Abstract

Background: studies have investigated the relationship between the transition through menopause and cardiovascular diseases. White population, generally, have lower levels of traditional coronary heart risk factors, particularly dyslipidemia, hypertension, obesity, and diabetes, and lower rates of coronary heart disease mortality, than black population. Furthermore many studies have shown the cardioprotective and anti-inflammatory effects of omega-3 polyunsaturated fatty acids (eicosapentaenoic acid and docosahexaenoic acid) of marine origin. The aim of this study was to investigate the effect of omega-3 supplementation, combined or not with vitamin E, on oxidative biomarkers and lipid profiles in nonwhite and white women with dyslipidemia transitioning through menopause. Methods: a randomized, double-blind, placebo-controlled trial was conducted. Seventy-four eligible women were assigned to receive: fish oil, fish oil plus vitamin E and placebo for three months. At baseline, 45 and 90 days blood sample for biochemical variables and biomarkers of oxidative stress were taken. Socioeconomic and lifestyle variables were collected with standardized questionnaires. Results: after 90 days the fish oil plus vitamin E treated group had a significant decrease in total cholesterol and LDL-C. Furthermore, there was a decrease in anti-LDL-autoantibodies after 45 days. Plasma TBARS concentrations were increased after 90 days in the group receiving only fish oil when compared to the placebo and fish oil-vitamin E groups. All of the effects observed were independent of ethnic group. Conclusion: supplementation with fish oil and vitamin E reduced total cholesterol and LDL-C, but had opposite effects on oxidative stress compared to supplementation with fish oil alone.

Keywords

Oxidative stress, Fish oil, Menopause, Vitamin E, Race.