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Room E104-106 Session 493 08:30-10:30

PN Poster Discussion : Role of the biomarkers in airway diseases

P4790

Detection of *Pseudomonas aeruginosa* (*Pa*) specific peaks by ion mobility spectrometry (IMS) in exhaled breath of bronchiectasis patients

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Introduction

Colonisation or infection of airways from bronchiectasis patients by *Pa* results in chronic inflammation leading to a progressive destruction of the lung and to a decline in lung function. Therefore more inpatient stays for intravenous antibiotic treatment are necessary and the quality of life in these patients is severely limited.

Objectives

Aim of our study was to detect and compare volatile organic compounds (VOCs) by IMS in exhaled breath of bronchiectasis patients either colonised or infected by *Pa* with healthy non-smoking controls (hc).

Methods

We have analysed VOCs by IMS coupled to a multi-capillary column (MCC) for pre-separation (MCC-IMS, B&S Analytik) in exhaled breath of bronchiectasis patients either colonised (Pac,n=3) or infected (Pai,n=9) by *Pa* (Pac+Pai=Pa+,n=12) compared to hc (n=39) and compared Pac with Pai. In addition we analysed VOCs from *Pa* cultures growing on agar plates.

Results

Using IMS for VOC analysis, differences between Pa+ and hc could be found. Different peaks were detected between Pac and hc, Pai and hc as well as Pac and Pai. VOC analysis from *Pa* cultures revealed two peaks which could be found in the Pa+ bronchiectasis patients.

Conclusions

IMS seems to be a promising method for the non-invasive identification of patients which are colonized or infected with *Pa*. A differentiation between patients colonised or infected with *Pa* seems to be possible, as well. However, confirmation of our findings in a larger study population is needed. The comparison of Pa+ with *Pa* cultures will help to identify peaks caused by the presence of *Pa*. Furthermore, it is required to identify the molecules representing the peaks.