CAROTID INTIMA-MEDIA THICKNESS IN OVERWEIGHT AND OBESE CHILDREN: CARDIOVASCULAR RISK FACTORS EVALUATION

Ana Leite[1], Ana Santos[2], Lúcia Gomes[1], Elizabeth Marques[1], Miguel Veloso[3], Miguel Costa[1]
[1] Department of Paediatrics, Centro Hospitalar Entre Douro e Vouga, Portugal
[2] Department of Hygiene and Epidemiology, University of Porto Medical School, Portugal
[3] Department of Neurology, Centro Hospitalar de Vila Nova de Gaia/Espinho, Portugal

Introduction: Increased carotid intima-media thickness (IMT) is an early marker of atherosclerosis. In children, its measuring is not yet established as a diagnostic standard procedure, but seems a promising method in assessing cardiovascular risk (CV) and monitoring treatment efficacy.
Purpose: To evaluate carotid IMT in overweight and obese children/adolescents and compare their individual CV risk factors.
Methods: 149 children/adolescents were stratified in 2 groups according to body mass index (BMI) in overweight (56) and obese (93). Mean age of total sample was 12,8 years±2,14. All subjects underwent high resolution B-mode ultrasonographic evaluation of common carotid artery IMT, resting blood pressure, glucose and lipid profile and abdominal ultrasonography. Parental CV risk was assessed by clinical interview. For comparison of quantitative variables the Mann-Whitney test was used. The Chi-square test or the Fisher exact test were used to compare categorical variables.
Results: Obese patients had slightly increased carotid IMT (mean of combined sites: 0,47mm ±0,05 vs. 0,46mm ±0,05, p=0,094). Considering CV risk factors, obese group had significantly higher levels of systolic and diastolic blood pressure (respectively p=0,041 and p=0,026), increased waist and hip circumference (p=0,002 and p=0,001) and higher parental BMI (father p=0,012; mother p=0,030). A total of 33,6% overweight/obese patients showed abnormal lipid profile (hypercholesterolemia 18,8%, elevated LDL-cholesterol 17,4%, hypertriglyceridemia 18,8% and decreased HDL-cholesterol levels in 4,0%). Hypertension was confirmed in 13,4% patients and non-alcoholic fat liver disease in 10,1%. Both groups presented marked positive familiar history for obesity (81,8%), dyslipidemia (72,5%), diabetes (57,4%) and hypertension (76,6%).
Conclusion: The authors highlight the elevated prevalence of dyslipidemia among this young population and the significant positive familiar history for CV risk factors. In this study no differences in carotid IMT children were observed between overweight and obese. This probably reflects the similarity between these two groups regarding the presence of CV risk factors.