

Traumatic Shock

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An introduction to traumatic shock!!

- Carries a 30% to 40% mortality rate
- Responsible for 50% of traumatic death in first 24 hours.
- Principals of fluid resuscitation in traumatic shock:
 - 1) Restore intravascular volume
 - 2) Prevent or correct coagulopathy

Clinical features

- Depends on
 - 1) The cause, rate, volume and duration of volume loss or bleeding
 - 2) The effect of current medications
 - 3) Patient's baseline physiologic status
- Classification of hemorrhage severity as a percentage of blood volume loss based on vital signs is **NOT** accurate and **SHOULD NOT** be used to guide ED resuscitation!!!!

Diagnosis

- Vital signs offer little value
- Oxygen debt develops in tissues when oxygen delivery does not meet the metabolic demands
- Oxygen debt is the only physiologic measure that has clearly been linked to mortality and morbidity
- Lactate and base deficit are using as resuscitation monitors in shock
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Treatment

- Begins in prehospital!!!
- Restore intravenous volume
- Maintain oxygen-carrying capacity
- Limit ongoing blood loss
- Prevent coagulopathy

A,B then C!

- Achieve SpO₂ > 94%
- Hemostatic hypotensive resuscitation
- BP goals: SBP: 90 mmHg
- **SHOULD NOT** be used in patients with myocardial disease, cerebral ischemia or traumatic brain injury

Magical fluids!!!!

- Isotonic crystalloids: normal saline, lactated ringer
- Large volume infusion can cause neutrophil activation
- Lactated ringer can increase cytokine release or cause lactic acidosis
- Normal saline can cause hyperchloremic acidosis or intracellular K depletion
- Colloid solutions: have no proven consistent benefit!

Transfusion In Traumatic Shock

- Using only PRBC may not restore tissue oxygen
- FFP can be kept in 1-6 C for up to 5 days
- Universal donor for FFP is AB+

- Predictors for massive transfusion need:
 - 1) Penetrating mechanism
 - 2) Positive FAST examination
 - 3) SBP<90
 - 4) PR>120

- High plasma to PRBC ratio resuscitation offer a better survival benefit
- Best ratio for PRBC:FFP:Plt is 1:1:1
- Tranexamic acid has a survival benefit if started in first 3 hours of injury: 1 gram in 10 min then 1 gram in 8 hours infusion.
- Most massive transfusion protocols include calcium administration and monitoring ionized calcium.

Questions????

Thank you!!! 😊