NASAL PERMEABILITY IN INFLAMMATORY RHINOSINUSAL DISEASES IN CHILDREN

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Introduction: Rhinosinusal inflammatory diseases constitute a current problem of contemporary rhinology. Rhinitis, sinusitis seriously affect the physiological functions of the nose, including the most important of them, the respiratory function. However, in the specialized literature nasal breathing and its role in achieving the physiological status of the nose is insufficiently elucidated.
Material and methods: Under our supervision were 80 children with rhinosinusal pathology aged between 6 and 15 years, who were divided into two groups. Group 1 included 40 children (22 boys and 18 girls) with chronic hypertrophic rhinitis, and group 2 consisted of 40 patients (21 boys and 19 girls) with chronic rhinosinusitis. At the same time, 30 healthy children (17 boys and 13 girls) formed the control group.
In order to assess nasal permeability, we used acoustic rhinometry, a non-invasive and highly accurate method, which reveals conclusive data about the volume and geometry of the nasal fossae by measuring the minimum cross-sectional area.
Results: The results obtained showed that nasal permeability was affected in both groups of patients, slightly prevalent in patients with chronic hypertrophic rhinitis where MCSA (minimum cross-sectional area) values were MCSA-1 = 0.215 ± 0.012, and MCSA-2 = 0.325 ± 0.041. At the same time, in patients with chronic rhinosinusitis the MCSA-1 values were 0.241 ± 0.018, and MCSA-2 = 0.385 ± 0.067. In the control group, the MCSA-1 and MCSA-2 values were significantly higher, 0.410 ± 0.055 and 0.520 ± 0.050, respectively. These differences are statistically significant and indicate a decrease in nasal permeability in rhinosinusitis inflammations.
Conclusions: Thus, nasal permeability, assessed by acoustic rhinometry, was statistically reduced in inflammatory rhinological diseases, both in chronic sinusitis and in hypertrophic rhinitis. At the same time, in patients with chronic hypertrophic rhinitis, the indices of the minimum transverse areas were lower, which means a more pronounced impairment in these patients. In both study groups, nasal permeability was reduced compared to healthy children.
Keywords: chronic sinusitis, chronic hypertrophic rhinitis, nasal permeability, acoustic rhinometry.