Best Practice Message

November 2025

How to treat Heart Failure while awaiting echocardiography

Practice changing moments

- If clinical symptoms and diagnostic tests strongly suggest heart failure, prescribers do not need to wait for an echocardiogram to start treatment. Introduce the 'four pillars' as early as practically possible.
- The 'four pillars' of heart failure have well established evidence in reducing mortality and hospitalisations in patients with HFrEF.
- The four pillars include the optimised use of:
  - Sodium Glucose Co-Transporter 2 (SGLT2) inhibitors
  - ACE inhibitors (ACEI) or Angiotensin receptor blockers (ARB) or Angiotensin receptor-neprilysin inhibitors (ARNI)
  - Mineralocorticoid Receptor Antagonists (MRA)
  - Beta-adrenoceptor blocking agents (Beta-blockers)

  \+ a loop diuretic for fluid retention.

BACKGROUND

Heart failure (HF) is a significant public health issue in Aotearoa, affecting a growing number of people. Heart failure affects an estimated 2 – 3% of all adults. Heart failure is also a significant equity issue with Māori almost twice as likely to die from heart failure than non-Māori.[1]

Heart failure is a clinical syndrome consisting of symptoms such as breathlessness, ankle swelling and fatigue that may be accompanied by signs such as elevated jugular venous pressure, pulmonary crackles, and peripheral oedema.[2] To make a clinical diagnosis of heart failure, clinicians interpret presenting features in the context of the patient's history and co-morbidities, supported by laboratory markers, such as Brain Natriuretic Peptide (BNP). BNP is an important initial test for heart failure – a negative result is useful for ruling out heart failure.[2,3] Electrocardiograms and chest x-ray may also be part of initial investigations.

Echocardiography can distinguish the type of heart failure based on the measurement of left ventricular ejection fraction (LVEF). Echocardiography findings can help refine long term decisions but is not required to make an initial diagnosis and may not be appropriate for patients in cases where the results will not alter clinical management.[4,5] Access to echocardiography is very limited. If the clinical presentation of heart failure is supported by either a raised BNP or evidence of pulmonary or systemic congestion, then current recommendations are that heart failure treatment should be initiated as if the patient has heart failure with reduced ejection fraction.[4,5]

CLASSES BY LVEF OF HEART FAILURE AND PHARMACOLOGICAL MANAGEMENT

Heart failure with reduced ejection fraction (HF**r**EF) is defined as heart failure symptoms and LVEF ≤40%, i.e. those with a significant reduction in LV systolic function. HF**r**EF has well-established guideline-directed medical therapies that improve survival. HF**r**EF patients should be established on guideline-directed medical therapy – also referred to as the 'four pillars' of heart failure treatment – as early as practically possible.[2,6] The four pillars include the optimised use of: Sodium Glucose Co-Transporter 2 (SGLT2) inhibitors, ACE inhibitors (ACEI) or Angiotensin receptor blockers (ARB) or Angiotensin receptor-neprilysin inhibitors (ARNI), Mineralocorticoid Receptor Antagonists (MRA) and Beta-adrenoceptor blocking agents (Beta-blockers). The approach also includes the addition of a loop diuretic for fluid retention to decrease pulmonary and peripheral congestion.

The four pillars treatment approach is generally also recommended for patients with LVEF 41 -49%, classified as mildly reduced (HF**mr**EF); although the evidence supporting a clear benefit in HF**mr**EF is somewhat less robust. For heart failure with preserved ejection fraction (HF**p**EF), those with LVEF ≥50% the supporting data for the use of the four foundational therapies is currently more limited. However, the pragmatic approach of treating all suspected heart failure as HF**r**EF has a high benefit to risk ratio.
Further details of the evidence of use for each of the 'four pillars' can be found in appendix 1.

HOW TO APPROACH INITIATION AND TITRATION OF THE FOUR PILLARS

A recommended approach to patients with suspected heart failure starts with considering a loop diuretic for symptom control. After that the prioritisation of the four pillars is guided by: the presence of euvolemia, heart rate, blood pressure, renal function and potassium.

