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United Airways from Mechanisms to Treatment

1310 - The investigation of inflammatory markers in induced sputum of patients with allergic rhinitis in relation to exposure to pollen allergens

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Background: We intended to verify the hypothesis, that eosinophilic inflammation in the lower airways during the pollen season is present not only in patients with asthma but also in patients with seasonal rhinitis without asthma symptoms.
Method: We examined three groups of subjects. 1st group - subjects with seasonal bronchial asthma without inhaled corticosteroid treatment. 2nd group - subjects with pollen allergic rhinitis without asthma symptoms. 3rd group - subjects with negative skin prick test to common aeroallergens, without allergic rhinitis or asthma symptoms (control group). Sputum was induced and processed by the standard method (Pizzichini). We evaluated changes in cell counts (eosinophils, macrophages, neutrophils) and a humoral inflammatory marker (ECP). Cell count was evaluated by means of Hemacolor staining (DCC) and immunocytochemistry (ICC), ECP in supernatant by means of enzymoimmunoassay.
Results: Sputum ECP levels in patients with allergic rhinitis during the pollen season were significantly elevated in comparison to the results before and after the pollen season. Levels of ECP in patients with asthma were higher compared to control group, but the differences among patients with asthma, patients with rhinitis and control group did not reach statistical significance. Eosinophil counts (both by DCC and ICC) during the pollen season in patients with asthma and rhinitis were significantly higher in comparison to controls. The tendency to elevation of numbers of sputum eosinophils in relation to exposure to pollen allergenes was seen both in patients with asthma and patients with rhinitis, but the differences did not reach statistical significance.
Conclusion: Differences in sputum ECP levels and eosinophil counts in patients with asthma before, during and after the pollen season were expected, it corresponds to persistent inflammation of lower airways. Elevated ECP levels and the tendency to elevation of numbers of sputum eosinophils in rhinitis patients during the pollen season indicate persistent inflammation in spite of absence of asthma symptoms.