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Title: Neutrophils and the increased risk of cardiovascular events in severe COPD

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Body: Introduction: Inflammatory cells and mediators that may lead to destructive changes in airways, pulmonary vasculature, and lung parenchyma may be associated with an increased risk of cardiovascular events in patients with chronic obstructive pulmonary disease (COPD). Aims: We tested the hypothesis that neutrophils in venous blood have a relationship with serum human atrial natriuretic peptide (hANP) and brachial-ankle pulse wave velocity (baPWV) in COPD. Methods: Five male outpatients with COPD (83±4 age, forced expiratory volume in 1 second (FEV₁) 39.1±7 % predicted), all ex-smokers and undergoing long-term oxygen therapy, were included. Measurements were obtained monthly for the ratio of circulating neutrophil cell count to peripheral white blood cell count (neutrophil%), FEV₁, forced vital capacity (FVC), hANP, and baPWV from July 1, 2011, to December 15, 2011. Results: Neutrophil% (67.4±11.1%) was significantly correlated with BaPWV (2465.8± 652.7cm/s) (rs =0.480702, p<0.05) and hANP (27.6±8.7 pg/ml)(rs=0.471491, p<0.05). However, BaPWV was not correlated with FEV₁ or FVC. Conclusions: This report suggests that neutrophils might be involved in the increased risk of cardiovascular events in severe COPD.