

Hyperkalemia

MEDZCOOL

1. DEFINITION

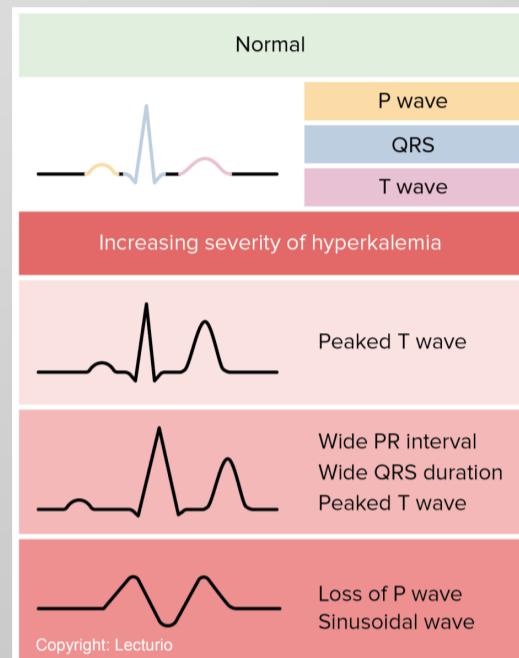
- Hyperkalemia is typically defined as serum potassium concentration exceeding **6 mEq/L** in neonates or **5.5 mEq/L** in children or adults.

Mild	Moderate	Severe
< 6 mEq/L	6 - 7 mEq/L	> 7 mEq/L

2. PEARLS

- Unless the rise is rapid, symptoms or signs generally do not become apparent until the level exceeds 7 mEq/L.
- Cardiac toxicity is exacerbated by:
rapid rise, acidosis, hyponatremia & hypocalcemia.
- Repeat serum potassium level to rule out Pseudohyperkalemia!
- ECG.. ECG..ECG..

3. TREATMENT



IV Calcium to stabilize cardiac membrane :

Calcium Gluconate

60-100 mg/kg. Max 2-3 grams.

Infuse over 2-5 min, may repeat in 10 min if needed. Effect is immediate in onset.
Patient must be on cardiac monitor.

Indications:

significant ECG changes (widening of QRS or loss of P wave). May not be indicated in settings of mild hyperkalemia with isolated peaked T wave.

Contraindications:

Patients taking digitalis (consult Cardio first).
Administration with sodium bicarbonate (would cause Ca precipitation).

Measures to redistribute potassium into the intercellular space :

Insulin & Dextrose

Dextrose 0.5 g/kg with Insulin 0.1 unit/g of dextrose over 15-30 min.

Monitor blood glucose. Lowers potassium by 0.5-1 mEq/L.

Time to onset is 15-30 min, duration 2-6 hrs.

B2 Agonists

0.4 mg nebulized albuterol for neonates, 2.5 mg for infants and children < 25 kg, 5 mg for children 25-50 kg, and 10 mg for patients over 50 kg.

Time to onset is 20-30 min, duration 2-4 hrs. Repeat as needed.

A single dose lowers potassium by 0.5-1 mEq/L.

Sodium Bicarbonate

1-2 mEq/kg over 5-15 min.

Minimal effect if the child is not acidemic.

Time to onset 15-30 min, duration 2 hrs.

Measures to remove potassium from the body :

Na Polystyrene Sulfonate (Kayexalate)

1 g/kg PO or PR, may repeat dose after 4 hrs. Max 15 grams PO, 30 grams PR.

Time to onset is 1-2 hrs. 1g/kg reduces potassium level by 1 mEq/L.

Do not give if within 1 week of surgery (postoperative ileus) or in neonates (high risk of NEC).

Loop Diuretics

1-2 mg/kg furosemide IV.

To avoid hypovolemia, provide non-potassium containing fluids.

Time to onset 15-60 min.

Dialysis

Peritoneal Dialysis; for neonates and infants.

Hemodialysis; older children.



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Source: Fleisher & Ludwig's Textbook of Pediatric Emergency Medicine 8th Edition
5 minute Pediatric Emergency Medicine Consult 2nd Edition