PRACTICE GUIDELINE

Effective Date: **4-16-04** Manual Reference: **Deaconess Trauma Services**

TITLE: TRAUMATIC ARREST

PURPOSE: To define the appropriate priorities and procedures for the management of traumatic arrest and describe the steps in the evaluation of the trauma patient in cardiac arrest and to limit futile care.

DEFINITION: Signs of life are defined as agonal breathing, any movement, any electrical activity, or any obtainable pulse or blood pressure at the scene, en route, or in the Emergency Department.

GUIDELINES:

1. Blunt traumatic arrest with signs of life:
    a. Transfer patient onto trauma gurney and continue ACLS protocol according to continual monitoring of the patient's EKG rhythm.
    b. Complete a rapid primary survey. Confirm presence or absence of spontaneous cardiac and/or respiratory activity.
    c. Perform endotracheal intubation and obtain large bore IV access.
    d. Insert 14-gauge IV catheter into the second intercostal space in the midclavicular line in both sides of the chest. Make sure that the needles puncture into the pleural space and that the steel needles are removed, leaving the plastic cannula in place. If a large amount of air or blood is obtained out of either cannula, then immediately insert a ≥28 Fr. chest tube into that side of the chest. Alternatively, insert chest tube on both sides of the chest as initial procedure.
    e. Run IV's at a full open rate with Rapid Infuser, transitioning to blood products after first liter of crystalloid.
    f. If these measures successfully reestablish pulse, rapidly assess with FAST and transport emergently to OR for operative intervention and continue blood product resuscitation. Activate MTP and consider TXA.
    g. In absence of successful return of pulse, ED thoracotomy may be considered. Although, it should be noted that ED thoracotomy for blunt trauma arrest has essentially 100% mortality and should not be performed routinely. It may be considered, if there is some cardiac activity seen on bedside ultrasound, to allow aortic cross-clamping just above diaphragm, internal cardiac massage, and continued resuscitation with blood products. Rapidly assess with FAST and if return of pulse is achieved, transport the patient emergently to OR for further resuscitative and operative intervention. If no return of pulse after 10-15 minutes of rapid infusion of blood products and internal cardiac massage, terminate resuscitation.
2. Penetrating chest injury:
    a. Transfer the patient to the trauma gurney and immediately listen for breath sounds. Define vital signs from prehospital.
    b. Intubate patient and obtain large bore IV access. Run IV's at a full open rate with Rapid Infuser, transitioning to blood products after first liter of crystalloid.

c. Insert 14-gauge IV catheter into the second intercostal space in the midclavicular line in both sides of the chest. Make sure that the needles puncture into the pleural space and that the steel needles are removed, leaving the plastic cannula in place. If a large amount of air or blood is obtained out of either cannula, then immediately insert a ≥28 Fr. chest tube into that side of the chest. Alternatively, insert chest tube on both sides of the chest as initial procedure.
d. If these measures with ongoing external CPR are unsuccessful at establishing a pulse, left thoracotomy at the bedside should be performed including opening of pericardium and internal cardiac massage.
e. If no return of pulse after 10-15 minutes of continued blood product administration, continued ACLS protocol with open cardiac massage, terminate resuscitation.
f. If at any time, return of pulse is achieved, transport patient emergently to OR, activate MTP, and consider TXA and notify cardiac surgeon

3. Penetrating abdominal injury resulting in traumatic arrest (with signs of life as defined above):
   a. Intubate patient and obtain large bore IV access. Run IV's at a full open rate with Rapid Infuser, transitioning to blood products after first liter of crystalloid.
   b. Continue ACLS protocol, if no response to these initial efforts, ED thoracotomy (left) may be considered to allow aortic cross-clamping just above the diaphragm and internal cardiac massage.
   c. If no response to above measures (either 20-30 min of ACLS with external CPR or 10-15 minutes of ACLS with internal cardiac massage and aortic cross-clamping) terminate resuscitation.
   d. If pulse successfully returns at any point, activate MTP, consider TXA, and transfer emergently to OR for laparotomy.

REFERENCES:

- Deaconess Trauma Guideline Manual, EMERGENCY RESUSCITATIVE THORACOTOMY.

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