

# Heart failure medication titration problem solving guidelines

NSAIDs or COX-2 inhibitors are contraindicated in patients with heart failure. Avoid negatively inotropic calcium channel blockers (verapamil, diltiazem) in patients with heart failure with reduced ejection fraction (HFrEF).

## Hypotension

- **Asymptomatic hypotension** does not usually require any change in therapy (systolic BP 90–100 mmHg).
- **Symptomatic hypotension** (dizziness, light-headedness and/or confusion):
  - I. Stop or reduce calcium channel blockers and/or other vasodilators unless essential e.g. for angina.
  - II. Consider reducing diuretic dose if there are no signs or symptoms of congestion.
  - III. Temporarily reduce ACEI / ARB / ARNI or beta-blocker dose if above measures do not work.
  - IV. Review patient as clinically appropriate within one week and seek specialist advice if the above measures do not work.

Severe symptomatic hypotension or shock requires immediate referral to an emergency department.

## Worsening renal function

- ACEI / ARB are generally well tolerated even in patients with renal impairment (eGFR less than 30mL/min). Use ARNI with caution in patients with eGFR less than 30mL/min.
  - Heart failure patients are more vulnerable to acute renal failure following a destabilising event such as a dehydrating illness or over-diuresis or addition of nephrotoxic medications.
- NB. Advise patients experiencing such an event to seek urgent medical attention and to stop the ACEI / ARB / ARNI until clinically reviewed and blood chemistry is checked.
- Some rise in urea, creatinine and serum K<sup>+</sup> is expected after commencing an ACEI / ARB / ARNI. Blood chemistry must be checked one week after commencing or titrating dose and monitored closely thereafter to ensure kidney function is not worsening.
  - An eGFR decrease of up to 30% is acceptable provided it stabilises within 2 weeks. Check serum K<sup>+</sup>, creatinine and urea within 48 hours if required.
  - If the eGFR declines more than 30%, the patient should be reviewed urgently for clinical assessment of volume status and review of nephrotoxic medications. Seek specialist advice regarding the safety of continuing therapy.

**Caution:** eGFR may over estimate renal function in low body weight individuals and does not reflect accurate renal function in individuals with fluctuating creatinine levels.

## Hyperkalaemia

- Careful serum K<sup>+</sup> monitoring is required with ACEI / ARB / ARNI and MRA. Urgently check serum K<sup>+</sup>, creatinine and urea if patient is dehydrated or septic. If serum K<sup>+</sup> rises to:
- I. 5.0–5.5 mmol/L, review and reduce K<sup>+</sup> supplements or retaining agents (e.g. amiloride, spironolactone, eplerenone).
  - II. 5.6–5.9 mmol/L, cease all K<sup>+</sup> supplements or retaining agents.
  - III. 6 mmol/L or greater, immediately seek specialist advice.

## Bradycardia

- Where heart rate is less than 50 beats per minute, and the patient is on a beta-blocker, review the need for other drugs that slow heart rate (e.g. digoxin, amiodarone) in consultation with specialist; and arrange ECG to exclude heart block.
- Consider reduction of beta-blocker where there is marked fatigue or symptomatic bradycardia.

## Congestion or peripheral oedema

Suggested actions when congestion or peripheral oedema is worsening:

- Increase the diuretic dose and then consider halving the dose of beta-blocker.
- Liaise with the heart failure service and review the patient daily or weekly (as appropriate).
- Seek specialist advice if symptoms do not improve; and, if there is severe deterioration, refer patient to an emergency department immediately.

## Angioedema and cough

- I. Angioedema, although rare, can occur at any time when using ACEI / ARB / ARNI. Actions include:
  - Stop ACEI / ARB / ARNI immediately.
  - Seek specialist advice where angioedema occurs with an ACEI before trialling ARB due to possible cross-sensitivity.
  - Avoid ARNI where angioedema is due to ACEI / ARB.
- II. Cough is common in patients with heart failure. Actions include:
  - Exclude pulmonary oedema as a cause if cough is new or worsening.
  - Consider if cough is caused by ACEI or other drugs and only discontinue drug if cough is not tolerable.
  - Consider substituting ACEI with an ARB if the cough is troublesome or interferes with sleep.