

Oncology of the chest

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Micro RNAs in lung cancer.

Erika Halasova¹, Tatiana Matakova², Anton Džian², Miroslava Sarlinova², Lukas Plank²

¹Comenius University in Bratislava, Jessenius Faculty of Medicine, Division of Molecular Medicine, Martin, Slovakia

²Comenius University in Bratislava, , Martin, Slovakia

Lung cancer represents a significant global health problem. Although considerable results have been recently achieved in the field of accurate diagnosis of lung cancer, the cancer incidence and mortality rate have remained the same. This fact is because of persistent absence of effective, non-invasive methods of early disease detection at curable stage. It is necessary to introduce a new non-invasive, but sufficiently sensitive method for detecting this disease. Numerous studies indicate that microRNA (miRNAs) can play an important role as reliable biomarkers for cancer detection and prognostic prediction. MicroRNAs represent an emerging class of non-coding RNAs, with significant functions in the post-transcriptional regulation of gene expression. As they regulate also oncogenes and tumour suppressive genes, microRNAs play an important role in the process of malignant transformation.

The aim of this study was to evaluate expression levels of selected candidate microRNAs (miR-221, miR-143, miR-145, miR-133a, miR-146, miR-31 and Let-7 g) in peripheral blood of 95 lung cancer patients and 100 matched healthy control individuals. We used RNU48 as a reference gene. Expression level of miR-143 was significantly higher ($p < 0.0001$), whereas expression level of miR-221 ($p = 0.000253$) was significantly lower in the blood samples of patients with lung cancer in comparison to control group. Based on the capacity of these miRNAs to discriminate patient's and control samples, we suggest, that after further validation these microRNAs could serve as potential non-invasive diagnostic biomarkers in lung cancer.

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