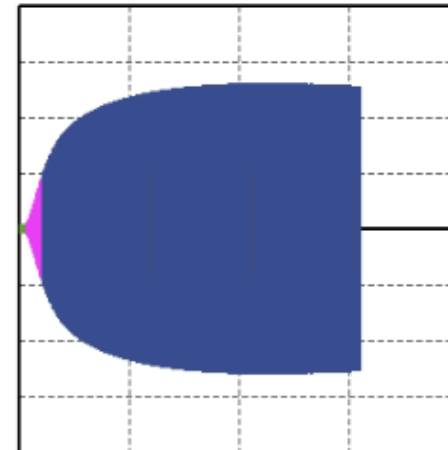
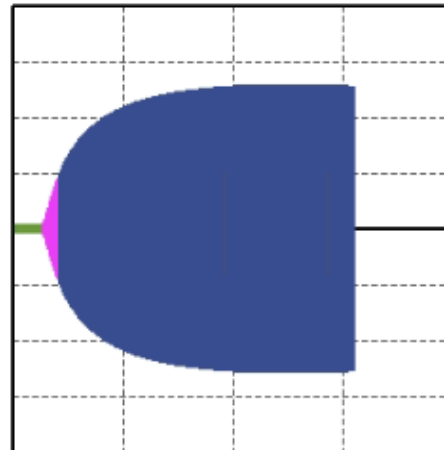
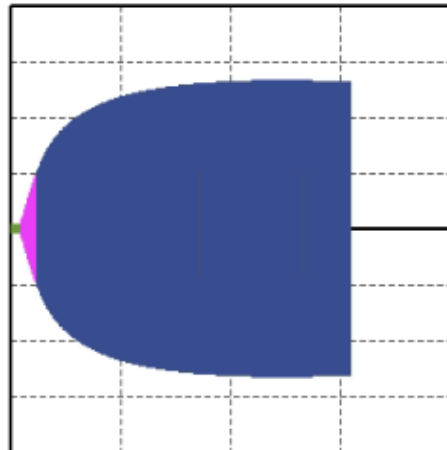
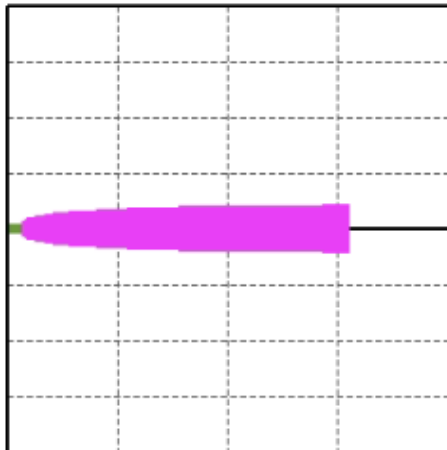


Clotpro case 2

- 27 year old male helicopter medivac after high-speed MBA versus car.
- Fluid resuscitation at scene (+1gm TXA) and ventilated with HI, chest and pelvic injuries.
- Unstable during transport and further resuscitation with blood and fibrinogen.
- Blood sample drawn for coagulation panel testing by Clotpro

FIB-test			EX-test			IN-test			TPA-test		
CT	70s	▶ 55-87	CT	59s	▶ 38-65	CT	159s	▶ 139-187	CT	39s	▶ 30-59
A5	6mm	▶ 6-21	A5	40mm	▶ 39-58	A5	38mm	▶ 32-53	A5	40mm	
A10	7mm	▶ 7-23	A10	48mm	▶ 47-64	A10	47mm	▶ 41-61	A10	48mm	
MCF	9mm	▼ 9-27	MCF	53mm	▼ 53-68	MCF	52 ^{LT} mm	▶ 49-65	MCF	52mm	▲ 21-43
						ML	1%	▶ 1-11	ML	2%	▼ 92-100



Interpretation

Step 1: FIB-test A5 is 6mm , this is a significantly low fibrinogen result given the injuries, especially after receiving pre-hospital fibrinogen.

Consider what you would order in your institution. If your hospital uses "Adult Dose of cryoprecipitate" you would order at least 1 adult dose. In Australia this is usually 1 x10 WB cryo or 1x 5 apheresis cryo. Alternatively 4g fibrinogen concentrate would also be reasonable. What is important, a follow up retest 10 mins after infusion of your nominated dose to track progress.

Step 2/3: Thrombin generation and platelets, the EX-test results are normal (CT 59 sec and A5 40mm) therefore no apparent deficiency of coagulation factors or platelets. These values should be reassessed after further fibrinogen and fluid resuscitation.

Step 4 : Clot stability, Hyperfibrinolysis can be a problem in severe trauma.

In this case the patient was given pre-hospital Tranexamic Acid (TXA) that works by blocking the lysine binding sites on plasminogen.

The Clotpro is the only viscoelastic analyser that can detect the presence of TXA.

