Functional Fibrinogen Versus Fibtem A10 in Evaluating Fibrinogen Level in Obstetric Population: Comparative Study Between Rotem (Delta) and TEG6s Devices

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Summary: Hypofibrinogenemia has been recognized as an early predictor of severe hemorrhage, and it is the most common coagulopathy during PPH. Point of care viscoelastic testing (POCVT) allows for early recognition and management of this important biomarker in bleeding patients. The gold standard laboratory testing for fibrinogen can take up to one-hour, whereas POCVT results are obtained within 10 - 15 minutes. The primary aim of this study was to compare the correlation between laboratory assays and their respective parameters obtained by rotational thromboelastometry (ROTEM) and the thromboelastography (TEG6s).

POCVT fibrinogen parameters for the ROTEM and TEG6s are highly correlated with the Clauss fibrinogen value of standard laboratory tests. POCVT is available much faster than the gold standard which allows for faster goal directed blood product resuscitation: personalizing care, saving time, resources, and blood products, and decreasing the risk of transfusion-related reactions. The next step of this work is to determine the correlation between POCVT values and Clauss fibrinogen in bleeding patients in order to create an algorithm for both the ROTEM and TEG6s for goal directed blood product transfusion during post-partum hemorrhages management.

Table and Figures:

Value, n	Mean (std)
Fibrinogen, 35	442 (104)
FIBTEM A10 (ROTEM), 48	21.5 (5.45)
CFF-MA (TEG6s),48	27.6 (6.98)

Table 1: The sample is made up of 48 women and their respective FIBTEM A10 and CFF-MA values. 35 had analogous Clauss fibrinogen
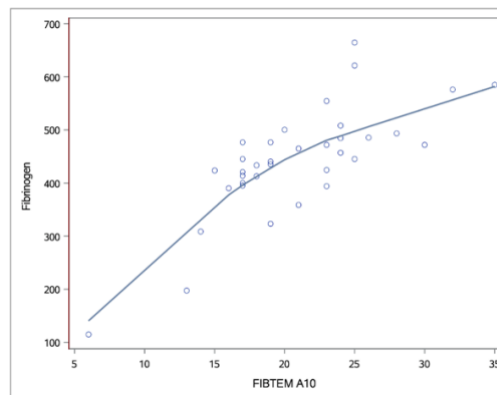

Figure 1: FIBTEM A10 (ROTEM) vs fibrinogen (gold standard) have a high Pearson Correlation Coefficient of r = 0.76; p <.0001.
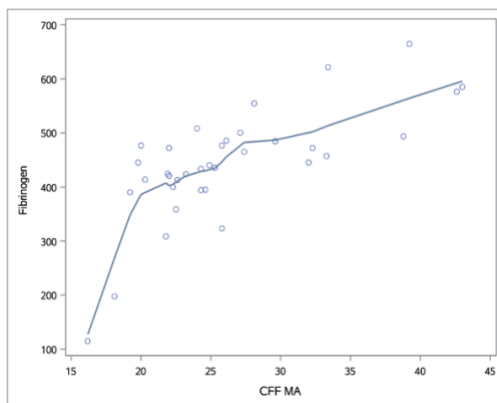

Figure 2: CFF MA (new TEG6s) vs fibrinogen (gold standard) have a high Pearson Correlation Coefficient of r = 0.72, p <.0001.
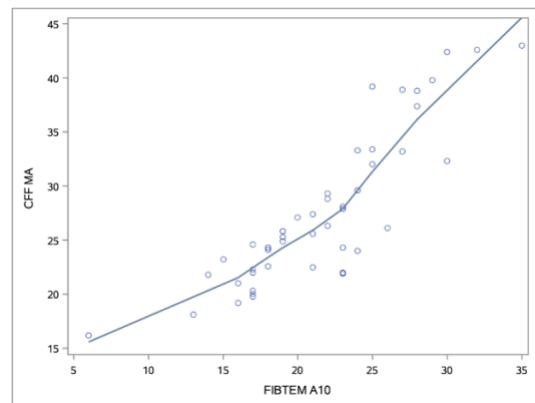

Figure 3: TEG 6s (newest POCVT) to ROTEM (current) have a high Pearson Correlation Coefficient of r = 0.88, p<.0001.