

engender career-related learning and self-efficiency. Parents provide considerable assistance to their children to facilitate academic planning and career goals. Indeed, numerous studies have reported a positive association between social support and career adaptability. [4, p.116]

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RELEVANCE OF ASSESSING THE STATE OF VASCULAR ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH DIFFERENT COURSES OF CHRONIC RHEUMATIC HEART DISEASE

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Introduction. Rheumatic heart disease continues to occupy a leading position among the diseases that contribute to the main factors leading to the development of acquired heart defects [1, 2]. Modern studies have proven that vascular endothelial dysfunction (VED) develops almost naturally in case of heart pathology [3, 4]. The endothelium regulating vascular tone and inflammatory processes plays a primary role in valvular damage in chronic rheumatic heart disease (CRHD) [5, 6].

The purpose of the study is to evaluate the nature of VED changes in CRHD, the relationship with the adsorption and rheological properties of blood and other indicators of the morphofunctional state.

Materials and methods. 105 patients with CRHD were examined (29 men and 76 women aged 15 to 60). The duration of the detected heart defect was 17 ± 1.2 years on average. Mitral insufficiency was found out in 96% of the patients, mitral stenosis - in 48%, aortic insufficiency - in 63%, aortic stenosis - in 11%, tricuspid insufficiency - in 12% and various combinations of them. At the previous stages 24% of patients underwent mitral commissurotomy, 14% - aortic valve replacement, 11% - mitral valve replacement. Electrocardiography, echocardiography, Holter monitoring, spirometry, lung diffusivity studies were performed. The content of vasoconstrictors, vasodilators and lipids in the blood was determined with the help of immunoenzymatic, biochemical and biophysical methods, the volume viscosity of the serum was estimated and its interphase tensor rheometry was performed. Statistical processing of the obtained results was carried out using the package of application programs "Statistica-Stat-Soft, USA" and "Microsoft Excel".

The results. In patients with CRCD the indicators in the blood are: endothelin-1 (ET1) – 6.7 ± 0.18 pg/ml, endothelial growth factor (VEGF) – 92.0 ± 4.42 pg/ml, thromboxane-A2 – 9.6 ± 0.38 ng/ml, prostacyclin (PGI2) – 17.6 ± 0.68 ng/ml, nitrites (NO2) – 5.7 ± 0.10 μ mol/l, cyclic guanosine monophosphate (cGMP) – 13.7 ± 0.27 pmol/ml, P-selectin (PS) – 46.7 ± 0.70 ng/ml, E-selectin (ES) – 217.2 ± 1.38 ng/ml, homocysteine (HCys) – 15.8 ± 0.37 μ mol/l. Compared to healthy people there was a significant increase of 68% in ET1 parameters, 12% in NO2, 23% in cGMP, 10% in PS and 70% in HCys, with a decrease in PGI2 by 76% and ES by 12% which was registered respectively in 87%, 60%, 69%, 31%, 82%, 70% and 3% of the number of examined patients, moreover, the indicators correlate with each other, as well as with the components of lipid metabolism, with viscoelastic, surface-active and relaxation properties of the serum, they are determined by patients' age, the nature of the heart defect, violations of the excitability of the myocardium and electrical conductivity of the heart, an increase in the size of its chambers, the degree of fibrosis of the heart valves and the functional class of heart failure. It has been established that ET1 indicators are correlated with the parameters of systolic pressure in the pulmonary artery in different directions, EGF, NO2 and cGMP - with the dimensions of the right ventricle of the heart. Taking into account the presented data of statistical processing of the obtained research material we have made some conclusions of practical value: 1) indicators $ET1 > 9$ pg/ml ($> M + SD$ of patients) are a risk factor for the development and progression of pulmonary hypertension; 2) VEGF values > 130 pg/ml are negative for the increase in the size of the right ventricle of the heart.

Conclusions. The course of CRHD is closely related to the changes in the levels of vasoconstrictors and vasodilators in the body caused by VED that depends on individual manifestations of the disease, determines by violations of the physical-chemical adsorption-rheological properties of blood and their lipid components.

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