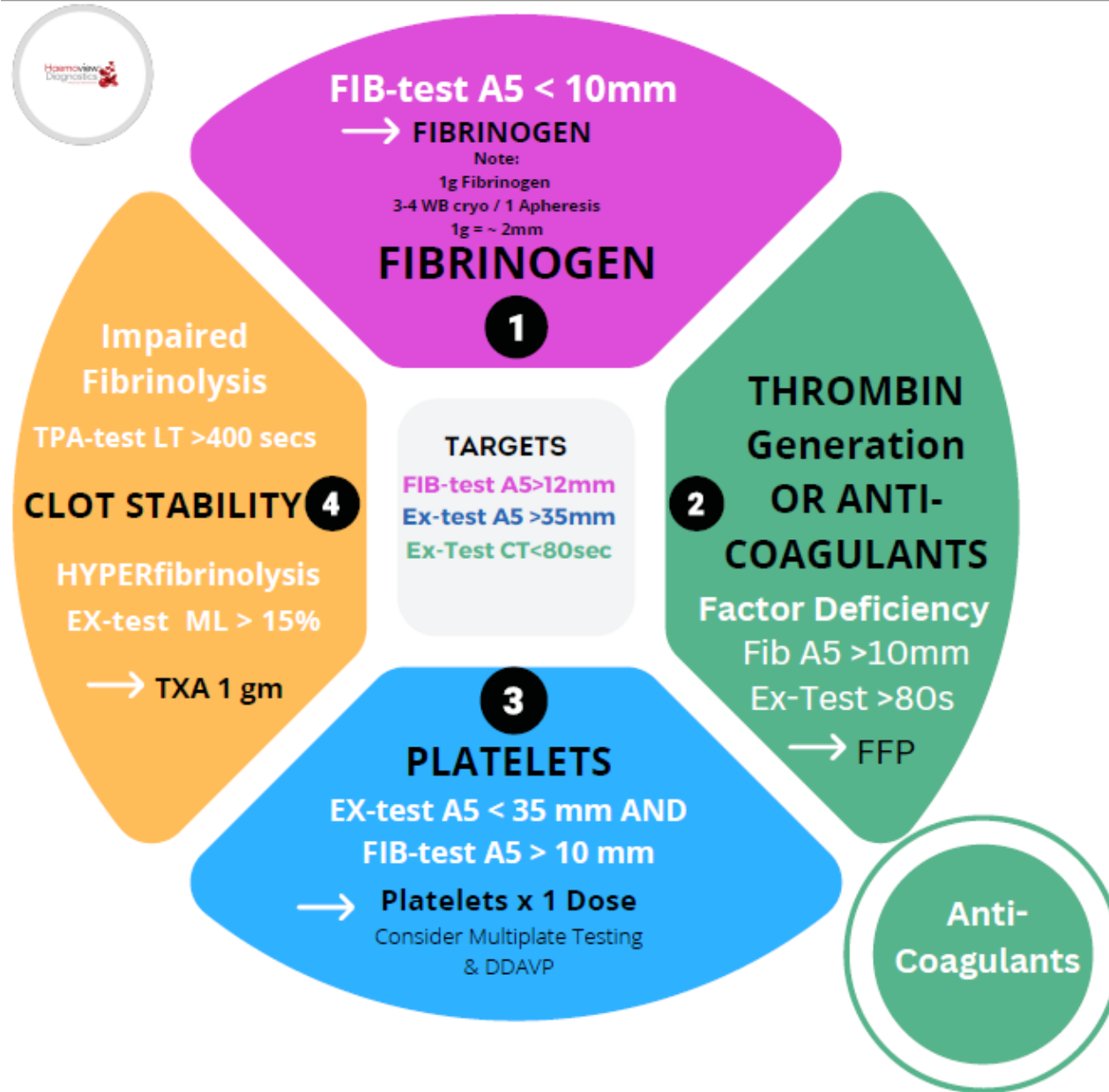
The evidence of TXA is shown by the missing Lysis Time (LT) in the TPA-test .

The TPA-test is an extrinsic based assay with 650 ng/ml of rTPA added . In a normal patient the LT is < 411 sec but in this case the TXA has completely blocked the rTPA contained in the reagent.

Other physiological reasons for this result without the presence of TXA, is in sepsis (SIC) where abnormal levels of PAI1 driven by proinflammatory cytokines, block the rTPA in the test – resulting in hypo-fibrinolysis.



Only treat abnormal value if **SIGNIFICANT BLEEDING** is present.



RVV Test
 Fxa Inhibitors/ LMWH
 CT >100s ~50ng/ml
 CT 100-150s- DOAC EFFECT
 CT >150s RELEVANT effect- reversal indicated

ECA Test
 Direct Thrombin Inhibitors
 CT >180s
 Dabigatan > 50ng/ml

IN-Test
 Heparin Effect
 IN-test CT > 190s and
 $\frac{IN-test\ CT}{HI-test\ CT}$ ratio ≥ 1.25

Hi-Test
 Protamine
 IN-test AND HI-test
 CT > 240 s

Physiological Targets

- T° > 36
- pH > 7.2
- iCa > 1mmol/L