

**INDUCED SPUTUM IN PATIENTS WITH INTERSTITIAL LUNG DISEASES:
A NON-INVASIVE SURROGATE FOR CERTAIN PARAMETERS IN
BRONCHOALVEOLAR LAVAGE FLUID**

M. Sobiecka, J. Kuś, U. Demkow, M. Filewska, A. Józwik, P. Radwan-Rohrenscheff, and J. Chorostowska-Wynimko

National Research Institute of Tuberculosis and Lung Diseases, Warsaw, Poland;

Background: Bronchoalveolar lavage is a standard tool for the assessment of patients with ILD. However, it is a relatively invasive procedure. Induced sputum (IS) has been proposed as a useful non-invasive method for the assessment of airway and parenchymal diseases. The aim of this study was to evaluate IS cellular composition and T-lymphocyte subpopulations and to compare them with those of BALF in patients with ILD. **Material and methods:** We studied prospectively newly diagnosed 59 patients with ILD: sarcoidosis (SA n=36), hypersensitivity pneumonitis (HP n=16) and idiopathic pulmonary fibrosis (IPF n=7). IS was performed at least 7 days after BAL by inhaling a 5% saline solution for 4 periods of 5 minutes by the selecting plugs method. 400 cells were differential counted in May-Grunewald-Giemsa stained cytopreps and T-lymphocyte subsets were analyzed by FACS. **Results:** 33 patients were able to produce an adequate sputum sample (SA-15, HP-11, IPF-7). The percentage of macrophages was significantly lower in IS than in BALF in SA group ($p=0.0045$), the percentage of neutrophils was significantly higher in IS than in BALF in SA and HP group (SA: $p=0.0007$, HP: $p=0.006$), and the percentage of lymphocytes was significantly lower in IS than in BALF in patients with HP ($p=0.004$). A significant correlation was found between BALF and IS CD4+, CD8+ T-lymphocyte subpopulations and CD4+/CD8+ ratio both in the whole group ($r=0.80$, $r=0.88$, $r=0.88$, $p<0.0001$, respectively) and in the 3 subgroups (SA, HP and IPF). Moreover, in HP patients there was a significant correlation between BALF and IS lymphocyte ($r=0.64$, $p=0.04$) and the percentage of eosinophils ($r=0.63$, $p=0.04$). **Conclusions:** A strong correlation of the T-lymphocyte subsets in IS and BALF in patients with different ILD may reflect inflammation in both the distal and proximal parts of the lung. IS may therefore be a non-invasive surrogate for certain parameters in BALF in these patients.