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### **Introduction:**

Conventional laboratory coagulation tests based on plasma samples are routinely used to assess for coagulopathy. However, point of care viscoelastic hemostatic assays (VHAs) have been used increasingly in recent years. This study aimed to examine the utilization of VHAs in characterizing the hemostatic pattern of patients with sepsis admitted to the ICU.

### **Methods:**

This was a single-centre, prospective observational study including patients with sepsis admitted to the Adult Intensive Care Unit between December 2020 and July 2021. Simultaneous blood samples were taken for thromboelastography (TEG®), rotational thromboelastometry (ROTEM®) together with conventional laboratory tests, including platelet count, prothrombin time, activated partial thromboplastin time, and fibrinogen. Data from VHAs were compared with conventional laboratory tests with Spearman's correlation coefficient.

### **Results:**

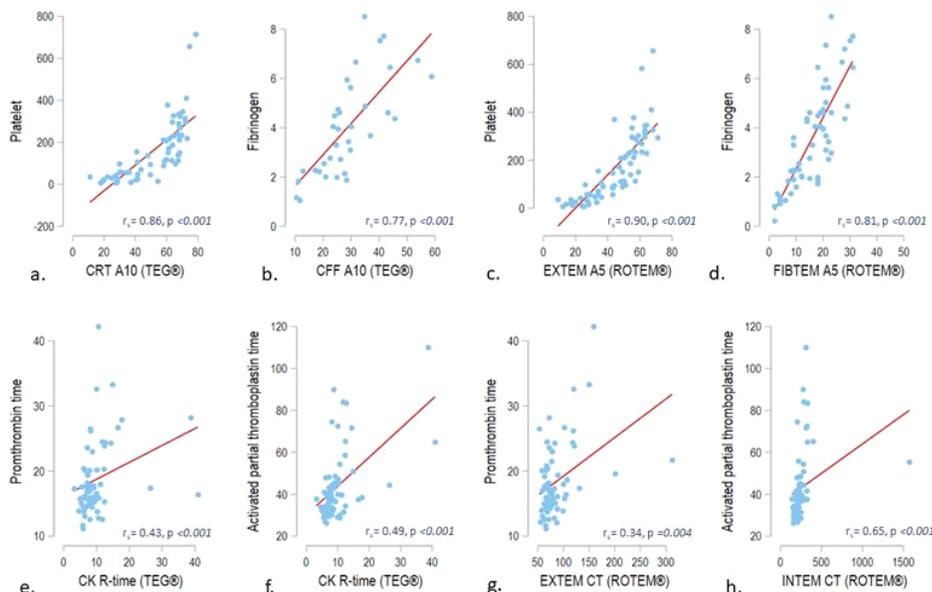
A total of 75 patients were recruited. The median (IQR) age was 67 (57-78) years, and 42 (56.0%) were male. Upon enrolment, they had a mean APACHE IV score of 96±33. Up to 25 (33.3%) patients had documented bacteremia. The median time to results availability was 77.4 minutes (60.3-107.3) for platelet, 106.0 minutes (84.2-167.8) for clotting time, and 120.9 minutes (88.8-179.6) for fibrinogen. It took a median time of 5 minutes (5-10) for ROTEM® and 10 minutes (10-10) for TEG® to achieve interpretable results. Assessment for hyperfibrinolysis took a mean time of 60.0±0.0 minutes for ROTEM® and 50.6±5.8 minutes for TEG®.

There were significant positive correlations between platelet and CRT A10 (correlation coefficient,  $r=0.86$ ), and between fibrinogen and CFF A10 ( $r=0.77$ ) of TEG®. ROTEM® showed similar findings, with EXTEM A5 correlating well with platelet ( $r=0.90$ ), and FIBTEM A5 with fibrinogen ( $r=0.81$ ). The correlation between VHAs and clotting time were less optimal.

### **Conclusion:**

There was good correlation between VHAs and platelet and fibrinogen levels in patients with sepsis, with a much shorter turnaround time.

### **Image :**



*Scatter plots of platelet and fibrinogen with TEG® and ROTEM® parameters showing good correlation (graphs a-d); Prothrombin time (PT) and activated partial thromboplastin time (APTT) with TEG® and ROTEM® parameters showing less optimal correlation (graphs e-h)*