



# The Royal Children's Hospital Melbourne

Guidelines

## Severe hyperkalaemia

- K<sup>+</sup> >7.0 mEq/L or at risk of increasing and/or
- Patient symptomatic and/or
- ECG disturbance:

- Calcium IV
- Salbutamol neb
- Insulin/glucose IV
- Bicarbonate IV if metabolic acidosis
- Dialysis:
  - Urgent if unstable
  - Rapid if stable but symptomatic or abnormal ECG,
  - To consider if asymptomatic but severe level
- Resonium (Polystyrene sulfonate) PR (if dialysis unavailable)

Consider hydrocortisone 1-2 mg/kg IV to consider if suspicion of adrenal insufficiency (guideline)

## Moderate hyperkalaemia

- K 6-7
- Asymptomatic
- Normal ECG

- Salbutamol neb
- Insulin/glucose IV
- Resonium (Polystyrene sulfonate) PR or oral
- Bicarbonate IV if metabolic acidosis

## Mild hyperkalaemia

- K >5.5
- Asymptomatic
- Normal ECG

- Consider no treatment
- Stop K supplements
- Recheck result
- Salbutamol neb
- Polystyrene sulfonate PR or oral ( resonium )
- Bicarbonate IV if metabolic acidosis

## Therapies

### Calcium

- Calcium Gluconate 10%: 0.5 ml/kg slow IV injection
  - o 2-5 minutes if unstable, over 15-20min if stable (Max: 20ml)
  - o Preferable if only peripheral line available

OR

- Calcium Chloride 10% : 0.1-0.2 ml/kg slow IV injection (as above) (Max : 10ml)  
**Note: Give under cardiac monitoring, discontinue if HR dropping significantly**  
**Avoid extravasations**  
**NOT to be given simultaneously with bicarbonate**  
**NOT to be given if digital toxicity**  
Onset of Action: <3 minutes, should see normalisation of ECG. If not: repeat dose (twice)  
Duration: ~30 minutes

### Salbutamol:

- Salbutamol: nebulisation
  - Less than 25kg : 2.5 mg neb q 1-2h
  - More than 25kg : 5mg neb (Adu max 10-20mg) q 1-2h
- Salbutamol : IV \*Only if severe hyperkalaemia after discussion with senior doctor from tertiary center with monitoring for tachycardia

Onset of Action: 30 minutes, should reduced intravascular K+ of 0.5-1.5mmol/L

Duration: 2-3 hours

### Insulin/glucose

**Please see our PICU BCH guidelines**

### Bicarbonate

#### **In metabolic acidosis only.**

*Severe hyperkalaemia* and metabolic acidosis

- Sodium Bicarbonate 8.4% 1mmol/ml : 1-3ml/kg IV over 5 minutes

*Mild to moderate hyperkalaemia* and metabolic acidosis:

- Sodium Bicarbonate 8.4% 1mmol/ml : 1ml/kg in slow IV infusion over 30 minutes

**Note: NOT to give simultaneously with Calcium**

Onset of Action: 30-60 minutes, should reduced intravascular K+ of 0.5

Duration: 2-3 hours

### Dialysis

To be organised with local paediatric renal or intensive care team. Transfer to tertiary centre.

### Resonium

Mild effect, multiple doses necessary, may be used as long term agent

- Polystyrene sulfonate (Resonium) 0.3-1g/kg q 6h (Max 15-30g) PR or oral (with lactulose)

