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Endonasal infrared thermometry for the diagnosis of allergic inflammation of the nasal mucosa in patients with bronchial asthma

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Abstract

© 2017, Nizhny Novgorod State Medical Academy. All rights reserved. Bronchial asthma (BA) is often associated with chronic inflammatory processes in the nasal mucosa; these processes give rise to allergic rhinitis, chronic rhinosinusitis, adenoiditis, and polypous rhinosinusitis. Due to their multiple symptoms, these diseases of the upper respiratory tract, especially allergic rhinitis, are often difficult to verify in patients with asthma. The aim of the study was to evaluate the diagnostic potential of endonasal IR thermometry in BA patients suspected of allergic rhinitis. Materials and Methods. Fifty children diagnosed with both BA and allergic rhinitis and 15 healthy children, matched by gender and age, participated in the study. The endonasal temperature determined with contactless IR thermometry was confronted with the symptoms of allergic rhinitis and sinusitis assessed with the TNSS and SNOT-20 questionnaires. The results were compared with the severity of nasal obstruction as determined through the anterior active rhinomanometry. Results. The nasal temperature in patients with asthma and allergic rhinitis was 33.77 [33.37; 34.17]°C, which was significantly lower than that in the group of healthy children (34.98 [34.57; 35.39] °C; p=0.0006); the body temperature did not differ between the groups (36.55 [36.45; 36.65] and 36.58 [36.40; 36.76] °C, respectively; p=0.5). We found a negative correlation between the values of nasal temperature and the sinusitis symptom scores in patients with BA and allergic rhinitis (R=–0.32; p=0.02). Conclusion. Patients with both BA and allergic rhinitis showed a decreased endonasal temperature in comparison with healthy children; the endonasal temperature can serve an indicator of allergic inflammation of the nasal mucosa.

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Keywords

Allergic rhinitis, Bronchial asthma, Endonasal infrared thermometry

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