CRUSH INJURY – PEDIATRIC

BASE GUIDELINES

1. Determine ALS Standing Order treatments/procedures rendered prior to base hospital contact. Use ALS standing order as guidelines for treatments/procedures not initiated prior to Base Hospital/CCERC contact.
2. Use length-based tape for weight determination.
3. Confined space and MCI situations may not allow time for treatment prior to release of crush weight. Ideally, treatment should be started prior to release of compression.
4. Hydrate intravenously prior to release of compression to combat hypovolemia and to dilute cellular toxins.
5. If both legs crushed, do not use IO for vascular access.
6. Pediatric orders apply to crush injury of muscular regions of the legs, pelvis, arms, and shoulders and do not apply to isolated crush injuries of hands or feet. Treat hand or foot crush injuries as isolated skeletal fractures as follows:
   - ▶ Splint or immobilize fractured extremities (note any breaks of skin or open wounds).
   - ▶ May place cold packs over splinted fracture sites for comfort
   - ▶ Transport to nearest appropriate ERC (ALS escort if Morphine or Fentanyl given).
7. For continued pain with systolic BP > 80 give or repeat:
   - ▶ **Morphine 0.1 mg/kg IV/IM**
     - Maximum single dose of 5 mg
     - Maximum total dose 10 mg

     OR
   - ▶ **Fentanyl 2 mcg/kg IV/IM/IN**
     - Maximum single dose 50 mcg
     - Maximum total dose 100 mcg

ALS STANDING ORDER

The following orders apply to crush injury of muscular regions of the legs, pelvis, arms, and shoulders and do not apply to isolated crush injuries of hands or feet. Treat hand or foot crush injuries as isolated skeletal fractures.

1. Obtain pulse oximetry; if room air oxygen saturation less than 95% administer:
   - ▶ High flow oxygen by mask or nasal cannula at 6 L/min flow rate as tolerated.
2. IV/IO access in unaffected limb and administer:
   - ▶ **Normal saline 20 mL/kg bolus** (maximum 250 mL), prior to release of compressing force.
3. For signs of hypovolemia or poor perfusion
   - ▶ Administer a **second Normal Saline 20 mL/kg bolus** (maximum 250 mL), may repeat a **third 20 mL/kg bolus** to attain or maintain perfusion.
4. For possible hyperkalemia due to crush injury of muscle tissue:
   - ▶ **Albuterol, Continuous nebulization of 6.0 mL (5 mg)** concentration as tolerated.
5. If crush injury duration greater than one (1) hour:
   - ▶ **Sodium Bicarbonate (NaHCO3) 1 mEq/kg IV/IO**
6. For severe pain, with systolic BP > 80:
   - ▶ **Morphine sulfate: 0.1 mg/kg IV/IM**, may repeat once for continued pain (maximum single dose 5 mg and maximum total dose 10 mg)

     OR
   - ▶ **Fentanyl 2 mcg/kg IN/IV/IM**, may repeat once after 3 minutes for continued pain (maximum single dose 50 mcg and maximum total dose 100 mcg)
7. Release compression and extricate patient.
8. Non-compressive splints; for bleeding control use direct pressure, hemostatic dressing, or tourniquet.
9. ALS escort, contact Base Hospital or CCERC for appropriate destination per OCEMS Policy # 310.00.

Approved: Carl Schultz, MD

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