Introduction: Obesity is a chronic disease that induces risk factors for metabolic syndrome and is associated with disturbances in the metabolism of the zinc. Therefore, the aim of this study was to investigate the existence of relationship between the biomarkers of metabolic syndrome and the zinc nutritional status in obese women. Method: Seventy-three premenopausal women, aged between 20 and 50 years, were divided into two groups: case group, composed of obese (n = 37) and control group, composed of no obese (n = 36). The assessment of the body mass index and waist circumference were carried out using anthropometric measurements. The plasmatic and erythrocytary zinc were analyzed by method atomic absorption spectrophotometry (\( \lambda = 213.9 \) nm). Results: In the study, body mass index and waist circumference were higher in obese women than control group (\( p < 0.05 \)). The mean plasmatic zinc was 72.2 ± 9.0 g/dl in obese women and 73.4 ± 8.5 g/dl in control group (\( p > 0.05 \)). The mean erythrocytary zinc was 36.4 ± 15.0 g/gHb and 45.4 ± 14.3 g/gHb in the obese and controls, respectively (\( p < 0.05 \)). Regression analysis showed that the body mass index (\( t = -2.85 \)) and waist circumference (\( t = -2.37 \)) have a negative relationship only with the erythrocytary zinc (\( R^2 = 0.32, p < 0.05 \)). Conclusions: The study shows that there are alterations in biochemical parameters of zinc in obese women, with low zinc concentrations in erythrocytes. Regression analysis demonstrates that the erythrocytary zinc is influenced by biomarkers of the metabolic syndrome, presenting an inverse relationship with the waist circumference and body mass index.

Keywords

Obesity, Plasmatic zinc, Erythrocytary zinc, Metabolic syndrome.