Obesity and insulin resistance are associated with an increase of cardiovascular risk factors, including adipocytokines. The aim of this study was to investigate the effect of low-calorie diet on serum lipids, adipokines, insulin resistance and body composition in obese women. It was a clinical trial with class I obese women aged 30-45 years submitted to hypocaloric diet for 90 days. Dietary intake, anthropometric parameters, body composition, serum lipids, glucose, insulin, leptin, adiponectin, HOMA-IR and QUICKI indexes were evaluated at the baseline, 30, 60 and 90 days. There was 30% significant decrease in energy intake, and also decrease in body weight, body mass index and waist circumference ($p < 0.01$) throughout the treatment period. Despite the amount of lean body mass (kg) reduced in average, it was observed that lean body mass (%) had increased ($p < 0.01$) and that the amount of fat body mass (kg) had decreased significantly in the third month ($p < 0.05$). Systolic blood pressure reduced up to $-5\text{mmHg}$ ($p < 0.05$) after 90 days. Was observed a decrease ($p < 0.05$) on serum insulin and HOMA-IR until the 60th day, while the serum adiponectin increased ($p < 0.01$) during treatment. Corroborating with the reduction of fat body mass and weight, serum leptin also reduced ($p < 0.01$). These results suggest that the short-term low-calorie diet reduces total body fat, mainly found in the abdominal region, and efficiently improve insulin sensitivity decreasing cardiovascular risk in obese women.

**Keywords**

Obesity, Hypocaloric diet, Insulin, Adiponectin, Body weight.