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Title: Increased levels of osteopontin in sputum supernatant in patients with COPD

Dr. Anastasia 3758 Papaporfyriou dranastp@gmail.com MD ¹, Prof. Dr Stelios 3759 Loukides ssat@hol.gr MD ¹, Dr. Konstantinos 3760 Kostikas ktk@otenet.gr MD ¹, Dr. Georgios 3761 Hillas ghillas70@yahoo.gr MD ², Dr. Davina 3762 Simoes davinasiomos@yahoo.co.uk ³, Dr. Elissavet 3764 Konstantelou eliskonst@yahoo.gr MD ², Prof. Spyros 3765 Papis papiris@otenet.gr MD ¹, Prof. Nikolaos 3766 Koulouris koulunik@med.uoa.gr MD ², Prof. Dr Petros 3767 Bakakos petros44@hotmail.com MD ² and Stelios 3773 Loukides ssat@hol.gr . ¹ 2nd Respiratory Medicine Attiko University Hospital, University of Athens Medical School, Athens, Greece ; ² 1st Respiratory Medicine -Sotiria Chest Hospital, University of Athens Medical School, Athens, Greece and ³ G.P Livanos and M. Simou Laboratories, " Evangelismos" Hospital, University of Athens, Greece .

Body: Background: Osteopontin (OPN) is a glycoprotein that has been associated with inflammation and fibrosis. Recently published data supports that OPN is up-regulated in surgical lung tissue samples of patients with COPD (Schneider F et al FASEB 2010). Aim: The aim of this study was to determine the levels of OPN in sputum supernatants of patients with COPD, and compare them with healthy subjects and to investigate their possible association with mediators and cells involved in the inflammatory and remodeling process as well as with the extension of emphysema as defined by HRCT. Methods: Seventy-seven patients with COPD and 40 healthy subjects (20 smokers) were studied. All subjects underwent lung function tests, sputum induction for cell count identification and OPN, TGF- β 1, MMP-2, IL-8, LTB4 measurement in sputum supernatants. A HRCT was performed for quantification of emphysema. Measurements and Main results: OPN levels [median (interquartile range) pg/ml] were significantly higher in patients with COPD compared to both healthy smokers and non-smokers [1340 (601-6227) vs 101(77-109) vs 69 (50-89) respectively, $p < 0.001$]. Regression analysis showed a significant association between OPN and sputum neutrophils, IL-8, MMP-2 and the extent of emphysema. The above associations were not observed in healthy subjects. Conclusions: Our results indicate that OPN levels are higher in patients with COPD compared to both smoking and non-smoking healthy subjects. Moreover, the association of OPN with sputum neutrophils, IL-8 and MMP-2 indicates a role of OPN in neutrophilic inflammation while its association with the extent of emphysema shows a role in the pathogenesis of this particular COPD phenotype.