

HYPERKALEMIA

Management of Acute Severe Hyperkalemia $K^+ > 6.5$ mmol/L \pm ECG Changes

Remove Potassium (K^+) Intake & Continuous ECG Monitoring

Stop potassium containing fluids +/- medications
Continuous Electrocardiogram (ECG) monitoring *



Cardiac Membrane Stabilization

Calcium GLUCONATE :0.5 mL/kg/dose (50 mg/kg/dose) IV push over 10 min
Max 3000 mg/dose. May repeat dose in 5 minutes if ECG changes persist
OR Calcium CHLORIDE : 0.2 mL/kg/dose IV (20 mg/kg/dose) over 5 to 10 min
Maximum: 1 g/dose = 10 mL of 10% solution. Need to dilute if peripheral administration



Redistribution Strategies (Shifting Extracellular K^+ into Cells)

Consider simultaneous use + Call for help

Salbutamol

Respiratory
Solution:

2.5 - 5 mg
Continuous
Nebulization

Glucose & Insulin

Regular Insulin
0.1 unit/kg
(max 10 units/dose)
IV over 30 min
(given with dextrose 0.5
g/kg (5 mL/kg of D10)
max 25 g/dose of
dextrose)
Then infusion of
0.1 unit/kg/hr Insulin
(50 units insulin in 50ml
0.9% NaCl)

Furosemide

1 mg/kg
(suggested in
hypovolemic or
euvolemic patients
able to produce urine)

Sodium Bicarbonate

IF pH < 7.2
1 mL/kg over 30 mins
(repeat if pH < 7.2)

*no benefit reported
when used for
hyperkalemia in
non-acidotic patients

REFRACTORY HYPERKALEMIA + ECG Change or Untreated Cause

Removal of K^+
via CVVH

Check Glucose Level Q30 Min if administering Glucose & Insulin Infusions

* Hyperkalemia ECG Features:

- Tall peaked T waves
- Flattened/ Absent P waves
- Sine wave
- Prolonged PR Interval
- Widened QRS Complex
- Bradycardia/ VTach/VFib

Contraindicated Fluids/ Medications:

- K^+ Supplements
- K^+ Sparing Diuretics
- ACE – Inhibitors
- NSAIDs
- Succinylcholine



Causes :

- **Trans-Cellular Shift:** e.g. Acidemia
- **Increased Intake:** e.g. K^+ supplements/ K^+ containing fluids
- **Cell Damage:** e.g. Malignant hyperthermia/ rhabdomyolysis/ tumor lysis syndrome/burns/ hemolysis (Likely to need CVVH in rapid cell breakdown states)
- **Reduced Renal Excretion:** e.g. AKI/hypoaldosteronism/ Addison's/CAH/Pseudo- hypoaldosteronism (e.g. after UTI)
- **Spurious:** e.g. Hemolysed sample