

Carotic intima media thickness in children with white coat and essential hypertension

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Introduction: Sonographic intima media thickness measurement of the carotic artery (cIMT) is considered a valid surrogate marker for cardiovascular risk allowing assessment of atherosclerotic changes at very early stage. Elevated blood pressure in adults is associated with increased cIMT. However, its effect on arterial health is less understood in a paediatric population. Thus, the aim of this study was to evaluate cIMT in adolescents suffering from essential and white coat hypertension.

Methods: One hundred thirty eight children – 46 (23 boys) children suffering from WCH, 46 (23 boys) patients with essential hypertension and 46 age/gender-matched healthy controls (age-period from 14 to 18 years) - were examined under standard conditions. The mean IMT of the carotid arteries was measured by high-resolution B-mode ultrasound (Prosound F75 Aloka).

Results: Statistical analysis revealed significant differences in the mean cIMT between the both hypertensive groups (WCH, EH) and control group ($0,45 \pm 0,05$ mm for WCH; $0,47 \pm 0,06$ mm for EH vs $0,40 \pm 0,04$ mm; $p < 0.001$). No significant differences were found between WCH and essential hypertensive groups.

Conclusions: Our results revealed significantly higher mean cIMT in children suffering from white coat and essential hypertension indicating early atherosclerotic changes associated with increased cardiovascular risk already in adolescent hypertension. Importantly, WCH should not be considered a harmless trait and has common features with essential hypertension.

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