



Strong Linear Correlation Between Functional Fibrinogen by Thromboelastography 6s and Fibrinogen Level by Clauss Method in Pregnant Women

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Background

Fibrinogen < 200 mg/dL: 100% positive predictive value for PPH progressing to severe hemorrhage requiring transfusion

- Measured using Clauss method

TEG: functional fibrinogen level (FLEV)

- Faster result
- Different values than Clauss method, but linear correlation seen (cardiac and trauma)

Defining a correlation between TEG 6s FLEV and fibrinogen using Clauss method in obstetric population can help quickly identify patients at risk for progression to severe hemorrhage

Methods

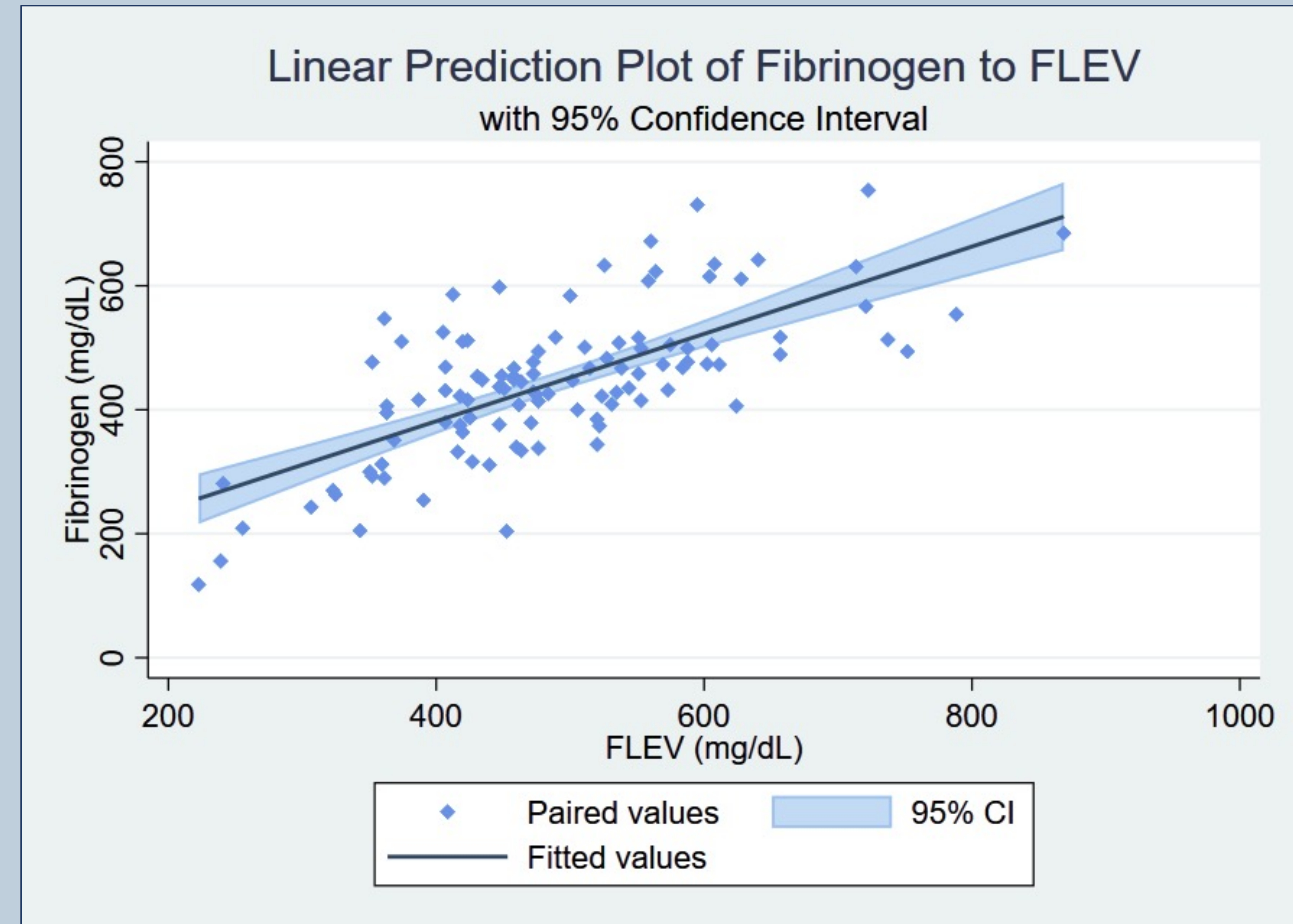
- Retrospective review of TEG records
- Third trimester pregnancy
- Fibrinogen level and FLEV drawn at the same time
- Fibrinogen level measured by Clauss method
- FLEV measured on TEG 6s analyzer
- Data tested for normality using histograms, QQ plots and Shapiro-Wilk tests
- Given normal distribution -> paired t-test
- Pearson correlation

