

TRAUMA-RELATED SIGNS & SYMPTOMS**SIGNS & SYMPTOMS:**

1. Contusion, abrasion, laceration, hematoma
2. Pain, tenderness, guarding, numbness & tingling
3. Bruising, swelling, deformity, false/limited motion
4. Muscle weakness or paralysis, loss of sensation
5. Altered mental status
6. Irregular/unstable vital signs
7. \neq pupils, JVD, incontinence, SQ air
8. Pale, cool, clammy skin; delayed capillary refill

OBTAIN HISTORY OF:

1. PMH/Meds/Allergies
2. Mechanism of injury/weapon description
3. Use of protective devices: helmets, seatbelts, airbags, padding
4. Substance abuse
5. Estimated blood loss at scene
6. Time of injury
7. Loss of consciousness

PRECAUTIONS:

1. Pulse oximetry readings may be difficult to obtain in states of low perfusion.
2. Substance abuse masks the signs of injury and illness. Any patient that is unconscious or has an altered mental status has the potential for a spinal injury.

FIRST RESPONDER / BASIC LIFE SUPPORT:

1. Take spinal precautions while assessing and supporting ABCs. Assist ventilations on any patient with decreased LOC and respirations < 10 or > 30 . A Combitube should be attempted if the patient is apneic and has no gag reflex.
2. Control bleeding with direct pressure, elevation, and pressure points. Consider applying TraumaDEX per TraumaDEX protocol.
3. Begin high flow supplemental oxygen via mask.
4. Assess vital signs (BP, pulse, respirations) minimally every 10 min.; more often if unstable.
5. Backboard patient with C-collar if patient complains of head, neck, or back pain, or if suggested by mechanism of injury, or if history is unreliable due to unconsciousness or altered mental status.
6. In extremity trauma with loss of distal pulse, prior to splinting, make one gentle attempt with traction to realign long bones to restore distal circulation. If unsuccessful, splint as indicated and notify receiving personnel immediately about circulatory status. Do not attempt to reduce/realign injured joints.

BASIC LIFE SUPPORT:

1. Immediately begin transport to nearest medical facility, any patient with significant airway, breathing, circulatory, or neurological compromise. Attempt to keep scene times to 10 minutes or less in severe trauma.
2. Consider an ALS intercept or calling for a helicopter if not already done.
3. Expose and perform PASG survey.
4. Consider the PASG on adult patients without penetrating trauma and BP < 50 systolic. Contact medical control prior to inflation.

BASIC-IV LIFE SUPPORT:

1. Initiate IV(s) if patient is exhibiting signs and symptoms of shock, or if they have the potential to go into shock due to known injuries or mechanism of injury. IV(s) in unstable patients should be established enroute unless extrication is delayed.
2. Consider 250cc fluid bolus in any patient with systolic BP < 90 , attempting to maintain BP @ ≥ 90 .

INTERMEDIATE: In addition to above and as appropriate:

1. Attempt ET intubation in any patient with a GCS < 9.
2. Perform chest decompression if evidence of tension pneumothorax.
3. Initiate cardiac monitoring enroute.
4. Consider Morphine 1-4 mg titrated to patient response up to 12 mg for pain control as appropriate.

PARAMEDIC/RN:

1. Consider Phenagran 12.5-25 mg IV for nausea and Morphine Sulfate potentiation.
2. Consider Valium 5 mg IV for pain/sedation if pt has an orthopedic injury.
3. Consider Dilaudid 1-2 mg IV if patient allergic to morphine.
4. Consider needle cricothyrotomy if airway is severely compromised.
5. Consider pericardiocentesis if indicated and appropriate.

PEDIATRIC CONSIDERATIONS:

1. Orders for inflation of pediatric PASG are per medical control only.
2. Consider IV/IO therapy. Fluid challenges are generally 20 cc/kg in significant trauma. Consult medical control as necessary.
3. ALS: IO may be the preferred route in pediatric patients < 5 with significant injuries.

HELMET CONSIDERATIONS:

1. All helmets: Helmets should generally be left in place if there is no evidence of airway or respiratory compromise. Padding, as necessary, should be placed under the torso to maintain neutral alignment. Do not use a V-block on helmeted patients. Stabilization is best accomplished using the horseshoe blanket technique and 2" tape.
2. Football and hockey helmets with shoulder pads:
 - A. In the event the patient is not breathing, or has an inadequate respiratory status, the preferred method of controlling the airway is to leave the helmet on and remove the face mask. The most appropriate way to accomplish this task is with bolt cutters or a Trainer's Angel. The helmet should be removed only as a last resort, but do not delay airway management for meticulous helmet removal.
 - B. If for some reason, the helmet must be removed, it should be removed utilizing the two-rescuer technique with one of the rescuers expanding the helmet laterally. Care must be taken to prevent the head from dropping. At all times during treatment and transport, the neck should be supported in neutral position with towels, etc. maintaining the spine in alignment.

SPECIAL NOTES:

1. Time spent at the scene, assessing and managing the patient's ABCs is time well spent. Secondary surveys, if patient is critical, should be performed enroute.
2. All amputated parts should be retrieved, if possible, for possible reimplantation. Wrap the part in a moist sterile dressing (DO NOT SOAK OR IMMERSE). Place the part in a sealed plastic bag and place the bag on regular ice or cold pack. Avoid tourniquets and never clamp bleeding vessels. Collect teeth and place in container of sterile normal saline.

Gregory T. Grobensch, MD