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MARKERS OF INFLAMMATION AND BRONCHIAL
HYPERRESPONSIVENESS IN SCHOOL-AGE CHILDREN WITH SEVERE
EXERCISE-INDUCED ASTHMA
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At least 10-12% of patients with bronchial asthma are suffering from a severe form of the disease. Severe asthma in children is characterized by heterogeneity that includes airway narrowing after exercise, known as exercise-induced bronchospasm. The objective of the paper was to analyze markers of inflammation and bronchial hyperresponsiveness in school-age children, having severe exercise-induced asthma. We examined 15 schoolchildren suffering from severe asthma, which had exercise-induced asthma, and 31 children suffering from severe type of the disease, with no signs of exercise-induced bronchoconstriction.

Airway hyperresponsiveness was assessed according to the results of bronchoprovocation testing with histamine. The type of bronchial inflammation was determined by the results of sputum cytology obtained by induction.

In assessing the reliability of difference between the rates, we did Student's t-test. The assessment of event implementation risk was conducted taking into account the reliability of relative risk index, and attribute risk and odds ratios. Greater proportion of schoolchildren with exercise-induced asthma (60,1%) was with symptoms of mucospin hypereosinophilia (average content of eosinophilic granulocytes over 8%) than that of the comparison group (17,6%, $r\phi < 0,05$). The fact that the bronchi of the schoolchildren with severe exercise-induced bronchial asthma are hyperresponsive (PC20H were $0,33 \pm 0,13$ mg/ml vs $0,71 \pm 0,20$ mg/ml, $P < 0,05$) is confirmed by a significantly greater proportion of patients with severe airway hypersensitivity to histamine (PC20H $< 0,5$ mg/ml) among the children of the first clinical group (87,5%) than those without phenomena of exercise-induced constriction (54,5%, $r\phi > 0,05$).

The indices of bronchial inflammation in children with severe exercise-induced asthma are characterized by hypereosinophilia of induced sputum. We have established reliably more pronounced airway hypersensitivity to histamine in the schoolchildren suffering from severe exercise-induced bronchial asthma.