ENGLISH VERSION: CLINICAL ASPECTS AND TREATMENT OF ISCHEMIC HEART DISEASE ASSOCIATED WITH COPD*

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The article presents the experience of therapy in patients with ischemic heart disease and comorbidity with COPD in the complex treatment of cardio protective and endothelium protective drug - kardioarhinin. It was found that patients of the group treated with kardioarhinin, compared with a control group of patients, showed a significant difference in terms of the disappearance of dyspnea (p <0 , 05), pain (p <0.05), a significant lowering of blood pressure (BP) and reducing of blood cholesterol levels (p <0.05), increasing of aPTT. In the course of treatment in the study group there was a significant increase in FEV1 of 9.8% (p <0.05); index Tiffno 11.9% (p <0.05), whereas patients of the control group noted an FEV1 increase 6.9% (p> 0.05); Tiffno index by 7.5% (p> 0.05). The average resting heart rate of the study group decreased by 27.7% per minute (p <0.05); whereas patients of the control group displade a decrease of the heart rate of 8% per minute (p <0.05). Patients of the main group had SBP decreased by 15.2% (p <0.05), diastolic blood pressure - 21.4% (p <0.05). Whereas patients of the control group had SBP decreased by 6.1% (p> 0.05), DBP - 8.2% (p> 0.05). Inclusion to the complex therapy of kardioarhinin boosted EF to 9.02% (p <0.05), whereas patients who received standard therapy, EF increased by 5.3% (p> 0.05). Positive clinical dynamics of patients treated with combined therapy by using a solution of kardioarhinin enhanced the quality of life, increased exercise capacity, reduced the period of hospital stay of 1.6 days.

Keywords: kardioarhinin, ischemic heart disease, chronic obstructive pulmonary disease.

Nowadays experts ascertain the fact of dynamic progression of comorbid pathological conditions. The problem of comorbidity is extremely important for both physicians and cardiologists [6]. Multimorbidity of pathologies usually causes a significant change of the classical clinical symptoms of the disease [3,6,8], requires the appointment of a significant number of medications that increase the risk of drug complications (side effects) and can lead to polypharmacy.

One of the most frequent comorbid conditions is a combination of ischemic heart disease (IHD) and chronic obstructive pulmonary disease (COPD), prevalence of which ranges from 6.8 to 70.2%, averaging 34.3% [1,2]. Compatibility of ischemic artery disease and COPD, according to various studies in older age groups is 62%, and 15-year survival of these patients is less than 25% [1, 2, 4].

Simultaneous course of COPD and coronary artery disease syndrome accompanied by "mutual burdens." Such a course of comorbidity contribute to certain pathogenic factors. Hypoxia that develops in COPD and its compensatory mechanisms (polycythemia, tachycardia) contribute to myocardial oxygen demand in low oxygenation of the blood and lead to deterioration of microcirculation [1, 10]. The combination of coronary artery disease and COPD leads to a more severe clinical course of disease progression of heart failure, a significant decrease in contractility of the myocardium to the development of systolic and diastolic left ventricular dysfunction, disturbance of vegetative balance and worsening gas exchange parameters [2,6]. Treatment of coronary artery disease in combination with COPD has some difficulties as active treatment of one disease is at high risk for aggravation of a disease. Thus, the use of β-agonists contributes to the development of adverse cardiovascular events, one of which is tachycardia – a strong and independent risk factor for coronary artery disease and heart attack, sudden death. At the same time, β arenoblokatory – drugs of choice in the treatment of coronary artery disease, can enhance bronchial obstruction and worsen COPD [1,2].

It requires the appointment of adequate therapy which will be clinically effective, safe and affordable [5,9]. The particular interest is kardioarhinin that is cardio and endothelium-protective metabolic remedy. Kardyoarhinin-Zdorovya is a combined drug based on the amino acid arginine, which includes dyarhinin succinate, arginine asparahinat, asparahinat potassium, magnesium asparahinat. This combination makes the positive clinical effects of the drug, which is the reducing of blood pressure and elimination of myocardial ischemia, coronary endothelial dysfunction, improving blood circulation [5]. In addition, the drug has antihypoxic, membranstable and antioxidant action.

Purpose – to improve treatment for patients with comorbidity of coronary artery disease and COPD using a drug – Kardioarhinin-Zdorovya.

Object of study – 60 patients with coronary artery disease: stable effort angina FC II, IIA stage heart failure with preserved systolic function in conjunction with the COPD group B-C.

