

**UPREGULATION OF TH1 CYTOKINE PROFILE (IL-12, IL-18) IN
BRONCHOALVEOLAR LAVAGE FLUID OF PATIENTS WITH
HYPERSENSITIVITY PNEUMONITIS**

R. M. Mroz¹, M. Korniluk¹, A. Stasiak-Barmuta², and E. Chyczewska¹

¹Pulmonary Department, ²Department of Pediatric Allergology, Białystok Medical University, Białystok, Poland; robmroz@wp.pl

Hypersensitivity pneumonitis (HP) is an immunologically mediated interstitial lung disease. The abnormalities in the bronchoalveolar lavage (BAL) fluid cell counts are almost always seen in patients with HP according to the stage of the disease. The aim of this prospective study was to find out how the BAL IL-12 and IL-18 levels correspond to the inflammatory activity of the disease. We studied 12 patients (3 women, 9 men) of the median age 41.7 years (range 28–52) with HP (Farmer's lung) and 13 normal subjects (6 women, 7 men) of the median age 48 years (range 39–63). IL-12 and IL-18 levels were measured using ELISA kits. The Mann-Whitney U-test and the Spearman correlation test were used for statistical analysis (Statistica 5.0). Spirometry and body plethysmography were performed using Elite DL Medgraphics body box. There were no significant lung function differences between both groups. HP group was characterized by significantly higher median range of: plasma ACE concentration (55 vs. 34 U/L, $p=0.0016$), lymphocyte percentage (57% vs. 14%, $p<0.001$), CD8+ cells (31.5% vs. 17%, $p<0.001$) and lower CD4/CD8 ratio (1.2 vs. 1.99, $p<0.0001$). The IL-12 BALF levels were significantly higher in HP patients than in healthy subjects (3.94 pg/mL vs. 3.2 pg/mL, $p = 0.003$). In addition, IL-18 levels were significantly increased in BALF samples (14.2 pg/mL vs. 6.15 pg/mL, $p < 0.0001$). Correlations within HP group showed strong correlation between IL-12 BAL and percentage of Lymphocytes ($R=0.678$, $p=0.015$), and negative correlation with percentage of Macrophages ($R=-0.6439$, $p=0.024$). There were no such correlations in regards to IL-18 BAL levels. We conclude that upregulation of Th1 cell cytokine profile may play a significant role in pathogenesis of HP. Studies based on large group of patients are needed to further establish the precise role of both cytokines in disease progression and its response to treatment.