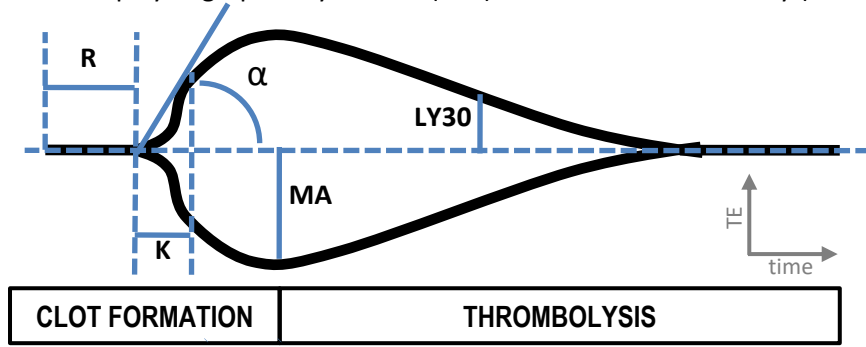


General Principle

- A small cuvette is rotated to simulate sluggish venous flow and stimulate clot formation.
- The resistance to rotation due to the mass of the clot is measured, which allows the kinetics of clot formation to be assessed.
- This provides information about clot formation and breakdown, and also reflects problems with coagulation cascade and platelet function.
- This is displayed graphically as time (min) versus thromboelasticity (in mm).

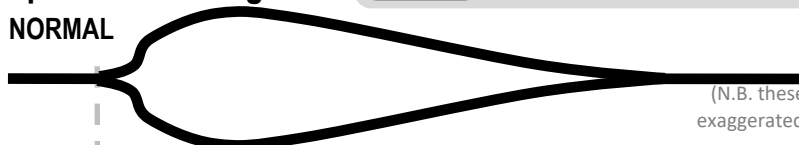

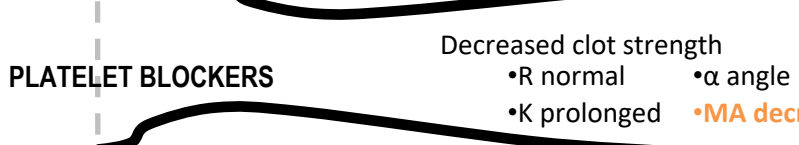
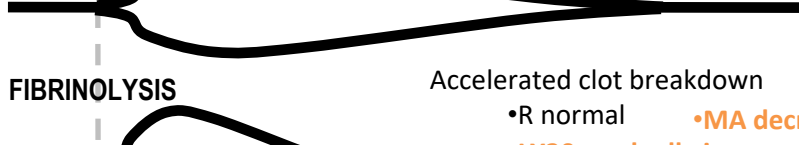

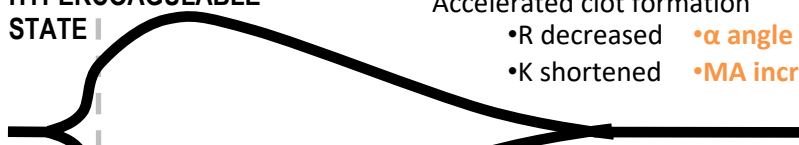
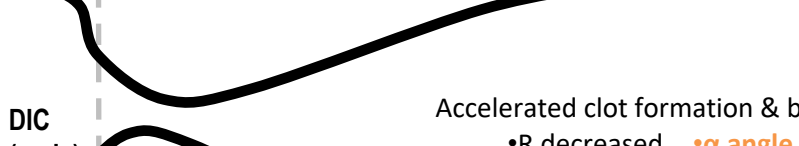
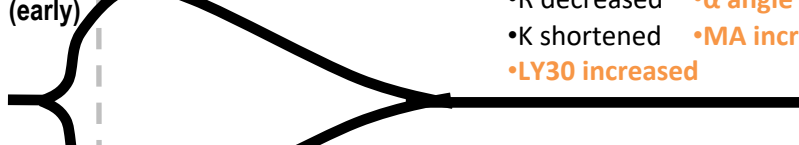


Explaining the numbers

- **R - reaction time** - latency until clot formation begins as (normal 3-9 min) defined by an amplitude of 2 mm
- **K - K value** - time from the end of R until the clot reaches (normal 0.5 to 3 min) 20mm – reflects speed of initial clot formation
- **α - alpha angle** - the angle tangent to the curve at K (normal 54-80 degrees)
- **MA - maximum amplitude** - reflects total clot strength (normal 51-78 mm)
- **Lysis time (LY30)** - % lysis after 30 min - reflects the (normal 0-9%) fibrinolysis stage of clot development

Specific Pathologies

(N.B. these pictures are exaggerated for emphasis)

NORMAL		
ANTICOAGULANTS		Delayed clot formation •R prolonged •α angle decreased •K prolonged •MA decreased
FACTOR DEFICIENCY		Decreased clot strength •R normal •α angle normal •K prolonged •MA decreased
PLATELET BLOCKERS		Decreased clot strength •R normal •α angle normal •K prolonged •MA decreased
FIBRINOLYSIS		Accelerated clot breakdown •R normal •MA decreased •LY30 markedly increased
HYPERCOAGULABLE STATE		Accelerated clot formation •R decreased •α angle increased •K shortened •MA increased
DIC (early)		Accelerated clot formation & breakdown •R decreased •α angle increased •K shortened •MA increased •LY30 increased
(late)		•R prolonged •α angle decreased •K prolonged •MA decreased

TEG guided resuscitation protocols

Advantage: Results available promptly: K, R within 5 minutes, MA and α-angle within 15 minutes, and LY30 within 45 minutes.

What to do?

- Increased R time => FFP
- Decreased α angle => cryoprecipitate
- Decreased MA => platelets (consider DDAVP)
- Fibrinolysis => tranexamic acid (or aminocaproic acid)