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Laboratory Medicine Procedure LMGPR004

HYPERKALAEMIA IN ADULTS
(K >5.3 mmol/L)

Patients with CKD, heart failure and/or diabetes, who are at risk of hyperkalaemia, should undergo regular monitoring at a frequency (2-4 times per year) dependent on level of renal function and degree of proteinuria.

MILD
5.4 – 5.9 mmol/L
Not usually a medical emergency.

MODERATE
6.0 – 6.4 mmol/L
Possible medical emergency.

SEVERE
≥ 6.5 mmol/L
Usually a medical emergency; admit (*unless spurious; see **BOX 1***)

BOX 1
Causes of spurious/artefactual:
1. Haemolysis. A comment will be added to the results if present.
2. Fist-clenching.
3. Contamination from FBC tube (K-EDTA).
4. Delayed arrival in lab (>6 hours).
5. Cold sample storage before arrival in lab e.g. put in fridge.
6. High platelet count.
7. High WCC.

If causes 1, 2, 3, 4 or 5 suspected, repeat, avoiding precipitating cause.
If causes 6 or 7 suspected, repeat using a green top sample tube sent straight to lab.

BOX 2
Some causes of true:

Drugs
- ACE inhibitors*
- Angiotensin receptor blockers (ARBs)*
- K-sparing diuretics/MRA (spironolactone, eplerenone, amiloride, triamterene)*
- Beta-blockers (non-selective)
- NSAIDs
- Trimethoprim
- Heparin
- Antifungals
- Ciclosporin
- Tacrolimus

**Serum K should be measured within 1-2 weeks of initiation or increase in dose of an ACEI, ARB, or MRA*

Renal Failure
- Chronic (usually stage 4 or 5)
- CKD and ingestion of foods high in potassium
- AKI
- Diabetic nephropathy (renal impairment may appear moderate)

Iatrogenic
- K-supplements
- Salt substitutes e.g. LoSalt
- Herbal medicines

Metabolic Acidosis
Hypoaldosteronism

Severity of Hyperkalaemia	Clinically well[$] (no AKI) and new result	Clinically unwell or AKI
MILD K^+ 5.4 – 5.9 mmol/l	Repeat within 14 days[+]	[#]Consider if hospital referral is indicated
	Assess for cause (see **BOX 2**) and address in community	
MODERATE K^+ 6.0 – 6.4 mmol/l	Repeat within 24 hours[+]	Refer to hospital
	Assess for cause (see **BOX 2**) and address in community or hospital	
SEVERE K^+ ≥ 6.5 mmol/l	Refer to hospital for immediate assessment and treatment	
	Assess for cause (see **BOX 2**) and address during hospital admission	

Suggested interval for repeat blood monitoring following an episode of hyperkalaemia.
[$]i.e. The test was done as a routine check rather than for acute illness, and there is no AKI warning stage.
[+]Take steps to minimise any of the factors that can cause artefactual hyperkalaemia (see **BOX 1**)
[#]Need for hospital referral (ED) will be guided by clinical circumstance and risk of further deterioration.

References and links to further information:
Changes-in-Kidney-Function-FINAL.pdf (thinkkidneys.nhs.uk) Accessed 20/07/23
Renal Association Hyperkalaemia Guideline 2022 (ukkidney.org) Accessed 20/07/23
Hyperkalemia: Practice Essentials, Background, Pathophysiology (medscape.com) Accessed 20/07/23

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