Somerset Adult Heart Failure Referral Pathway

Suspect heart failure if: breathlessness, fatigue, oedema

Mandatory baseline tests:
- NT-pro-BNP needed before referral in all patients.
- Blood tests: U+Es, FBC, TFTs, LFTs, HbA1c & lipids
- ECG
- CXR (but do not delay referral whilst awaited if BNP raised)

Check NT-pro-BNP

NT-pro-BNP <400 pg/ml

Heart failure unlikely; consider alternative diagnosis.
Discuss with specialist if ongoing concerns

Raised NT-pro-BNP ≥400 pg/ml
- **>2000pg/ml ; aim for review by heart failure service within 2 weeks**
- **If raised but < 2000pg/ml, aim for review within 6 weeks**

Refer to Heart Failure Service via eRS (Musgrove Park) or email to ClinicalInvestigations@ydh.nhs.uk (Yeovil)

Patient will be triaged & seen by specialist Heart Failure Service with echocardiogram as part of referral : DO NOT BOOK ECHOCARDIOGRAM.
The echocardiogram may identify the following:

Systolic RV Dysfunction

Valvular Heart Disease

Plan will be made by specialist heart failure team

HFpEF
LV EF ≥ 50%
Diastolic Dysfunction

Optimise co-morbidities including
- Hypertension
- Diabetes
- Smoking
- Obesity
- Discontinue NSAIDs

Offer loop diuretic to relieve congestive symptoms.
Consider an SGLT2i and an MRA

HFmrEF
LV EF 41-49%

Manage as per HFpEF.

Possible benefit for HFrEF medications in this cohort. Patient specific specialist advice.

HFrEF
LV EF ≤40%
Systolic Dysfunction

- Assess NYHA status
- See treatment algorithm overleaf
- Ensure correct GP coding for LVSD (need both a heart failure code ***AND*** LVSD code to qualify for QOF)

For all HF patients:
- Discuss treatment goals & offer advanced care planning
- Consider TEPP process

HFpEF: Heart failure with preserved ejection fraction (left ventricular ejection fraction ≥50%)
HFmrEF: Heart failure with mildly reduced ejection fraction (left ventricular ejection fraction 41-49%)
HFrEF: Heart failure with reduced ejection fraction (left ventricular ejection fraction ≤40%)

NYHA I: No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea.
NYHA II: Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea.
NYHA III: Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnea.
NYHA IV: Unable to carry on any physical activity without discomfort. Symptoms of heart failure at rest. If any physical activity is undertaken, discomfort increases.

Authors: Dr A Burchell, Mr P Fee (July 2025)

Treatment Algorithm for LV Systolic Dysfunction - HFrEF

Diuretics for symptomatic relief

- Furosemide up to 120mg BD or Bumetanide up to 3mg BD
- If not responding consider addition of thiazide-like diuretic (bendroflumethiazide/metolazone)

Four Pillars of Guideline Directed Medical Therapy:

Order of initiation tailored to patient; commence all four classes and then up-titrate

- **ACEi**
  - Ramipril 1.25mg od, increase every 2 weeks, target dose 5mg bd
  - Consider ARB if ACEi intolerant (candesartan, valsartan or losartan)
- **Beta Blocker**
  - Bisoprolol 1.25mg od, increase every 2-4 weeks, target dose of 10mg, target HR <75bpm
- **Mineralocorticoid receptor antagonist (MRA)**
  - Spironolactone 12.5-50mg od or epleronone 25-50mg od
- **SGLT-2 inhibitor:**
  - Dapagloflozin 10mg OD or Empagliflozin 10mg OD

ADVISE PATIENT ON MEDICINE SICK DAY RULES

If NYHA II-IV and EF ≤ 45% check iron deficiency status

- Step 1: Check anaemia status –If Hb<15g/l, proceed to step 2. No role for IV iron if Hb >15g/dl.
  Consider investigations for cause of anaemia if Hb <13g/dL (male) or <12g/dL (female)
- Step 2: Check ferritin and iron studies – refer for consideration of IV iron if :
  ferritin <100mcg/l **or** ferritin 100-299mcg/l and TSAT <20%

If NYHA II-IV consider specialist referral to assess need for

- Ivabradine 5 - 7.5mg bd if sinus rhythm and HR ≥ 70bpm
- ARNI (sacubitril/valsartan) in place of ACEi/ARB
- CRT (cardiac resynchronization therapy) or ICD (implantable cardioverter-defibrillator)

If NYHA II-IV and EF ≤ 35% despite optimised second-line treatments, consider under specialist advice:

