TREATMENT TECHNOLOGY FOR PATIENTS WITH BRONCHIAL ASTHMA WHO HAVE HAD COVID-19

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Abstract. The coronavirus disease (COVID-19) pandemic has not only caused millions of deaths, but has also left tens of millions patients with persistent symptoms. These long-term consequences of COVID-19 pose a significant burden on human health, health care systems, and economies worldwide, given the high infection rate of SARS-CoV-2. Therefore, rehabilitation measures and strategies are needed to counter the consequences of COVID-19. This question is relevant for the management of patients with bronchial asthma (BA), who experience loss of control and exacerbation of asthma due to COVID-19.

The aim: to develop a technology for treatment of BA patients who have had COVID-19 and determine its effectiveness.

Materials and methods. 30 BA patients with post-COVID syndrome (21 men and 9 women) aged 18 to 80, average age (37.8 ± 2.5) years, took part in the study. The main group consisted of 15 patients (10 men, 5 women, average age (39.7 ± 4.2) years), the control group included 15 patients (11 men, 4 women, average age (35.9 ± 2.8) years). For the main group patients, in addition to asthma therapy (a combination of inhaled corticosteroid + formoterol as maintenance therapy and to relieve symptoms), the drug erdosteine in a dose of 300 mg twice a day and breathing exercises to relieve symptoms of shortness of breath and cough, as well as other related COVID-19 health disorders (according to guidance for patients with COVID-19, National Health Service, England) within 2 months were prescribed. The control group patients were treated with a combination of inhaled corticosteroid + formoterol as maintenance therapy and for symptom relief for 2 months. Asthma control before and after treatment was determined by the Asthma Control Test (ACT) and Asthma Control Questionnaire (ACQ-7). All patients underwent spirometry and a 6-minute walk test before and after treatment.

Results. After 2 months of treatment, patients in both groups had improved asthma symptoms control according to ACT and ACQ-7, with patients in the main group having a minimally clinically important difference in scores, which was not achieved in the control group. Under the influence of treatment, positive dynamics of lung function indicators were noted, and in patients of the main group, the vital and forced vital capacities, the forced expiratory volume in the first second, the FEV_1/FVC ratio, and the patency of the large and medium airways increased with a statistically significant difference in the indicators. In the patients of the main group, there was an improvement in all indicators of the exercise tolerance in the 6-minute walk test.

Conclusions. The use of erdosteine and breathing exercises for the treatment of patients with BA who have had COVID-19 allows to achieve an improvement in asthma control from (11.1 ± 0.8) to (16.6 ± 0.6) points according to the ACT questionnaire and from (3.8 ± 0.2) to (2.4 ± 0.2) points according to the ACQ-7 questionnaire, $p < 0.05$; improvement of the lung function and all indicators of exercise tolerance enhancement. The clinical effectiveness of the proposed treatment is 99.3 %.

Key words: bronchial asthma, asthma control, COVID-19, post-COVID-19 period, erdostein, rehabilitation.