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Results

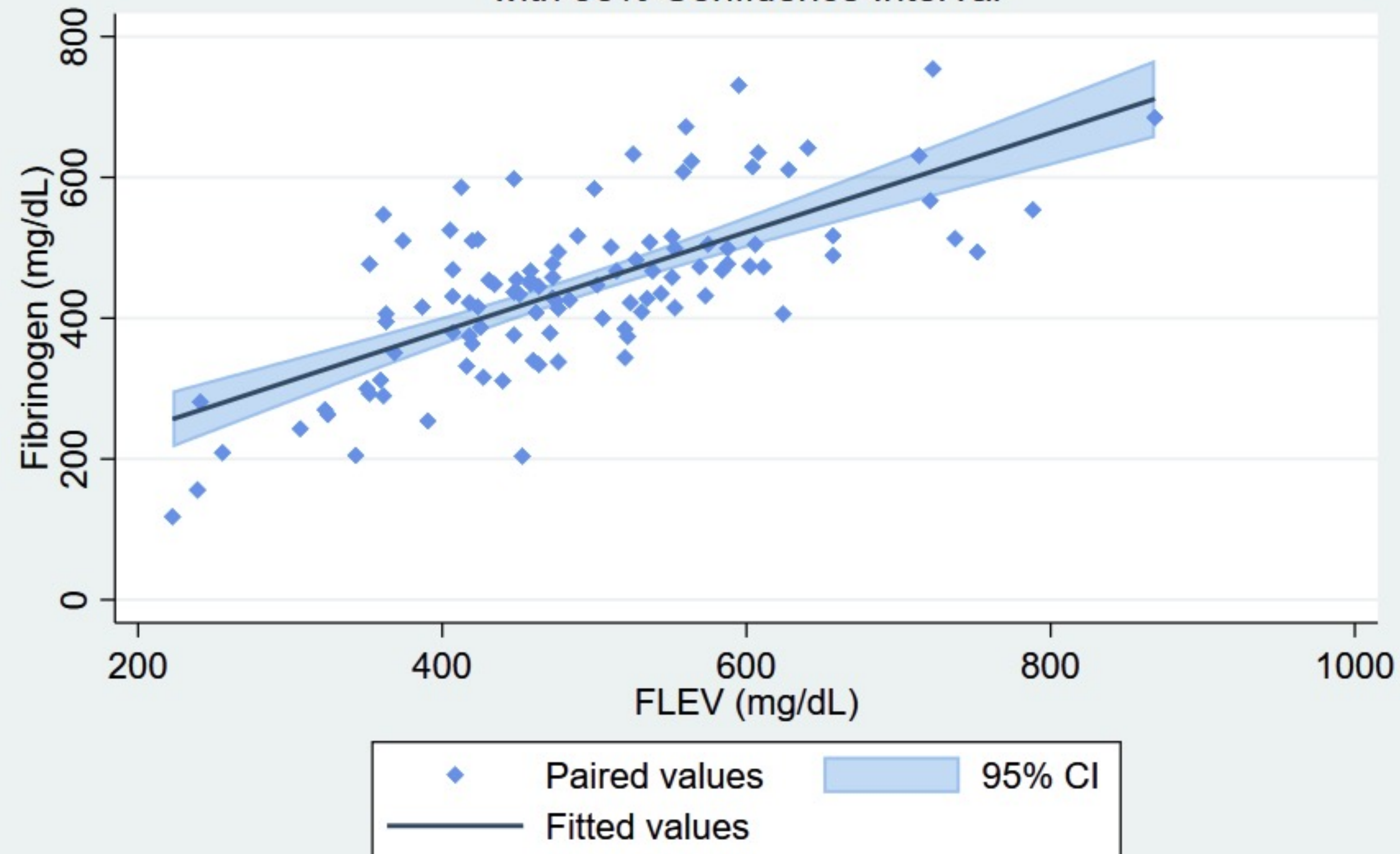
- 107 pairs of values
- 72 patients
- FLEV: 44.8 (SD +/- 91.8) mg/dL higher than the laboratory fibrinogen level ($p < 0.0001$)
- Pearson correlation
 - Strong positive linear correlation and statistically significant relationship ($r = 0.698$, $p < 0.0001$)



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Linear Prediction Plot of Fibrinogen to FLEV
with 95% Confidence Interval



Discussion

- FLEV is approximately 50 mg/dL greater than the fibrinogen level using the Clauss method
- FLEV < 250 mg/dL on the TEG 6s may be equivalent to a fibrinogen level < 200 mg/dL
- Use of this threshold on TEG 6s FLEV for parturients experiencing hemorrhage should raise significant concern for progression to severe hemorrhage and aid in the rapid and prompt treatment of these patients with either cryoprecipitate or fibrinogen concentrate.

References

- J Thromb Haemost.* 2007; 5.2: 266-273
- Br J Anaesth.* 2012; 108(6): 984-989
- BMC Anesthesiol.* 2019; 19(1): 90-90