Evidence in focus | Publication summary

Clinical Decision Points for the Functional Fibrinogen Assay of a Novel TEG® 6s Heparin Neutralization Cartridge

Hartmann J., et al. Anesthesiology. **(2025)***

Key takeaway



CFFH-MA cutoff point corresponding to Clauss fibrinogen of 150 mg/dL was 17.6 mm.



CFFH-MA measurements positively correlated with Clauss fibrinogen (r=0.75).

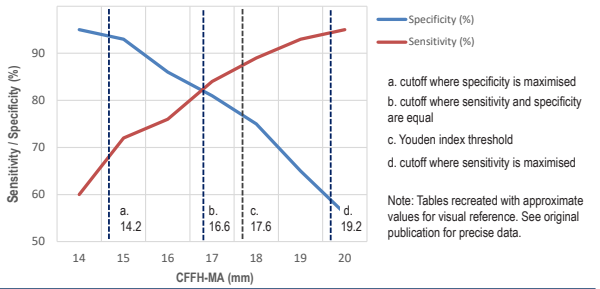
Overview

Plasma fibrinogen deficiencies due to blood loss and consumption can develop earlier than other haemostatic abnormalities. Haemostatic testing can inform management, particularly around fibrinogen replacement. The TEG® 6s heparin neutralisation (HN) cartridge with heparin neutralisation capacity for the CFF assay (CFFH), allows identification of hypofibrinogenaemia at the point-of-care (POC), early in cardiovascular surgery, before CPB weaning. This study aimed to define clinical decision cutoff points for the CFFH-MA, based on established Clauss fibrinogen cutoffs representing hypofibrinogenaemia (150 mg/dL), low-normal (200 mg/dL) and hyperfibrinogenaemia (400 mg/dL).

Results

- The Youden index CFFH-MA cutoff points corresponding to Clauss fibrinogen values 150, 200 and 400 mg/dL were 17.6, 19.5 and 25.1 mm respectively
- Analysis suggests clinical decision cut-offs for hypofibrinogenaemia (150 mg/dL) to be between 14.2 and 19.2 mm, depending whether sensitivity or specificity is prioritised
- CFFH-MA measurements positively correlated with Clauss fibrinogen (Spearman correlation: r = 0.75; 95% CI (0.72-0.78)

Sensitivity & Specificity for CFFH-MA for Hypofibrinogenaemia (< 150 mg/dL)



Conclusion

The TEG 6s HN cartridge enables assessment at the POC while neutralising effects of heparin. The study defined the cutoff values for the CFFH-MA for diagnosing hypofibrinogenaemia, low-normal fibrinogen and hyperfibrinogenaemia in relationship to Clauss fibrinogen. The HN cartridge offers a tool for earlier identification of hypofibrinogenaemia and clinical thresholds may expedite diagnosis and treatment at the POC. Utility could extend to settings in which high level of endogenous heparin-like substances can contribute to hypocoagulability, such as liver transplantation.

"High sensitivity and robust specificity for hypofibrinogenemia suggests that the CFFH assay can accurately identify patients undergoing major surgery who need fibrinogen supplementation while confidently ruling out supplemenation in those that don't require it"

* Hartmann J, Dias JD, Adelmann D., et al. *Clinical Decision Points for the Functional Fibrinogen Assay of a Novel TEG 6s Heparin Neutralization Cartridge.* Anesthesia-analgesia. 2025; https; DOI: 10.1213/ANE.0000000000007568

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