

Emergency Department



Standard Operating Procedure (SOP)

Traumatic cardiac arrest

Related documents

Trauma Call SOP Jan 2014
Damage Control Surgery SOP Jan 2014

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This will be a consultant-led hospital trauma call.

In PEA arrest following trauma (blunt and penetrating):

(NB This SOP does not apply to medical arrests + minimal trauma, e.g., an older patient who has sustained a minor head injury in the course of their arrest)

The patient has a low or very low output state rather than a true cardiac arrest.

The patient has one of 4 reversible pathologies:

1. Hypoxia.
2. Hypovolaemia.
3. Tension pneumothorax.
4. Cardiac tamponade (remember, blunt trauma patients *can* have this).

External chest compressions are not indicated until 1 - 4 have been addressed. Usually the patient is under-filled, and the pulse returns as patient is oxygenated and blood given. External chest compressions in the context of a low output state can make the low output even lower, or injure the patient in the context of significant chest trauma !

The recipe for PEA traumatic arrest patients is as follows:

1. Do not do external chest compressions.
2. Do not give vasopressors (e.g., adrenaline, metaraminol).
3. Oxygenate.
4. Infuse 4 units of warmed O-neg blood stat.
If possible give the blood via a rapid infuser (flush line first to check that cannula is satisfactory). A subclavian trauma line may be required.
If there is a delay, squeeze the blood in manually or with a pressure bag. If possible take a blood sample prior to commencing infusion, for on-going cross-match.
5. Perform bilateral thoracostomies, unless certain that a tension pneumothorax is not present (caution: can be bilateral).
6. Ultrasound the heart immediately to check for tamponade and volume status.
7. If PEA and tamponade present , the patient needs immediate thoracotomy.
8. Ultrasound the abdomen.
If positive and the pressure comes up with blood, go to theatre (*standby/ activate the Damage Control Surgery protocol*) .
9. X-ray the chest.
If massive haemothorax (whiteout) and the pressure comes up with blood, go to theatre (*standby/ activate the Damage Control Surgery protocol*) .
10. X-ray the pelvis.
If significant disruption and the pressure comes up with blood, go to theatre (*standby/ activate the Damage Control Surgery protocol*) .
11. If patient remains in PEA after:
 - Oxygenation,
 - 4 units of blood,
 - Bilateral thoracostomies
 - Tamponade exclusion**and**
 - Abdominal ultrasound is strongly positive, or significant pelvic disruption is seen on pelvic XR,

=> the patient may be a candidate for thoracotomy, aortic compression and further blood/products prior to theatre. Or resuscitation may be deemed futile.

12. If patient remains in PEA after:

- Oxygenation,
- 4 units of blood,
- Bilateral thoracostomies
- Tamponade exclusion

and

- CXR show massive *unilateral* haemothorax

=> the patient may be a candidate for thoracotomy, lung collapse / compression, aortic compression and further blood/products prior to theatre. Or resuscitation may be deemed futile.

Asystole

If the patient is in asystole then resuscitation is likely to be futile. On a case-by-case basis it may be appropriate to do CPR whilst attending to 1-4 reversible pathologies.

VF

If the patient is in VF they are usually older and resuscitation is likely to be futile. On a case-to-case basis it may be appropriate to do CPR (internal cardiac massage) for two minutes whilst attending to 1-4 reversible pathologies. After the two minutes shock the patient once, then do CPR for two minutes then stop CPR and make a decision as to futility or not.

Emergency thoracotomy has four uses.

1. Tamponade relief.
2. To collapse and compress lung for haemostasis of unilateral lung injury causing a massive haemothorax.
3. To compress thoracic aorta if exsanguinating below the diaphragm.
4. Internal cardiac massage.