second stage management included complete breech extraction of a second breech or transverse lie twin, and internal versión of a non engaged cephalic second twin followed by a complete breech extraction.
Clinical cases and summary results: 127 twin deliveries were assisted in period A and 149 in period B. We observed no differences on mean age (33 vs 35,5) pregnancy complications (15,1 vs 16,57) or nulliparity (76,2 vs 82,9).The fetal position before delivery were both cephalic (48,8 vs 54,4%), cephalic/noncephalic (25,2 vs 22,1%) and breech/other (26 vs 23,5%). After the implementation of the protocol we observed a significant reduction in twin cesarean rate (CS), (71,8% vs 47,7%; p<0,001). This reduction was observed in the cephalic/noncephalic presentation CS (92,8% vs 26,1%; p<0,001), and also in both cephalic presentation CS (46,4% vs 37,9%;; p<0,001). We observed no differences in neonatal composite morbidity for first or second twin outcomes (1,1% vs 0,67%) in the overall twin deliveries or after the exclusión of pregnancy complications (0,78% vs 0,33%). Combined vaginal cesarean delivery was reduced (6,5% to 0%) if an obstetrician used to internal maneuvers was present.
Conclusion: A protocol that includes active management in twin deliveries assistance achieves a significant higher rate of vaginal deliveries not only in cephalic non cephalic presentation but also in both cephalic presentation.
The presence of an obstetrician used to internal maneuvers reduces combined vaginal cesarean deliveries.
Delivery training programs on internal maneuvers skills achieve an increase in successful twin vaginal delivery

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A case of early pprom in twins

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Presenter: **P. Domashev**

Introduction: Brief amniotic fluid leaking has been detected at 15w3d of gestation in MCDA twins on day 3 after laser treatment for TTTS stage III. At 17 gestation weeks marked fluid loss in ex-recipient has renewed and has been lasting for 3 weeks. Subsequently the pregnancy developed without complications unless 31w2d when PPROM has happened again. At 31w3d two boys have been born- F1 (ex-recipient) 1628g., Apgar score 7/7, F2 (ex-donor) 1502 g., Apgar score 6/7. Now they are 3,5 months old and are developing normally.
Clinical cases and summary results: At 30 y.o. G2, P1 woman in spontaneous MCDA twin pregnancy TTTS stage III was detected at 14w0d and laser treatment was made at 15w0d. In 3 days after successful laser coagulation brief fluid leaking was detected. Chorionic membrane dissociation with good AFI for both fetuses were detected. At about 17w0d marked fluid loss from ex-recipient started. Conservative management was chosen due to woman did not show signs of inflammation, laser treatment was successful, AFI was good in both fetuses and cervix remained long. At 20w fluid leaking stopped. Subsequently pregnancy developed without complications except secondary cardiomyopathy (right ventricle hypertrophy, TVR, PV stenosis) in ex-recipient at 23w5d. At 31w3d due to PPROM the day before two boys have been born by CS. F2 (ex-donor) - 1502 g., Apgar score 6/7. F1 (ex-recipient) 1628g. by weight and 7/7

by Apgar score was referred to Cardiologic clinic for surgery. Now the twins are 3,5 months old and are developing normally.
Conclusion: Early PROM is not a fatal condition.

Keywords: *PROM twins*

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Comparison of pregnancy and labor course in spontaneous and art-conceived twins

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Presenter: **N. Skrypchenko**

