



Evidence Used and Rationale
Kimberley Clinical Guidelines

Heart Failure

Dates reviewed:

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Rationale:

Updates to heart failure (HF) definitions, new pharmacotherapy

Writing Group:

- Zoe Mikosza, WA Country Health Service (WACHS)
- Sarah Straw, WACHS
- Hannah Mann, Kimberley Pharmacy
- Hussam Tayeb, Royal Perth Hospital
- James Marangou, Perth Cardiovascular Institute
- Lorraine Anderson, Kimberley Aboriginal Medical Services

Discussion points / updates to previous version:

Definition

- Update to reflect definition now reduced versus preserved ejection fraction (EF), rather than diastolic versus systolic.
- Clinical presentation not changed.

Screening

- Not changed

Clinical evaluation/investigation

- Update to reflect HF definition change from systolic/diastolic to preserved/reduced EF.
- HF reduced EF (HF_rEF) (formerly systolic heart failure)
 - Symptoms +/- signs of HF
 - Left ventricular EF (LVEF) <40%
 - If LVEF mildly reduced (41-49%) - HF_{mr}EF, additional criteria required (i.e., signs of heart failure, diastolic dysfunction with high filling pressure demonstrated by invasive means or echocardiography or biomarker testing)
- HF preserved EF (HF_pEF) (formerly diastolic heart failure)
 - Symptoms +/- signs of HF
 - LVEF ≥50%

- Objective evidence of:
 - o Relevant structural heart disease (left ventricular hypertrophy (LVH), left atrial enlargement)
and/or
 - o Diastolic dysfunction without an alternative cause
- Consider events precipitating acute HF symptoms: acute coronary syndrome, malignant hypertension, arrhythmia, mechanical catastrophe (rupture of septum, papillary muscle, left ventricular free wall or acute valve event), pulmonary embolus
- Principles of management
 - Should acute HF be discussed or at least mentioned with presentation/baseline clinical assessment? Too much for the limitations of this guideline?
 - Aims of management:
 - o Reduction in mortality
 - o Prevention of recurrent hospitalisations
 - o Improvement in clinical status, functional capacity and quality of life
 - Baseline clinical assessment – vital signs including peripheral pulse oximetry, assess for signs of reduced end-organ perfusion
 - Electrocardiogram (ECG): rhythm, QRS width, LVH, ischaemia)
 - Add iron studies to baseline investigations
 - Specify medications to avoid – non-dihydropyridine calcium channel blocker
- Management
 - Add to manage co morbidities: atrial fibrillation, obstructive sleep apnoea, hyperlipidaemia, smoking
- Non-pharmacological management
 - of all HF subtypes
- Pharmacological management
 - Divide into HFrEF and HFpEF

HFrEF

1. ACE-Inhibitors: In all patients with EF <40%. Should be considered in those with EF 41%-49%
 - a. Recommended for all patients with systolic dysfunction
 - b. Australian HF guidelines 2018 below ?? the value in differentiating the rec for 40-49% versus <40%
2. Loop Diuretics
 - a. First-line treatment for fluid overload to improve symptoms and manage congestion
3. Beta blockers
 - a. Recommended for all patients with reduced EF
 - b. Bisoprolol, carvedilol, metoprolol or nebivolol
 - c. Aim for heart rate <70bpm
4. Mineralocorticoid receptor Antagonist
 - a. Listed as 'despite ACEi, B-blocker and diuretic therapy' – Guidelines/evidence - Recommended in all?

- b. ?change contraindicated eGFR to <30 vs 60 (in old guidelines)
- 5. ARNI (Entresto) –
 - a. Replace ACE/ARB in HFrEF (EF<40%) despite maximal Ace and Beta-blockade with/without MRA to decrease mortality and hospitalisation
 - b. Note 36hour washout period of ACEi
 - c. NT-proBNP levels are used instead on BNP on ARNIs
 - d. ?Commence in discussion with physician/cardiologist
- 6. Ivabradine – EF<35% and Sinus HR >70 despite ACE and beta-blockade
 - a. ?commence in discussion with physician/cardiologist
 - b. Left off with scope of guideline
- 7. SGLT-2 Inhibitors
 - a. Empagliflozin/dapagliflozin
 - b. Recommended in patients with DM II associated with cardiovascular disease and insufficient glycaemic control despite metformin, to decrease the risk of cardiovascular events and decrease the risk of hospitalisation and death due to heart failure
 - c. Recommended in all patients unless contra-indicated or not tolerated – European cardiac society guidelines.
 - i. Start at 10mg OD. Recheck renal function in 1-2 weeks, monitor regularly
 - ii. Monitor fluid balance, diuretics likely to need to be reduced
 - iii. Contra-indicated in Pregnancy, eGFR<20, hypotension
- 8. IV Iron
 - a. Ferritin <100 or 100-299 with transferrin saturation <20%) Improves symptoms and quality of life, reduces risk of HF related hospitalisation
- 9. Fish Oil
 - a. GISSI-HF trial shows very small benefits in improving mortality and hospitalisations

HFpEF - LVEF>50%

Heart failure with preserved EF has traditionally been difficult to manage as there has been limited evidence for pharmacotherapy to improve outcomes (unlike HFrEF). Lately, we have seen the emergence of evidence to reduce hospitalisations in patients with HFpEF.

1. Control BP <130/80 - With ACEi, ARB, Beta blockers
2. Diuretics – in all patients who are fluid overloaded
3. Mineralocorticoid receptor antagonists ie Spironolactone can improve diastolic function in patients with HFPEF to reduce hospitalisation (TOPCAT study). Be cautious in CKD with Egfr <30 AND/OR hyperkalaemia. Start with spironolactone 12.5mg and uptitrate.
4. SGLT2 inhibitor – In patients with T2DM & NYHA class II to III & an elevated BNP
 - Shown to reduce the risk of hospitalisations and improve quality of life (EMPEROR-preserved trial)
 - Start with either Empagliflozin 10mg or Dapagliflozin 10mg and ensure no contraindications to SGLT2 (T1DM, frequent DKA, frequent and complicated urinary tract infections, eGFR <20, risk factors for foot amputation)

Therapeutic Protocol

- Make divide between left and right pathways LVEF <50% rather than 40%
- HFpEF
 - Screening for, and treatment of, aetiologies, and cardiovascular and non-cardiovascular comorbidities is recommended in all patients.

Follow-up

- Symptomatic (delete postural) hypotension

Refer/Discuss

1. Physician/Cardiologist
 - For investigation of Ischaemic Heart Disease
 - PCI or CTCA
 - LVEF <35% (for consideration of device therapies, resynchronization therapy)
2. Cardiac rehabilitation
 - Telehealth service

Resources and References

- ACC/AHA/HFSA (2017) [Focused Update of the 2013 ACCF/AHA Guideline for the Management of HF](#): : A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Failure Society of America
- Australian Medicines Handbook
- Dolgin M. & New York Heart Association (NYHA) Criteria Committee (1994) *Nomenclature and criteria for diagnosis of diseases of the heart and great vessels* (9th ed.). Little Brown.
- European Society of Cardiology (2021) [Guidelines for the diagnosis and treatment of acute and chronic HF](#)
- KAHPF [Kimberley Standard Drug List](#)
- MIMS
- National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand (2018) [Guidelines for the Prevention, Detection, and management of HF in Australia](#)
- Therapeutic Guidelines Australia

Endorsed by the Kimberley Aboriginal Health Planning Forum: 11/12/23