Hyperkalemia

C- MEDICAL

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GENERAL ASSESSMENT

• Hyperkalemia is common in patients with severe renal failure (particularly those on dialysis) and should be considered when patients have weakness/fatigue, nausea/vomiting, chest pain/palpitations, shortness of breath or numbness/tingling
• Hyperkalemia may also occur when there is significant muscle breakdown such as in rhabdomyolysis and **crush injuries**
• Hyperkalemia can lead to ECG changes that ultimately result in life-threatening dysrhythmias. Treatment in the prehospital setting is based on the severity of the ECG, is temporizing until definitive treatment is achieved in the hospital and aims to stabilize patients with potential to arrest or hemodynamic instability
• Obtain relevant history and assessment including:
  ○ Patients regularly scheduled dialysis sessions and if any session were missed
  ○ Evaluation of dialysis site (e.g. fistula with palpable thrill) if applicable

BLS MANAGEMENT
• Assess ABC's, vital signs, Oxygen PRN (goal >94%) • For patients without a pulse and not breathing see **Medical cardiac arrest**
ALS MANAGEMENT

• Cardiac monitor
• Obtain **12 Lead ECG**. ECG change(s) associated with hyperkalemia (Appendix A) include:
  1. Peaked T-waves
  2. Widened QRS complex (> 0.12 sec; may progress to sine wave)
  3. Bradycardia
• Establish IV/IO
• If ECG change(s) and history are suspicious for hyperkalemia
  1. **Calcium Chloride**
  2. **Sodium Bicarbonate**
  3. **Albuterol**

COMMENT
• Calcium Chloride should be prioritized over sodium bicarbonate because it stabilizes the cardiac membrane. Consider placement of 2nd IV line for since sodium bicarbonate since it may precipitate in IV bag or tubing.

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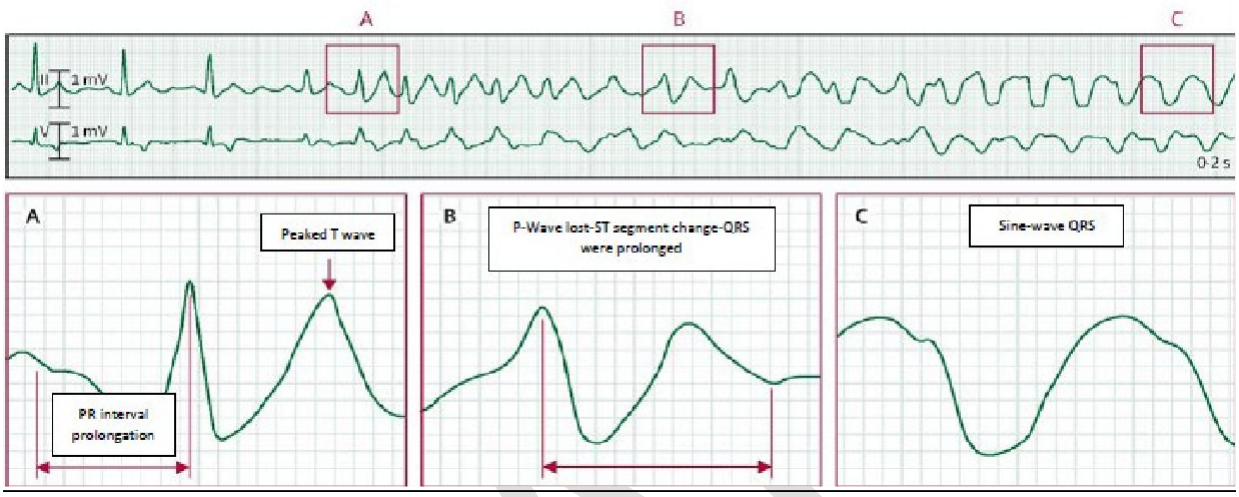
APPENDIX A: ECG changes associated with hyperkalemia



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Effective: xx/xx/xx
Supersedes 10/1/24

BLS Treatment

- **Primary survey:** Identify and immediately correct life threats
- ABCs, vital signs and oxygen as indicated
- **Secondary survey:** Relevant physical examination of the patient

ALS Treatment

HYPERKALEMIA WITHOUT CARDIAC ARREST

spect hyperkalemia in patients with a history of kidney disease, dialysis, or crush syndrome with any of the following clinical findings on ECG or cardiac monitor:

- Bradycardia
- Peaked T waves
- Prolonged QRS (> 0.12 sec), that may progress to sine wave in severe cases (see example below)

l/or

- Recent potassium value > 6.0 mEq (with or without the presence of above ECG findings)

The following approach should be taken for a patient in suspected hyperkalemia especially with ECG findings:

Calcium Chloride

Adult: 1g IV/IO. May repeat every 5 minutes until ECG changes improve, up to a cumulative amount of 4g

Pediatric: 20 mg/kg IV/IO up to 1g per dose over 5 minutes. May repeat every 5 minutes up to cumulative dose of 4g

ly, give medication to shift potassium intracellularly:

Albuterol 5mg/6ml NS via nebulizer over 5 to 15 minutes, repeated 3 times.

ium Bicarbonate:

Adult: 50mEq IV/IO one time dose

Pediatric: 1mEq/kg (max 50mEq) IV/IO one time dose

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following approach should be taken for a patient in suspected hyperkalemia without ECG changes,

e medication to shift potassium intracellularly:

uterol:5mg/6ml NS via nebulizer over 5 to 15 minutes, repeated 3 times.

ium Bicarbonate:

Adult 50mEq IV/IO one time dose

Pediatric: 1mEq/kg (max 50mEq) IV/IO one time dose

HYPERKALEMIA WITH CARDIAC ARREST

fer to protocol **2.04 – Cardiac Arrest** for detailed treatment information.

Notes

- Calcium should always be given first with any of the ECG findings noted above
- Anytime **Sodium Bicarbonate** is administered, the IV should be flushed before and after. In cases of ECG changes in hyperkalemia, Calcium should always be given prior to Sodium Bicarbonate