

Traffic Lights: how to monitor renal function and potassium rises in stable heart failure

This advice applies to monitoring of pharmacotherapy in clinically stable patients – it does NOT apply to patients with intercurrent acute illness. This advice does NOT apply to people taking potassium binders – refer to the [POTASSIUM BINDER PATHWAY](#) for management of these patients.

Use the immediate pre-treatment serum creatinine concentration as the baseline. Remember that the risk of death is higher in acute hyperkalaemia than in chronic hyperkalaemia.

Creatinine Rise



Serum creatinine rise <15% from baseline
→ No action required



Serum creatinine rise >15% but <30% from baseline

- Continue current dose
- Arrange clinical review to assess:
 - fluid status – reduce concurrent diuretics if hypovolaemic
 - blood pressure – stop or reduce other BP-lowering drugs if SBP <120mmHg
- Repeat U&Es in a further 1 to 2 weeks



Serum creatinine rise 30% - 50% from baseline

- Aim to initially continue renin-angiotensin-aldosterone (RAAS) inhibitor
- Arrange clinical review to assess:
 - fluid status – reduce concurrent diuretics if hypovolaemic
 - blood pressure – stop or reduce other BP-lowering drugs if SBP <120mmHg
- Repeat U&Es within 5 to 7 days; if serum creatinine remains >30% from initial baseline either ↓ dose or temporarily stop - discuss with HF team



Serum creatinine rise >50% from baseline OR eGFR <20
→ Temporarily stop
→ Seek advice from HF/renal service

Potassium Rise



Potassium <5.5mmol/L
→ No action required



Potassium 5.5-5.9mmol/L

- As long as patient well and no AKI, increase frequency of biochemical monitoring but do not stop RAAS inhibitor
- Look for and remove other contributors to hyperkalaemia*
- Consider reducing dose
- Consider referral to secondary care for potassium binder



Potassium 6.0-6.4mmol/L

- Stop RAAS inhibitors/Aldosterone receptor antagonists
- If hyperkalaemia is unexpected, consider arranging a repeat test the following day
- Look for and remove other contributors to hyperkalaemia*
- Repeat potassium within 1 week
- Re-start at lower dose once K<5.5
- Re-start one drug at a time, with close monitoring
- Consider referral to secondary care for potassium binder



Potassium ≥6.5mmol/L
→ Refer to hospital for immediate treatment

* Factors to consider in hyperkalaemia:

- Artefactual
- Trimethoprim/co-trimoxazole/NSAIDs
- Potassium supplements
- Potassium-sparing diuretics
- Check for overdiuresis/hypovolaemia
- Non-selective beta-blockers
- Digoxin toxicity
- Use of salt substitutes e.g. 'LoSalt'

References

Think Kidneys, the Renal Association and the British Society for Heart Failure. Changes in kidney function and serum potassium during ACEI/ARB/diuretic treatment in primary care. 2017. Available from <https://www.thinkkidneys.nhs.uk/aki/wp-content/uploads/sites/2/2017/10/Changes-in-Kidney-Function-FINAL.pdf>

Clark, AL et al. Change in renal function associated with drug treatment in heart failure: national guidance. *Heart* 2019; 105:904-910.

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