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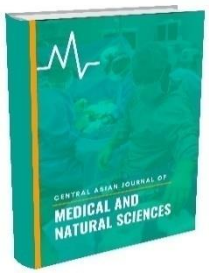

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Interrelations of Disorders Psychological Status of Patients with Bronchial Asthma with Pulmonary Hypertension

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Abstract: To study life quality, psycho-emotional state and effect of complex therapy on parameters of ventilation-perfusion function of lang and parameters of diastolic function right ventricle of heard in patients with bronchial asthma complicated by pulmonale hypertension failure.

Keywords: bronchial asthma, pulmonary hypertension, right ventricular.

Actuality. In recent decades, an increase in the prevalence and mortality of patients with severe bronchial asthma (BA) with pulmonary hypertension (PH) has been observed [1]. The growing incidence of BA with concomitant arterial hypertension is combined with some features of its course, complications and outcomes. The number of patients in whom the first manifestations of the disease arose after 40–50 years increased, therefore, BA began to be associated more often with diseases of the cardiovascular system, which in turn were significantly "younger". In addition, the structure of chronic pathology is currently characterized not only by an increase in the distribution of individual nosologies, but also by an increase in their combined course, which interferes with the course of diseases and creates difficulties in diagnosis and treatment [2,]. Pulmonary hypertension (PH) is defined as a group of diseases characterized by progressive pulmonary vascular resistance, leading to right ventricular failure and premature death. [2,3]. The disease can significantly limit daily activity, the quality of life of patients and lead to death. [3]. The main goal of treatment is to achieve complete control of asthma and a high quality of life in all patients, regardless of the severity of the disease, but the prognostic factors affecting the level of control of asthma have not yet been determined. [2,4]. There is evidence of a correlation of BA severity with the degree of decline in the quality of life of patients in different populations. The instability of the course of the disease can contribute to significant absenteeism in school for children, absence from work in adults, and can damage the career of the patient. [1,6]. The study of quality of life can be used both for a one-time assessment of the patient's condition and for dynamic assessment, for example, in determining the effectiveness of treatment [5,9].

Purpose of the study: Comparative analysis of the relationship of impaired quality of life and psychoemotional status of patients with different degrees of severity of bronchial asthma and the effectiveness of different modes of complex therapy.

Material and methods. The study included 46 patients aged from 41 to 65 years old, suffering from asthma, in whom the disease was complicated by PH. Patients were divided into 2 groups. The 1st group included 21 patients with BA II-III degree of severity with PH (mean age 55.7 ± 2.5 years). 27 patients with BA with (average age 55 ± 1.7 years) were assigned to the 2nd group. The control group consisted of 20 practically healthy individuals (PL), matched by age. The examined patients had no concomitant diseases. One week prior to inclusion in the study, all vasodilators were canceled. Studies were conducted in the period of relative remission of pulmonary disease. In addition to general clinical trials, the function of external respiration, blood oxygen saturation was examined in all patients, electrocardiography was performed in 12 generally accepted leads, chest x-ray, two-dimensional and doppler echocardiography.

Hemodynamics of the pulmonary circulation were studied using 2D and Doppler echocardiography. The following parameters of the spectrum of diastolic filling RV were calculated: E / A - the ratio of the rates of early and atrial filling; EF (m / s) - early filling delay time; IR (m / s) - isovolumic relaxation time and atrial filling fraction (AFF %). Mean pulmonary arterial pressure (PAP) was calculated using the formula proposed by Kitabatake et al. Analyzed the VCL with the assessment of forced expiratory volume for 1 sec (FEV1,%), lung capacity (FVC,%) and Tiffno index (FEV1 / FVC,%).

The psychoemotional status of the patients was assessed on the basis of psychological testing using the Spielberger test to identify reactive and personal anxiety.

