

Can the ankle-brachial index be a predictor of the grade and localisation of thoracic aortic atherosclerosis?

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Introduction: The ankle-brachial index (ABI) is a strong marker of cardiovascular disease and is a predictor of cardiovascular events and mortality. In several studies, low ABI (<0,9) values were a predictor of atherosclerosis, such as peripheral artery disease (PAD), coronary artery disease and carotid artery disease. The atherosclerosis is a systemic disease, and recently we have learnt about the association of the PAD and cardiovascular diseases. One of the most important manifestations of the atherosclerotic process can be seen in the thoracic aorta. Patients with severe aortic arch plaque are at a high risk for stroke. We have investigated whether we can use the measurement of the ABI to predict the atherosclerosis of thoracic aorta and its grade and localization as well.

Patients and Methods: Transoesophageal echocardiography examination was made for the consecutive patient population of 62 adults due to other reasons, such as atrial fibrillation, detection of intracardiac sources of embolism, arti-

cial valves function, pulmonary embolism. We observed the grade of the atherosclerosis in three different sites of the thoracic aorta, in the visualized part of the ascendens aorta, on the aortic arch and in the descendens thoracic part. We used the universally accepted classification of aortic atherosclerosis (grade 1-4). After it ABI measurement was performed for all patients with a handheld Doppler device. We investigated the correlations between the aortic plaques severity, localization and age of patients and the ABI values.

Results: In our consecutive population we found predictive value of ankle-brachial index for manifestation of atherosclerosis in the thoracic aorta. ABI measurements showed the same values independently for the observed atherosclerotic process in the thoracic aorta.

Conclusion: The ABI measurement, as an indicator of PAD and the commonly used factor of cardiovascular risk assessment can not consequently predict the form appearing in the thoracic aorta of general atherosclerosis, neither considering the severity nor the localization. Morphologically detected various severities of aortic plaques in our study could not be explored by ABI measurements.

KEYWORDS: ankle-brachial index measurement, aortic plaque, transoesophageal echocardiography.

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