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Dietary polyphenol intake, body composition and components of metabolic syndrome in a sample overweight and obese adults: a cross-sectional study

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Abstract

Background The health benefits of dietary polyphenol intake (DPI) including improved lipid profiles, blood pressure, insulin resistance, and reduced systemic inflammation has revealed previously. However, the results of numerous studies are not consistent and it seems that these health effects are attributed to some of DPI. In the current research, we evaluated the health benefits of DPI on metabolic markers and glycemic markers among overweight and obese individuals.

Methods In this cross-sectional study, 487 individuals with overweight and obesity were participated. Dietary intake was assessed by a Food Frequency Questionnaire (FFQ) and the amount of dietary polyphenol intake were calculated based on the information derived from Phenol-Explorer database (www.phenolexplorer.eu/contents). Bioelectrical impedance analysis (BIA) was used to measure body composition. Systolic and diastolic blood pressures were measured by sphygmomanometer. Biochemical assays including fasting blood sugar, insulin and serum lipids' concentrations were measured by enzymatic methods.

Results According to our results, males were more likely to be at the highest tertile of DPI ($P=0.04$). Also, those at the highest tertile of DPI had higher fat free mass and physical activity level ($P<0.05$). Lower TG level in highest tertile of DPI in crude model was also observed, but, it lost its significant threshold after adjustment for confounders. Subjects at the second tertile of DPI were more likely to have lower systolic blood pressure in the sex and age adjusted model [OR = 0.970; CI = 0.940-1.000; $P=0.049$]. For other biochemical variables, no significant association was observed.

Conclusion In the current study, total dietary polyphenol intake was associated with lower SBP among overweight and obese individuals. Further studies are warranted to better elucidate the observed results.

Keywords Dietary polyphenol intake, Metabolic parameters, Overweight, Obesity, Glycemic markers

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