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Title: Osteoprotegerin plasma concentrations is correlate with forced expiratory volume at 1 second (FEV1) in patients with COPD

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Body: Background Chronic obstructive pulmonary disease (COPD) is characterized by chronic airflow limitation and inflammation of the respiratory tract which causes significant morbidity and mortality. Several inflammatory biomarkers have been evaluated in stable and during exacerbations of the disease. Osteoprotegerin (OPG) is a member of the tumor necrosis factor receptor family which reported to be expressed in lung and macrophages. Aim: The objective of the study was to evaluate the serum level of OPG and its corellation with forced expiratory volume at 1 second (FEV1) in patients with COPD and healthy volunteers. Methods The study was conducted between June 2011 and October 2012 in the pulmonology outptient clinic of the medical school in Namik Kemal University. The main inclusion criteria for COPD patients were; age of ≥ 40 years; experience smoking ≥ 10 pack/years and no other clinically significant disease. Control group were selected from non-smoking gender- and age-matched healthy volunteers. Results A total of 70 subjects (47 patients with COPD aged $61,9 \pm 9,5$ years and 23 healthy nonsmokers aged $58,4 \pm 8,7$) were recruited into study. Plasma OPG concentrations with COPD patients ($8,61 \pm 4,4,78$ ng/ml) were higher than healthy control group ($6,29 \pm 1,36$ ng/ml), the difference was found statically significant $p < .05$). On the other hand serum OPG levels were also found negatively correlated with FEV1 significantly ($r = - 0,26$, $p < .05$). Conclusion: Although we have found OPG levels higher in COPD patients and correlated with FEV1. larger and longitudinal studies will be required to use OPG as a biomarker of lung function in COPD patients.