- Digoxin
- Hydralazine in combination with a nitrate (especially if person is of African or Caribbean ethnicity , consider earlier in pathway).
- Cardiac transplantation / Left Ventricular Assist Device (LVAD)

Monitoring

- Review pts 6-12 monthly if stable – this should include an assessment of functional capacity, fluid status, cardiac rhythm (minimum of examining the pulse), cognitive status and nutritional status
- Monitor renal function after each dose change of diuretic
- MRA: monitor renal function 1 week after initiation, after any dose increase, monthly for 1st 3 months then every 3 months for 1 year and 6 monthly after
- ACEi/ARB/ARNI: monitor renal function 1 to 2 weeks after initiation and after any dose increment. Once on a stable dose monitor monthly for 3 months and then at least once every 6 months and at any time the pt is unwell

See 'Change in renal function associated with HF drug treatment' for advice on how to manage results

Lifestyle Advice -

- Exercise (ideally formal cardiac rehab programme)
- Smoking, diet
- Sexual activity, pregnancy & contraception
- Flu vaccination, air travel
- Driving
- COVID-19 precautions
- Occupational support/advice

Patients with a poor prognosis/palliative care needs:

Identify and add to practice register if :

NYHA III/IV & progressive deterioration despite treatment, frequent hospital admissions, resistant hyponatraemia, frequent ICD shocks; (consider device deactivation), patient requests palliative approach.

See End Stage Heart Failure Pathway on Somerset EoL website:

Assess, communicate, Advance Care Planning including TEPP form.
Consider referrals for: Hospice Fatigue and Breathlessness Course , Psychological support e.g. The Harbour,
Hospice support if complex/intense needs not met elsewhere.

Change in renal function associated with drug treatment in stable heart failure

This advice applies to monitoring of pharmacotherapy in clinically stable patients – it does NOT apply to patients with intercurrent acute illness.

Use the immediate pre-treatment serum creatinine concentration as the baseline .

Remember that the risk of death is higher in acute hyperkalaemia than in chronic hyperkalaemia.

Creatinine Rise

Serum creatinine rise <15% from baseline
→ No action required

Serum creatinine rise >15% but <30% from baseline
→ Continue current dose
→ Arrange clinical review to assess:
a) fluid status – reduce concurrent diuretics if hypovolaemic
b) blood pressure – stop or reduce other BP-lowering drugs if SBP <120mmHg
→ Repeat U&Es in a further 1 to 2 weeks

Serum creatinine rise 30% - 50% from baseline
→ Aim to initially continue RAAS inhibitor
→ Arrange clinical review to assess:
a) fluid status – reduce concurrent diuretics if hypovolaemic
b) blood pressure – stop or reduce other BP-lowering drugs if SBP <120mmHg
→ Repeat U&Es within 5 to 7 days; if serum creatinine remains >30% from initial baseline either ↓ dose or temporarily stop - discuss with HF team

Serum creatinine rise >50% from baseline OR eGFR <20
→ Temporarily stop
→ Seek advice from HF/renal service

Potassium Rise

Potassium <5.5mmol/L
→ No action required

Potassium 5.5-5.9mmol/L
→ As long as patient well and no AKI, increase frequency of biochemical monitoring but do not stop RAAS
→ Look for and remove other contributors to hyperkalaemia*
→ Consider reducing dose

Potassium 6.0-6.4mmol/L
→ Stop RAAS inhibitors/MRA
→ If hyperkalaemia is unexpected, consider arranging a repeat test the following day
→ Look for and remove other contributors to hyperkalaemia*
→ Repeat potassium within 1 week
→ Re-start at lower dose once K<5.5
→ Re-start one drug at a time, with close monitoring

Potassium ≥6.5mmol/L
→ Refer to hospital for immediate treatment

*** Factors to consider in hyperkalaemia:**

→ Artefactual
→ Trimethoprim/co-trimoxazole/NSAIDs
→ Potassium supplements
→ Potassium-sparing diuretics
→ Check for overdiuresis/hypovolaemi
→ Non-selective beta-blockers
→ Digoxin toxicity
→ Use of salt substitutes e.g. 'LoSalt'

→ ***Consider specialist review for access to renal dietician and potassium binder***

References
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Dr Amy Burchell, June 2022

References

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- **2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure, accessed at:** https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/Acute-and-Chronic-Heart-Failure

- **2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure, accessed at:** https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/Focused-Update-on-Heart-Failure-Guidelines

- **Somerset Guidance for management of End Stage Heart Failure, accessed at,** https://www.st-margarets-hospice.org.uk/wp-content/uploads/2025/02/Heart-Failure-guideline-Dec-24.pdf