

Irgasheva D.G.

Assistant of the Department of Normal Physiology

Andijan State Medical Institute

Andijan Uzbekistan

PECULIARITIES OF THE PROGNOSTIC VALUE OF STRESS- ECHOCARDIOGRAPHY IN THE DIAGNOSIS OF HEART DISEASE

Summary. The problem of diagnostics and treatment of cardiovascular diseases (CVD) remains in the first place, despite the progress in the development of cardiological services and the use of new drugs. Today, 18.7 million people died from CVD in the world in 2018 alone, of which 9 million 387 died from coronary heart disease (CHD). Mortality from these diseases in the countries of the Central Asian region also remains extremely high. The forecast of deaths from coronary artery disease in the world for 2021 amounted to 11 million. human. According to the ANA / ACC and the US National Institutes of Health, despite the huge funds (\$ 60 billion) annually spent by the US on the treatment of coronary atherosclerosis, more than 5 million people suffer from coronary artery disease in the US.

Keywords: ischemic heart disease, cardiovascular diseases, coronary angiography, stress echocardiography.

Иргашева Д.Г.

Ассистент кафедры нормальной физиологии

Андижанский государственный медицинский институт

Андижан Узбекистан

ОСОБЕННОСТИ ПРОГНОСТИЧЕСКОГО ЗНАЧЕНИЯ СТРЕСС- ЭХОКАРДИОГРАФИИ В ДИАГНОСТИКЕ ЗАБОЛЕВАНИЙ СЕРДЦА

Резюме. Проблема диагностики и лечения сердечно-сосудистых заболеваний (ССЗ) остается на первом месте, несмотря на успехи в развитии кардиологической службы и применение новых лекарственных препаратов. Сегодня от ССЗ в мире только в 2018 г. по этой причине умерли 18,7 млн. человек, из них 9 млн. 387 - от ишемической болезни сердца (ИБС). Летальность от этих заболеваний по странам среднеазиатского региона также остаётся крайне высокая. Прогноз смертности от ИБС в мире на 2021 г. составил 11млн. человек. По данным АНА/АСС и национального института здоровья США, несмотря на огромные средства (60 млрд. \$), ежегодно затрачиваемые США на лечение коронарного атеросклероза, в США страдают ИБС более 5 млн. человек.

Ключевые слова: ишемической болезни сердца, сердечно-сосудистых заболеваний, коронароангиографии, стресс-эхокардиографии

Relevance. One of the ways to reduce mortality from coronary artery disease is early diagnosis and timely treatment. There are various algorithms for diagnosing coronary artery disease both in our country and abroad (Sedov V.P., Alekhin M.N., Korneev N.V., 2000), and in the USA (AHA / ACC 2007), including mandatory stress echocardiography (stress echocardiography) before performing selective coronary angiography (CAG). The sensitivity of standard samples (dobutamine with atropine, dipyridamole with atropine) is relatively low and is about 80.0% (Sedov V.P., Alekhin M.N., Korneev N.V., 2000). Given the mechanism of action of dipyridamole (“intercoronary steal syndrome”), and dobutamine (stimulation of α -adrenergic receptors, leading to an increase in myocardial oxygen demand), it is advisable to combine them as stress agents during exercise EchoCG.

To exclude false-positive and false-negative results in the diagnosis of coronary artery disease, stress echocardiography should have high sensitivity and specificity.

According to many literature sources, the sensitivity of stress echocardiography with exercise is 91.0% (Alekhin M.N. 2003, Hecht HS 1993, Gani F. 2007, Leischik R. 2007, Picano E. 2007), which is significantly higher than than pharmacological tests. However, there is a group of patients who are not able to perform this particular type of study. For this contingent, a stress echocardiogram with pharmacological tests (dipyridamole, dobutamine) is indicated.

The purpose of the study: to study the role and possibilities of stress-Doppler echocardiography in the diagnosis of coronary artery disease.