The diagnosis was verified on the basis of physical examination, medical history, general clinical examination, biochemical (total cholesterol-TC, triglycerides, low-density lipids – LDL, prothrombin index, fibrinogen, activated partial thromboplastin time), X-ray of the chest, electrocardiography (ECG), echocardiography (EhoKS), bicycle ergometry (VEM). The diagnosis of COPD was based in accordance with the orders of the Ministry of Health of Ukraine № 555 from 27.06.2013r. [6], based on the clinical history, X-ray of the chest, the definition of respiratory function (ERF), the samples with bronchial spasmolytic.

Patients were divided into two groups: the first – control (n = 30) – were administered a comprehensive base-

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line therapy (nitrates, combined inhaled glucocorticosteroids and long-acting β2-agonists, statins, anticoagulants) as metabolic therapy – Dextrose 5% with Panangin intravenously №5). The second group – the main (n = 30) – to the basic treatment was added a solution of 5.0 kardioarhiniu intravenously withf 5% glucose solution 100.0 1 time per day №5. The groups were comparable for age and sex, and degree of cardiac and respiratory failure.

The main complaint of patients with coronary artery disease with concomitant COPD was dyspnea – 46 patients (76.6%). Complaints of dyspnea at rest noted 8 patients (13.3%). Complaints of cough with phlegm were found in 24 patients (46.6%), with cough, mostly at night noted (58%). Complaints of palpitations was seen in 32 patients (53.3%). Heart pain noted 27 patients (45%), 55% of patients had myocardial silent ischemia.

Thus, the obtained data show that patients with combined IHD and COPD have no clear clinical manifestations of ischemic heart disease, which complicates the timely diagnosis of angina. One of the possible reasons for this course of ischemic heart disease is prolonged hypoxia, which contributes to the threshold of pain sensitivity in the respective centers of the brain and activation of free radical oxidation is one of the mechanisms of silent myocardial ischemia, which coincides with the opinion of the authors [1].

Potency assignment included the dynamics of clinics. Estimated timing of the disappearance of the main manifestations of syndromes: pain, and dyspnea, as an indicator of cardiac and respiratory failure. It was found that patients of the group treated with kardioarhinin compared with a control group of patients showed a significant difference in terms of the disappearance of dyspnea (p <0, 05), pain (p <0.05), a significant lowering of blood pressure (BP) and reduce blood cholesterol levels (p <0.05) increase of activated partial thromboplastin time. The results are presented in Figures 2, 3.

Patients treated with combined therapy using solution of kardioarhinin had a positive clinical dynamics which helped to reduce terms patient's stay in hospital by 1.6 days.

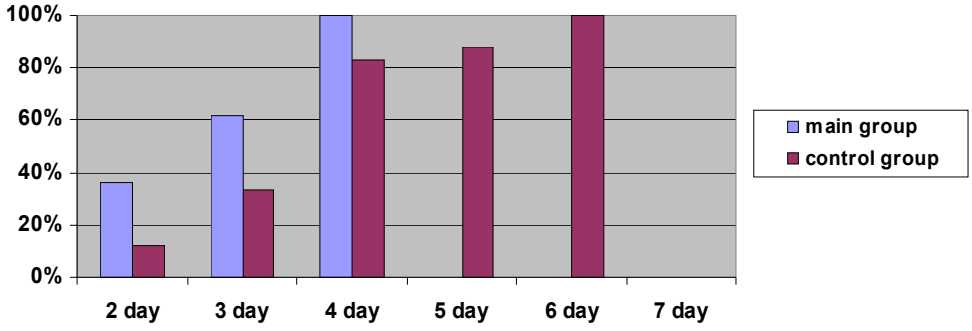

Fig.1. Terms of dyspnea disappearance

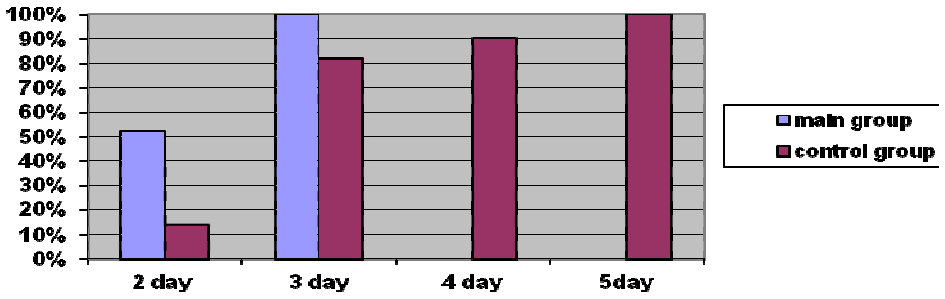

Fig.2. Terms of pain syndrome disappearance

Therapy with Kardioarhinin-Zdorovye which was added to therapy of patients with IHD associated with COPD improved quality of life of patients, increased tolerance to physical exercise.

