

How to Monitor and Manage Acute Changes in Kidney Function Related to RAASi



ASPC
The American Society for Preventive Cardiology



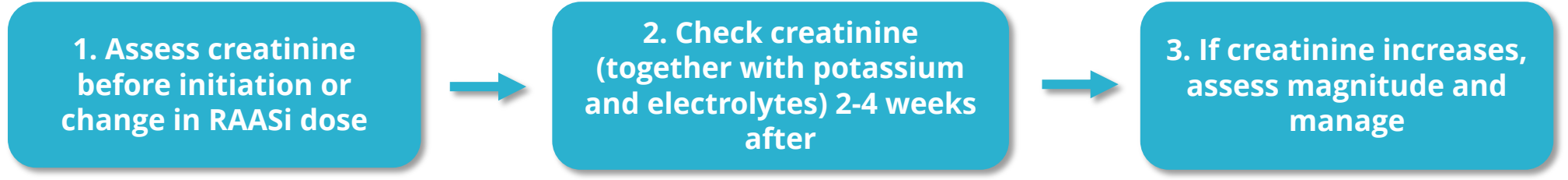
HFA
Heart Failure Association
European Society of Cardiology



ISN
INTERNATIONAL SOCIETY OF NEPHROLOGY



RPA
Renal Physicians Association



Note: increase in serum creatinine can be a result of a haemodynamic RAASi effect

Creatinine increases <50% from baseline
(as long as and eGFR remains >20ml/min)

- Acceptable, no changes in RAASi needed if kidney function stabilizes
- Further assess creatinine as part of the long-term monitoring

Creatinine increases between 50 to 100%
(as long as eGFR remains >20ml/min)

- Reduce dose to half or temporary withhold RAASi
- Exclude reversible causes (refer to info #2)
- Reassess kidney function after 2-4 weeks
 - If improvement, increase dose or re-introduce at half dose (check creatinine again in 2-4 weeks)

Creatinine increases more than 100%

- Temporarily withhold RAASi
- Exclude reversible causes (refer to info #2)
- Reassess kidney function in 2-4 weeks
 - If improvement, re-attempt the doses (check creatinine in 2-4 weeks)

Note: Keep in mind that discontinuation and reducing doses of RAASi can worsen outcomes in HF and CKD

- *In the management of HF as a primary indication for RAASi a more aggressive approach is preferred if kidney function is preserved*
 - *In advanced CKD a more conservative approach may be necessary*

Following Work Up is Recommended:

Causes for worsening kidney function

Pre-renal

- Volume depletion (gastro-intestinal losses, excessive diuretic use inadequate intake)
- Renal venous congestion due to volume overload
- Deterioration of LV function

Renal

- Nephrotoxic medications
- Drugs that alter glomerular hemodynamic
 - Interstitial nephritis
 - Glomerular disease
- Urinary tract Infection, sepsis

Post-renal

- Urinary obstruction
 - Ascites

Evaluation and clinical assessment

Volume status evaluation (skin turgor, blood pressure, lung auscultation, jugular venous pressure, oedema)

- Concurrent or new medications (NSAIDs/Antibiotics/SGLT2i/MRAs)

Abdominal examination and history of anuria, or bowel obstruction or others.

Lab and Imaging evaluation

Echocardiogram and renal ultrasound +/- renal Doppler

- Urinalysis
- Kidney biopsy

Midstream urine, kidney ultrasound