Hyperkalaemia Guidelines in Adults

MILD
5.5-5.9mmol/l

Identify and treat cause promptly. Consider long term management strategies.

At this stage, acute hyperkalaemia treatment is **not** required.

MODERATE
6.0-6.4mmol/l

Assess rate of change – was rise in potassium level significant? Is a further rise of potassium anticipated?

Yes → **Perform urgent medical assessment: ABCDE**
Urgent ECG – Look for: prolonged *PR interval or QRS duration, tall, tented T-waves, any new arrhythmia (e.g. AF, VT), 2nd degree AV block or complete heart block.* **[Compare with baseline ECG]**

No

Identify and treat cause promptly.
Consider long term management strategies.

SEVERE
≥6.5mmol/l

Perform urgent medical assessment: ABCDE
Urgent ECG – Look for: prolonged *PR interval or QRS duration, tall, tented T-waves, any new arrhythmia (e.g. AF, VT), 2nd degree AV block or complete heart block.* **[Compare with baseline ECG]**

No

Yes

Protect the heart:
10ml of IV calcium gluconate10% (=2.26mmol Calcium) administered over 2-3 minutes*via a large vein

Monitor cardiac rhythm with ECG or continuous cardiac monitor

Shift potassium into cells - administer:
1. IV Actrapid® 10units in 50ml of **glucose 50%** over 30 minutes
2. 10mg of nebulised salbutamol

Recheck potassium level in **2 hours** and **6 hours** after treatment. If unable to obtain blood sample, an **arterial gas sample** would suffice.

Capillary glucose (BMs) **MUST** be monitored:
Every 15 minutes in the first hour
Every 30 minutes in the second hour
Every hour thereafter for a total of six hours

CAUSES OF HYPERKALAEMIA

Medications	ACE inhibitors Angiotensin Receptor Blockers Potassium sparing diuretics Trimethoprim Potassium supplements (IV/oral) Beta blockers Suxamethonium
Acute conditions	Acute kidney injury Metabolic acidosis Rhabdomyolysis Tumour lysis syndrome Burns Hypo-aldosteronism Type IV renal tubular acidosis
Pseudo-hyperkalaemia	Test tube haemolysis Prolonged tourniquet time Marked leucocytosis Haemolysis 'Drip arm' sample

IMPORTANT POINTS TO CONSIDER

- *Calcium gluconate 10% should be administered by medical staff or Advanced Nurse Practitioners. Duration of action is anticipated to be 30 to 60 minutes – repeat if required. A large vein should be used, please check patency of IV access prior to administration, tissue necrosis can occur with extravasation.
- Discuss with a senior member of your clinical team for advice if hyperkalaemia persists after initial treatment. **If required** Contact the Renal team at RIE.
- Peak effect of insulin glucose is usually seen within 30 to 60 minutes after the infusion. This effect may last for up to two hours with a gradual **rebound in potassium** anticipated.
- The effect of nebulised salbutamol can happen within 30 minutes of administration and may last for 2 hours.
- Dialysis patients should be treated as above but the on-call Renal Registrar or Consultant **must** be contacted as urgent dialysis may be required.
- Administration of sodium bicarbonate 1.26% infusion may cause sodium and fluid overload therefore is not a routine treatment strategy unless metabolic acidosis is a concern.

LONG TERM MANAGEMENT STRATEGIES

- Maintain treatment of underlying cause(s) of hyperkalaemia as clinically indicated.
- All medications which can cause hyperkalaemia should be withheld or stopped.
- Cation-exchange resins *(eg: Oral calcium resonium 15g three times daily)* may be considered in some slow resolving cases and should always be prescribed with lactulose.
- Consult the Dietetics team for low potassium dietary advice.

NHS Borders

Written by: Dr Madeleine Vernon, Specialist Registrar Renal Medicine, Jin Hah, Renal Pharmacist
Adapted by Allison Carruthers Clinical Pharmacist, Borders General Hospital Melrose, July 2019
Review Date July 2022