Abstract

Introduction: The development of chronic-degenerative diseases secondary to obesity in early infancy has alerted health providers to the importance of identifying the risk factors for obesity and assessing preventive treatment to reduce risks. Studies performed on a pediatric population have examined the role of inflammatory biomarkers (specifically CRP and TNF-) and adiposity with inconsistent results. Objective: To assess the relationship between the serum levels of C-reactive protein and tumor necrosis factor- alfa with adiposity measured by bioimpedance analysis in schoolchildren. Methods: Cross sectional design. Data were collected from 74 schoolchildren randomly selected in a local primary school in the city of Colima, Mexico. The mean age was 9.4 years (1.5, SD); 33 (44.6%) were girls. The adiposity (percentage of fat mass) was measured using bioimpedance analysis and anthropometric measurements. Serum C-reactive protein and tumor necrosis factor alfa were determined with enzyme- linked immunosorbent assay. The association between adiposity and serum inflammatory biomarkers was assessed with non parametric tests (Mann Whitney and Kruskall Wallis tests), and parametric tests (Pearson’s correlation). Results: Children with obesity had a significantly higher level of C-reactive protein [2.90 mg/L (0.07-9.37)] compared with children with a normal percentage of fat mass [0.71 mg/L (0.07-5.75)] (p < 0.001). No differences between groups were identified regarding serum levels of tumor necrosis factor-alfa. Modest correlations were identified between serum levels of C-reactive protein, adiposity determined by bioimpedance analysis (r = 0.453, p < 0.001); body mass index (r = 0.398, p = 0.001); triceps skinfold (r = 0.369, p = 0.002); and subescapular skinfold (r = 0.405, p < 0.001). No correlation was found between adiposity and serum tumor necrosis factor-alfa. Conclusion: Subclinical inflammation manifested by higher serum levels of C-reactive protein was identified in schoolchildren with higher percentage of fat mass as determined by bioimpedance analysis and other anthropometric measurements. (Nutr Hosp. 2014;29:531-536) DOI:10.3305/NH.2014.29.3.7158

Keywords