05.01 - Airway pharmacology and treatment

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Oral and inhalation usage of acetylcysteine in patients with COPD

COPD - management

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Background: Some patients with COPD in a stable phase and with a baseline therapy continue to complain of shortness of breath and cough with sputum production difficulty. These patients additionally take mucolytics such as acetylcysteine.

Aims and objectives. To determine the efficacy and safety of the nebulized therapy of acetylcysteine compared to its oral administration in patients with COPD.

Methods. The study included 31 patients with COPD without exacerbation. They were divided into 2 groups. The first group (n=13) took 600 mg/day acetylcysteine orally, and the second one (n=18) inhaled 600 mg/day acetylcysteine from a nebulizer for 10 days receiving the unchanged baseline therapy. Data from questionnaires (CAT, mMRC, CCQ) were evaluated, day and night cough symptoms were assessed on a scale, as well as spirometry and sputum analysis were done.

Results. The first group showed an improvement in their condition based on CCQ score (decrease by 15.1%, $p<0.04$). In other investigations significant dynamics was not registered. There were significant positive changes in CAT results (decrease by 16.8% compared to initial data), reduction in the night cough symptoms (by 36.4%) in the group of patients inhaling acetylcysteine. CCQ, mMRC and daytime cough symptoms values did not change significantly. The increase in FEV1 at 10% ($p=0.01$) and the decrease in the number of leukocytes in sputum were also registered in second group. Side effects developed infrequently.

Conclusions. In patients with COPD who have symptoms in a stable phase, the inhalation of acetylcysteine has a greater effect on the disease manifestation comparing with the oral administration in the same daily dose; the tolerability of treatment is satisfactory.