

# ADAPTATION POSSIBILITIES OF THE CARDIOSPIRATORY SYSTEM OF PATIENTS WITH BRONCHIAL ASTHMA DEPENDING ON THE DEGREE OF SEVERE AND CONTROL OF CONDITION

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**Abstract. The aim of the study.** to study the adaptive capabilities of the cardiorespiratory system and their long-term dynamics in patients with bronchial asthma depending on the severity and control of the disease.

**Materials and methods of research.** The study involved 480 patients with asthma, with mild to severe disease and controlled, uncontrolled and partially controlled course of the disease. Drug programs were used on the principle of «step-by-step approach» to pharmacotherapy for the treatment of patients with bronchial asthma in accordance with the severity of the disease. To determine the controllability of the disease, all patients were previously interviewed using the Asthma Control Test (ACT) and the Asthma Control Questionnaire (ACQ). Maximum oxygen consumption was determined for all subjects, the adaptive potential of the cardiovascular system was calculated according to the Baevsky formula, adaptive reserve of the cardiorespiratory system and physical health index over a ten-year interval (five and ten years). Statistical processing of the material was performed using licensed software products included in the Microsoft Office Professional 2000 package, license Russian Academic OPEN NO LEVEL № 17016297 in Excel.

**Conclusions.** The adaptive capacity of the cardiorespiratory system in patients with bronchial asthma depends on the severity, and the progression of negative dynamics over time — on the controllability of the disease, as evidenced by high correlations between the value of adaptation potential ( $\tau = 0.72$ ,  $p < 0.001$  and  $\tau = 0.61$ ,  $p < 0.001$ ), maximum oxygen consumption ( $\tau = -0.74$ ,  $p < 0.023$ ,  $\tau = -0.69$ ,  $p < 0.037$ ), functional reserve of the respiratory system ( $\tau = 0.65$ ,  $p < 0.028$  and  $\tau = 0.73$ ,  $p < 0.005$ ), physical health ( $\tau = 0.59$ ,  $p < 0.008$ ,  $\tau = 0.64$ ,  $p < 0.021$ ). Testing of the adaptive capacity of the cardiorespiratory system in patients with asthma should be routine, especially in severe or uncontrolled course of the disease. The technique is easy to perform, does not require additional financial costs and training of medical staff, allows you to quickly diagnose the development and progression of maladaptation processes even in the absence of clinical manifestations of the disease, control physical activity, vital signs and treatment effectiveness.

**Key words:** bronchial asthma, controllability, cardiorespiratory system.