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Room G106-107 Session 492 08:30-10:30

PN Poster Discussion : Bronchoalveolar lavage and biomarkers in diffuse parenchymal lung disease

P4772

Detection of differences in volatile organic compounds (VOCs) by ion mobility spectrometry (IMS) of exhaled breath in patients with interstitial lung diseases (ILDs) compared to healthy controls (HC)

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Introduction

ILDs comprise a heterogeneous group of disorders involving the lung parenchyma. Rapid and accurate diagnosis is often complicated by the need of assessing the pathological changes in the lung parenchyma by bronchoalveolar lavage, transbronchial biopsies or open lung biopsy.

Objectives

The aim of our study was to compare the pattern of VOCs in exhaled breath of patients with extrinsic allergic alveolitis (EAA), non-specific interstitial pneumonia (NSIP), idiopathic pulmonary fibrosis (IPF) or sarcoidosis (SA) to healthy controls (HC).

Methods

Detection of VOCs in exhaled breath was performed by ion mobility spectrometry (IMS) coupled to a multi-capillary column (MCC) for pre-separation (MCC-IMS, B&S Analytik). ILD patients with EAA (n = 16), NSIP (n = 28), IPF (n = 26), SA (n = 21) were compared to HC (n = 39).

Results

Overall 215 peaks could be detected in exhaled breath of patients and controls. The EAA and the HC groups differed in 115 peaks. The IPF and the HC groups differed in 26 peaks, the NSIP and HC groups in 63, the SA and HC groups in 3 peaks.

Conclusions

IMS seems to be a promising technique to discriminate different ILDs from healthy controls. However, confirmation of our findings in a larger study population is needed. Also further investigations have to be undertaken, to address the question, whether different ILDs can be distinguished from one another by distinct peak patterns.