

Fulminant hyperfibrinolysis detected through thromboelastometry

Hiperfibrinólisis fulminante detectada mediante tromboelastometría

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Hyperfibrinolysis is a blood coagulation disorder in which fibrinolysis is excessively activated, potentially leading to massive hemorrhage. Thromboelastometry is a viscoelastic test that allows for the rapid evaluation of coagulation status at the point of care. This technique provides a visual representation with important information about coagulation activation, clot formation, and its stability^{1,2}.

The EX-test and the IN-test measure activation in the presence of tissue factor and contact activation, correlating with prothrombin time and activated partial thromboplastin time, respectively³. The FIB-test uses cytochalasin D, thus eliminating the contribution of platelets and represents the contribution of fibrinogen to the clot. These tests are typically performed on all patients, while the AP-test is reserved for cases of hyperfibrinolysis, as it uses aprotinin to inhibit fibrinolysis^{1,2}.

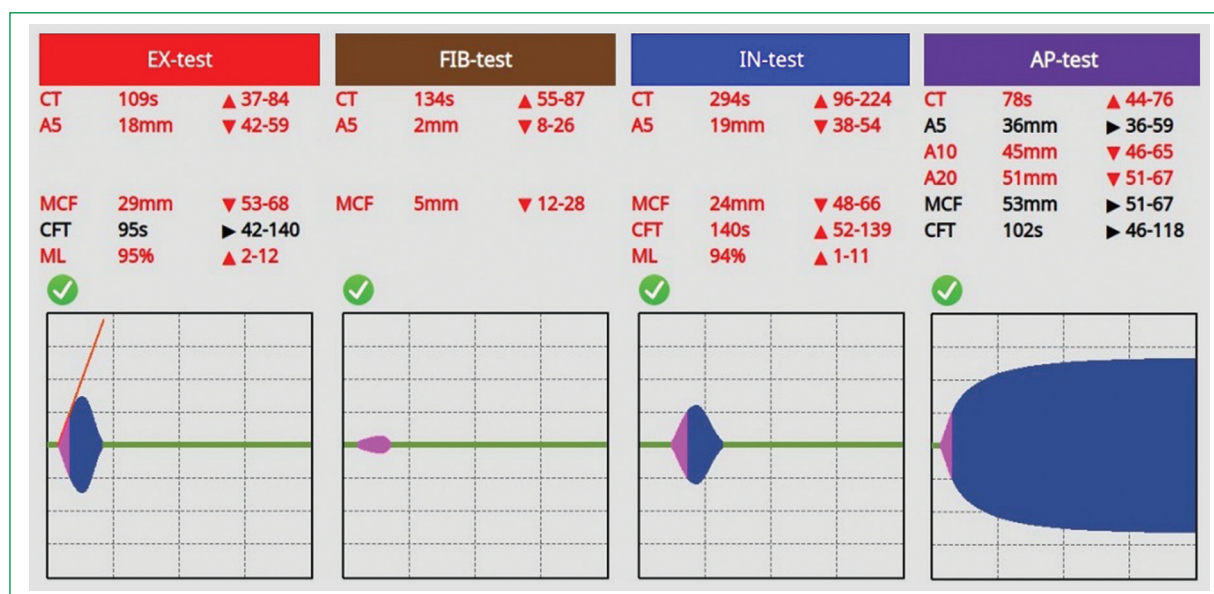


Figure 1. Representation of fulminant hyperfibrinolysis in ClotPro®. A(x): amplitude after (x) minutes; CFT: clot formation time; CT: coagulation time; MCF: maximum clot firmness; ML: maximum lysis.

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Figure 1 shows a case of fulminant hyperfibrinolysis in a 65-year-old patient who presented to the emergency department after a fall down the stairs. The EX-test, FIB-test, and IN-test show rapid and fulminant lysis of the fibrin clot before it fully forms, as reflected in the low clot amplitude after 5 minutes (A5). In contrast, the AP-test, which uses aprotinin (a potent direct antagonist of plasmin, the effector protease of fibrinolysis), shows the maximum clot firmness in the absence of hyperfibrinolysis (A5 is normal in this test) and confirms the utility of antifibrinolytic treatment.

In conclusion, thromboelastometry is crucial for the early detection of coagulation disorders, as delayed clinical intervention could result in significant bleeding and an increased risk of death for the patient.

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Conflicts of interest

None.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The study does not involve patient personal data nor requires ethical approval. The SAGER guidelines do not apply.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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