



GUIDELINE

Hyperkalaemia Management

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

Aim

This outlines management of hyperkalemia in the newborn.

Risk

- Extreme prematurity
- Oral or parenteral K⁺ supplementation
- Acute renal failure (e.g. perinatal asphyxia)
- Hemolysis and cell necrosis
- Sepsis
- Low systemic blood flow leading to metabolic acidosis
- Drugs- beta blockers, suxamethonium, K⁺ sparing diuretics

Background

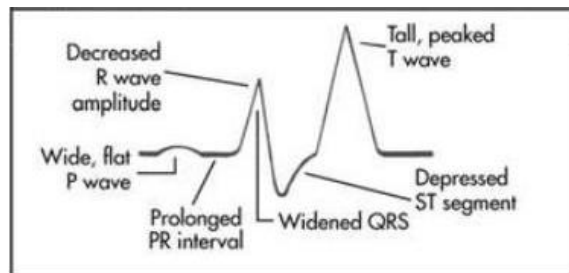
- The normal range of serum potassium levels in newborn is 3.5-6.0 mmol/L.
- Hyperkalemia is a potentially life-threatening condition which if untreated can lead to arrhythmias and death.
- It is most commonly seen in extremely preterm infants with impaired renal function.
- Cardiac toxicity is enhanced by hypocalcaemia, hyponatremia or acidosis, and newborns with these abnormalities may experience complications at lower potassium levels.

Definitions

Serum potassium (K^+) > 6.5 mmol/L (in a free flowing venous or arterial sample).

Clinical Manifestations

- Most babies are asymptomatic and hyperkalaemia is noted on the routine monitoring of levels.
- ECG changes as below



- Cardiac conduction disturbance, resulting in wide complex tachycardia, ventricular fibrillation and cardiac arrest.

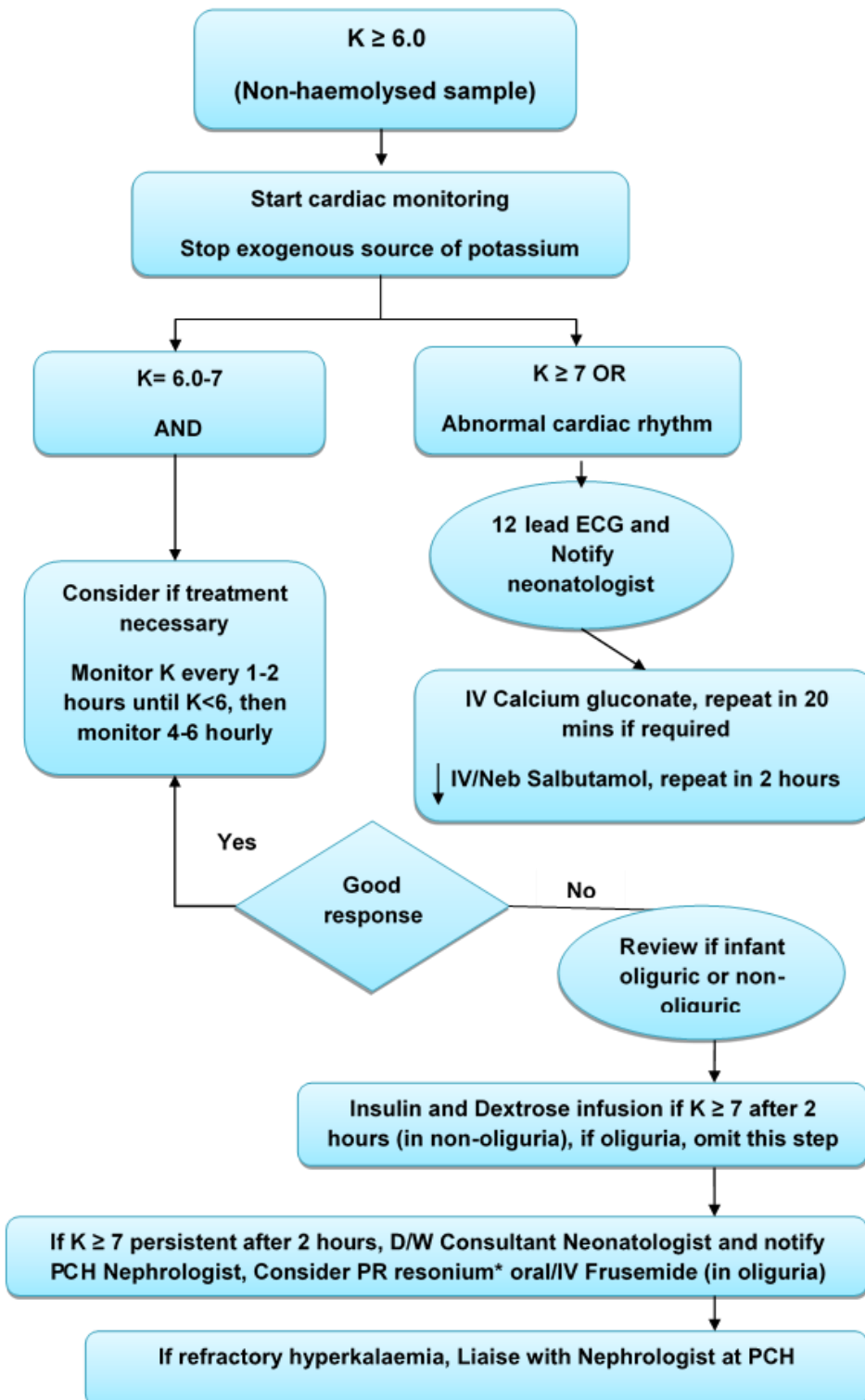
Diagnosis

- If K^+ > 6.5 mmol/L in capillary blood sampling then baby should have the levels checked by free flowing venous sampling or arterial sampling. If K^+ > 6.5 mmol/l in venous or arterial sampling, baby should have cardiac monitoring.
- 12 lead ECG should be performed if K^+ > 7 mmol/L or if evidence of cardiac arrhythmia on monitoring.
- Check urine output and exclude other causes of hyperkalaemia.
- It will also be useful to note the trend in K^+ recorded from the blood gases.

Principles of treating Hyperkalemia

- Ensure Serum potassium levels are truly elevated with a repeat free flowing sample.
- Cease administration of potassium from all sources (including TPN) immediately and review for nephrotoxic drugs.
- Look for ECG changes and continuous ECG monitoring is in place.
- Stabilise the myocardium: Prevent or treat myocardial excitability by giving calcium gluconate
- Increase cellular uptake of potassium by medications:
 - [Sodium bicarbonate](#) if there is acidosis
 - IV [salbutamol](#)
 - Glucose and insulin drip


- Removal of excess potassium: Furosemide and Calcium resonium.
- In refractory conditions: Peritoneal dialysis, Haemodialysis and Hemofiltration after discussion with Nephrology team.



References and related external legislation, policies, and guidelines (if required)

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8. <http://kidshealthwa.com/guidelines/hyperkalaemia/>
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