Transfusion Management of Major Haemorrhage (Paediatric)

Activation Telephone Number LIH, Oban Dial:2222

Emergency O -ve Re Cell Location:

Theatre Blood Fridge, 4 units

Estimated time to receive blood:

- O -ve: immediate
- Full X-match:50 mins (plus travelling time for BMS)

Continuously monitor patient:

- SaO₂ BP, HR, ECG, RR
- Monitor signs of shock: urine output, concious level, capillary return, cool peripheries
- · Document vital signs

Prevent Hypothermia

- · Use fluid warming device
- · Use forced air warming blanket

Monitor/treat Hyperkalaemia

CaCl₂ dextrose + insulin, B2 agonists, HCO₂

Monitor/treat Hypocalcaemia

CaCl₂ dextrose + insulin, B2 agonists, HCO₂

Monitor/treat Acidosis

Maintain intravascular volume, monitor renal function, avoid hypoglycaemia

Monitor/treat volume overload

Be aware: electrolytes change quickly in paediatric patients

Targets for Therapy:

Hb 70 to 90q/l **Platelets** $>50 \times 10^9/I$ PT ratio <1.5 APTT ratio <1.5 Fibrinogen >1g/l Ca 2+ >1 mmol/l Temp >36° C рΗ >7.35 on ABG

monitor for hyperkalaemia

IDENTIFY PATIENT HAS MAJOR HAEMORRHAGE

20% loss of calculated blood volume in <1 hr 50% loss of calcuated blood loss in <3 hrs Total blood volume:child 80ml/kg: neonate 90ml/kg



ACTIVATE MAJOR HAEMORRHAGE PROTOCOL: CALL 2222

CALL FOR ADDITIONAL SUPPORT AND ALLOCATE ROLES:

- Lead clinician takes overall responsibility
- Communication: phones lab, duty haematologist, paediatrics, Scotstar, etc
- Resuscitation: ABC including vascular/iO access
- Haemorrhage control
- Documentation: blood loss, products given & obs
- Sample taking

TAKE BLOODS:

X-match, FBC, Coag, fibrinogen, U&E, Ca 2+, NPT:ABG

RETRIEVE O-ve FROM THEATRE FRIDGE

REQUEST X-MATCHED RBC & FFP

Number of units requested will vary according to child's weight eg <20kg: 1-2 unit of each, >20kg 2-4 units of each

Give RBC:FFP sequentially in 10 ml/kg alliquots

REASSESS PATIENT AND RESULTS (if available)

REQUEST BLOOD AND PRODUCTS

Continue RBC: FFP 10ml/kg if bleeding continues Give platelets 10ml/kg if platelets <75 x 10° Give cryoprecipitate 5ml/kg if fibrinogen <1.5g/l

NB Platelets not kept on site - allow transport time Keep in close communication with haematology, paediatrics and retrieval team

Circulation

CONTROL HAEMORRHAGE

RESUSCITATE

Airway

Breathing

Direct pressure Tourniquet Stabilise fractures Surgical / Radiological interventions

HAEMOSTATIC DRUGS

Tranexamic acid: 15mg/kg followed by 2mg/kg over 8 hours

Patients on Warfarin: Vitamin K 30 microgram/kg

Prothrombin complex Concentrate (Beriplex)

APTT/PT ratio:

2 to 3.9: give 25 units/kg PCC 4 to 5.9: give 35 units/kg PCC >6: give 50 units/kg

Give RBC: FFP in 10ml/kg aliquots CRYO + PLATELETS as required

When second pack administered, repeat bloods

FBC, coag, fibrinogen, U&E, Ca ²⁺, NPT: ABGs If blood loss continuing further blood component requirement with duty haematologist, senior clinical team and BMS

Continue cycle of clinical and laboratory monitoring and administration of goal-directed blood component therapy until bleeding stops

SEEK SPECIALIST ADVICE EARLY

RHSC via switch Scotstar 03333 990 222

STAND DOWN

Inform lab
Return unused componentts
Complete documentation
Consider
thromboprophylaxis
when patient is stable

Medical illustrationDecember 2024-00330