The study of the parameters of the quality of life of patients with asthma with hypertension was carried out according to a specialized Seattle questionnaire and evaluated by a point system. This questionnaire allows the patient to assess the level of emotional state (ES), satisfaction with treatment (ST), professional fitness (PF) and physical condition (PC).Depending on the treatment methods, the patients were divided into the following 2 subgroups: 1a subgroup- (10 patients) and 2a subgroup (11 patients) received amlodipine tablets 5-10 mg once daily, bischofite electrophoresis (EB) and standard therapy (ST) according to (GINA 2017 y), which includes short and / or prolonged bronchodilators inhaled GCS and mucolytics, as well as exercise therapy and breathing exercises, chest massage, psychotherapy session. In the presence of signs of intrabronchial infection, patients were prescribed antibiotic therapy; 1b subgroup (12 patients) and 2b subgroup (15 patients) with standard therapy received EB procedures. Patient studies were performed on the day of admission and after 10 procedures.

Results and discussion. After the complex therapy, it was found that in patients BA complicated, reactive anxiety and personal anxiety decreased in all subgroups. In the 1a and 1b subgroups of patients, the scores of the psychological test are greater than in the 2a and 2b subgroups.

However, in the period of clinical improvement, patients remain relatively high tension sympathoadrenal units in the adaptive reactions of the body.

In the dynamics of treatment with amlodipine, EB on the background of ST, in patients with BA with arterial hypertension, the parameters of QOL parameters: PC, ES, PF, and ST are improved more than in patients who received only EB and ST procedures. When comparing within a subgroup, in patients with BA II-III degree of severity with PH (1a and 1b subgroups), the quality of life parameters turned out to be slightly more significant than in patients of Grade III-IV with segmentation PH 2a and 2b ($p < 0.05$). Determined a decrease in early relaxation time, isovolumic relaxation time, AFF and PAP, as well as an increase in E / A ($p < 0.05$, the significance of the difference with the values before treatment). The obtained facts show that in the examined patients a decrease in pressure in the pulmonary artery leads to a decrease in pressure in the right ventricular of the heart.

When conducting a correlation analysis between the parameters of LQ, VCL, pulmonary hemodynamic indices and RV of heart remodeling, it was noted that with improved bronchial permeability of FEV1, PC, ES, PF and ST improved (r = 0.64; 0.45; 0.24 and 0.19, p <0.03). A decrease in the level of PADP medium led to an improvement in PC, ES, PF and ST by (r = -0.64; -0.55; -0.56 and -0.26, p <0.01). The relationship between the increase in E / A and FS, ES, PF and ST (r = -0.49; -0.39; -0.78 and -0.18, p <0.05) was established.

The findings suggest that the inclusion in the complex therapy of patients with BA with arterial hypertension amlodipine and EB against the background of standard therapy allows increasing the ventilation capacity of the lungs, reducing the hemodynamic load on the right heart, thereby improving the structure of diastole RV of the heart. It should be noted that the interrelated disorders of psycho-vegetative factors of regulation and LQ of patients with remodeling of the right ventricle of the heart improve after the procedures performed, and the severity of the disease course decreases and the LQ of these patients increases.

Conclusion. Patients with bronchial asthma with concomitant arterial hypertension have features of the circadian rhythm of BP. This is manifested in the absence of a sufficient reduction in blood pressure during night hours in more than ½ of patients with a combined pathology, higher rates of systolic and diastolic blood pressure in both day and night. At the same time, patients with comorbidity had lower rates of BP elevation. For patients with bronchial asthma with arterial hypertension, pronounced dysfunction of external respiration and low quality of life indicators are also characteristic. At the same time, with an increase in the degree of bronchial obstruction, a more significant decrease in the quality of life indicators was observed. All the above indicates the presence in patients with combined pathology of BA with PH a number of clinical and functional features that must be considered when conducting therapeutic interventions.

Inference.

In patients BA with PH, a more pronounced decrease in LQ in physical condition and satisfaction with treatment was observed, and in patients BA II-III, the degree of severity with PH in emotional state and professional fitness (p <0.05) must be taken into account during rehabilitation.

2. The basis for the onset and development of pulmonary hypertension in patients with asthma II-III is adaptive, and in patients with hypertension disadaptive states in the sphere of psycho-vegetative regulation factors, which indicates a decrease in VCL and prolonged hypoxia of the brain.

3. Treatment with amlodipine and EB against the background of standard therapy helps to improve disorders of the psycho-vegetative state of patients with PH, which positively correlates with the state of VCL, pulmonary arterial hypertension and remodeling of the RV of the heart.

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