Category :**Sepsis: biomarkers**

A220 - ***Relationship between the procalcitonin levels and clot microstructure in acute exacerbation of chronic obstructive pulmonary disease (aecopd)***

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Introduction:

Procalcitonin (PCT) is a widely used biomarker that helps to differentiate systemic inflammatory response syndrome (SIRS) from sepsis. PCT is increasingly used in emergency departments to differentiate between infective with non-infective exacerbation of COPD to guide antibiotic therapy. D_f is a functional biomarker that quantifies the incipient blood clots fibrin network across sepsis spectrum. The aim of the study was to compare the changes in clot microstructure at different levels of PCT fractal dimension-d_f. Patients were divided into five groups based on their PCT levels

Methods:

85 AECOPD patients were recruited from the emergency department of a tertiary teaching hospital. Those patients who did not have PCT levels at admission were excluded. Blood samples were taken to perform fractal dimension (d_f) and PCT. The five groups based on PCT levels and what these levels indicates were <0.05ng/mL (no SIRS), ≥ 0.05 to <0.5ng/mL (SIRS), ≥ 0.5 to <2.0ng/mL (sepsis), ≥ 2.0 to <10ng/mL (severe sepsis) and ≥ 10ng/mL (septic shock)

Results:

The d_f was highest at PCT level of ≥ 0.5 to <2.0ng/mL. There was a significant correlation between d_f at PCT at this level (p=0.04). The d_f was not significantly different between the five groups

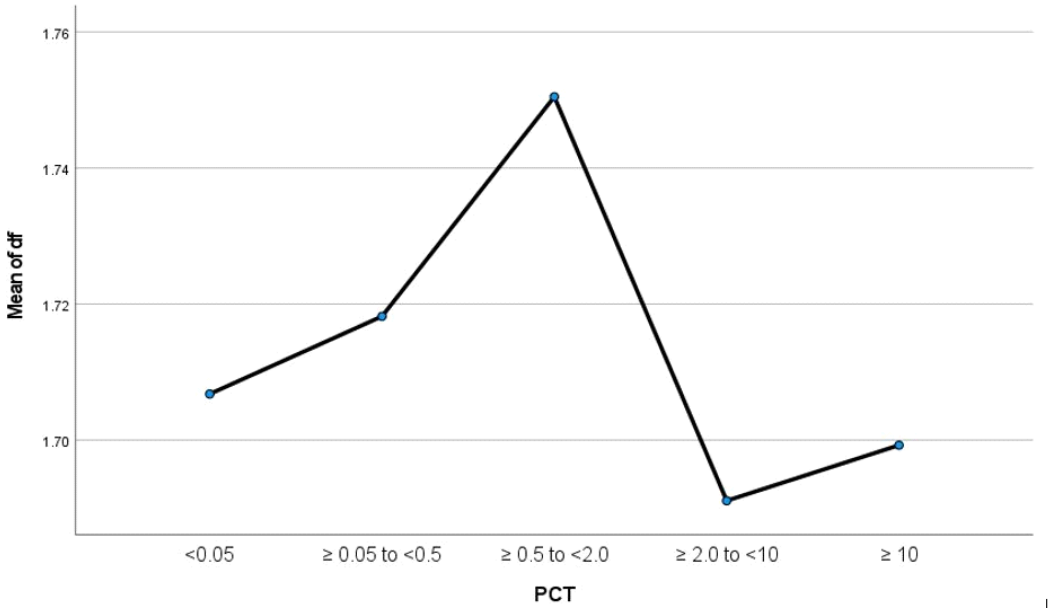
Conclusion:

Our results indicate that COPD patients develop denser and tighter clot microstructure as indicated by high d_f when PCT levels are at a level consistent with sepsis. These changes in d_f were previously demonstrated across sepsis spectrum. This study demonstrates the utility of d_f to quantify clot microstructure across the sepsis spectrum in COPD patients particularly during exacerbations

References:

1. Pantzaris et al.. *J Clin Med Res*. 2018;10(7):545-551. doi:10.14740/jocmr3458w
2. Davies et al. Intensive Care Med 42:1990-1998, 2016

Image :



Df at different levels of PCT in AECOPD patients