Does low glycemic index diet superior than routine diet to control blood inflammation state and lipid parameters in patients with coronary artery disease?

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Background and aims: Low glycemic index diet has been shown several benefits in terms of reduction in atherosclerotic biomarkers in patients with coronary artery disease (CAD).

Objective of the study: To demonstrate superiority of the low glycemic index diet in patients with CAD in terms of blood inflammation state and lipid parameters.

Methods: One hundred and sixty patients aged 38–76 years established with CAD entered as 12 week dietary intervention either with low glycemic index (n=80) or routine diet (n=80) together with standard therapy from 2016 to 2019 (male=48%; 58.2±12.0 years). Laboratory (including hs-CRP, pro-inflammatory interleukins, IL-1β, IL-6, TNF-α, lipid parameters TC, TG, LDL-Cholesterol, HDL-Cholesterol) and instrumental data were obtained at baseline and in 12 weeks of the intervention.

Results: There were no statistically differences in biochemical data between two groups at their baseline characteristics. Low glycemic index diet positively influenced on hs-CRP (from 252.4±40.6 mg/dL to 161.9±28.5 mg/dL vs. from 237.8±35.6 mg/dL to 202.4±23.8 mg/dL; P<0.05), HbA1c (from 6.95±1.95% to 4.78±1.18% vs. 6.80±1.65% to 6.25±1.45%; P<0.05), TG (from 5.2±2.2 to 3.1±1.8 vs. from 5.8±2.8 to 4.9±2.0, P<0.05), TNF-α (from 1.48±0.91 to 0.88±0.19 vs. from 1.55±1.35 to 1.12±0.35, P<0.05), IL-6 (from 8.2 pg/mL to 4.9 pg/mL vs. from 8.2 pg/mL to 4.9 pg/mL, P<0.005) than routine diet. Although reduction in IL-1β were observed in both groups (from 32.5±17.2 pg/ml to 29.8±20.4, P>0.05; vs. 33.6±21.6 pg/ml to 29.8±20.4, P>0.05), however there were no statistically significant from baseline and between groups (P>0.05).

Conclusions: Low glycemic index diet demonstrated superiority to routine diet to improve inflammatory state and lipid parameters in patients with CAD.