There are such biochemical parameters listed in the table.

Tabl.
Biochemical parameters in patients with ischemic heart disease and in patients with ischemic heart disease associated with COPD during treatment.

Measure	Control group (n=25)		Main group (n=25)	
	Before treatment	After treatment	Before treatment	After treatment
Cholesterol Mmol/L	5,36±0,62	4,6±0,46	5,44±0,45	4,2±0,37*
Triglycerides Mmol/L	2,1±0,31	2,0±0,24	1,95±0,23	1,84±0,32
low-density lipids Mmol/L	3,9±0,5	3,80±0,34	4,97±0,71	3,53±0,89
prothrombin index,%	89,7±2,4	85,5±1,89	92,8±2,7	84,2±2,24
APTt, s.	37,2±1,4	39,5±0,82	36,1±1,23	41,5±1,9 *
Fibrinogen, g/l	4,8±0,57	4,2±0,49	5,1±0,42	4,0±0,54

*Note: * significant differences before and after treatment*

As evidenced by the results in the treatment of patients who received adjuvant therapy in addition to kardioarhinin a significant decrease cholesterol levels by 22% (from 5,44 ± 0,45 to 4,2 ± 0,37) mmol / l (p <0.05); APTT increase by 10.2% (from 36,1 ± 1,2 to 41,5 ± 0,9s) (p <0.05) were detrected. While in patients who received conventional therapy appropriate indicators were not significantly improved.

The results suggest that combined therapy with using of kardioarhinin improves blood rheology.

In addition, the course of treatment in patients of group showed significant increase in FEV1 of 9,8% (from 50,52±2,02)% to (56,04±1,9)% (p<0,05); Tiffno growth index by 11,9% – (from 51,61±2,50)% to (58,65±2,03)%(p<0,05), whereas in the control group of patients seen at 6,9% (from 50,92±1,43)% to (54,73±2,09)% (p>0,05); Tiffno growth index by 7,5% (from 52,2±2,80)% to (56,45±2,24)% (p>0,05).

Improvement of respiratory function due to increased concentration of NO in the bronchial tree, which coincides with the opinion of the authors [8].

The use of conventional regimens in patients with COPD in conjunction with coronary artery disease contributed to certain clinical treatment. Additional assignment of Kardioarhinin-Zdorovye promoted faster (compared with the control group) regression of the symptoms showed above.

In hemodynamic studies in patients with coronary artery disease in combination with COPD tachycardia, was marked which was partially related to treatment with inhaled b-agonists and contributed to an increase in myocardial oxygen demand, which is undesirable for CHD. The average heart rate in patients of main group decreased from 95,8 ± 3,2 to 69,2 ± 4,1 min (p <0.05) – 27.7%; while patients in the control group a decrease in heart rate from 93,2 ± 4,2 to 75,3 ± 3,6 min (p <0.05) – 8% was observed

The averages SBP and DBP were significantly decreased in patients who got aditionally Kardioarhinin-Zdorovye. Thus, in patients of main group SBP decreased from 146,3 ± 4,4 mmHg do121,8 ± 3,7 (p <0.05), which accounted for 15.2%. DBP decreased from 92,2 ± 3,1do 73,4 ± 4,3 (p <0.05) – 21.4%. While in patients in the control group SBP decreased from 144,9 ± 3,7 to 136,1 ± 4,9 mm (p> 0.05) – 6.1%, DBP decreased from 90,8 ± 2,0 to 82,8 ± 1,8 (p> 0.05) – 8.2%.

Hemodynamic measures shows the improvement in left ventricular contractility of the heart. Thus, the inclusion of a medical complex kardioarhinin boosted ejection of 50,9 ± 2,1% to 56,4 ± 1,8% (p <0.05), ie by 9.2%, whereas in patients receiving standard therapy, ejection fraction increased from 52,2 ± 2,7% to 55,1 ± 2,3% (p> 0.05) – 5.3%.

The results suggest that kardioarhinin improves blood rheology, as antiplatelet agent for the prevention of atherosclerosis, as vasodilator.

Thus, the complex therapy of patients with comorbidity with ischemic heart disease and COPD using kardioarhinin promotes more rapid elimination of clinical manifestations of the disease, reducing the period of stay of patients in hospitals, improving the quality of life of patients.

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