Advanced or End-stage Heart Failure

Disclaimer

See also Terminal Phase Management.

COVID-19 note

Medication
Patients should continue to take ACE inhibitors and angiotensin-II receptor antagonists as part of optimal management of heart failure during the COVID-19 pandemic. For more details, see Medicines and COVID-19.

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Consider a palliative approach
Consider a palliative approach in patients with severe heart failure, noting that patients with heart failure do not follow a predictable trajectory like malignancy.

Identify patients at risk of deteriorating and dying using indicators of deteriorating health and advanced disease.

1. Use the New York Heart Association (NYHA) functional classification to determine heart failure status (functional capacity IV and objective capacity D).

<table>
<thead>
<tr>
<th>Class</th>
<th>Patient Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnoea (shortness of breath).</td>
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<tr>
<td>II</td>
<td>Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnoea (shortness of breath).</td>
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<tr>
<td>III</td>
<td>Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnoea.</td>
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<tr>
<td>IV</td>
<td>Unable to carry on any physical activity without discomfort. Symptoms of heart failure at rest. If any physical activity is undertaken, discomfort increases.</td>
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</table>

See Heart Foundation – Classes of Heart Failure

2. Look for ≥ 2 indicators of deteriorating health.

**Indicators of deteriorating health**
- Shortness of breath at rest (NYHA IV).
- Poor or deteriorating performance status e.g., needs help with personal care, in bed or chair for ≥ 50% of the day.
- Weight loss of 5 to 10% over the past 3 to 6 months, or BMI < 20. Note that diuresis can lead to up to 5% weight loss if fluid overloaded.
- Persistent, troublesome symptoms, despite optimal treatment of the underlying conditions.
- New co-morbidity likely to reduce life expectancy to < 1 year.
- Patient requesting supportive and palliative care or treatment withdrawal.
- ≥ 2 unplanned hospital admissions in past 6 months.

3. Look for clinical indicators of advanced disease e.g., breathlessness or chest pain at rest or on minimal exertion, anorexia and cachexia, extreme fatigue.

4. Ask yourself: “Would I be surprised if the patient died in the next 6 to 12 months?”
Management

1. Continue with usual management of heart failure.
   - **Assess and treat reversible causes of breathlessness**
     - Acute renal dysfunction
     - Anaemia
     - Atrial fibrillation
     - Infection
     - Iron deficiency
     - Pulmonary embolism
     - Thyroid dysfunction
   - Diuretics are usually continued until the final stages to alleviate short-term symptoms but do not use alone. They do not improve prognosis.

2. If the patient is deteriorating and has symptoms unresponsive to medical management (e.g., symptoms at rest, or on minimal exertion) refer for cardiology assessment for advanced heart failure management, consistent with the patient's wishes and the Advance Care Plan.

3. If patient has resistant heart failure on optimal therapy, consider early referral to community palliative care services to assist with symptom control.

4. Manage dyspnoea:
   - **Opioids**
     - Morphine elixir is useful for severe dyspnoea.
     - Use lower doses than are used for pain relief:
       - 2.5 to 5 mg of elixir 4 hourly or as required
       - Gradually titrate up as for pain
       - Patients rarely require doses > 30 mg per day for dyspnoea alone
       - The desired end point is comfort, rather than resolution of dyspnoea
     - If a trial of morphine elixir is helpful, consider changing to a low dose of long acting morphine.
     - Reduce the dose in renal impairment and use with caution in patients with a GFR of < 30 mL/min.
     - Warn about excessive sedation and driving.
     - Consider empirical treatment to avoid constipation.
     - Treat any associated nausea.
   - **Anxiolytics**
     - Ensure symptoms are not related to worsening heart failure or COPD.
     - Assess anxiety history.
     - Consider using shorter-acting anxiolytics for episodic anxiety.
     - More generalised anxiety may require regular therapy e.g., SSRI.
     - Consider clonazepam
       - Is effective for severe anxiety and panic.
       - Dosage:
         - Clonazepam drops 2.5 mg/mL, 2 to 4 drops, every 6 hours as required, or
         - Clonazepam 0.25 mg twice daily, subcutaneously or sublingually, increase up to 0.5 mg twice daily.
       - Has a long half-life:
         - Be aware of the resulting cumulative effect.
Ensure the interval between doses of clonazepam is > 6 hours to avoid accumulation.
- Not PBS funded for this indication.
  - Warn about excessive sedation and driving.

- **Palliative home oxygen**
  - Home oxygen is only beneficial when proven hypoxaemia i.e., oxygen saturation (PaO2 < 88%).
  - Occasionally used for refractory angina or patients with SaO2 < 90% whose symptoms are not alleviated by opioids or anxiolytics.
  - Patients with SaO2 > 90% may be **considered for palliative oxygen**, but would need to be assessed on an individual basis.

**Criteria for palliative oxygen**
- Progressive, life-limiting illness
- Reversible causes of dyspnoea diagnosed and, where possible, treated
- Other available measures to *palliate dyspnoea*, including opioids and anxiolytics, were unsuccessful
- Oxygen saturation usually under 90%
- For reasons of patient safety, patient must have been smoke-free for 4 to 6 weeks
- Oxygen prescribed under the palliative category must be approved by either a respiratory specialist or palliative care specialist. Discuss with treating cardiologist.
  - It is the sensation of airflow that provides the symptomatic relief e.g., fan or breeze (open window), or using medications.
  - Short-term oxygen therapy the required flow rate is generally 1 to 2 litres per minute.

5. Manage other symptoms:
- **Depression**
  - There is an increased incidence of depression in patients with heart failure. Most antidepressants can be used safely in patients with heart failure.

