PAEDIATRIC
ROTEM TRANSFUSION ALGORITHM (2023)

Temp >36° C, pH >7.2, iCalcium >1.1 mmol/L, Platelets >70x10⁹/L, Hb >75 g/L
Only consider APTT and INR in the presence of heparin and warfarin.

Repeat ROTEM test 10 mins AFTER EACH INTERVENTION

IS THERE CLINICALLY SIGNIFICANT BLEEDING?

YES → **High risk of Fibrinolysis? Consider Tranexamic Acid 15mg/kg** → **ROTEM Results in 10 min**

NO → **Observe**

FIBRINOLYSIS

EARLY DIAGNOSIS:
IS EXTEM A5 < 35 mm?
OR LATE DIAGNOSIS:
Leave test running for up to 60 min
IS EXTEM ML ≥ 5%?
Clot should be stable for 1 hour, not tapering > 5 %

YES → **Hyperfibrinolysis** →

Tranexamic Acid 15mg/kg

Consider repeat dose if patient has lost over one blood volume since initial dose

Adjust subsequent dose for renal dysfunction

PROCEED WITH ALGORITHM

NO

FIBRINOGEN

IS FIBTEM A5 < 12mm?
(Including flat line at 5 minutes)

YES → **Low Fibrinogen** →

Clinician discretion for Fibrinogen Concentrate
Usually single dose
Only for severely low FIBTEM – e.g.. ≤6mm

Aph.Cryo or FibConc

FIBTEM A5	Dose Cryo	Dose FibConc
	mLs/kg	mg/kg
≥12mm	NONE	NONE
10-11mm	1mL/kg	15mg/kg
8-9mm	3mL/kg	30mg/kg
6-7mm	4mL/kg	45mg/kg
4-5mm	5mL/kg	60mg/kg
0-3 mm	8mL/kg	75mg/kg

If FIBTEM A5< 6 ensure platelets are also available

RETEST

NO

PLATELETS

NORMAL FIBTEM A5 ≥ 12mm
AND
IS EXTEM A5 < 35mm?

YES → **Poor Platelet Contribution** →

Pool Platelets 20mLs/kg
If chronic renal dysfunction also consider
Desmopressin / DDAVP 0.3microg/kg IV
Slow infusion over 30min

RETEST

NO

FACTORS

NORMAL FIBTEM A5 ≥ 12mm
AND
IS EXTEM CT > 90 sec?
Ensure core temperature >36°C
And Fibrinogen corrected first

YES → **Low Coagulation Factors Correct fibrinogen before** →

ELP* 20mLs/kg
OR
Prothrombinex 12.5 Units/kg IV
If volume overloaded
* FFP for Neonates – see protocol

RETEST

NO

NORMAL

STILL BLEEDING? Consider SURGICAL PROBLEM
and discuss with surgeon and blood bank/haematologist (to consider Recombinant factor 7a)

Make a stronger clot?
- Give Cryo to FIBTEM A5 > 14mm
- Give platelets to EXTEM A5 > 40 mm or consider Platelet Function testing (in hours)
- Consider ELP to shorten clotting time to EXTEM CT < 80 sec

Re check temperature, pH, iCalcium, platelets and haemoglobin
Consider other contributors to bleeding
- Platelet inhibitors (do Multiplate Platelet Function test)
- Consider Von Willebrands Disease, warfarin (INR), clexane etc.

When clinically possible always complete the algorithm in a stepwise manner and check the ROTEM between steps as indicated. This reduces unnecessary transfusion especially of ELP.