COMPARATIVE EFFICIENCY OF ACETYLCALCYTEIN APPLICATION IN ORAL AND INHALATION FORM WITH THE HELP OF NEBULAISER IN PATIENTS WITH COPD

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Abstract

Aims. To determine the efficacy and safety of nebulized inhalation of acetylcysteine compared with its oral administration in patients with chronic obstructive pulmonary disease (COPD).

Materials and methods. The study included 31 patients, two groups of patients were formed. In the first of them (n = 13) patients took acetylcysteine orally, in the second (n = 18) — by inhalation with a nebulizer for 10 days with stable basic therapy. To assess the severity of symptoms and the effectiveness of treatment, data from validated questionnaires (CAT, mMRC, CCQ) were analyzed, the severity of day and night cough was assessed on a scale, spirometry and sputum analysis were performed.

Results. Patients who received acetylcysteine orally showed a significant improvement in the condition according to the results of the CCQ questionnaire (a decrease by 15.1 %, $p < 0.04$). According to other methods of diagnostic no significant dynamics was obtained. In the group of patients who received acetylcysteine inhalation, there were significant positive changes in the results of the CAT questionnaire (a decrease by 16.8 % compared with the initial level) and a decrease in the symptoms of nocturnal cough (by 36.4 %). In this case, the score according to mMRC, CCQ, the symptoms of daily cough did not change significantly. A decrease in the manifestations of bronchial obstruction was recorded — an increase in the mean forced expiratory volume in one second (FEV_1) value by 10 % ($p = 0.01$) and decrease of leukocyte count in sputum was obtained. No significant changes of FEV_1 after first oral or nebulized exposure of acetylcysteine were obtained.

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Conclusions. Inhalation use of acetylcysteine for 10 days has a wider range of effects on the manifestations of the disease compared with oral administration of the drug in the same dose in patients with COPD without exacerbation but in the presence of sputum. Tolerability of acetylcysteine in both cases of its use is satisfactory, side effects develop rarely.

Key words: COPD, acetylcysteine, nebulizer therapy, mucolytics.

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