P-0974

Worldwide trends of academic publications on gut microbiota and type 2 diabetes mellitus

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Background
Recent evidence has shown an important role of gut microbiota on type 2 diabetes mellitus (T2DM) and its complications. Despite the large number of experimental and clinical researches performed on this regard, little known on bibliometric status of these studies.

Aims
We aim to assess the trend of scholarly products in field of the relationship between gut microbiota and T2DM.

Method
The bibliometric data of the scientific publications on gut microbiota and T2DM till 09 April 2019 were retrieved based on Scopus database. Some of search terms were "microbiota", "microbiome", "probiotic", and "diabetes". Analysis of the publication year, published journal, citation' number, subject area, country distribution and language were carried out. The data were analyzed by the Scopus analysis tools, and SPSS version 15.

Results
A total number of 1,106 documents were identified. The United States published the highest number (23.06%), followed by the China and United Kingdom. The number of publications showed an increasing trend over the years that the most productive year was 2017. The overall correlation reflecting the association between number of published documents and year of publication was 0.921 with p value >0.0001. The R-squared value of 0.630 suggests a steady and significant increase since 1998 to 09 April 2019. The leading subject area was medicine that followed by biochemistry, genetics and molecular biology subject. Most of papers were original articles and 95.12% of them published in English language. The top published journal was "Plos One". The total citation of documents was 45,224 times with an h-index (98) and average citation rate (40.9). Number of published scientific papers in diabetic foot, diabetic retinopathy, diabetic nephropathy, diabetic neuropathy, and cardiovascular complications of T2DM was 9, 30, 70, 41, and 305 documents, respectively. The highest number of citation was on cardiovascular documents as 9959 times and h-index (49). Obesity and Insulin resistance were respectively used more than other key words in published documents on field of cardiovascular complications of T2DM and gut microbiota.

Discussion

The promising scientific publications in field of gut microbiota and T2DM worldwide can provide practical information to researchers to find studies with potentially highly citation. Our study would be helpful for researchers to conduct better studies that eventually could lead to more publications in this field.

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P-0326

Gut microbiota, oxidative stress and diabetes; what know we now? A systematic review with meta-analysis

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Background
Established consistent finding in literature is that oxidative stress has a main role in the pathogenesis of diabetes. On the other hand, an association between gut microbial dysbiosis and type 2 diabetes mellitus (T2DM) is widely observed in vast amount of researches.

Aims
The present study attempts to systematically run a critical assessment of the association between gut microbiota, oxidative stress, and T2DM.

Method
A systematic search in PubMed, Web of Science and Scopus web databases was done for clinical trials documented up to 15 Jan 2018. Some of search terms were "microbiota", "gut bacteria", "intestinal microbes", "diabetes", and "oxidative stress". Study was conducted according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guideline.

Results
Our initial search yielded 217 articles. After screening abstracts and full texts, 9 randomized clinical trials (RCTs) were included that involved 573 subjects with T2DM. Probiotics were supplemented from 6 to 12 weeks. No significant effects was marked in terms of fasting blood sugar (FBS), and hemoglobin A1C (HbA1C) with the standardized mean difference (SMD) and 95% CI [-0.17 (-0.35-0.01), P= 0.07], and [-0.02 (-0.30-0.28), P=0.87], respectively in a random-effect method. However, probiotic supplementation was shown to induce a significant effect on the serum levels of total antioxidant status (TAS), and malondialdehyde (MDA) with the SMD and 95% CI [0.17 (0.01-0.33), P= 0.04], and [- 0.37 (-0.67- (-0.06)), P=0.02], respectively.

Discussion
Although the beneficial effect of gut microbiota on glucose was small and non-significant, it

seems that gut microbiota can exert beneficial effects in diabetic patients via altering oxidative stress' biomarkers. However, current evidence reveals that the association between gut microbiome, oxidative stress, and T2DM is needed to be confirmed by conducting more RCTs.

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OP-0218

Scientometric study of diabetes management by Traditional Herbal Medicines in the Middle East countries

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Background
Prevalence of type 2 diabetes mellitus (T2DM) is increasing worldwide. Traditional herbal medicine is suggested by WHO as accessible, safe, and low-cost option in management and care of diabetes.

Aims
The purpose of this bibliometric study is to assess the global scientific production analysis in field of traditional herbal medicines and T2DM in the Middle East countries.

Method
Some of search terms were “type 2 diabetes ”,“ herbs”, “traditional medicine”, in Scopus web database, limited in Middle East countries up to 17 April 2019. Our extracted data were publication year, main journal, geographical distribution, documents’ type, subject area, and h-index of citations. Data was analyzed using analysis tools provided by Scopus database, and SPSS version 11 software.

Results
Among 3018 global publications in studied field, more than 90% of the published papers were original articles. A significant time-trend was shown in number of papers ($P<0.001$) with a highest number of productions in 2016 (383 papers). Subject areas in nearly 82% of papers were medicine followed by pharmacology. The first to third rank in number of publications in the region were belonged to Iran, Egypt and Turkey, respectively with 2506 papers (83% of total papers). The documents were cited totally 44178 times with average citation/article 14.64, and h-index 83. The highest cited paper (534 times) was a review articles from Iran entitled “A review on the role of antioxidants in the management of diabetes and its complications”. The first three

top sources were “Journal of Ethnopharmacology”, “Phytotherapy Research” and “Biomedicine and Pharmacotherapy”. Among “key words”, the highest rates was observed for “oxidative stress”, antioxidants”, and “drug effect”.

Discussion

Good position of Middle-East countries in producing scientific publications for management of T2DM by herbal medicines especially by antioxidative herbal medicines would be helpful for researchers to conduct better researches and for policy makers to arrive at evidence-based decisions.

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