

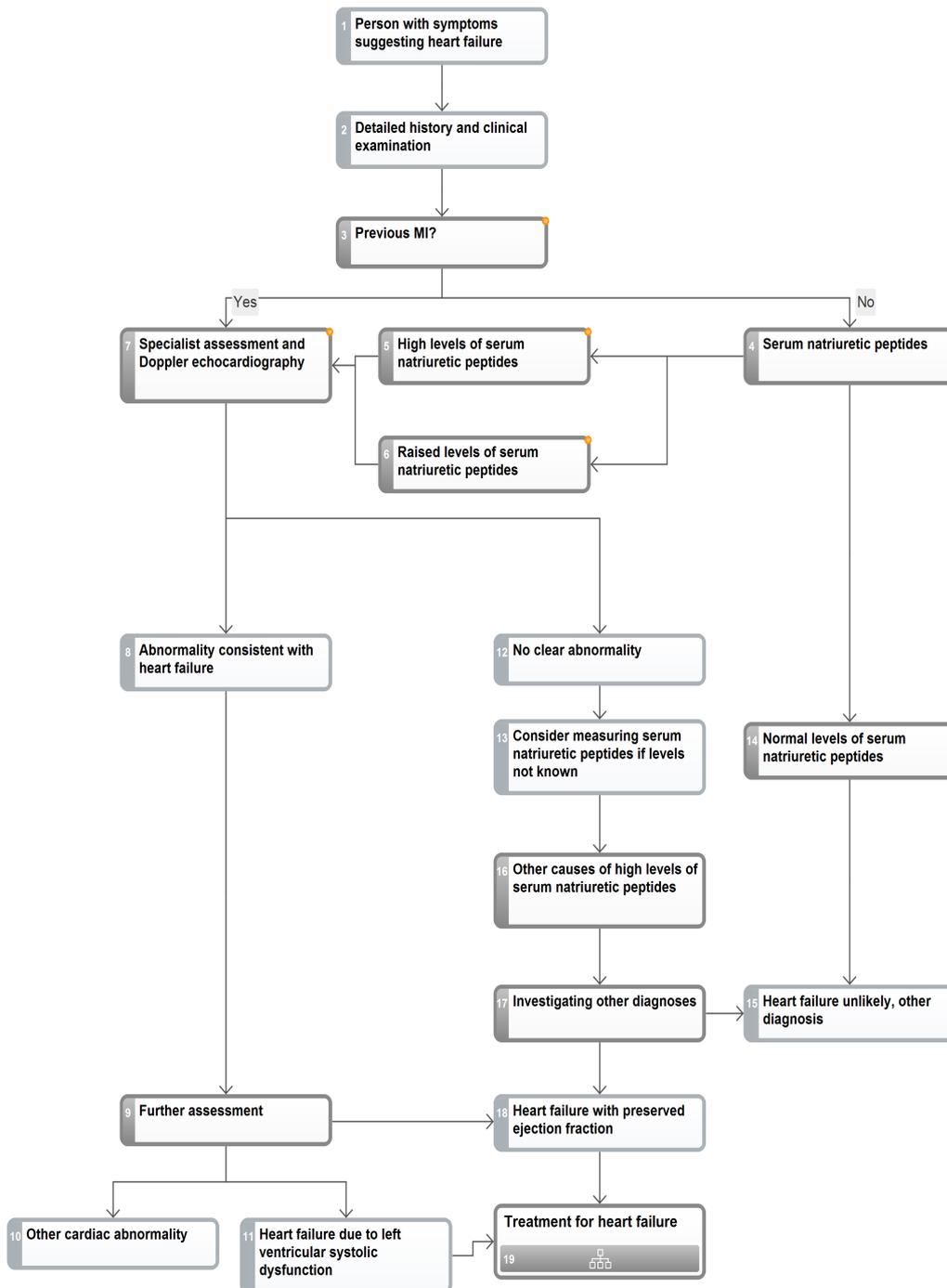
Chronic heart failure diagnosis

A NICE pathway brings together all NICE guidance, quality standards and materials to support implementation on a specific topic area. The pathways are interactive and designed to be used online. This pdf version gives you a single pathway diagram and uses numbering to link the boxes in the diagram to the associated recommendations.

