European Respiratory Society
Annual Congress 2013

Abstract Number: 2285

Publication Number: P3790

Abstract Group: 1.5. Diffuse Parenchymal Lung Disease

Keyword 1: Sarcoidosis **Keyword 2:** Bronchoalveolar lavage **Keyword 3:** Biomarkers

Title: The impact of smoking on bronchoalveolar lavage fluid (BALf) amyloid A concentration in patients with sarcoidosis

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Body: Serum amyloid A (AA) is known as a marker of inflammation and has been proved to be elevated in patients with sarcoidosis, but data on AA concentration in bronchoalveolar lavage fluid (BALf) in these patients are scarce. Some report higher BALf AA concentrations in patients with sarcoidosis as compared to healthy subjects; moreover, there was a correlation between BALf AA concentration and the stage of the disease. On the other hand, smoking is suspected to have a protective role on the course of sarcoidosis, however this remains a point of controversy. The aim of our study was to evaluate BALf AA in patients with sarcoidosis in relation to their smoking history. Material and methods. Forty one patients with sarcoidosis (mean age 42 yrs, range 25-74 yrs) were enrolled. There were 31 never smokers and 10 smokers (two of them active) in the group; the median number of packyears was 8 (range 1-30). BALf AA concentration was assessed by ELISA, (Human SAA ELISA, IBL International, Germany). Results.The median BALf AA concentration in the whole group was 104 µg/ml (IQR 78-147 µg/ml) and a statistically significant difference between smokers and never-smokers was found - 88 µg/ml (IQR 89-179 µg/ml) vs. 128.5 µg/ml (IQR 67-130 µg/ml), respectively, p = 0.026. No correlations between BALf AA and the BALf cellular composition or the clinical parameters of the disease were found. Conclusions. BALF AA seems to be a promising biomarker sarcoidosis. The lower BALf AA concentration in smokers warrants further studies and contributes to the discussion on the role of smoking in this disease.