

**COULD THE CONCENTRATION OF MATRIX METALLOPROTEINASE-9 IN THE SERUM OF COPD PATIENTS RELATE TO THE BASIC DISEASE PROGRESS AND A DEGREE OF AIRWAY OBSTRUCTION?**

B. Brajer<sup>1</sup>, H. Batura-Gabryel<sup>1</sup>, A. Nowicka<sup>1</sup>, B. Kuźnar-Kamińska<sup>1</sup>, and A. Szczepanik<sup>2</sup>

<sup>1</sup>Department of Pulmonary Diseases, University of Medical Sciences, Poznań Poland; <sup>2</sup>ICU of Department of Cardiology University of Medical Sciences, Poznań, Poland; [bebab@wp.pl](mailto:bebab@wp.pl)

**Background:** COPD is a chronic inflammatory process leading to irreversible airway obstruction. The previous studies showed that the increased level of matrix metalloproteinases (MMPs), especially MMP-9 in sputum and BAL (bronchoalveolar lavage) as a sign of local inflammation in COPD patients. To-date only some studies have estimated MMP-9 serum concentration in COPD patients which correlated with systemic inflammatory process. **Aims:** 1. The estimation and comparison of sera MMP-9 concentration in COPD patients and a healthy control group. 2. The evaluation of correlation between MMP-9 concentration and a degree of airway obstruction in COPD patients. **Materials and methods:** 23 smokers with COPD (17 male and 6 female), diagnosed on the basis of the GOLD 2007 criteria (mean age  $59.6 \pm 9.3$  yr) and 23 healthy controls (17 male and 6 female) (mean age  $55.2 \pm 9.1$  yr) were enrolled into the study. In both groups spirometry tests were performed using a Jaeger system. The MMP-9 concentration in the sera taken from both groups was studied using the enzyme-linked immunosorbent assay (ELISA) technique. **Results:** Patients with COPD had increased levels of serum MMP-9 compared with the control group ( $p=0.0005$ ). In the COPD group, MMP-9 concentrations were negatively correlated with FEV1 ( $p=0.01$ ) and with FEV1/FVC ratio ( $p=0.0002$ ). **Conclusions:** The results suggest that MMP-9 plays an important role in the systemic inflammatory process in COPD. A higher serum concentration of MMP-9 is connected with the degree of airway obstruction and progression of the disease.