

Evaluation of Hypokalaemia

Suggested scheme for evaluation of Hypokalaemia

Common causes

Transient

Common in acute illness, ? due to cell uptake consequent to adrenergic activity (stress related).

Drugs

Insulin, salbutamol, gentamicin, cis-platinum, cyclosporin.

Diuretics

Occurs in ~ 5% of patients on thiazide or loop diuretics. Usually associated with a high serum HCO_3^- and high urinary K and Cl.

Diarrhoea

Hypokalaemia associated with a low serum HCO_3^- occurs in diarrhoea, Diamox therapy, and renal tubular acidosis (RTA).

Vomiting

Associated with hypokalaemia (urinary loss), a high serum HCO_3^- , a high urinary K and a low urinary Cl.

Magnesium deficiency

Common cause of hypokalaemia (due to renal loss) in acute/chronic alcohol excess.

Also seen with proton pump inhibitors.

Mineralocorticoid excess (MCE)

Not a common cause of hypokalaemia, but consider Conn's syndrome in hypertension and ectopic-ACTH syndrome in patients with malignancy.

Evaluation

1. Repeat to exclude transient hypokalaemia

2. Evaluate HCO_3^-

Increased: Vomiting, diuretics

Decreased: Diarrhoea, RTA, etc.

3. Spot urine for K and Cl

K:	> 20 mmol/L	Renal loss
	< 20 mmol/L	Extrarenal loss
Cl:	< 10 mmol/L	Vomiting
	> 20 mmol/L	Vomiting unlikely: Diuretics, MCE, Mg deficiency

4. If the cause is obscure

Consider magnesium deficiency, surreptitious vomiting, surreptitious diuretic medication, malignancy (ectopic-ACTH syndrome).