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

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

P2788

A new possibility of process monitoring in lung cancer: Volatile organic compounds detected with ion mobility spectrometry to follow the success of the therapeutic process

J. I. Kurth, K. Darwiche, J. I. Baumbach, L. Freitag (Essen, Saarbruecken, Germany)

Introduction:

Lung cancer is mostly detected when it is already too late for surgery. But even when tumours can still be operated, there has not been a simple, convenient way of observing any follow-up parameters such as PSA in prostate cancer. With the non-invasive analysis of Volatile Organic Compounds (VOCs) in exhaled breath using ion mobility spectrometry (IMS) we get the chance to step up in this development.

Objectives:

To develop a non-invasive technique of analysing new tumour markers in order to find a follow up biomarker for an improved monitoring of the treatment of lung cancer patients.

Methods:

Exhaled breath from 33 lung cancer patients was collected and analysed with an IMS device before and after lung surgery. The patients were split into groups according to the tumour histology. Additional conditions such as COPD, medication and former radiation or chemotherapy were also taken into consideration. Furthermore, the results were statistically analysed.

Results:

There were several peaks which showed differences between the pre- and post-surgery groups (such as "EV" normU: 0,062 in squamous cell carcinoma). Further results will be presented in box plots.

Conclusion:

As the results show differences between the peaks before and after surgery, the analysis of VOCs in exhaled air might be a new non-invasive possibility of monitoring the process of lung cancer therapy.

In future research it would be interesting to carry out further investigations on long-term patient observations after defined time intervals.