## Transfusion Management of massive haemorrhage in children

Ensure a consultant is aware of the massive haemorrhage and a senior member of staff is available to take charge of resuscitation if not already present

Activation Tel Number(s) **Transfusion** 

Ext: 1584 or if not available 0151 431 0030

Emergency O red cells

- location of supply:
- 2 units AED
- 2 units Delivery Suite
- 2 units Burns unit (MET)
- \* Time to receive at this clinical area:

Group specific red cells 15 minutes + delivery time

XM red cells 30 minutes + delivery

Transfusion Lab will contact the Consultant Haematologist

time

# STOP THE BLEEDING

### **Haemorrhage Control**

Direct pressure / tourniquet if appropriate Stabilise fractures Surgical intervention (consider damage limitation surgery) Interventional radiology

JL

Endoscopic techniques

#### **Haemostatic Drugs**

Vitamin K and Prothrombin complex concentrate for warfarinised patients Other haemostatic agents:

discuss with Consultant Haematologist

(A)BG - (Arterial) Blood Gas

FFP- Fresh Frozen Plasma MHP - Massive Haemorrhage

Pack

XM - Crossmatch

Ongoing severe bleeding (overt / covert) and received 20ml/kg of red cells or 40ml/kg of any fluid for resususcitation in preceding hour.

Signs of hypovolaemic shock and / or coagulopathy

Administer Tranexamic acid (especially in trauma – ideally within 1 hour)

15mg/kg bolus over 10 mins (max 1000mg) intravenously: then infuse 2mg/kg/hr (max 125mg/hr) intravenously until bleeding is controlled

#### Activate Massive Haemorrhage Pathway

#### Call for help - 'CODE RED, Location'

Alert Blood transfusion Ext: 1584
Alert team including paediatric SpR on call
and portering/transport staff
Consultant involvement essential

#### Take bloods and send to lab:

XM, FBC, Coagulation screen, fibrinogen, U+E, Ca<sup>2+</sup> **(A)BG**,

> and Order MHP 1 (see table 1)

#### Give MHP 1

Red cells and FFP: give 10ml/kg in aliquots in a 1:1 ratio, reassess rate of blood loss and response to

#### Reassess

Suspected continuing haemorrhage requiring further transfusion Take bloods and send to lab:

FBC, Coagulation screen, fibrinogen, U+E, Ca<sup>2+</sup>(A)BG

Order MHP 2 (see table 2)
When half of MHP1 has been used

#### Give MHP 2

Red cells and FFP: give 10ml/kg in aliquots in a 1:1 ratio, reassess blood loss and response to treatment and repeat as necessary Platelets: give up to 10ml/kg

Cryonrecinitate give up to 10ml/kg

# Once MHP 2 administered, repeat

**bloods:** FBC, Coagulation screen, Fibrinogen, U+E,

Ca2+ NPT: (A)BG
To inform further blood component

Continuous cardiac 

← monitoring

**RESUSCITATE** 

**Airway** 

**Breathing** 

NHS

## Prevent Hypothermia

Use fluid warming device and Bair hugger

Consider 0.2 ml/kg 10% calcium chloride (max 10ml) over 30 min

Further cryoprecipitate (10ml/kg) if fibrinogen < 1.5g/l

### Aims for therapy

Aim for: Hb 80-100g/lPlatelets  $>75 \times 10^9/l$ 

PT ratio < 1.5 APTT ratio

Fibrinogen >1.5g/l onised Ca<sup>2+</sup> >1.0

<1.5

mmol/l Temp > 36°C

pH > 7.35 (on ABG) pH > 7.25 (capillary

BG)

Monitor for hyperkalaemia

STAND DOWN Inform lab

V3 2013