Trauma Resuscitation

Speaker

Richard Dutton: Trauma anesthesiology at Shock Trauma

Clinical Case

18M shot once in the right chest and once in the RUQ. Medic state a LOC in the field, but state patient regained consciousness after a 1L crystalloid challenge and radial pulse was palpable. BP: 110/70, HR:130bpm, pale and lethargic.

Dutton Reply

a. Would hang blood on the patient right away
b. Signs are classic of hemorrhagic shock
c. Younger patients have high vasoconstrictive abilities
d. Patient could have lost 50% of his blood volume and compensating, for the time being
e. Can be hard to define shock in words, but easy to tell when seen in a patient
f. Intubation timing is clinical judgement related to conditions
    a. Patient needs a chest tube, so Dutton would intubate before

Induction Agents

a. <u>The specific agent does not matter, the key is in the reduced dose</u>
b. Patients in hemorrhagic shock have changes in their brain
    a. This allows anesthetic agent to be much more potent than normal
    b. Hemorrhagic shock itself is highly anesthetic
c. Example: Might give just 20mg of propofol to this patient (Normal: 200mg)
d. <u>Any anesthetic given will sharply reduce the patient's own catecholamine response</u>
e. Patient will predictably crash regardless of agent due to injuries

Pearl #1: Sharpy reduce induction agent and increase your paralytic.

Patient is Intubated

a. Patient's blood pressure drops to 50/30
b. Dutton is asked what he would do if he didn't have blood yet
    a. Emphasizes that blood should always be ready
    b. RBC + FFP is equal proportions
    c. No evidence that any other fluid does anything helpful
    d. Dutton states he would bolus 250-500mL through a warmer
c. 18yo bleeding in abdomen are resilient to deep shock
    a. Difficult to watch a blood pressure stay that low
d. Dutton states systolic of 70mmHg in this patient is adequate to go to surgery

Patient is now in surgery

a. Patient has received blood products and now has a systolic of 110mmHg
b. Dutton states he's a big proponent of permissive hypotension
    a. Does not want SBP of 110
    b. Increases bleeding and therefore the amount of blood needed
c. Asked what he's giving as an anesthetic
    a. Gives blood products and fentanyl (25-50)
    b. BP Drops: Fluids
    c. BP Rises: Fentanyl
    d. After 500mcg BP response is lost, boluses large dose to keep pt down
    e. The goal is to have a perfusing patient with lower BP to help bleeding/surgery
    f. Sounds like BP becomes consistent due to vascular tone/blood transfusion
    g. Instead of pt catecholamine being in charge of BP and having ups/downs
    h. This is empirical evidence by Dutton's clinical experience

Asked about using vasopressors

a. Increases amount of bleeding
b. No physiological benefit, treating the monitor/provider
c. Increases blood pressure, not blood flow

Asked about blunt trauma w. head injury

a. Pupils are unequal, same patient
b. Brain injury and hemorrhagic shock are very fatal comorbidities
c. Might keep the blood pressure a little higher in him now