Abstract

Background: The metabolic syndrome is related to the increase in cardiovascular diseases. Polyunsaturated fatty acids from fish oil help in reducing cardiovascular risk factors and are natural bindings of PPAR. Objective: To evaluate the impact of hypocaloric diet associated with microencapsulated fish oil supplementation in women with metabolic syndrome. Methods: We conducted a randomized, single-blind and placebo-controlled clinical trial with adult women who presented metabolic syndrome (n = 30) for 90 days. The volunteers were divided into two groups: placebo group (n = 15) and microencapsulated fish oil group (n = 15) (3 g/day of microencapsulated fish oil containing 0.41 g/day of eicosapentaenoic acid and decosahexanoic acid). Anthropometric, body composition, clinical and laboratory parameters were assessed before and after the intervention. Paired t-test was used for comparisons within groups and Student’s t-test for comparison between groups. We considered p < 0.05 as significant values. Results: The comparison between groups revealed a significant reduction of blood glucose, insulinemia and the homeostasis model assessment in the microencapsulated fish oil group after 90 days, as opposed to the placebo group. We also observed reduction of the systolic arterial pressure in the microencapsulated fish oil group. Conclusion: A hypocaloric diet associated with the consumption of microencapsulated fish oil was effective in reducing blood glucose, insulinemia and insulin resistance in women with MS.

Keywords

Metabolic syndrome, Fish oil, Insulin resistance, Hypocaloric diet, Microencapsulation.