PRACTICE GUIDELINES: TRAUMATIC ARREST

OBJECTIVES:

1. To define priorities in the management of traumatic arrest.
2. To describe procedures for the management of traumatic arrest.

DEFINITION:

Traumatic arrest: A patient who is admitted to the trauma room with no pulses or spontaneous respiratory activity. This status includes pulseless electrical activity (PEA).

Signs of life: Presence of blood pressure, neurologic activity, and/or respiratory effort. Cardiac electrical activity in the absence of any other “signs of life” (PEA) will not be an indication to proceed with resuscitative thoracotomy

GUIDELINES:

1. Background
   a. Blunt trauma arrest
      i. Survival is zero.
      ii. Resuscitative thoracotomy should be not be used.
   b. Penetrating Trauma arrest
      i. Up to 30% survival depending on the circumstances and the nature of the injury
      ii. Prognosis is better at urban centers with rapid transport times
      iii. Penetrating chest injuries are associated with greatest survival
   c. General approach to the initiation of resuscitation
      i. Blunt traumatic arrest should have an initial attempt at appropriate ACLS..
      ii. Penetrating traumatic arrest
         a) Do not resuscitate if the patient has had no signs of life (consciousness, movement, blood pressure, pulse) for greater than ten minutes.
         b) Resuscitation can be terminated in the field for patients in asystole.

2. Penetrating chest injury in traumatic arrest with hypotension or loss of VS for no longer than 5 minutes deserves vigorous trauma resuscitation.

3. Penetrating abdominal injury in traumatic arrest and arrives without vital signs (survival 5.7%) and does not respond to initial resuscitation meets criteria for this resuscitation if signs of life present within last 5 minutes.

4. General Procedure for Traumatic arrest:
   a. Transfer patient onto trauma gurney.
   b. Continue CPR.
   c. Do a rapid primary survey.
   d. Confirm presence or absence of spontaneous cardiac and/or respiratory activity (use cardiac ultrasound to view cardiac motion).
   e. Do simultaneous orotracheal intubation and IV access.
      i. In this situation IV access may not be obtainable in peripheral veins.
      ii. Attempt simultaneous femoral venous access and/or subclavian vein IV insertion.
   f. Resuscitative procedures:
i. Bilateral Needle Thoracostomy
   1) If a large amount of air or blood is obtained out of either cannula, then
      immediately insert a chest tube into that side of the chest.
   2) Alternatively, insert chest tube on both sides of the chest as initial

ii. Consider Peri-Cardiocentesis
   1) If penetrating trauma
   2) If positive FAST for pericardial fluid.

i. Assess the cardiac rhythm.
   i. Initiate the ACLS protocol.
   ii. In the usual case, the problem will be asystole and epinephrine will be the first
       drug of choice.

ii. Activate MTP
   i. Run all blood and fluid through rapid infuser.
   ii. The infusion rate should be between 500 and 1000 ml/minute.

i. Determine need for thoracotomy
   i. Indications
      a) Penetrating chest injury with signs of life within 5 minutes of now.
      b) If no pulse or cardiac electrical activity does not proceed.
         Left anterior thoracotomy:
      e) If cardiac function returns
         (ii) Prepare to go to the OR as quickly as possible
              - request Cell saver
              - Continue MTP resuscitation and any pressors
         (iii) Be dignified; cover the thoracotomy with a sheet
      f) If unsuccessful, close thoracotomy skin incision with large nylon running
         sutures. Call the medical examiner/coroner. Stop MTP.