

## **Oncology of the chest**

### **The biological and clinical significance of alpha-1 antitrypsin in non-small cell lung cancer**

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**Objective:** Lung cancer progression is generally associated with extensive tissue remodeling to provide a suitable environment for tumor growth, invasion and metastasis, and it is known that proteinases expressed by cancer cells and/or host cells play a key role in this process. However, the biological role of alpha-1 antitrypsin (AAT) in lung carcinogenesis is not clear.

**Methods:** serum and FFPE tissue samples from 206 NSCLC patients (stages I-IV) were analyzed for AAT and CRP blood concentration, AAT phenotype and AAT protein expression in tumor cells. Reference groups consisted of 183 PiMM COPD patients and 23 PiMM patients with benign lung nodules (positive chest radiograph).

**Results:** only 10/206 (5%) NSCLC patients carried deficient AAT allele (mean AAT blood concentration 150 mg/dl). In the PiMM NSCLC patients mean AAT serum concentration (195.5 mg/dl) was significantly higher than in the PiMM COPD group (171 mg/dl) and the patients with benign lung nodules (154 mg/dl; p

**Conclusions:** our results evidenced that local production of AAT by tumor cells significantly contribute to high levels of AAT in blood of NSCLC patients reflecting an active role of this anti-protease in lung carcinogenesis. The study is on-going.