

Dietary Intake and the Risk of Hypertriglyceridemia in Adults: Tehran Lipid and Glucose Study

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Abstract : Background and aim: Lifestyle factors, especially dietary intakes play an important role in metabolism of lipids and lipoproteins. In this study, we assessed the association between dietary factors and 3-year changes of serum triglycerides (TG), HDL-C and the atherogenic index of plasma among Iranian adults. This longitudinal study was conducted on 1938 subjects, aged 19-70 years, who participated in the Tehran Lipid and Glucose Study. Demographics, anthropometrics and biochemical measurements including serum TG were assessed at baseline (2006-2008) and after a 3-year follow-up (2009-2011). Dietary data were collected by using a 168-food item, validated semi-quantitative food frequency questionnaire at baseline. The risk of hypertriglyceridemia in the quartiles of dietary factors was evaluated using logistic regression models with adjustment for age, gender, body mass index, smoking, physical activity and energy intakes. Results: Mean age of the participants at baseline was 41.0 ± 13.0 y. Mean TG and HDL-C at baseline was 143 ± 86 and 42.2 ± 10.0 mg/dl, respectively. Three-year change of serum TG were inversely related energy intake from phytochemical rich foods, whole grains, and legumes ($P < 0.05$). Higher intakes compared to lower ones of dietary fiber and phytochemical-rich foods had similar impact on decreased risk of hypertriglyceridemia (OR=0.58, 95% CI=0.34-1.00). Higher- compared to lower-dietary sodium to potassium ratios (Na/K ratio) increased the risk of hypertriglyceridemia by 63% (OR=0.1.63, 95% CI= 0.34-1.00). Conclusion: Findings showed that higher intakes of fiber and phytochemical rich foods especially whole grain and legumes could have protective effects against lipid disorders; in contrast higher sodium to potassium ratio had undesirable effect on triglycerides.

Keywords : lipid disorders, hypertriglyceridemia, diet, food science

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