

Once in haemorrhagic shock and no response to 20 ml/kg fluid, declare massive haemorrhage protocol

Reduce bleeding:
Physical haemorrhage control – direct pressure, tourniquet, stabilise fractures

Give tranexamic acid 15 mg/kg bolus IV/IO if not already given if within 3 hours of injury
Start tranexamic acid infusion (2 mg/kg/hr) if bolus already given

Do not wait for blood results before starting resuscitation

Send blood for:
Crossmatch, clotting studies, FBC, gas, lactate, calcium, U&E
Use point of care clotting studies (ROTEM/TEG) if expertise to interpret available

ANTICIPATE need for further blood products after 20 ml/kg of RBC / plasma

Give warmed red blood cells (RBC) and plasma 10 ml/kg aiming for a balanced 1:1 ratio
Regularly reassess ongoing shock and response to blood

Therapeutic aims:
Bleeding controlled

Hb > 80 g/l
Platelets > 75 x 10⁹/l
APTT ratio < 1.5
PT ratio < 1.5
Fibrinogen > 1.5 g/l
Ionised Ca > 1.0 mmol/l
Lactate < 2.0 mmol/l
pH > 7.35
Temp > 36°C
Avoid hyperkalaemia

Order RBC, plasma, platelets and cryoprecipitate

Continuing haemorrhage and/or shock:
Continue to give RBC and plasma 10 ml/kg
Give platelets 10 ml/kg
Give cryoprecipitate 10 ml/kg
Correct calcium
Repeat FBC, clotting and gas

Discuss with consultant haematologist if on anticoagulants
CONSIDER Damage control surgery and/or interventional radiology

Reassess Shock remains?

No

Continue to monitor for further features of shock and treat accordingly

Yes

Continue to give blood products and cryoprecipitates to achieve therapeutic aims

Stand down Massive Haemorrhage when bleeding controlled AND therapeutic aims achieved
Continue to monitor FBC, clotting, U&Es