

# Evaluation of Hyperkalaemia

Suggested scheme for evaluation of Hyperkalaemia

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## Common causes

- Factitious (commonest cause)
- Renal failure
- Drugs, potassium sparing diuretics, ACE inhibitors, AT2 receptor blockers, NSAIDs, heparin
- Insulin deficiency/diabetes mellitus
- Mineralocorticoid deficiency (MCD)

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### Factitious (commonest cause)

Characteristic features are normal values for Na, Cl, and HCO<sub>3</sub>, with or without elevated LD and PO<sub>4</sub>.

### Causes

*In vitro* haemolysis

Seepage from cells (specimen degeneration)

Thrombocytosis, leucocytosis

### Action

Repeat on a fresh blood sample.

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### Renal failure

Only in acute tubular necrosis, severe chronic failure (creatinine > 400 µmol/L), and obstructive nephropathy. If hyperkalaemia and serum creatinine < 400 µmol/L, look for another cause (e.g. high K intake, or drug therapy).

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### Drugs

- Diuretics (amiloride, spironolactone, triamterene)
- Prostaglandin inhibitors (ibuprofen, indomethacin)
- ACE inhibitors, Heparin infusion.

Usually associated with depressed HCO<sub>3</sub> and elevated Cl.

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### Insulin deficiency/diabetes mellitus

High K usually associated with high glucose and acidosis (low HCO<sub>3</sub>).

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### Mineralocorticoid deficiency (MCD)

Characteristically low HCO<sub>3</sub> and high Cl. Commonest cause: syndrome of hyporeninaemic hypoaldosteronism (SHH), which occurs in the elderly and is associated with mild renal insufficiency (creatinine < 250 µmol/L); 50% of patients with SHH also have diabetes. Addison's disease is a rare finding.

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## Evaluation

### 1. Repeat electrolytes on a fresh blood sample

### 2. Exclude

- Diabetes
- Acute/severe renal failure, and
- Drugs (*see above*)

### 3. If there is a possibility of MCD

Perform a Synacthen stimulation test (to exclude Addison's disease), followed by evaluation of renin-aldosterone system if necessary (contact laboratory).