Crush Injury/Syndrome (129)

Base Hospital Contact Required	Base Hospital Contact Required
• Obtain order for additional Normal Saline 20mL/kg IV/IO if persistent entrapment. • For persistent ECG abnormalities, obtain order for additional medications.	• Obtain order for additional Normal Saline 20mL/kg IV/IO if persistent entrapment. • For persistent ECG abnormalities, obtain order for additional medications.

128 EXCITED DELIRIUM

Special Considerations

1. Crush syndrome is a systemic illness characterized by dysrhythmias and shock. It results from toxins released from crushed muscle tissue into the blood stream. Patients are at risk for crush syndrome if they have all of the following: 1) circumferential compression causing crush injury; AND 2) involvement of a large muscle group (lower extremity including the thigh(s) and/or pelvic girdle or upper extremity including the pectoral girdle); AND 3) entrapment for at least 1hour. The risk of crush syndrome increases with the amount of muscle involved and the duration of the entrapment.

2. For CRUSH INJURY without risk of crush syndrome release compression and extricate patient. Monitor cardiac rhythm for signs of hyperkalemia.

3. A backboard is not required for spinal motion restriction (SMR) and may cause harm as well as increased pain. Patients should not be transported on a backboard for the purpose of SMR. If a backboard is used for extrication, patients who are alert should then be logrolled onto the gurney prior to transport. The backboard may be used during patient transport for splinting of multiple simultaneous extremity fractures or to assist with maneuvering the unconscious patient. In all cases, the backboard should be removed immediately if causing respiratory compromise.

4. Patients with crush injury require large volumes of fluid resuscitation. Patients with prolonged entrapment will require maintenance fluids. IO access should be considered when attempts at IV access are not successful if: 1) prolonged entrapment is likely (> 30 minutes) and/or 2) there are signs of hyperkalemia and/or 3) there is risk of crush syndrome requiring medication administration.

5. Flush the IV line with normal saline after each medication. Administration of Calcium and Bicarbonate together will cause precipitation of the medication.

6. Higher doses of albuterol are required to treat hyperkalemia. Consider blow-by to avoid agitation in pediatric patients if a mask cannot be tolerated (e.g., infants and toddlers).

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7. The duration of action of the medications is approximately 30 minutes. Contact Base to discuss re-dosing the medications if persistent signs of hyperkalemia or if the patient will not arrive at the hospital within 30 minutes.

8. Tourniquet placement PRIOR to extrication is a last resort for patients who are at risk for crush syndrome in whom vascular access cannot be established or when transport time is anticipated to be > 30 minutes. The tourniquet must completely occlude venous and arterial flow in order to protect the patient from crush syndrome. Establish vascular access and cardiac monitoring immediately after extrication and be prepared to treat symptoms of crush syndrome upon extrication of the patient. Calcium stabilizes the cardiac muscle and should be administered first.

9. These medications should be administered prior to release of the compressive force to prevent complications from the cellular toxins that enter the circulation.

10. Infants and small children are at high risk for hypothermia due to their large surface area to body mass ratio, reduced ability to shiver, and limited body fat.