Abstract

Introduction: Atherosclerosis is an asymptomatic chronic disease, which begins at early age and is difficult to detect during this stage. Prospective studies suggest a causal relationship between total serum cholesterol levels during childhood and early adolescence and the development of cardiovascular diseases in adulthood. Objective: The aim of this study was to evaluate the prevalence of early atherosclerotic lesions in the aorta artery of children and its relationship with post-mortem serum cholesterol levels. Material and methods: Post-mortem samples of blood and aorta were taken from 43 subjects aged less than 17 years old. Histopathological analysis (intimal thickening and inflammatory infiltrates) of the thoracic aorta and measurement of total serum cholesterol were performed. Results: The analysis showed thickening of the intima and lymphocyte infiltrates in 93% of children, and macrophage infiltrates in 79.1% of cases. A relationship between the highest terciles of total serum cholesterol levels and the presence of multiple lesions in the aorta wall was found (P<0.05). Conclusion: This group of children had a high prevalence of early inflammatory atherosclerotic lesions positively related with serum cholesterol levels. To our knowledge this study represents the first report of a relationship between post-mortem total serum cholesterol levels and pathological findings of macrophages and lymphocytes infiltrates in the aorta wall.

Keywords

Atherosclerosis, child, adolescent, cholesterol, post-mortem changes, aorta.