Factors to consider when initiating or titrating the four pillars in primary care[3,5,7–9]:

Factor to consider:	SGLT2 Inhibitors	ACEI/ARB/ARNI	MRA	Beta blockers
Fluid balance	Diuretic effect may help volume overload. Consider reducing other diuretics. Monitor for volume depletion.	Watch for hypotension in volume-depleted patients. ARNI: Entresto® has a diuretic effect - consider reducing other diuretics.	Caution if combined with other diuretics.	Ideally should not be initiated until euvolemic. If patient is already on a beta blocker and presents overloaded, beta blocker can be continued.[5]
Heart rate	No direct effect.	No direct effect.	No direct effect.	Do not start if heart rate <60bpm or titrate if heart rate <55bpm.
Systolic blood pressure (SBP) If SBP < 100 mmHg: Reduce diuretic and stop other antihypertensives such as calcium channel blockers.	**Consider whether patient has symptomatic hypotension**.			
	SBP < 100 mmHg: Do not start empagliflozin except on cardiology advice.	SBP < 100 mmHg: Consider low dose ACEI instead of ARNI. SBP < 80 mmHg: Do not start ACEI. Seek cardiology advice before titrating if SBP is < 95 mmHg.	SBP < 100 mmHg: Consider low dose.	SBP < 100 mmHg: Initiate at low dose. Seek cardiology advice before titrating if SBP is < 95 mmHg.
Renal function - estimated Glomerular Filtration Rate (eGFR) eGFR ≥ 30mL/min	Can start. The empagliflozin dose for heart failure is 10mg but can titrate up if also using for T2DM.	Can start or titrate up.	Monitor K+ levels closely if eGFR < 60mL/min. Lower doses may be required.	Can start or titrate up.
eGFR < 30mL/min but > 20 mL/min	Can be started. Maximum dose empagliflozin 10mg/day.	ACEI and ARB are renal protective, low doses may be started in patients with diabetes.	Do not start unless under specialist advice.	Can start or titrate up.
eGFR < 20mL/min	Do not start unless under specialist advice but does not need to be stopped if patient is already taking. Maximum dose empagliflozin 10mg/day.	Do not start unless under specialist advice.		Bisoprolol use a maximum of 10mg daily. Metoprolol and carvedilol are hepatically cleared and can be started or titrated in impaired renal function.
Potassium K+ ≤ to 5	Can start or titrate up. Empagliflozin may reduce K+ levels.	Can start or titrate up. Risk of hyperkalaemia - monitor closely.	Can start.	Can start or titrate up.
K+ > 5 but < 5.5			Do not start. Seek cardiology advice on reducing dose.	
K+ > 5.5		Do not start. Consider stopping.		

Receiving multiple classes of the four pillars at lower doses is likely more effective in reducing risk than receiving one or two at a higher dose. Patients should be titrated to the maximum tolerated dose. Benefits are seen even if target doses are not reached.[10] Titration over a short period is recommended. The bpac titration plan may give guidance on titration approach and monitoring required. Speed of titration depends on:

- Patient frailty and confidence.
- Accessibility to appointments and resourcing.

A pseudo worsening renal function may occur due to empagliflozin and/or ACEI/ARB/ARNI. eGFR may decline within the first 6 to 8 weeks. An increase in creatinine of up to 30% of baseline is acceptable, unless patient requires renal replacement therapy, empagliflozin and/or ACEI/ARB/ARNI does not require cessation or dose adjustment.[4,5] Contact the renal department if a decline of over 30% is seen.

MANAGEMENT OF COMORBIDITIES AND LIFESTYLE INTERVENTIONS

The management of heart failure includes treatment of risk factors such as hypertension and diabetes. Patients should be encouraged to make positive lifestyle interventions such as smoking cessation, limiting alcohol consumption, increasing physical exercise as appropriate, weight control, and dietary changes such as increasing fruit and vegetable consumption, moderating salt intake and reducing saturated fat intake.[12] Patients should have a heart failure action plan which includes weighing themselves each morning to guide diuretic dosing. Heart failure action plan is available through the Heart Foundation.

CARDIOVASCULAR RISK MANAGEMENT

One of the key changes in the 2018 Cardiovascular Disease Risk Assessment (CVDRA) and Management for Primary Care Consensus statement was the inclusion of heart failure as established cardiovascular disease (CVD). Assertive risk management of these patients, who are at high risk of having a cardiovascular event, includes[13]:

- Antihypertensives
- Lipid-lowering medicines (recommended)
- Aspirin (considered for patients who are aged under 70 years)

Tools and further reading:

- **Community HealthPathways Te Matau a Māui | Hawke's Bay:**
  Heart Failure - Optimising care in the community webinar recording
  Heart Failure Health Pathway
- **Health Hawkes Bay Best Practice Messages:**
  Managing medicines during 'sick days'
  Entresto and the future of heart failure
  Dulaglutide and empagliflozin treatment decision
  Empagliflozin: A reminder of the risks
- **Bpacnz:**
  Addressing heart failure in primary care: Part 1 – Identifying and diagnosing heart failure
  Addressing heart failure in primary care: Part 2 – Initiating and escalating treatment for heart failure
- **Goodfellow:**
  Goodfellow unit webinar: CHF – what to do after discharge
  Goodfellow unit webinar: Empagliflozin for heart failure with reduced ejection fraction
- **CARM:**
  As with any medicine, any adverse reaction should be reported to CARM.

Patient resources:

- **Heart foundation:**
  Heart failure action plan
  Heart foundation – Staying well with heart failure
- **Healthify:**
  Heart failure

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Acknowledgements: Thanks to Johanna Lim and Michelle Murphy for content contribution and guidance.

APPENDIX 1: FOUR PILLARS OF HEART FAILURE TREATMENT EVIDENCE

SGLT2 Inhibitors

SGLT2 inhibitors, such as empagliflozin, were initially developed for the treatment of type 2 diabetes mellitus due to their ability to block the sodium-glucose cotransporter 2, leading to glucose excretion in the urine. However, their use has expanded beyond diabetes due to evidence showing significant cardiovascular and renal benefits.

SGLT2 inhibitors improve outcomes in heart failure through multiple mechanisms, including reduction of fluid retention, modulation of the sympathetic nervous system, improvement of endothelial function, and reduction of systemic inflammation.

The EMPEROR reduced trial showed a reduction in the composite endpoint of CV death or first hospitalization for HF across the LVEF range studied for patients treated with empagliflozin.

PHARMAC has approved empagliflozin for use in heart failure with reduced ejection fraction (or if an ECHO is not reasonably practicable, and in the opinion of the treating practitioner the patient would benefit from treatment).[14]

Empagliflozin should be considered if heart failure is suspected.[15] Dapagliflozin in registered for heart failure but not funded.

If a patient has diabetes review other diabetes medications when starting and titrating SGLT2 inhibitors.

Mineralocorticoid Receptor Antagonists (MRA)

MRA reduce mortality and the risk of hospitalisations as well as improving symptoms in patients with HF**r**EF.[2] Meta-analyses of trials have shown that MRA therapy, such as spironolactone reduces hospitalisations in patients with HF**mr**EF and HF**p**EF.[2,7] If patients cannot tolerate spironolactone, eplerenone is recommended (requires Special Authority).

ACE inhibitors (ACEI)/ Angiotensin receptor blockers (ARB) / Angiotensin receptor-neprilysin inhibitors (ARNI)

ACEI were the first class of drug to show a reduction in mortality and morbidity in patients with HF**r**EF. The PARADIGM-HF trial compared sacubitril + valsartan (an ARNI) to enalapril and showed it was superior at reducing hospitalisations for HF**r**EF. There are no specific trials of ACE, ARB or ARNI in patients with HF**mr**EF. Clinical trials on ACEI, ARB and ARNI have shown some symptom improvement or trends reduction in hospitalisation or mortality in patients with HF**p**EF.[2]

If the patient is intolerant of ACE inhibitors, switch to an ARB. Do not use ACE inhibitors with ARBs.

The only ARNI available in Aotearoa is Entresto®: sacubitril (ARNI)+ valsartan (ARB). Entresto® is only funded under special authority for patients with a LVEF ≤35% or (or if an ECHO is not reasonably practicable, and in the opinion of the treating practitioner the patient would benefit from treatment). Patients need to have trialed an ACEI or ARB to be eligible for Entresto®. Patients on ACEI therapy require a 36-hour washout period prior to commencement of Entresto® where patients on an ARB do not. A practical approach for those who are likely to be candidates for Entresto® is to commence on an ARB rather than an ACEI. Read more about Entresto® in heart failure here.

Beta blockers

Beta-blockers have been shown to reduce mortality, morbidity and symptoms in patients with HF**r**EF, in addition to treatment with an ACEI and diuretic.[2]

An individual patient-level meta-analysis of 11 randomized controlled trials of beta blockers that included patients with HF**p**EF found no evidence of benefit in the small subgroup of patients in sinus rhythm with LVEF ≥50 percent.[7]

Beta blockers in patients with HF**mr**EF and HF**p**EF may be appropriate for patients with hypertension, arrhythmias or history of myocardial infarction. Initiation of the beta blocker should ideally be when the individual is euvolemic.

Diuretics

Diuretics are not considered one of the four pillar treatments for heart failure, as they have not been shown to improve survival. However, they play a crucial role in relieving symptoms by reducing fluid overload, which can greatly enhance quality of life heart failure patients across the LVEF ranges—especially in patients with significant congestion.

Primary care clinicians are well placed to assist in diuretic dosing guided by patient weight and symptoms. See more details on the heart failure action plan.