SERUM HOMOCYSTEINE CONCENTRATIONS IN SCHOLAR CHILDREN ANS ITS IMPORTANCE IN CARDIOVASCULAR DISEASE

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Homocysteine is a sulfur amino acid formed exclusively from methionine during transmethylation. It is either salvaged back to methionine or is converted to cysteine. High levels or homocysteine are associated with an increased risk of cardiovascular disease in adults, but few studies have been perfomed in children. Therefore our group measured homocysteine levels in 668 children (average 8,8 years). The homocysteine levels determined by the standard HPLC-fluorescence method were also compared with a less laborious chemioluminescent method. A strong correlation was found ($r=0.821$, $p<0.0001$). Homocysteine average values were 5,5 μmol/L, while high levels (over 8 μmol/L) were observed in 4,6% of the children. A strong correlation between homocysteine and waist circumference or triglycerides was found. Thiobarbituric reactive substances and lipid hydroperoxides were also determined in plasma samples and compared with the levels of homocysteine in order to evaluate if higher levels of homocysteine might increase oxidative stress, but no statistical differences were found. This is one of the first studies that measured the levels of homocysteine in scholars of Brazil trying to determine the role of potential cardiovascular risk factors.