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Serum C-reactive protein levels and body mass index in children and adolescents with CHD

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Abstract

The prevalence of overweight in children with CHD is about 26.9%. Increase in adipose tissue is related to the secretion of proinflammatory markers such as C-reactive protein. Assuming that children with CHD are exposed to other inherent risk factors for heart disease, our objective was to evaluate the correlation between levels of C-reactive protein and body mass index in children and adolescents with CHD.

A cross-sectional study with 377 children and adolescents with CHD in a clinical setting of a reference hospital was carried out. C-reactive protein data were collected after 12 hours of fasting. Nutritional status was classified according to body mass index. The patients were divided into three groups: cyanotic, acyanotic, and minimal heart defects (controls).
The mean age was 9.9±4.2 years, and 53.6% of the sample included males. The cyanotic group represented 22.3%, acyanotic 42.2%, and minimal defects 35.5% of the sample. The average body mass index percentile was 57.23±32.06. The median values of C-reactive protein were as follows: cyanotic 0.340, acyanotic with clinical repercussion 0.203, and minimal defects 0.128. There was a significant difference between the minimal defects and the cyanotic groups (p=0.023). There was a significant correlation between C-reactive protein and body mass index percentile (r=0.293, p<0.01). C-reactive protein levels were higher in girls (p=0.034). There were no significant correlations between C-reactive protein and age or birth weight.
The correlation between body mass index percentile and C-reactive protein was confirmed in this population. The prevention of overweight is paramount to avoid overlapping modifiable risk factors to those already inherent to the CHD.

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