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**Title:** Cytokines and MMP 9 level in serum and induced sputum of patients with suspicion of occupational COPD

Marta 509 Wiszniewska martaz@imp.lodz.pl MD <sup>1</sup>, Aneta 510 Kleniewska klen.an@interia.pl MD <sup>1</sup>, Ewa 511 Nowakowska-Swirta enow@imp.lodz.pl <sup>1</sup>, Diana 512 Tymoszuk diana.tymoszuk@gmail.com MD <sup>1</sup>, Cezary 513 Palczynski cpalczyn@imp.lodz.pl MD <sup>1</sup> and Jolanta 514 Walusiak-Skorupa jolantaw@imp.lodz.pl MD <sup>1</sup>.

<sup>1</sup> Department of Occupational Diseases, Institute of Occupational Medicine, Lodz, Poland, 91-348 .

**Body:** Background: Chronic obstructive pulmonary disease (COPD) may be work-related. It is estimated that working in exposure to dust and irritant gases is responsible for 10 to 20% cases of COPD. The aim of the study was to evaluate the usefulness of determination of cytokines and MMP 9 in occupational COPD. Material and methods: The study group included 36 patients (10 with suspicion of occupational COPD, 14 with occupational asthma and 12 healthy subjects). They underwent clinical examination, spirometry, metacholine challenge test, gasometry, induced sputum. Determination of IL-1, IL-6, TNF  $\alpha$ , MMP 9, fibrinogen and C-reactive protein were performed in all subjects. Results: Analysis of acute-phase proteins concentration and cells proportion in induced sputum did not reveal significant differences. The determinations of cytokines and MMP 9 showed higher concentrations in induced sputum compared to serum tests. Among patients with suspicion of occupational COPD the significantly higher concentrations of IL-1, IL-6, TNF  $\alpha$  and MMP 9 were detected than in control group. Conclusions: The obtained results revealed the increased concentrations of IL-1, IL-6, TNF  $\alpha$  and MMP 9 in induced sputum among COPD subjects compared to control group. The determination of cytokines and MMP 9 in induced sputum was more useful method in comparison to serum analysis. There was no relationship found between acute-phase proteins concentration and cells proportion in induced sputum in the study groups, however further investigations are required.