Objective

The aim of this study was to determine the beneficial effect of dietary soy protein containing isoflavones on several biomarkers of cardiovascular health (mainly serum lipoproteins and serum paraoxonase1 (PON1) activity) in postmenopause women.

Methods

In a randomized clinical trial 42 healthy postmenopausal women, aged 55.03±4.82 years, were divided into two groups: a soy group that received 50gr/day soy protein containing 164mg isoflavones (n=21) and a control group (n=21) for 10 weeks. The initial total serum cholesterol and triglyceride concentration was > 200mg/dl.

Measurements

Serum lipid profiles including total cholesterol, low density lipoprotein (LDL-C), high density lipoprotein (HDL-C) and triacylglycerol were measured enzymatically and serum paraoxonase1 activity was measured colorimetrically.

Results

Serum lipid profiles improved with significant decreases in LDL-Cholesterol (-20.27 vs -3.8 mg/dl, P=0.022) and total cholesterol (-17.11 vs 3.42 mg/dl, P=0.012) in the soy group compared to placebo. At the end of study, the mean ± sd of paraoxonase activity increased significantly (P=0.029); and LDL-C/HDL-C (p=0.012), TG/HDL-C (P=0.041) and TC/HDL-C (P=0.029) decreased in the soy group compared to placebo.

On the other hand, in the soy group paraoxonase activity (P=0.015) and HDL-C (P=0.011) increased; and serum LDL-C (P=0.001), TC (P=0.002), LDL-C/HDL-C (P=0.001), TC/HDL-C (P=0.001) and TG/HDL-C (P=0.016) decreased significantly at the end of study.

Conclusion

In postmenopausal women, dietary consumption of soy protein containing isoflavones favourably affects on serum lipid profiles. So it is possible that isoflavones may contribute to a lower risk of coronary heart disease if consumed over longer period in conjugation with other lipid lowering strategies.