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Characteristics of Cardio-Ankle Vascular Index (CAVI) in healthy Slovak children

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Purpose: Recently, the cardio-ankle vascular index (CAVI) is considered as a novel noninvasive index of the arterial stiffness from the beginning of the aorta to the ankle. CAVI represents an important marker of early atherosclerotic changes that is significant for a consequent evaluation of the atherosclerosis severity. We aimed to determine the CAVI values in the group of otherwise healthy children and adolescents necessary for a comparison with CAVI values in pathological states. Moreover, the second aim was to assess the age and gender influence on the CAVI in healthy children and adolescents.

Methods: We examined 117 healthy Slovak children at the age from 7 to 21 years (58 boys) without clinically observed cardiovascular risk factors. CAVI values were evaluated using the system VaSera 1500 (Japan).

Results: The CAVI normal values are presented in graphical forms for total group, and separately for boys and girls. In healthy children, the CAVI increased linearly with age from 7 to 21 years. Gender analysis did not show significant differences between boys and girls at this age-period. Additionally, CAVI values were independent on the blood pressure measurement at the same time.

Conclusion: Our study firstly presented the CAVI normal values for Slovak population of children and adolescents at the age from 7 to 21 years. Importantly, the CAVI was dependent on the age during this developmental period. Concluding, our CAVI values can be used for detection of the early atherosclerotic changes in children with essential hypertension. Support: VEGA No. 1/0087/14.