A294 - The underlying inflammatory effect of stable copd (chronic obstructive pulmonary disease) patient on thrombogenicity and clot microstructure.

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Introduction:
COPD patients are known to have marked underlying lung parenchymal damage and associated microvascular changes. They have two to four times increased mortality from ischaemic heart disease and one fourth of patients develop pulmonary embolism particularly during acute exacerbations. The aim of the study was to demonstrate whether these patients’ underlying inflammatory response promotes thrombotic risk using the functional biomarker (fractal dimension-d f). The stable COPD patients were divided in to four groups based on their Forced Expiratory Volume at one second (FEV1); mild (>80%), moderate (50-80%), severe (30-50%) and very severe (<30%).

Methods:
30 stable ambulatory COPD patients with no evidence of infection or any underlying disease process that affect their coagulation system where recruited from the chest clinic of a tertiary teaching hospital. Blood samples were taken to perform fractal dimension (d f), full blood count, platelet aggregometry, PT, aPTT, fibrinogen, d-dimer, CRP and Factor XIII.

Results:
The mean d f in stable COPD patients was 1.690 (normal d f 1.73 ± 0.04). The very severe group had highest d f (1.712 ± 0.023, p=0.103), had significantly low FEV1 (24.20 ± 3.70, p<0.001) and significantly low BMI (21.57 ± 1.49, p<0.001). There were no significant rise in inflammatory markers, standard markers of coagulation and d-dimer.

Conclusion:
Ambulatory COPD patients who has a well-controlled disease have a normal coagulation profile despite having known parenchymal and vasculo-inflammatory disease. The clot microstructure (d f) in these patients are within normal range. The study demonstrates that ambulatory COPD patients are less prone to develop thromboembolism and an increased risk occurs due to an exacerbation, sepsis or increased immobilisation.

References: