Queensland Government

Heart Failure Medication Titration Plan

Facility: .....

(Affix identification label here)

URN:

Family name:

Given name(s):

Address:

Date of birth: Sex: ☐ M ☐ F ☐ I

In heart failure with reduced ejection fraction (HFrEF) the following medications can reduce morbidity and mortality when titrated to maximum tolerated dose: i) angiotensin-converting-enzyme inhibitor (ACEI) or angiotensin II receptor blocker (ARB) or angiotensin receptor-neprilysin inhibitor (ARNI); ii) HF guideline recommended beta-blockers and; iii) mineralocorticoid receptor antagonists (MRA).

Monitoring recommendations:

- Check blood pressure (BP) (including postural drop) and heart rate (HR) each visit and clinically review the patient prior to each dose adjustment
- ACEI/ARB/ARNI/MRA check: serum K+, creatinine, eGFR, and urea 1 week after commencing or titrating dose
- MRA: ensure that baseline serum potassium (K+) is less than 5mmol/L and eGFR is greater than 30mL/min; check serum K+, creatinine, eGFR, and urea monthly for 6 months, then 6 monthly once dose is stable
- Diuretic dose change beyond 3 days requires medical, blood chemistry, and fluid status review

NB. Patients over 75 years old with comorbidities are more likely to experience adverse effects

Observations	EF %	eGFR mL/min	Serum K+ mmol/L	BP mmHg	HR bpm	Weight kg	Target weight kg
Date (if known)							

Medication titration instructions

Order (1,2,3)	Drug Class	Medication name	Current dose/frequency	Target dose/frequency	Schedule
	ACEI ARB ARNI				**Caution: >36hr washout if changing from ACEI to ARNI** Increase dose by: every week(s)
	Beta-blocker[1]				Increase dose by: every week(s)
	MRA				**Caution: Risk of hyperkalaemia** Increase dose by: every week(s)
	Diuretic			Variable dose with no target[2]	Fluid overloaded increase dose to: Dehydrated decrease dose to:

Additional instructions:

1. HF guideline recommended beta-blockers; consider ivabradine if HR remains greater than 77 despite maximum tolerated beta blocker dose (only use in sinus rhythm)
2. Increase dose where weight gain is more than 2 kg over 2 days. Reduce dose where weight loss is more than 2 kg over 2 days (unless still congested) and / or there are signs of dehydration (dizziness, postural hypotension, dry mucosa)

HF medications to be titrated by (name): .....

Medical Consultant's name: .....

Prescriber's name: .....

Prescriber's signature: .....

Date: .....

[Insert Service Name]

Phone: Fax:

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HEART FAILURE MEDICATION TITRATION PLAN

v6.00 - 10/2017

SW066

Queensland Government

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Heart Failure Medication Titration Problem Solving Guide

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+ is expected after commencing an ACEI / ARB / ARNI. Blood chemistry must be checked one week after commencing or titrating dose and monitored closely there after 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+, 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+ monitoring is required with ACEI / ARB / ARNI and MRA. Urgently check serum K+, creatinine and urea if patient is dehydrated or septic. If serum K+ rises to:

I. 5.0–5.5 mmol/L, review and reduce K+ supplements or retaining agents (e.g. amiloride, spironolactone, eplerenone)

II. 5.6–5.9 mmol/L, cease all K+ 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

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This form is not intended to replace clinical judgement. Endorsed by the Queensland Heart Failure Services Steering committee August 2017. To down load form: ttp:/www.health.qld.gov.au/heart_failure