

Abstract

Effects of a Dietary Intervention with Lacto-Ovo Vegetarian and Mediterranean Diets on Apolipoproteins, Lipid Profile and Cardiovascular Risk: Results from the CARDIVEG Study [†]

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Abstract: Background: Cardiovascular disease (CVD) remains the leading cause of death worldwide. Attention in recent years is turning toward the role that apolipoproteins might play as markers of CVD risk. However, to date, evidence regarding the effects of diet on apolipoproteins is still limited. Aim: To compare the effects of the Mediterranean diet (MD) and lacto-ovo vegetarian diet (VD) on anthropometric parameters, lipid profile, inflammatory profile and apolipoprotein levels, in subjects with low-to-moderate CVD risk. Methods: Fifty-two clinically healthy subjects (39 F; mean age: 49.1 ± 12.4 years), followed an MD and a VD for 3 months each. Demographics, risk factors, dietary and lifestyle habits were collected from each subject at the baseline. Anthropometric parameters and blood samples were obtained both at the beginning and at the end of the MD and VD periods. Results: Both MD and VD resulted in significant reductions in body weight, BMI and fat mass. VD led to a significant reduction in LDL (−5%; $p = 0.038$), while MD led to a significant reduction in plasma triglycerides (−9%; $p = 0.018$). Both diets led to a reduction in most of the inflammatory parameters, but MD was more effective in reducing IL-10 (−37.2%; $p = 0.009$) and IL-17 (−49.1%; $p = 0.002$). As for apolipoproteins, a statistically significant change was observed only for Apo C1 after VD (+24.4%; $p = 0.020$). MD led to a statistically significant negative correlation between Apo C3 and carbohydrates ($R = -0.29$; $p = 0.039$), whereas VD led to a statistically significant negative correlation between Apo D and saturated fats ($R = -0.38$; $p = 0.006$). In addition, a statistically significant positive correlation emerged after MD between change in plasma triglycerides and change in Apo C1 ($R = 0.32$; $p = 0.020$) and Apo D ($R = 0.30$; $p = 0.031$). On the other hand, after VD, a significant positive correlation emerged between change in HDL and Apo D ($R = 0.33$; $p = 0.017$). Subgroup analysis revealed positive effects on apolipoprotein levels from both diets, especially in women, individuals with >50 years and those with <3 CVD risk factors. Conclusions: Both diets resulted in improved apolipoprotein levels, especially in certain population subgroups, while also demonstrating different associations with specific dietary nutrients.

Keywords: cardiovascular risk; apolipoproteins; Mediterranean diet; vegetarian diet



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