STRESS TESTING IN PATIENTS WITH CORONARY HEART DISEASE

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ABSTRACT

To assess the effect of coraxan on the parameters of the stress ECG test, 32 patients with coronary heart disease (stable angina pectoris of functional class I-III) were selected. A prerequisite for the patient's inclusion in the study was the presence of a stable sinus rhythm and the absence of significant regurgitation on the mitral valve according to the results of echocardiography. To assess the effect of coraxan on the functional state of the left ventricle (LV), 32 patients with coronary heart disease (stable angina pectoris of functional class I-III), aged 45 to 74 years, were selected. The diagnosis of angina pectoris of tension I-III FC was verified according to the treadmill test, according to the recommendations of the Canadian Association of Cardiology, clinical and anamnestic characteristics. Coraxan was added to all patients in addition to the standard treatment regimen for coronary heart disease. The study was conducted before treatment and after 12 weeks of coraxan treatment. Coraxan therapy in patients with coronary heart disease was accompanied by high antianginal efficacy and increased exercise tolerance. Thus, ivabradine therapy in patients with coronary heart disease was accompanied by both high antianginal efficacy and increased exercise tolerance.

Key words: coronary heart disease, coraxan, stress ECG test.

INTRODUCTION

Coronary heart disease (CHD) continues to be the leader among the causes of morbidity and mortality in Europe, the USA and Russia, despite obvious achievements in the field of interventional cardiology and the emergence of new drugs. The prevalence of stable angina depends on age and gender: in men aged 45 to 54 years in 2-5% of cases, aged 65 to 74 years in 10-20% of cases, in women from 45 to 54 years in 0.5-1% of cases, from 65 to 74 years in 10-14% of cases. Stable angina pectoris is a chronic disabling disease characterized by the risk of developing acute coronary syndrome and high mortality. In the population, about 40-50 of all angina patients are aware of the presence of the disease and receive appropriate treatment, whereas in 50-60% of cases the disease remains unrecognized, despite the variety of diagnostic manipulations. The mortality rate of patients with stable angina is about 2% per year, 2-3% of patients have nonfatal myocardial infarction annually. Men suffering from angina pectoris live on average 8 years less compared to those who do not have this

pathology. According to the results of the Framingham study, in patients with stable angina pectoris, the risk of developing nonfatal myocardial infarction and death from coronary heart disease within 2 years is, respectively, 14.3% and 5.5% in men and 6.2% and 3.8% in women. The aim of the study was to study the effect of coraxan-based therapy in patients with coronary heart disease before and after 12 weeks of treatment on exercise tolerance.

MATERIALS AND METHODS OF RESEARCH

To assess the effect of coraxan on the functional state of the left ventricle (LV), 32 patients with coronary heart disease (stable angina pectoris of functional class I-III), aged 45 to 74 years, were selected. The diagnosis of angina pectoris of tension I-III FC was verified according to the treadmill test, according to the recommendations of the Canadian Association of Cardiology, clinical and anamnestic characteristics. The stress ECG test was performed on the treadmill "Stress-Test ST-2001" (the Netherlands) using the modified Bruce protocol. When discussing the indications and contraindications for a stress ECG test, the recommendations of the American College of Cardiology and the American Heart Association (ACC/ANA), related to class 1, were guided. 2 days before the treadmill test, patients were canceled for 6-8 hours, prolonged-acting nitrates were canceled. The research was carried out in the morning. Indications for discontinuation of the test were considered: the occurrence of an angina attack, registration of ischemic signs in at least one ECG lead, achievement of submaximal heart rate, decrease in initial systolic blood pressure by more than 10 mmHg, increase in systolic blood pressure by more than 220 mmHg or diastolic blood pressure by more than 110 mmHg, registration on an ECG of life-threatening arrhythmias, according to the classification of J.Widdeg, 1984, modified by A.V. Inaccessible, 1999, the occurrence of syncope or other acute neurological symptoms. The electrocardiographic parameters of the treadmill test were determined: the total duration of the load (sec), the amount of external work performed (in MET), the degree of depression ST (mm), the time before the onset of depression ST (sec), the duration of depression ST (sec), the duration of the recovery period (sec), the presence of rhythm disturbances (extrasystole or paroxysm atrial fibrillation) during exercise or recovery period. The following hemodynamic parameters of the treadmill test were evaluated: maximum heart rate, maximum systolic and diastolic blood pressure. In addition, a "double product" was calculated at each load stage, as well as the ratio of the "double product" at the highest load stage to the "double product" at rest. The study included only patients with a positive stress ECG test on treadmill: - patients with a typical attack of angina pectoris during exercise; - patients with the appearance of horizontal or oblique depression or ST segment elevation with an amplitude of more than 1 mm, localized at a point 0.06 ms from the end of the ventricular complex, recorded in at least one standard lead, during or after the cessation of exercise.

THE RESULTS AND THEIR DISCUSSION

Initially ischemic episodes of displacement of the ST segment from the isoline during exercise were detected in all patients. Before treatment, exercise tolerance was reduced in patients of the 2nd group, as evidenced by low values of the maximum achieved load level, the amount of external work performed, a significant duration of the recovery period, a pronounced increase in SAD and DAD during exercise. After treatment, favorable changes in exercise tolerance were observed in patients of group 2: an increase in the volume of exercise performed occurred by 41.8% (p=0.008), the maximum achieved load level increased from 2.2± 0.2 to 3.5± 0.2 by 59.4% (p=0.01). The total duration of the load was lengthened by 26.5% (p=0.02) due to an increase in the volume of work performed, and the duration of the recovery period was shortened by 36.6% (p=0.03). SAD and DAD after treatment decreased, respectively, by 6.8 mmHg and 7.0 mmHg, and the increase in these the indicators under load were less pronounced. The antianginal efficacy of coraxan was high: the degree of ST segment depression on the ECG decreased (p=0.04) from the initial level of 1.7±0.08 mm to 1.4±0.09 mm.

CONCLUSIONS:

Thus, ivabradine therapy in patients with coronary heart disease was accompanied by both high antianginal efficacy and increased exercise tolerance.

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