Introduction: There is a strong evidence of higher rate of perinatal complications in twin pregnancy, including preeclampsia, antenatal fetal death, poor neonatal outcome, increased rate of preterm delivery, cesarean section etc. At the same time there is a significant increase in the amount of multiple pregnancies during recent years due to assisted reproductive technologies and advanced maternal age. The level of perinatal mortality in twins is mostly determined by chorionicity: in monochorionic twins it is about 2.5 times higher than in dichorionic. That's why it is important to have an early diagnosis of the fact of twin pregnancy, and to determine correctly the type of chorionicity and amnionicity, as this data will define obstetric management and intensity of monitoring.
Materials and methods: Objective of the study was to assess pregnancy and labor course in women with twin pregnancies, who conceived either spontaneously or with the help of assisted reproductive technologies (ART), taking into account chorionicity and amnionicity. 51 women with twin pregnancies, who were hospitalized to our Institute in 2014-2015, participated in the study: 28 (54.9%) had spontaneous conception (group 1) and 23 (45.1%) conceived by ART (group 2). According to the type of placentation, in group 1 35.7% (n=10) were dichorionic diamniotic (DC-DA), 53.6% (n=15) monochorionic diamniotic (MX-MA) and 10.7% (n=3), monochorionic monoamniotic (MC-MA). In group 2 all twins were DC-DA. Clinical, statistical and mathematic methods were used.
Clinical cases and summary results: High incidence of complications was found in both groups. In group 2 rate of threatened abortion was 1.7 times higher, and rate of preeclampsia 7 times higher than in group 1 ($P< 0.05$). Incidence of placental dysfunction and fetal distress were similar in both groups (39.3% in group 1 and 34.8% in group 2). Among 15 MC-DA twins rate of selective growth restriction (sIUGR) was 40%, rate of twin-to-twin transfusion syndrome (TTTS) was 26,7%, single antenatal fetal death was in 2 cases (one in TTTS, the other - sIUGR), antenatal death of both twins (in TTTS) was in 3 cases. Among MC-MA twins there were 1 case of TTTS, 1 case of congenital heart defect in one twin, but otherwise unremarkable pregnancy and 1 twin pair with normal development and good outcome. Births were preterm in 79.6% in group 2. In group 1 the rate of preterm births was 2 times less - 39.3% ($p <0.05$). Rate of spontaneous delivery was 60.7% in group 1, by C-section were delivered 78.3% of patients in group 2.
Conclusion: Type of pregnancy complications in twins depends on type of conception. Patients after ART showed higher rates of threatened abortion, preeclampsia and preterm delivery; complications in spontaneous twins were mostly due to specific pathology of MC twins - TTTS, sIUGR, antenatal fetal death. Best outcome was in group of spontaneous DC-DA twins. Ultrasound examination is very important for surveillance of all types of twins - for establishing correct diagnosis and adjusting obstetric management.

Keywords: Twins, assisted reproductive technologies, pregnancy, delivery

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Monochorionic discordant twins related to placental insufficiency and velamentous ombilical cord insertion

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Presenter: **RM. SIMA**

Introduction: Lately we experience an increased incidence of multiple pregnancies in the developed countries due to advanced maternal age at childbirth and the extended availability of infertility treatments. Monochorionic twin pregnancies and dichorionic triplet pregnancies carry higher risks because the fetuses share a common placenta, which is associated with an increased risk of discordant growth and twin-twin transfusion syndrome. Discordant growth reflects the difference in birth weight between the largest and smallest infant in a multiple pregnancy. Increasing discordant growth is associated with augmented risk of poor pregnancy outcome, fetal and neonatal death, and neonatal morbidity. Ultrasound scan is the gold standard to evaluate the chorionicity and fetal growth.
Clinical cases and summary results: We present the case of 32 years patient, with naturally obtained twin pregnancy, investigated in our unit. The first trimester ultrasound scan performed at 12 weeks plus 3 indicated a monochorionic, biamniothic, and a growth difference of 1 week between the twins. The growth discordance between the twins increased with pregnancy progression. One month later that discordance was about two weeks. At 33 weeks of gestation one girl had an estimated weigh of 2000 grams and the other girl about 1000 grams with obvious signs of severe IUGR but still normal Doppler indexes. The premature rupture of membranes imposed C section at 34 weeks of gestation. Two girls were extracted one of 2100 gr the other one of 1000 gr. The neonatal outcome was favorable for both of them. The particularity of this case is the macroscopic display of the placenta. It appeared as a single placenta with two accessory lobes. Those lobes corresponded to the placental part of the small twin. The enlarged part of the placenta belonged to the big twin and the umbilical cord had a velamentous insertion. No vascular anastomoses were noticed between the two circulations.
Conclusion: The particularity of this case is the favorable outcome in twin pregnancy with risk factors such as monochorionicity. For one twin the reduced placental tissue determined intrauterine growth restriction as a consequence of placental insufficiency. The additional risk factor was the velamentous umbilical cord insertion identified after delivery. The differential diagnosis of the twin discordance were TTTS and TAPS which were excluded considering the normal Doppler in MCA or umbilical teritory.