Inflammatory markers in induced sputum of patients with allergic rhinitis in relation to exposure to pollen allergens

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We intended to verify hypothesis that eosinophilic inflammation in lower airways during the pollen season is present not only in patients with asthma but also in patients with seasonal rhinitis without asthma symptoms.

Patients: 1st allergic rhinitis with seasonal asthma without inhaled corticosteroids, 2nd allergic rhinitis without asthma symptoms, 3rd controls.

Sputum was induced and processed by Pneumacine. We evaluated changes in cell counts (eosinophils, macrophages, neutrophils) and in humoral inflammatory marker (ECP). Cell count was evaluated by means of Hemacon colorimetric (DCO) and immunocytochemistry (ICC). ECP is immunostained by chemiluminescence.

Sputum ECP levels in patients with rhinitis during the pollen season were significantly elevated (\( p < 0.014 \)) compared to results out of the season. ECP levels in patients with asthma were higher compared to controls, but the differences did not reach statistical significance (\( p = 0.111 \)). Eosinophil counts during the pollen season in asthma and rhinitis were significantly higher (\( p = 0.032 \)) compared to controls. Elevated number of sputum eosinophils in relation to exposure to pollen allergens was seen both in patients with seasonal asthma and patients with rhinitis, but the differences did not reach statistical significance (\( p = 0.161 \)).

Differences in sputum ECP levels and eosinophil counts in patients with seasonal

asthma in relation to pollen season correspond to persistent inflammation of lower airways. Elevated ECP levels (52.4 ng/ml) and eosinophil number (1.3%) in rhinitis patients during the pollen season indicate persistent inflammation in spite of absence of asthma symptoms.

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