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A COMPARISON OF CELLULAR AND BIOCHEMICAL MARKERS OF AIRWAY INFLAMMATION IN PATIENTS WITH MILD TO MODERATE ASTHMA AND COPD: AN INDUCED SPUTUM AND BRONCHOALVEOLAR LAVAGE FLUID STUDY

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Although the clinical pictures of asthma and chronic obstructive pulmonary disease (COPD) may be similar, the pathogenesis and the course of these diseases differ in many aspects. **Aim**: The aim of the study was to compare the cellular and biochemical features of airways inflammation in patients with asthma and COPD, based on the induced sputum (IS) and bronchoalveolar lavage fluid (BALF) evaluation. **Material and methods**: The study was conducted in 22 patients with asthma (M/F 12/10, mean age 36 ± 14 yr) and 17 patients with COPD (M/F 10/7, mean age 57 ± 11 yr). The further inclusion criteria were as follow: (1) stable disease, (2) mild to moderate severity of the disease, (3) no anti-inflammatory treatment within at least 3 months prior to inclusion. Each patient underwent sputum induction followed by flexible bronchoscopy and bronchoalveolar lavage (BAL). Total and differential cell counts, as well as the concentration of interleukin-8 (IL-8) (ELISA QuantiGlo, R&D Systems) and myeloperoxidase (MPO) (MPO-EIA kit, OXISResearch, USA) were measured in IS and BALF. **Results:** No significant differences in the total and differential cell counts in IS were found in patients with asthma and COPD. However, COPD patients showed an increased total macrophage count in BALF as compared to asthma patients (14.0×10^6 cells/ml vs. 7.1×10^6 cells/ml; $p<0.05$). The relative eosinophil count in BALF was significantly higher in patients with asthma versus patients with COPD (5% vs. 1%, $p<0.05$). The concentration of IL-8 in IS and BALF was significantly higher in patients with COPD vs. patients with asthma (1015.6 vs. 123.6 pg/ml in IS and 15.2 vs. 3.9 pg/ml in BALF, $p<0.05$). BALF concentration of MPO (but not IS MPO concentration) was significantly higher in patients with COPD as compared to patients with asthma (7 ±3 pg/ml and 4 ±3 pg/ml; $p<0.05$, respectively). **Conclusions:** The analysis of the cellular composition of IS from patients with mild to moderate asthma and COPD does not warrant differentiation of these two conditions.

BALF study reveals more differences in the cellular and biochemical features of airways inflammation in patients with asthma and COPD than IS evaluation.