Abstract

Introduction: In children, the presence of obesity is a major risk factor for the occurrence of cardiovascular diseases on the adulthood. Objective: To evaluate the association of anthropometry, body composition, clinical variables and biochemical profile with C-reactive protein and adiponectin levels, and insulin resistance in children in the municipality of Nova Era, Brazil. Methods: Nested case-control study following a cross-sectional study. We evaluated 178 children, 57 of them classified as obese and 121 as normal-weight from a population of 1024 schoolchildren 6 to 10 years old: Blood samples were collected after 12-hour fast to obtain serum and plasma. We collected anthropometric and body composition measures, systolic and diastolic blood pressure data. Sexual maturation was assessed according to the stage of sexual development. We performed Student's t-test, Mann-Whitney U test, Pearson's correlation, Spearman's test and multiple linear regression analysis. Independent variables with p < 0.05 were included in the multiple regression model. Residual analysis was performed to assess model validity. Results: Among obese children, C-reactive protein levels were associated with triacylglycerol levels and body fat percentage estimated by skinfold thickness (R^2 adjusted = 27.6%, p < 0.001). Adiponectin was associated with HOMA-IR, HOMA-AD and body fat percentage estimated by skinfold thickness (R^2 adjusted = 75.5%, p < 0.001). HOMA-AD index was associated with HOMA-IR, adiponectin, systolic blood pressure and weight (R^2 adjusted = 90.7%, p < 0.001). Conclusion: Significant associations were found between body composition, anthropometry, clinical variables, biochemical profile and adiponectin and C-reactive protein levels and insulin resistance in obese and normal-weight children.

Keywords