

Major Haemorrhage in Adult Trauma

Pulse > 110 • RR > 30 • Systolic BP < 90mmHg • Urine < 20ml/h
 ≥ 40% loss of total blood volume • 4 litres in 24 hours
 2 litres in 3 hours • > 150ml/min

Important phone numbers and prompts to tell the laboratory

Get senior help

Initiate major haemorrhage protocol by contacting relevant staff members and teams, eg. resus

Contact Transfusion Laboratory

Assess ABC

IV access

Check patient identification – ID / wristbands
2 large cannula

- Send blood samples, cross-match, FBC, coagulation, biochemistry
- Consider arterial blood gas measurement
- Check if **tranexamic acid** given, if not give as soon as possible (within 3 hours of injury) at a dose of: 1g intravenously over 10 minutes, followed by 1g over 8 hours

Resuscitate

Give oxygen

Early administration of blood products (if blood products are not available, small boluses or crystalloids can be given)

Minimise crystalloids where possible:

Avoid large volumes of crystalloid as they dilute clotting factors and can worsen bleeding

Give blood

Give up to 4 units via blood warmer. Aim for Hb > 80g/L

Give Group O if immediate need and/or blood group unknown

Before transfusion

- Check patient ID
- Use wristbands
- Follow local procedure

Prevent coagulopathy

Anticipate need for platelets and FFP after 4 units of blood replacement and continued bleeding

- If you use TEG/ROTEM please follow local policy
- Give Trauma Primary Major Haemorrhage (MH) Pack
- Order Secondary Major Haemorrhage Pack
- Correct hypothermia
- Correct hypocalcaemia (keep ionised Ca > 1.13mmol/L)
- Send FBC and coagulation samples after every 3–5 units of blood given
- Contact Haematologist
- If bleeding continues repeat secondary pack

Secondary MH pack

- RBC 4 units
- FFP 4 units
- Platelets if available
- Cryoprecipitate

Trauma MH pack

- RBC 4 units
- FFP 4 units
- Platelets 1 unit
- Aim for RBC:FFP 1:1

When laboratory results available

IF	GIVE
Falling Hb	Red cells
APTT and/or PT ratio > 1.5	FFP 15–20ml/kg
Fibrinogen < 1.5g/L and Obstetrics < 2g/L	Cryoprecipitate (2 pools)
Platelet count < 50 x 10 ⁹ /L	Platelets 1 unit when available

Get help to stop bleeding

Reassess and document – contact surgeons and clinical colleagues from other specialisms as appropriate