

LRI Children's Hospital

Potassium administration

Staff relevant to:	Medical and Nursing staff caring for children with low potassium on ward 27
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Written by:	A Kamal
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1. Introduction and who this guideline applies to

This guideline is for use in children on ward 27 who have been identified as having low potassium that are either unsuitable for correction with oral potassium supplements, have failed with oral potassium supplements or are unsuitable and/or have failed with normal Intravenous fluids with potassium supplementation.

Related Documents:

This guideline should be used in conjunction with [Fluid Electrolyte Management UHL Children's Hospital Guideline C6/2015](#)

2. Guideline Standards and Procedures

Children needing potassium, whose needs cannot be met with oral potassium or from pre-made infusion fluids containing potassium, will use the following policy which is for use on **ward 27 only at the Leicester Royal Infirmary**.

Normal maintenance potassium for paediatric patients is 1-2mmol/kg/day

Children on chemotherapy specifically on platinum containing regimes are likely to need higher levels of potassium to correct low potassium.

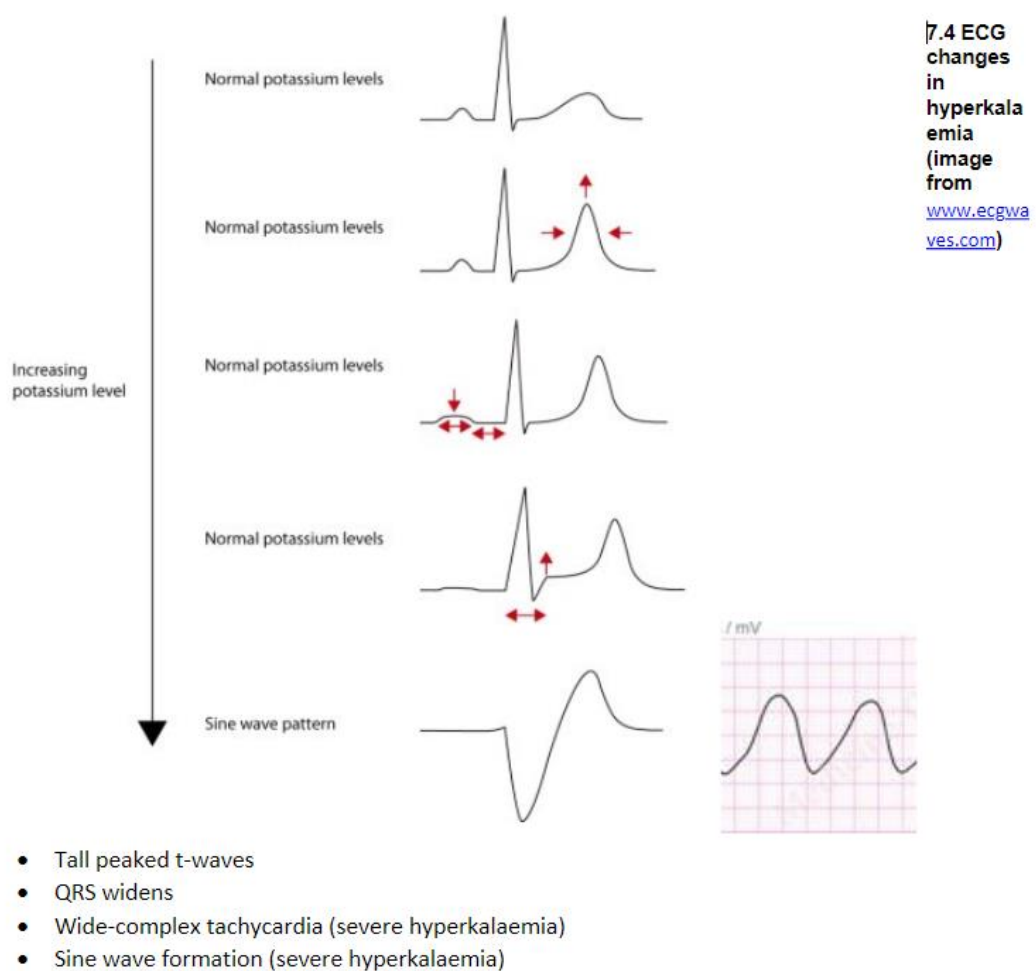
Any additional insult is likely to need higher doses of potassium. This includes diarrhoea, vomiting and inter-current illnesses.

