

PHYSICAL AND REHABILITATION MEDICINE DIAGNOSTICS

17

A DEVICE WITH USING MAGNETIC SENSOR CAN DETECT DIFFERENCE OF FINGER DEXTERITY BETWEEN PEOPLE WITH COGNITIVE DISORDER AND AGE MATCHED HEALTHY PEERS

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Introduction/Background: Deterioration of dexterity has been reported in the population of dementia. Skillful using of hand is closely related to keeping the ability of daily living in this population. Finger tapping was used as an indicator to know the extent of decay in hand dexterity for the patients with dementia but there was the controversy whether the ability of finger tapping could detect the difference between people with cognitive disorder and healthy peers. Recently, we invented a new device to measure the finger tapping movement with using magnetic sensor. (UB-1®)The purpose of this study was to define parameters of finger tapping measured with using UB-1 to detect the difference of finger tapping between people with cognitive disorder and age matched control. **Material and Methods:** Subjects were six men and eight women diagnosed Alzheimer disease or mild cognitive disorder (AD/MCI group: average age 72.5 SD 6.1) and age matched peers (6 men and 7 women) without cognitive disorder (Control group: average age 71.7 SD 7.9). The parameters of finger tapping were total moving distance, energy balance, standard deviation (SD) of contact duration, SD of tapping interval, and SD of phase difference between taps of both hands. **Results:** There were statistically significant differences between AD/MCI group and Control group in total moving distance ($p=0.03$), SD of contact duration ($p=0.02$), SD of tapping interval, ($p=0.03$). **Conclusion:** It was dependent on the parameter of finger tapping whether we could detect the difference between patients with cognitive disorder and healthy peers. We are going to use these parameters to define the difference of hand dexterity for the extent of cognitive disorder and also to monitor the deterioration of hand function in the course of progression of dementia.

18

THE ROLE OF ULTRASOUND IN DIAGNOSIS OF THE CAUSES OF LOW BACK PAIN: A REVIEW OF THE LITERATURE

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Introduction/Background: Low back pain (LBP) is among the most prevalent musculoskeletal conditions in the developed countries. It is a common problem causing disability and imposing a huge economic burden to individuals and state organizations. Imaging plays an important role in diagnosis of the etiology of LBP. **Material and Methods:** The electronic databases included: PubMed, Ovid SP Medline and ISI and Google Scholar. In every search engine another search was performed using various permutations of the following keywords: ultrasonography, ultrasound imaging, low back pain, back muscles, paraspinal muscles, multifidus, transverse abdominis, muscle size, spinal canal, sacroiliac joint and

spondylolisthesis. **Results:** Magnetic resonance imaging (MRI) is widely used in evaluation of patients with LBP; however, high costs, limited availability and contraindications for its use have restricted MRI utilization. In a quest for a less expensive and readily available tool to investigate LBP, clinicians and researchers found ultrasonography (US) as an alternative. In this review we discuss the US application in diagnosis of some common causes of non-specific chronic LBP. Discussed topics include evaluation of spinal canal diameter, paraspinal and transabdominal muscles, sacroiliac joint laxity, pregnancy related LBP, sacroiliitis, and spondylolisthesis using US in patients with LBP. **Conclusion:** While the first researches on employing ultrasound in diagnosis of patients with LBP had been focused on spinal canal diameter, recent studies have been mostly performed to evaluate the role of transabdominal and paraspinal muscles on core stability and thereby LBP occurrence. On the other side, Doppler ultrasonography has recently played an important role in objective measurement of joint laxity as a common etiology for LBP. Doppler imaging also in pregnant patients with LBP has been recommended as a safe and sensitive method. As conclusion, according to recent and most prestigious studies, focusing more on transabdominal muscle thickness can be considered as future approach in investigations.

CANCER REHABILITATION

19

FUNCTIONAL STATUS AND ASSOCIATED FACTORS IN TURKISH PATIENTS WITH COLON CANCER: PRELIMINARY RESULTS

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Introduction/Background: Patients with colon cancer are at risk for developing functional impairment. However, studies on functional status in this population are limited. The aim of this study was to evaluate functional status and to determine its associations with demographic/disease-related characteristics and perceived family support in Turkish patients with colon cancer. **Material and Methods:** This cross-sectional study included 30 patients (53.3% male) with colon cancer who were followed up by an oncology outpatient clinic in a training hospital in Turkey. Inclusion criteria were age 18 years or older, colon cancer diagnosis for at least one month, aware of diagnosis, having received at least one chemotherapy regimen, ability to communicate in Turkish and agreeing to participate in the study. Exclusion criteria were cognitive impairment, history of major psychiatric disorder, the presence of substantial physical disability and unstable clinical status. Data were collected by using an information form, the Functional Living Index-Cancer (FLIC), and the Cancer Patient Social Support Scale (CPSS). Descriptive statistics, the Mann-Whitney *U* test and Spearman's correlation coefficient were used for the analysis of data. A *p* value of <0.05 was regarded as statistically significant. **Results:** The mean age of the patients was 60.0 ± 11.8 years (range =22–75) and the median duration of disease was 12 months. The majority of the patients (90%) had metastases, and 36.7% had comorbidity. The mean FLIC score of the patients was 112.9 ± 22.4 , and the mean CPSS total score was 147.4 ± 12.7 . The FLIC scores were lower in females than males ($z=-2.163$, $p=0.031$). The FLIC scores were also positively correlated with the CPSS total ($r=0.55$, $p=0.002$) and subscale scores (emotional support: $r=0.54$, $p=0.002$, and information support: $r=0.56$, $p=0.001$; respectively). **Conclusion:** The functional status of the patients was higher than moderate level. Better understanding of factors associated with functional status may provide more effective interventions to improve health and well-being in patients with colon cancer.