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Effects of Cinnamon Consumption on Glycemic Status, Lipid Profile and Body Composition in Type 2 Diabetic Patients

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Letter to Editor

DEAR EDITOR

With curiosity we read the original article by Vafa *et al*.[1] They examined the effects of the daily intake of 3 g cinnamon on glycemic status, lipid profiles and body composition in Iranian type 2 diabetic patients, and concluded that cinnamon may have a moderate effect in improving glycemic status indicators. The results of this study certainly gave some novel expectation for efficacy of cinnamon on glycaemic control. Recent meta-analysis also demonstrated that cinnamon improves fasting blood glucose (FBG) and glycated haemoglobin A1c (HbA1c) in diabetic patients.[2,3] The author is to be congratulated for conducting such a comprehensive study on a topic of high importance both for healthcare providers and researchers. Here we provide comments on three points;

First; it seems that there is a significant difference in baseline fasting blood glucose and triglyceride levels between groups in this study [Table 1], which could potentially affect the results of this study. A common practice in randomized parallel group clinical trials is to perform tests of homogeneity on covariates measured at or before randomization. Another concern that arises from this study is that, patients had very high mean serum triglycerides, total and low density lipid (LDL) cholesterol levels at baseline in both groups, and we wonder whether any of these patients were treated with cholesterol lowering medications. Why a potential recommendation was not made for patients with elevated serum triglycerides and LDL cholesterol, if the patients were not using any cholesterol lowering medication.

Second; we would like the authors to elucidate us on some of the following methodological matters, which could possibly interrupt the significance of results. Since a dropout did occur in this study (n = 7), we wonder whether intend to treat (ITT) analysis could be performed in this study. Although discussion of ITT analysis might be beyond the scope of this study, many researchers considered ITT to be the preferred method of data analysis in clinical trials, as it is less prone to bias. Furthermore, we are also eager to know the contents of 3 g placebo capsules and how the matching strong smell of cinnamon used in placebo capsules for double blinding.

Table 1: Baseline characteristics of the study population

Variables	Cinnamon (n=19)	Placebo (n=18)
Triglycerides (mg/dl)	163.32 ± 52.66	135.67 ± 40.52
Total Cholesterol (mg/dl)	169.37 ± 32.69	155.44 ± 35.33
Fasting Plasma Glucose (mg/dl)	149.28 ± 9.11	136.911 ± 9.11

Data presented as mean ± SD, obtained from Vafa *et al*.[1]

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Third; another concern that arises from this study is the use of 3 g of cinnamon dose. According to the results of our previous review and meta-analysis,[2,4] this is the first study which showed a significant reduction in HbA1c and FBG due to higher dose of cinnamon supplementation (3 g of cinnamon), and we would also like to know whether patients in this group showed any intolerance or side effects due to higher cinnamon dosage.

Finally, as HbA1c remains the most important long-term predictor of complications in both type 1 and type 2 diabetes, the effect of any intervention on glycated haemoglobin A1c (HbA1c) is critical in determining its clinical usefulness. In this study, participants were not given cinnamon for a long enough duration of more than 12 weeks. Because 8 weeks of study duration is less than the full 120-day lifespan of red blood cells, perhaps this shorter duration contributed to a false-negative result of HbA1c in this study, and we would like to know the authors opinion on this.

In conclusion, this study certainly added evidence to the existing literature, and demonstrated a beneficial effect of short term (8 weeks) consumption of cinnamon on glycaemic control. Obviously, large scale clinical trials are needed to confirm the long-term tolerability, safety, and efficacy of cinnamon on glycaemic indicators.

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