Materials and research methods. The control group consisted of 20 apparently healthy patients aged from 60 to 60 years (49.1 ± 2.98) without clinical manifestations of coronary artery disease and the absence of its main risk factors. Depending on the clinic, the results of the study, the patients were divided into 2 groups. Group I patients consisted of 20 apparently healthy men aged 37 to 61 years (49.2 ± 2.87) with two risk factors for CHD. Group II included 20 men aged 39 to 64 years (49.5 ± 3.01) with typical angina attacks. All examined patients underwent tissue stress echocardiography with physical activity. Physical activity according to the method was used as a stress agent. The patient was discontinued beta-blockers, cardiac glycosides, calcium antagonists and nitrates 2 days before stress echocardiography. Tissue stress echocardiography was performed in the parasternal position at the level of the papillary muscles along the long axis (PLax) and short axis (SaxPM), apical 4-chamber (4Ch) and 2-chamber (2Ch) positions, as well as using pulsed-wave mode of longitudinal tissue Doppler. Systolic regional parameters of myocardial contractility were determined in the main blood supply basins: anterior descending artery (ADA), circumflex artery (OA), right coronary artery (RCA). The increase in maximum segmental systolic velocity (MSV) for each of the segments at all stages of the stress test was assessed. The tissue stress-dechoCG test was considered positive if the MSS for any of the segments decreased at the next stage of the test.

Research results. MCC indicators at rest during stress-dechoecardiography in the control group (n=20). There is a direct linear relationship between the increase in MCC and the stage of the stress test in the control group. Thus, there is an increase in MCC by an average of 1.31 times, and with a combined stress-DechoCG test - by an average of 1.87 times. In patients without clinical manifestations of coronary artery disease with no major risk factors with a positive VEM test (n=20), the sensitivity and specificity of the combined stress echocardiography was 100% (p0.001). It was found that 90.0% of patients in this group with pathological changes in the ST segment had no coronary lesions (p0.05). In the group of patients with newly developed angina pectoris, the presence of 2 or more risk factors for coronary artery disease and a negative VEM test, atherosclerotic lesion of the coronary artery was noted in 70.0%. The results of the combined stress echocardiography fully corresponded to those in CAH both in terms of the location of the affected artery and the prevalence of the pathological process (p0.001).

Conclusion. Stress echocardiography is the preferred imaging technique due to lower cost, wide availability, and, most importantly, the absence of ionizing radiation. Combined stress Doppler echocardiography can be successfully used both to form groups of patients subject to coronary angiography and to assess the effectiveness of angiosurgical treatment of coronary artery disease.

LITERATURE

1. Alekhin M. N., Salnikov A. V., Sidorenko B. A. Stress echocardiography with treadmill in the diagnosis of coronary artery stenosing lesions in patients with a variable risk of coronary heart disease. *Cardiology*. - 2002. - No 12. - S. 18–22.
2. Korneev N.V. Stress echocardiography // *Clinical guide to ultrasound diagnostics* // Ed. Mitkova V.V., Sandrikova V.A., V.5, M.: Vidar, 2000., S. 138-160.
3. Sedov V.P., Alekhin M.N., Korneev N.V. stress echocardiography. M - 2000 -152С.

4. Gani, F. The role of cardiovascular imaging techniques in the assessment of patients with acute chest pain / G. Gani, D. Jain, A. Lahiri // Nucl. Med. Commun.–2007. –No28 (6). -P. 441-449.

5 Gibbons R.J., et al. ACC/AHA 2007 guideline update for the Management of Patients With Chronic Stable Angina A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 2004 Guidelines for the Management of Patients With Chronic Stable Angina) 2007 American College of Cardiology Web site. Available at: http://www.acc.org/clinical/guidelines/stable/update_index.htm. Accessed October 17, 2007.

6. Hecht H.S., DeBord L., Shaw R., et al. Usefulness of supine bicycle stress echocardiography; a new technique for evaluating coronary artery disease. // J. Am. Col. cardiol. 1993;71;4: 293-301.

7. Leischik R., Dworrak B., Littwitz H. et al. Prognostic significance of exercise stress echocardiography in 3329 outpatients (5-year longitudinal study) // Int. J. Cardiol. 2007. - No. 3. - P. 297-305.

8. Picano E., Alaimo A., Chubuchny V. et al. Noninvasive pacemaker stress echocardiography for diagnosis of coronary artery disease: a multicenter study. J Am Coll Cardiol 2007;40: 1305–1310.