Endocrinology and Diabetes Research

Short Communication

Effect of cinnamon supplementation on glycemic indices and lipid profiles in type 2 diabetic patients: a systematic review and meta-Analysis of clinical trials

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Abstract:

Diabetes mellitus is a complicated and metabolic disorder characterized by an increase in blood glucose level as a result of insulin resistance, impairment in insulin release, or both. In 2013, it had reported that 382 million people had type 2 diabetes mellitus (T2DM) worldwide and this number is expected to reach 592 million in 2035. However, in some studies cinnamon proved useful to treat T2DM, some others did not find a favorable effect. A present systematic review and meta-analysis aimed to provide more robust evidence on the use of cinnamon for treating T2DM. A systematic search was undertaken in PubMed, Embase, Scopus, Web of Sciences and Cochrane Library to identify clinical trials examining the effect of cinnamon supplementation on type 2 diabetic patients up to 9 August 2019. In the case of heterogeneity among studies, fixed or random effects models were done to calculate standardized mean difference (SMD) and its 95% confidence interval (CI). After excluding nonrelated records, 14 full-text articles included to this meta-analysis. This study found a significant reduction in Fasting blood sugar (FBS) (SMD: -0.472 mg/dl, 95% CI: [-0.791, -0.153], P = 0.004), serum triglyceride (TG) (SMD: -0.538 mg/dl, 95% CI: [-0.933, -0.143], P = 0.008), total serum cholesterol (SMD: -0.580 mg/dl, 95% CI: [-1.080, -0.080], P = 0.023) and increase in high-density lipoprotein (HDL) (SMD: 0.167 mg/dl, 95% CI: [0.014, 0.320], P = 0.032). In addition, dose-based subgroup analysis indicated significant reduction in HbA1c, serum insulin and low-density lipoprotein (LDL). Also, no publication bias was found. Cinnamon supplementation significantly improved FBS, TG, total serum cholesterol and HDL, with subgroup analysis highlighting improvements in HbA1c, serum insulin and LDL.

Biography:

Jalali is an Iranian nutritionist, which receive honorary doctorate as health education at the age of 20 years old and also has a traditional medicine certificate from Shiraz University of Medical Sciences with score 100. He is a member of Nutrition Research Center of Shiraz, Iran. He is specifically working on functional foods and nutraceuticals that can improve various metabolic disorders, and has obtained significant outcomes regarding important biomarkers. He also eminence in the field of meta-analysis studies.