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The role of echocardiography (EchoCG) in the diagnosis of congenital asymptomatic heart disease in young athletes

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Purpose. Assess the role of echocardiography (EchoCG) in the diagnosis of structural congenital heart disease in young athletes.

Material and methods. Of the 3,000 young athletes aged 15.6–1.8 that were examined before the shading, 440 (14.7%) had a retrospective assessment of echocardiograms performed in connection with the suspected heart defect. In this group, 11 kinds of sports were represented - from team play to individual strength. The duration of the training was 6.4 ± 2.5 years on average. 44% were engaged in game types, 33.5% - in martial arts, 10.3% - in water disciplines, 5.5% - in rhythmic gymnastics, 4.2% - power types, 2.5% - in other sports. We compared the frequency of heart disease, resulting from EchoCG, with the frequency according to clinical data ECG.

Results. Congenital abnormalities of the heart structure were diagnosed in 238 (according to EchoCG in 54.1% and according to clinical data in 7.9%, p = 0.0000) cases. Minor pathology with localization in the right parts of the heart (atrial septum aneurysm, Hiari network, moderate pulmonary stenosis, significant tricuspid insufficiency) Was detected in 44 (10.0% and 1.6%, respectively, p = 0.0000), malformations with bleeding from left to right (atrial ventricular septal defect, ventricular septal defect, open arterial duct) - in 71 (16.1 and 2.3%, p = 0.0000), aortic valve dysfunction and aortic root dilatation - in 120 (27.3 and 3.8%, p = 0.0000), mitral valve prolapse in 3 (0.7 and 0.2%, p = 0.2682) people. Heart murmur was absent in 160 (67.2%) children with a diagnosis of congenital heart disease, confirmed by EchoCG. In 114 (47.8%) of 238 athletes, the existing pathology in combination with sports loads led to dilatation of the chambers of the heart or aortic root, exceeding the 99-th percentile for a given body surface area or myocardial hypertrophy, due to which they had limited and training intensity. In 3 patients, surgical intervention was performed - two catheter embolization of the open arterial duct and one occluderous closure of the atrial septal defect.

Conclusion. Congenital heart disease in asymptomatic young athletes may be present in a significant percentage of cases. The use of EchoCG allows to increase the detectability of congenital heart defects by 7 times, in comparison with physical examination in combination with an ECG. Even with moderately pronounced malformations, there may be consequences in the form of significant dilatation of the chambers of the heart and aorta, as well as myocardial hypertrophy, which can potentially lead to disability or sudden death. At the same time, the fact itself of the presence of congenital heart defects is not a contraindication to sports, it is necessary to assess the hemodynamic disturbances and structural changes associated with this defect.