

Fibulin-3 in plasma and pleural effusion as a biomarker of pleural mesothelioma

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BACKGROUND. Patients with asbestos related pleural involvement may develop mesothelioma with a long latency period. According to reports, with the help of fibulin-3 in plasma and pleural effusion, it is possible to distinguish patients with mesothelioma (even in the initial stage of the disease) from those with benign or malignant pleural effusion of other etiology. The purpose of our study was to examine the potential of plasma and pleural fibulin-3 as a biomarker of mesothelioma.

METHODS. The prospective study included patients with exudative pleural effusion who underwent thoracoscopy between January 2013 and October 2014 at University Clinic Golnik. At the time of thoracoscopy blood and pleural effusion samples were obtained, in which the concentration of fibulin-3 was determined by enzyme-linked immunosorbent assay (USCN Life Science).

CONCLUSION. Lower values of serum fibulin-3 in benign asbestos related pleural involvement compared to mesothelioma suggest the possible role of this biomarker in guiding the diagnostic decisions in these patients and enabling the recognition of mesothelioma in early stages.

RESULTS.

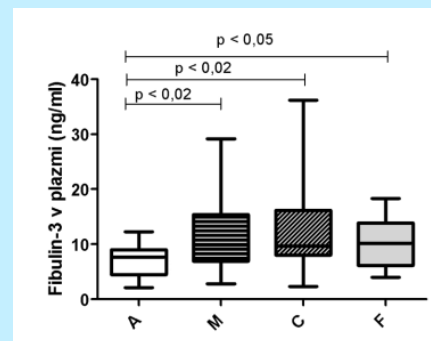


Figure 1: Plasma fibulin-3 values by group. A - benign pleural involvement associated with asbestos-related pleural effusion, M - mesothelioma, C - carcinosis, F - benign pleural effusion of other aetiologies.

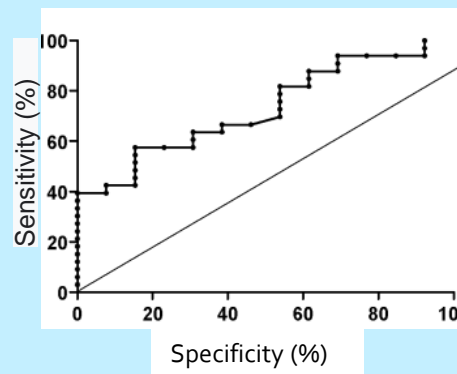


Figure 2: Receiver-operating characteristic (ROC) curve for fibulin-3 in plasma at differentiating groups M (mesothelioma) and A (benign asbestos-related pleural involvement).

We found significantly lower serum fibulin levels in patients with benign asbestos related pleural involvement compared to patients with pleural mesothelioma ($p < 0.02$), carcinosis ($p < 0.03$) and other benign diseases ($p < 0.05$).

Despite the trend of lower pleural fibulin values in benign diseases compared to malignant ones, the difference was not statistically significant.