RESPIRATORY MECHANICS IN PATIENTS WITH OBSTRUCTIVE LUNG DISEASES

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Abstract

The *aim* of the study was to evaluate a respiratory mechanics in patients with asthma (A) and chronic obstructive pulmonary disease (COPD) overlap (ACO).

Material and methods. The patients with A (n = 34), COPD (n = 17) and ACO (n = 140) and a group of healthy individuals (n = 35) were enrolled into the study. Spirometry and impulse oscillometry (Jaeger Master Screen, Erich Jaeger) were performed.

Results. The healthy subjects demonstrated decreased values of respiratory resistance at all frequencies, small airways resistance, low frequency reactance area and resonance frequency. In A patients, in comparison with healthy individuals, the resistance values at all frequencies were higher, as well as the overall respiratory impedance. In patients with COPD and ACO, not only respiratory resistances, but also the low frequency reactance area and resonance frequency were significantly higher, indicating more distinct differences in the distal respiratory mechanics. When comparing the indices in the COPD and ACO groups, the respiratory resistance at the frequency of 20 Hz was significantly higher in patients with ACO, confirming more pronounced obstructive disorders at the level of proximal bronchi.

We compared the impulse oscillometry parameters in patients with ACO, in which the first established diagnosis was COPD. In these patients the respiratory resistance at all frequencies, the low frequency reactance area and the respiratory impedance were higher. The general resistance of the respiratory tract, respiratory resistance at 5 Hz, the low frequency reactance area were higher in patients with more severe dyspnea (mMRC = 2). In ACO patients the greatest disturbances were observed in COPD clinical groups B and D, as well as in overweight patients.

Conclusions. ACO is characterized by significant disturbances of respiratory mechanics, which are more pronounced in groups B and D COPD patients and in patients with overweight.

Key words: asthma-COPD overlap, respiratory mechanics, impulse oscillometry.

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