

Shock Trauma Go-Team Standard Operating Procedure Crush Syndrome Management



Last update: 6 October 2020

During Extrication:

- ▶ Secure large bore intravenous access (intraosseous access acceptable alternative)
- ▶ Infuse **0.9% saline** at **1 - 1.5 L / hour** (avoid Ringer's lactate or Plasmalyte if possible)
- ▶ Begin cardiac monitoring
- ▶ Consider treatment for hyperkalemia if clinically suspected (see below)
- ▶ Obtain blood sample (if capability exists for point of care testing, e.g., i-STAT)
- ▶ Prepare for amputation (see Go-Team Prehospital Amputation SOP)

If Extrication > 2 hours:

- ▶ Consider reducing **0.9% saline** infusion rate to **0.5 L / hr**
- ▶ Attempt to monitor urine output (goal > **300 mL/hr**; place a Foley or condom catheter if able)
- ▶ Consider *alternating* 0.9% saline with **1 L of 0.45% saline + 50 mEq sodium bicarbonate** (infusion rate **0.5 L / hr**)
 - ▶ Targets: pH > 7.5, urine pH > 6.5, normalization of calcium level

Additional Clinical Considerations

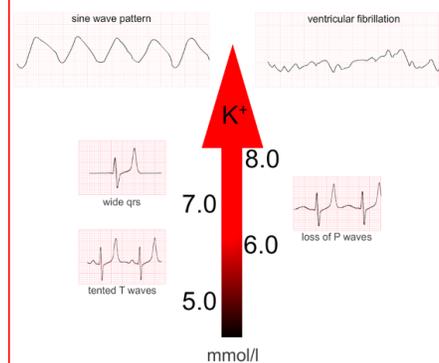
- On site amputation is **only** indicated to rescue the patient NOT to *prevent* crush syndrome
- Only apply tourniquets for life-threatening bleeding
- Diagnose and treat hyperkalemia as early as possible (common < 1 hour after extrication)
- Monitor urine output whenever possible
- Mannitol and alkalinization of the urine are **not** recommended to prevent renal failure, mortality, or need for dialysis

Maintain a low threshold to **DIAGNOSE** and **TREAT HYPERKALEMIA**

If signs of **hyperkalemia**, consider administration of **1 g 10% CALCIUM CHLORIDE** or **3 g of 10% CALCIUM GLUCONATE**

- 1g of CaCl 10% in 10mL is 13.65 meq / 10mL
- 1g of CaGlu 10% in 10mL is 4.65 meq/ 10 mL

ECG/EKG changes in hyperkalemia



Additional treatment options for hyperkalemia:

- **Insulin 10 U IV** followed immediately with **50 mL of 50% dextrose** (25 g of glucose)
 - Alternative: **10 - 20 U insulin in 500 mL of 10% dextrose**
 - Consider 10% glucose infusion at 50 to 75 mL/hr to prevent hypoglycemia (occurs in up to 20%)
- **40 mg IV furosemide** (consider only in patients who may not tolerate excessive volume, i.e. heart failure patients)
- **Albuterol** via nebulizer, 10-20 mg in 4 mL of saline, nebulized over 10 minutes