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THE ROLE OF AGING IN CARDIOVASCULAR REMODELING IN HYPERTENSIVE MEN

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Nowadays cardiovascular diseases are still one of the leading causes of mortality. A number of physiological aging processes affect cardiovascular system and increase cardiovascular risk as well as it alters adaptive protective mechanisms. The result of age-related changes is the homeostasis disturbance and target organ damage [1; p.325]. Vascular changes that occur with advanced age in normotensive individuals have been observed in hypertensive patients at younger age and are more conspicuous than in those without hypertension [2; pp.139-146].

Life expectancy remains greater for women than for men, and male sex is considered as a cardiovascular risk factor. The evaluation of the impact of age to cardiovascular remodeling was the aim of current study.

Materials and methods. 46 male patients with stage II hypertension who were hospitalized into the cardiology department of Municipal institution "City hospital #7», Zaporizhzhia were recruited into this study. 20 normotensive men were included to the control group. The criteria for inclusion into the study were: the availability of voluntary written consent to participate in the study and diagnosis of essential hypertension. As exclusion criteria were considered type 2 diabetes mellitus, $BMI \geq 35$ kg/m², coronary heart disease, heart failure III-IV (NYHA), myocardial infarction, a history of symptomatic lesions of the peripheral arteries. All study participants underwent general clinical examination, office blood pressure measurement, ambulatory blood pressure monitoring (ABPM), non-invasive evaluation of parameters of arterial stiffness - aortic pulse wave velocity (aoPWV), augmentation index (AI), reflected wave transit time (RWTT) using BPLab system, and transthoracic echocardiography.

Results. Both study groups were comparable by age and anthropometric parameters. Among patients with essential hypertension (EH) according to office BP measurement and ABPM 32 patients (69.6%) had grade 3 hypertension, 11 (23.9%) - grade 2 and 3 (6.5%) – grade 1 of hypertension. According ABPM average daily systolic blood pressure (SBP) in patients with EH was $146,8 \pm 8,7$ mm Hg, daily average diastolic blood pressure (DBP) – $94,8 \pm 3,7$ mm Hg. Average pulse blood pressure in patients of this group was higher than 50 mm Hg. The prevalence of systolic hypertension was observed with advanced age. Non-dipper pattern was more prevalent in patients aged over 60 years. Compared to the control group patients with EH were characterized with an increase in arterial stiffness and an early impairment of the left ventricle (LV) deformation parameters and diastolic function ($p < 0.05$). According to the evaluation of arterial stiffness parameters in both groups the age-related changes were revealed in aoPWV ($11,0 \pm 0,9$ m/s in patients with EH older than 60 years and $10,3 \pm 0,6$ m/s in those below 60 years old vs. $9,9 \pm 1,1$ m/s in controls aged above 60 and $9,9 \pm 1,1$ m/s in subjects younger than 60). Similar dependence was showed for RWTT. It was also observed that the age affects the global longitudinal strain and strain rate as well as diastolic function. This influence is more perceptible in older patients with EH to compare healthy individuals of the same age.

Conclusion. Aging demonstrates an additional impact in the development of cardiovascular remodeling in male patients with essential hypertension.

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PARAMETERS OF BASILAR ARTERY IN YOUNG PATIENTS WITH DEGENERATIVE DISORDERS OF CERVICAL VERTEBRAL COLUMN

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Introduction. Vertebrobasilar insufficiency (VBI) is a broad classification describing the condition where there is an insufficient delivery of blood flow via the vertebral and/or basilar arteries to the brain. The vertebral or basilar arteries become narrow and cause such conditions [1-4; 6]. The etiology can be of various types including lipohyalinosis, embolic occlusion, atherosclerosis, vertebrobasilar artery dissection or cervical osteochondrosis [5]. So VBI is a hemodynamic posterior circulation transient ischemic attack (TIA) could be caused by intermittent vertebral artery occlusion that is induced by a head rotation or extension. The topic of our discussion is mostly based on vertebral artery affection, resulting from osteochondrosis.

Research objective: To study hemodynamic characteristics of basilar artery in young patients with with spondylogenic VBI.

Materials and methods. We examined 240 patients at the neurology department of Kharkiv Regional Hospital-Centre for emergency medical care and disaster medicine with manifestations of VBI on the background of neurovascular and radicular syndromes of cervical osteochondrosis of a vertebral column. Patients from 18 to 40 years (median age of 28.5 ± 3.8 years) were included in this study. All study subjects underwent functional X-ray examination of cervical vertebral column with bending and extension, cervical spine MRI. Patients underwent an ultrasonic dopplerography and transcranial dopplerography of cerebral vessels with functional loading tests (head rotations) [7]. We studied the dynamics of blood flow indices in