

19. Electrolyte Abnormalities Algorithm

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.

- Monitor, support ABCs
- Check vital signs (BP, PR, RR, SPO₂, T° C, **RBS**)
- Start Oxygen **IF** SPO₂ < 94%. Maintain SPO₂ ≥ 94%
- Establish IV Access and send blood samples for **FBC**, **UEC**
- Obtain/review 12-lead ECG for K⁺ abnormalities
- Perform brief, targeted history, physical exam

Hyponatraemia (< 130 mmol/L)	Hypernatremia (> 150 mmol/L)	Hypokalaemia (< 3 mmol/L)	Hyperkalaemia (> 5.5 mmol/L)
<p>For hypotensive patients, give NS 20 mL/kg bolus and repeat until vital signs are stable</p> <p>Consult a Physician for ALL Patients</p> <p>For patients with severe symptoms (vomiting, cardiorespiratory distress, abnormal or deep somnolence, seizures or coma (GCS ≤ 8) (usually in the 100 to 110 mmol/L range), regardless of whether hyponatraemia is acute or chronic: Start IV infusion of 150 ml 3% hypertonic saline over 20 min. Repeat infusion checking the serum sodium concentration every 20 min until a target of 5 mmol/l increase in serum sodium concentration is achieved or until the symptoms improve, whichever comes first.</p> <p>Consider using weight-based (2 ml/kg) rather than the fixed 150 ml infusion volumes of 3% hypertonic saline in case of obviously deviant body composition. Keep in mind that if hypokalaemia is present, correction of the hypokalaemia will contribute to an increase in serum sodium concentration.</p> <p>Do not expect patients with severe symptoms to completely recover immediately, as it may take some time for the brain to fully recover.</p>	<p>For hypotensive patients, give RL 20 mL/kg bolus and repeat until vital signs are stable</p> <p>Consult a Physician for ALL Patients</p> <p>After the patient is stabilized, change fluids to D5 ½ NS to provide for maintenance requirements and on-going losses.</p>	<p>For hypotensive patients, give RL 20 mL/kg bolus and repeat until vital signs are stable</p> <p>Mild-Moderate hypokalaemia (2 -3 mmol/L) Patients who have mild or moderate hypokalaemia may need only oral potassium replacement therapy if nausea or vomiting is not the cause of the hypokalaemia.</p> <p>Giving 40 to 60 mmol of elemental potassium orally every 2 to 4 hours for 3 days.</p> <p>Severe hypokalaemia (< 2mmol/l) Give 40 mmol K⁺ in 1L RL over 1 hour with continuous ECG monitoring.</p> <p>Additionally, restoration of normokalaemia relies on the establishment of normomagnesemia as both K⁺ and Mg²⁺ co-transport in the kidney.</p> <p>Give 2gm magnesium sulphate along with potassium replacement.</p> <p>Consult a Physician for ALL Patients</p>	<p>For hypotensive patients, give NS 20 mL/kg bolus and repeat until vital signs are stable</p> <p>Give calcium to protect the heart (not bind K⁺) ONLY to patients with;</p> <ul style="list-style-type: none"> • a widening QRS including a sine wave, • a cardiac arrest that is believed to be due to hyperkalaemia, or • signs of rapidly progressing hyperkalaemia in the face of tumour lysis syndrome, massive haemolysis, or rhabdomyolysis where a normal ECG has rapidly progressed through tall peaked T waves and loss of the P wave. <p>Give 10mls 10% CaCl₂ (6.8mmol) over 10mins OR 30mls 10% Calcium Gluconate (6.6mmol) over 10mins</p> <p>1. Check RBS. If RBS < 14mmol/L, give 50mls 50% dextrose IV bolus 2. Then give 10units soluble insulin IV bolus</p> <p>Repeat 1 & 2 above if repeat K⁺ is > 5.5 mmol/L</p> <p>Re-check RBS hourly</p> <p>Nebulise Salbutamol 10 to 20 mg in 4 ml of NS over 10 minutes - 25-40% of patients do not respond secondary to tachyphylaxis.</p> <p>Serum potassium will be lowered approximately 10 to 30 minutes after the above measures are performed, and the effect will last for 2 to 6 hours.</p> <p>Consult a Physician for ALL Patients</p>