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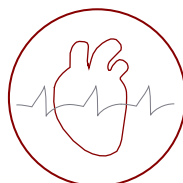
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in patients with essential hypertension and rheumatoid arthritis.

Materials and methods. 120 patients with essential hypertension (EH) and rheumatoid arthritis were examined. Another ones, in group 2, were 65 subjects with RA without EH; and in group 3 – there were 67 patients with EH. The average age of the patients was (51.8±5.4) years, of which 58 (23 %) men and 194 (77 %) women; the average duration of AH was (7.12±2.48) years, the average duration of RA was (8.3±3.7) years. Endothelium functional state was assessed using an ultrasound method for determining endothelial dependent vasodilation (EDVD) and endothelium-independent vasodilation (ENVD) of the brachial artery (BA) during the test with blood flow mechanical stimulation. As classical risk factors for the development of cardiovascular diseases we evaluated the following: overweight (body weight ≥ 25 kg/m²), heredity, diabetes mellitus, smoking, hyper- and dyslipidemia (the content of total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C) and triglycerides (TG) was determined by the enzymatic method according to the standard method; low density lipoprotein cholesterol (LDL cholesterol) and atherogenic coefficient (CA) were calculated according to generally accepted formulas), Using the Framingham scale for all patients the 10-year coronary risk (risk of developing coronary heart disease (CHD)) was calculated. Using the SCORE scale a 10-year fatal risk (risk of death from coronary artery disease, atherosclerosis of the cerebral and peripheral arteries) was calculated. Also, as additional cardiovascular risk factors, the level of circulating endothelial cells (CEC) and the levels of C-reactive protein (CRP) were studied.

Results. Among the classic cardiovascular risk factors, the largest difference was in the blood lipid spectrum in the studied groups. In patients with RA, regardless of the presence of EH, there was a significant increase in the concentration of proatherogenic lipid parameters (TC, TG, LDL-C, CA) compared with similar indicators of healthy individuals. A feature of the lipid profile in patients with RA, both with and without EH, was lower concentrations of HDL-C and higher CA values, in contrast to similar parameters of the lipid spectrum in patients with EH without RA. The 10-year coronary risk according to the Framingham scale in patients with RA was 4.4 [3.2; 7.7] %, which is significantly lower than the corresponding risk for a population of comparable sex and age without RA. The 10-year risk of fatal cardiovascular events according to the SCORE scale in these patients was 1.2 [1.2; 2.3] %, which can be considered low risk. In patients with RA in combination with EH, the 10-year coronary risk according to the Framingham scale was 5.4 [4.4; 9.2] %, according to the SCORE scale – 4.1 [1.1; 2.2] %, which exceeds these parameters in RA patients, but is also at a low level. The level of CRP >10 mg/l was observed in 39 subjects (60 % of patients with RA and in 75 (62.5 %) of patients with RA in combination with EH, which is quite natural considering the inflammatory nature of RA. Significantly higher levels

of CEC were found in the groups of patients with RA. The level of circulating endotheliocytes in patients with RA significantly correlated with the erythrocyte sedimentation rate and CRP ($r=0.222$, $p<0.05$). There were no significant differences ($p>0.05$) in the level of EDVD between the groups, however, the proportion of patients with reduced EDVD (<10 %) was significantly higher in the RA and RA in combination with AH group than in the control group (49 % and 15 %, respectively, $p<0.01$). ENVD was significantly higher in groups of patients with RA.

Conclusions. Endothelium functional state in patients with EH and RA is significantly more affected in comparison with those with EH or RA alone and the risk of developing fatal cardiovascular events in patients with RA, calculated taking into account only classical risk factors, is close to the general population, which requires additional risk factors to be taken into account.

Peculiarities of cardiohemodynamics and conditional differentiation inhibition in the cerebral cortex in male patients with essential hypertension of elderly age

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Goal of the study: to investigate dynamical changes of cardiohemodynamic parameters and blood pressure caused by differentiation inhibition in the cerebral cortex in male patients with essential hypertension of elderly age.

Materials and methods. We examined 70 elderly-aged male subjects with essential hypertension (EH) who did not receive antihypertensive therapy for 6 months prior to enrollment, or whose antihypertensive therapy was not regular. Conditional differentiation inhibition in the cerebral cortex (CDICC) during operative activity was studied based on the results of the test to determine mental task performance by the method of Anfimov (Anfimov proofreading test (APT)).

Blood pressure (BP) and thoracic rheogram (TGR) were determined at baseline, immediately after the test and 3 minutes after the end of APT. The computer apparatus «RHEOREST» (2013, Ukraine) was used for rheographical research. Registration of thoracic rheogram was processed according to the generally accepted tetrapolar method; both a qualitative analysis of the rheographic curve and its quantitative parameters were performed. Immediately after the test and 3 minutes after the end of the APT the rheographic systolic index (RSI), diastolic index (DSI), amplitude-frequency index (AFI), anacrotic relative duration of (ARD), venous outflow index (VOI). Statistical analysis of the obtained data was performed by methods of

parametric and non-parametric statistics on a personal electronic computer using Microsoft Excel software and «Statistica Version 6.0».

Results. The study of the mental task performance during the APT allowed to determine and pick out three types of mental task performance: high capacity (n=5; 7.1 % of respondents); medium (n=16; 22.9 % of respondents) and low (n=49; 70 % of respondents). The general regularities of the by-minute dynamics of mental task performance in each of the groups were revealed. As a result of research of influence of internal inhibition in APT at operative activity on parameters of BP and TRG 2 basic types of reaction of cardiovascular system – hypertensive and normotonic are revealed. In subjects with hypertensive response of the cardiovascular system, which was detected in 62 patients (88.6 %), there was a significant increase in blood pressure and heart rate by more than 5 % from baseline. Three minutes after the APT, blood pressure and heart rate were also significantly higher than the basic ones. TRG had a typical characteristic type of hypertensive curve. In the conditions of internal inhibition during APT according to rheographic research there was a decrease in RSI and increase of values of DKI, DSI, AFI, ARD and VOI, which indicated an increase in total blood flow, increased tone of arteries and arterioles, venous vessels. 3 minutes after the APT, the parameters of

TRG were also significantly higher than those of the baseline. Normotonic type (n=8; 11.4 % of the total number of subjects) was characterized by the absence of significant changes in blood pressure and heart rate. Quantitative integrative parameters of TRG (RSI, DKI, DSI, AFI, ARD and VOI) after APT and 3 minutes after its completion did not undergo significant changes, which characterizes a certain stability of the BP regulation system in subjects with this type of response.

Thus, in patients with EH of elderly age, as a result of a study of the effect of conditioned differentiation inhibition in the cerebral cortex during mental operative activity on the background of significant changes in cardiohemodynamics by hypertensive type (increase in SBP, DBP, heart rate, DKI, DSI, AFI, ARD, VOI and reduction of RSI) high, medium and low types of working capacity (mental task performance) with a significant prevalence of low mental task performance capacity (n=49; 70 % of respondents). The obtained data indicate a decrease in overall performance in patients with stage II of EH, the presence of imbalance between the processes of excitation and inhibition in brain cortex, in particular conditional differentiation inhibition; the inertia of processes in the regulation of blood pressure with a shift towards responsiveness excitation in brain cortex and blood pressure control centers.