**Antidepressant medications**
- Most antidepressants can be used safely in patients with heart failure.
- Antidepressants to use preferentially in heart failure:
  - Sertraline
  - Mirtazapine
  - Other selective serotonin reuptake inhibitors (SSRIs). Monitor sodium levels as SSRIs may cause hyponatraemia.
- Antidepressants to avoid in heart failure:
  - Tricyclic antidepressants (TCAs) can exacerbate ventricular arrhythmias
  - Venlafaxine and other serotonin and norepinephrine reuptake inhibitors (SNRIs)
  - Norepinephrine reuptake inhibitor (NRI) – Reboxetine
- See also [Depression in Adults](#)

- **Refractory angina** – consider short-acting opioids and palliative home oxygen

- **Chronic kidney disease**
  - Is common in advanced heart failure.
  - Reduces the effectiveness of diuretics.
  - Can cause problems with reduced excretion of some opioids, particularly when GFR < 30 mL/min. If uncertain, consider specialist advice.
  - See [Chronic Kidney Disease (CKD) in Adults](#)
• Nausea
• Constipation
• Cachexia
  If the patient appears cachexic and has lost > 7% of their dry weight, consider:
  ▪ thiamine 100 mg daily.
  ▪ nutritional supplementation e.g., Ensure.
  ▪ referral for dietitian assessment.
  See also Cachexia and Anorexia in Palliative Care.

6. If patient is not palliative and not in a residential aged care facility (RACF), refer to the Complex Care Program (formerly HARP).

7. Reassess:
   • Implantable cardiac devices
     ▪ If there is an implantable device, this may need to be deactivated.
     ▪ Discuss with the cardiologist, who may consider inactivating it after discussing resuscitation status with patient and family. The action required depends on the device type, the underlying condition, and the resuscitation status.
     ▪ See also Implantable Cardiac Devices
   • Fitness to drive – cardiovascular conditions and Driving regulations
     ▪ A patient with shortness of breath on moderate exertion may not hold an unconditional licence for private use.
     ▪ If a general practitioner provides evidence of satisfactory response to treatment and minimal symptoms relevant to driving, a conditional licence for private use can be issued.
     ▪ A patient with heart failure cannot hold an unconditional licence for commercial use. A conditional licence requires an annual review and report issued by the treating specialist.
   • Community supports
     ▪ Social e.g., personal care assistance
     ▪ Carer support
     ▪ Home environment – consider an occupational therapy assessment to look at equipment, such as a walking frame or hospital bed
     ▪ Financial – explore end-of-life funding options

8. Discuss end-of-life issues, including Advance Care Planning and palliative care.

End-of-life issues
  • Address patient, family, and carer concerns.
  • Review or create an Advance Care Plan.
  • Agree on and complete a Goals of care (GOC) plan
    ▪ current and future care goals or plan.
    ▪ preferred place of care.
    ▪ levels of intervention and resuscitation, discussing treatment options, resuscitation decisions, likely outcomes.
  • GOC ensure patients:
    o receive appropriate treatment or limitations of treatment, including not for resuscitation (NFR).
    o do not receive treatment which is unlikely to have any benefit, or which is considered a burden by either the patient, their representative, or health professional.
Discuss the GOC plan with the patient or their representative, and other staff as appropriate. It should be consistent with wishes expressed in an Advance Care Plan (ACP).

Select **Goals of Care** for:
- all patients admitted to public hospitals.
- patients for whom limitations of treatment apply in community settings.
  - Curative
  - Restorative with specific limitations of treatment
  - Palliative
  - Comfort measures for dying patients

The plan can be used at any time to communicate treatment limitations to others (e.g., ambulance, other general practitioners, or caregivers), and may be initiated or altered by a general practitioner or outpatient specialist.

Review if clinical conditions change, the patient wishes change, or at the next hospital admission.

See also:
- Department of Health and Human Services Tasmania – [Medical Goals of Care Plan](#)
- Department of Health and Human Services Victoria – [Goals of Care](#)
- Consider undertaking a medication review:
  - assess which medications are life prolonging or life enhancing/symptom control.
  - consider ceasing medications which are life prolonging after discussion with patient and family.
- Appoint an enduring power of attorney and create a will.
- See Palliative Care – [Terminal Phase Management](#)
- Discuss, in consultation with cardiologist, implantable cardiac device (ICD) deactivation. See [Implantable Cardiac Devices](#).

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**Referral**

- If the patient is deteriorating and not responding to normal care, refer for **cardiology assessment**, consistent with the patient’s wishes and the Advance Care Plan.
- If patient has resistant heart failure on optimal therapy, consider:
  - early referral to **community palliative care services** for assistance with symptom control.
  - referral for an **ACAS assessment** via MyAgedCare for increased services if appropriate.
  - referral to **Residential In-reach Services (RIR)** if patient residing in a RACF.
- If patient is not palliative and not in a RACF, refer to the **Hospital Admission Risk Program (HARP)**.
- For advice about palliative oxygen in hypoxaemic patients, discuss with the treating **cardiologist** or respiratory physician.
- To discuss deactivating an implantable defibrillator, contact the **cardiologist** concerned.

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**Information**

**For health professionals**

- American Heart Association – [Classes of Heart Failure](#)
• Heart Lung and Circulation – Guidelines for the Prevention, Detection, and Management of Heart Failure in Australia 2018
• MacLeod R, Vella-Brincat J, Macleod AD – Palliative Care Handbook: Respiratory System: Dyspnoea (Breathlessness)
• Queensland Government – Heart Failure Medication Titration Plan
• Tasmanian Department of Health and Human Services (DHHS):
  o Adult Palliative Care Formulary
  o Implementing Goals of Care Plan (flowchart)

References

Select bibliography


Disclaimer

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