

Management of Hypokalaemia in PaedOnc

Hypokalaemia suspected

Always repeat sample, if very low worth running a gas at the same time for a rapid result, ensure adequate line discard, not haemolysis or artefactual.

No: Observe

Mild 3-3.5 mmol/l
Moderate 2.5-3 mmol/L
Severe <2.5 mmol/L

Consider likely cause of hypokalaemia

Urinary loss due to drugs (furosemide, amphotericin, aminoglycosides, broad spectrum penicillins, platinum based agents) If on Amphotericin consider addition of amiloride.

Loss in the stools from diarrhoea

Alkalosis

Inadequate intake

Sepsis

Steroids

If confirmed: define severity Mild/Moderate/Severe

Identify aetiology and check for symptoms and signs. Urgency of correction depends on how low potassium is and on presence of symptoms/signs

Is this a clinical emergency?

Symptoms and signs include fatigue, weakness, hyporeflexia, paraesthesia, cramps, restless legs, constipation, ileus, hypo/hypertension, metabolic alkalosis

ECG changes.: flattening of the T wave, appearance of U waves.

No: Mild and asymptomatic

Prescribe oral supplementation if tolerated

No: Moderate

Consider rate of fall and suitability for oral or IV replacement

YES: Severe and or Symptomatic

Prescribe IV potassium replacement, ensure any hypomagnesaemia is also corrected as this will assist in the retention of potassium. Be aware of other potassium containing fluids running i.e. TPN

Oral potassium chloride:

0.5-1mmol/kg twice daily initially, adjusted to requirements.

Available as:-

Kay-Cee-L liquid (1mmol/ml);
Sando-K soluble tablets (12mmol per tablet);
Slow K slow release (8mmol per tablet).

If oral supplementation is not possible, use potassium containing maintenance fluids (ready mixed) e.g. 10mmol or 20mmol potassium chloride in 500ml sodium chloride 0.9%/glucose 5%.

If NBM, ensure KCl in maintenance fluids is used (max 20mmol/500ml peripherally) or adjust KCl content in next PN prescription

If drops to severe or becomes symptomatic

PERIPHERAL (or central) intravenous administration:

Suggested initial dose in acute depletion is 1mmol/kg (up to a maximum of 20mmol) potassium given over 6-12 hours, using one of the following ready-mixed solutions:-

20mmol potassium chloride in 500ml sodium chloride 0.9%

20mmol potassium chloride in 500ml sodium chloride 0.9%/glucose 5%

Maximum infusion concentration for peripheral administration is 20mmol potassium in 500ml. If more concentrated infusion is required, CENTRAL IV access must be used. 

Maximum rate of infusion is 0.2mmol/kg/hr without ECG monitoring. Maximum rate of infusion is 0.5mmol/kg/hr with ECG monitoring in HIGH CARE areas only

CENTRAL intravenous administration ONLY:

Concentrations up to 0.1mmol/ml may be used in HIGH CARE areas only. Concentrations exceeding 0.1mmol/ml may be used in PICU only (see PICU guideline)

0.5mmol/kg may be given over a minimum of 1 hour. Check potassium levels at the end of the infusion and 3-4 hours later. Repeat infusion if necessary.

Concentrated potassium solutions for central administration must be prepared in designated areas authorised to stock potassium ampoules (PAEDIATRIC HIGH CARE, PAEDIATRIC INTENSIVE CARE, PIAM BROWN, G4N). Infusions must be thoroughly mixed following preparation to ensure a uniform solution. Concentrated potassium products must be ordered, stored and recorded as Trust policy.