MASSIVE TRANSFUSION PROTOCOL

TRANSFUSION MEDICINE DEPARTMENT HOSPITAL SULTAN IDRIS SHAH, SERDANG

Patient fulfill either one of the criteria;

1. Estimated or actual loss >50% of blood volume within 3 hours OR loss >150mls/min.
2. Persistent class III shock despite 1.5L of fluid resuscitation.
3. ABC (Assessment of Blood Component) score ≥ 2.
(PUSH : Penetrating mechanism, US positive free fluid, SBP <90mm/Hg, HR >120)

ACTIVATE MTP BY CONSULTANT/SPECIALIST
Appoint MTP Coordinator (MO)
Appoint porter/runner from site of activation

Calculating blood volume :
- Neonate : 80-95 mL/kg
- Children : 80 mL/kg
- Adult : 70 mL/kg

0 minute = sample received at the blood bank without rejection

MTP Coordinator to alert Transfusion team

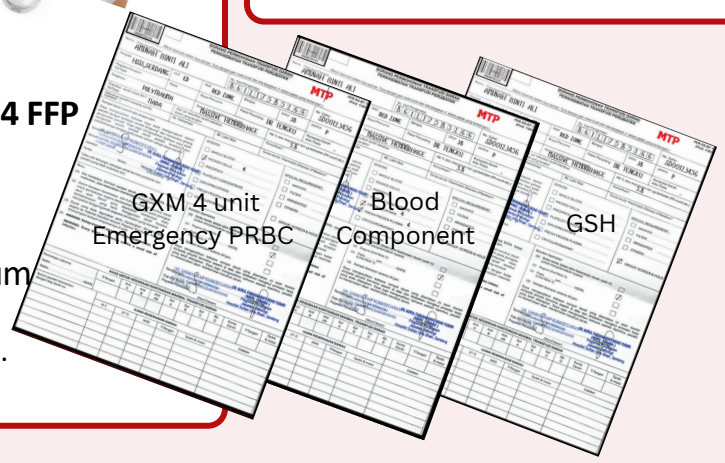
- To inform MO/Specialist in-charge of blood bank.
- Information required :
  a. Name and phone number of the MTP coordinator.
  b. Specialist/consultant who activate the MTP.
  c. Patient's detail :
     - Name/IC/passport/SD number
     - Location
     - Cause of bleeding

MO/Specialist Transfusion will prepare the MLT on duty for MTP activation

Houseofficer/Porter
(from activation site-not from ward)

1. Get the *Safe O (available at ED/GOT/MOT)
* area without safe O: get from Transfusion Lab with request form.
2. Get the MTP Kit if available (ED/LR/GOT/MOT)
3. To bring to Transfusion Lab :
(each request must be ordered in the system)
a) **2x EDTA** tubes & **1x ROTEM** tube
b) **3x request forms** with label for : -
i. GXM for **4 emergency crossmatches**
ii. Blood components **cryoprecipitate 1 unit/10kg + 4 FFP**
iii. **GSH** to standby for crossmatch of 2nd package
c) Cool box with ice pack
4. Take baseline investigation :
- FBC, coagulation factor, fibrinogen, blood gases, RP, Calcium

*To start transfusion with 2 unit safe O while awaiting for 1st package.



MLT in Transfusion Lab

- Should **prioritize** MTP and start prepare component once received sample for MTP activation.
- **Thaw** group AB FFP and cryoprecipitate of 1st package once MTP activated.
(group specific if known blood group)

MTP Adjunct
Tranexamic Acid
Slow bolus 1g over 10 minutes
followed by infusion of
1g over 8 hours
(dilutes in 500mls NS)

1st package (30 mins upon received sample without rejection)
- 4 units packed cells (emergency crossmatch- incomplete crossmatch phase)
- 4 units FFP
- 1unit per 10kg cryoprecipitate

Once issued, blood bank need confirmation from MTP coordinator whether to proceed with 2nd package.
MLT blood bank to inform MO Blood bank once 1st package issued.

2nd package (45 mins after 2nd package requested)
- 4 units packed cells (urgent crossmatched) : Blood bank will use GSH form & sample from initial request

Porter to bring 1 request form with label for (must be ordered in the system)
- 4 units FFP
- 4 units platelets
- 1 unit/ 10kg cryoprecipitate

The subsequent blood and blood component request will be based on clinical judgement of the primary specialist/consultant/ transfusion specialist.
Once 2nd package issued, need confirmation from MTP coordinator whether to continue or to stop MTP.

Subsequent package
(45 minutes from new sample and request form received)
Porter to bring 1 sample in EDTA tube and 2 request form.
Blood and blood product will be prepared based on request.

Hybrid Approach
Targeted hemostatic therapy (ROTEM)

Patient's monitoring throughout MTP
- Avoid hypothermia, acidosis and coagulopathy throughout resuscitation
- Laboratory criteria should be used in conjunction with clinical condition. Aiming parameters :
  - Hb : 8g/dL
  - Platelet count : ≥ 50 x 10^9/L
  - Prothrombin time (PT) : <1.5 x control
  - Partial Thromboplastin Time (PTT) : <1.5 x control
  - Fibrinogen > 150mg/dL
- 4 hourly FBC, Blood Gases, Coagulation profile, Fibrinogen, Sr Calcium are recommended.
- Laboratory criteria should be used in conjunction with clinical condition.

Reference : Handbook on Clinical Use of Blood 3rd edition 2020

Notes :
- For **pediatrics** patient, kindly request blood according to patient's body weight.
  - **FFP/Cryoprecipitate/Platelet : 15ml/kg**
  - **Packed cells : 20ml/kg**
- The responsibility of the MTP will be transferred to the primary team once patient leaves ED.
- ED MTP coordinator should pass over clearly the stage of MTP with the new MTP coordinator.
- MTP coordinator is responsible to terminate the MTP as discussed with respective specialist/consultant.
- **NOTIFY BLOOD BANK ONCE MTP DEACTIVATE**