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ERS EUROPEAN
RESPIRATORY
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every breath counts

Hall 2-40 Session 287 12:50-14:40

TP Thematic Poster Session : Biomarkers and other new methods for lung cancer

P2790

Volatile organic compounds in lung cancer patients before and after tumour resection

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Introduction: Ion mobility spectrometry (IMS) is a promising tool in the detection of volatile organic compounds (VOC) even in small amounts. Whether it can contribute to the diagnosis of non-small-cell cancers (NSCLC) has not been adequately evaluated. Breath analysis with IMS is based on the assessment of multiple volatile organic compound (VOC) peaks considered specific for the disease.

Objectives: We studied bronchoscopically obtained VOCs in exhaled breath with an ion mobility spectrometer coupled to a multi capillary column (MCC/IMS) in patients with NSCLC before and after tumour resection in order to find tumour specific VOCs.

Methods: In 8 patients with histologically proven NSCLC, gas samples were aspirated out of the lungs during the diagnostic bronchoscopy and after tumour resection. Gas samples were aspirated via a Teflon tube introduced in the working channel of the bronchoscope and assessed using IMS.

Results: We found 228 common peaks in the measured data. 17 of them were significantly different before and after surgery. 11 peaks could be found with a lower value after tumour resection whereas 6 had a higher value.

Conclusion: While in a former study (Poli D et al. Acta Biomed 2008; 79; Suppl 1: 64-72) using solid-phase micro-extraction no changes after lung cancer resection could have been found, IMS revealed a change in the composition of exhaled breath after surgery in our work. Therefore some VOC levels may have been influenced by the tumour and these VOCs can be detected by MCC/IMS.