Most patients will only need IV fluids with potassium chloride at maintenance rate to maintain a potassium level > 3.5mmol/L.

However there will be some patients who will need additional potassium to help maintain their homeostasis.

The threshold potassium level for patients is 3.5mmol/L, or as specified by the treating clinician. Treatment should be commenced if the potassium level falls below the target level.

ECG changes can occur as a result of low or high potassium and can also occur during potassium corrections (if over corrections occurs).



7.6. ECG changes in hypokalaemia (www.my-ekg.com)



Moderate Hypokalemia:

ST depression, T waves flattening (red arrows), prominent U waves (orange arrows).



Severe Hypokalemia:

ST depression, negative T waves (red arrows), prominent U waves (orange arrows).

- ST depression
- Negative T-waves (flattened at first)
- Prominent U-waves

Procedure

High strength Potassium corrections on ward 27 can be given during normal working hours (0900-1700) on Monday-Friday following discussion with service week Paediatric Oncology/Haematology Consultant.

If decision is made to give potassium chloride correction out of hours this must be discussed with on-call Paediatric Oncology/Haematology Consultant and nursing staff.

Patients receiving high strength potassium correction must be attached to a **3-lead ECG monitor** (please see ECG changes above)

High strength continuous potassium infusions on ward 27 are not first-line at correcting low potassium levels.

In any 24hour period a child requiring high strength potassium will be given an initial dose of **0.4mmol/kg (maximum dose 20mmols) over 2 hours**

Potassium will then be checked after 2 hours (Blood gas and lab to confirm). If it is low a second dose of **0.4mmol/kg (maximum dose 20mmols)** over **2 hours** can be given.

If potassium is still not corrected following 2 doses of 0.4mmol/kg please discuss with Children's Intensive Care for admission. Higher rates and concentration can be used on Children's Intensive Care.

Please ensure that all other potassium containing fluids are stopped during the correction.

If there are ECG changes on 3-lead monitor that are concerning please inform medical staff immediately and stop the infusion.

Method of administration

Short infusions of 0.4mmol/kg (max dose 20mmols) should be given **CENTRALLY** over **2 hours**

The maximum rate of potassium should not exceed **0.5mmol/kg/hour**

Use ready-made bag only

20 mmol in 100mls of potassium chloride bags made in 0.9% saline are stocked on PICU and ward 27.

Example prescription:

A child who weighs 15kg needs a potassium correction. The total dose of potassium is $0.4 \times 15 = 6$ mmols. The prescription should look like this: -

PRESCRIPTIONS FOR INTRAVENOUS INFUSIONS FOR CHILDREN									
DATE	TIME	INFUSION FLUID	ADDITIVES & AMOUNT (BATCH/BLOOD BAF NO.)	VOLUME	RATE(mls/hour)	EQUIVALENT DOSE	TIME/DATE REASSES	PRESCRIBER'S SIGNATURE	PRINT NAME
23/08/22	1300	POTASSIUM CHLORIDE PRE-MADE BAG (20mmols in 100mls of 0.9% Sodium Chloride)		30mls = 6 mmols	15ml/hr (For 2 hours)			(insert signature)	A.Kamal

3. Education and Training

All relevant staff (nursing and medical) on ward 27 will need to attend/watch presentation on ECG changes due to Hypokalaemia and Hyperkalaemia.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Patients who are prescribed IV potassium correction meets required rate and volume of correction	Audit	Ahmed Kamal	3 yearly	Local clinical audit group

5. Supporting References

1. BNF for Children 2020-2021
2. Medusa Injectable Medicines Guide: accessed via <https://medusa.wales.nhs.uk/Local%20files/UHLP/IV%20Monograph%20POTASSIUM%20CHLORIDE%20vs2-%20PICU%202020.pdf> on 18/02/2022
3. Micromedex Drug Database:
4. Birmingham Children's Hospital Injectable Medicine Guide POTASSIUM CHLORIDE for IV INFUSION Version 1.03

6. Key Words

Potassium Chloride, Electrolytes, Ward 27.

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details	
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Details of Changes made during review: New document	