To view the online version of this pathway visit:

<http://pathways.nice.org.uk/pathways/chronic-heart-failure>

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1 Person with symptoms suggesting heart failure

No additional information

2 Detailed history and clinical examination

No additional information

3 Previous MI

Refer patients with suspected heart failure and previous myocardial infarction (MI) urgently, to have transthoracic Doppler 2D echocardiography and specialist assessment within 2 weeks.

Patients without previous MI

Measure serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NTproBNP]) in patients with suspected heart failure without previous MI.

Quality standards

The following quality statements are relevant to this part of the pathway.

1. Urgent referral for people with previous myocardial infarction
2. Measuring serum natriuretic peptides
3. Two week assessment and diagnosis

4 Serum natriuretic peptides

Be aware that the level does not differentiate between heart failure due to left ventricular systolic dysfunction and heart failure with preserved ejection fraction.

Quality standards

The following quality statement is relevant to this part of the pathway.

2. Measuring serum natriuretic peptides

Resources

The following implementation tools are relevant to this part of the pathway.

[Chronic heart failure educational resource](#)

[Chronic heart failure online educational resource](#)

[Services for people with chronic heart failure commissioning guide](#)

5 High levels of serum natriuretic peptides

Because very high levels of serum natriuretic peptides carry a poor prognosis, refer patients with suspected heart failure and a BNP level above 400 pg/ml (116 pmol/litre) or an NTproBNP level above 2000 pg/ml (236 pmol/litre) urgently, to have transthoracic Doppler 2D echocardiography and specialist assessment within 2 weeks.

Be aware that high levels can have causes other than heart failure, including left ventricular hypertrophy, ischaemia, tachycardia, right ventricular overload, hypoxaemia (including pulmonary embolism), GFR less than 60 ml/minute, sepsis, COPD, diabetes, age greater than 70 and liver cirrhosis.

Quality standards

The following quality statement is relevant to this part of the pathway.

3. Two week assessment and diagnosis

6 Raised levels of serum natriuretic peptides

Refer patients with suspected heart failure and a BNP level between 100 and 400 pg/ml (29–116 pmol/litre) or an NTproBNP level between 400 and 2000 pg/ml (47–236 pmol/litre) to have transthoracic Doppler 2D echocardiography and specialist assessment within 6 weeks.

Be aware that high levels can have causes other than heart failure, including left ventricular hypertrophy, ischaemia, tachycardia, right ventricular overload, hypoxaemia (including

pulmonary embolism), GFR less than 60 ml/minute, sepsis, COPD, diabetes, age greater than 70 and liver cirrhosis.

Quality standards

The following quality statement is relevant to this part of the pathway.

4. Six week assessment and diagnosis

7 Specialist assessment and Doppler echocardiography

Echocardiography

Perform transthoracic Doppler 2D echocardiography to exclude important valve disease, assess systolic (and diastolic) function of the (left) ventricle, and detect intracardiac shunts.

Ensure that:

- echocardiography is performed on high-resolution equipment by experienced trained operators
- demand does not compromise quality
- those reporting echocardiography are experienced in doing so.

When a poor image is produced by transthoracic Doppler 2D echocardiography, consider other imaging methods, such as radionuclide angiography, cardiac magnetic resonance imaging or transoesophageal Doppler 2D echocardiography.

Multidisciplinary approach to care

Heart failure care should be delivered by a multidisciplinary team with an integrated approach across the healthcare community.

Quality standards

The following quality statement is relevant to this part of the pathway.

6. Multidisciplinary heart failure team

8 Abnormality consistent with heart failure

No additional information

9 Further assessment

Assess severity, aetiology, precipitating factors, type of cardiac dysfunction and correctable causes.

Tests for evaluating possible precipitating factors and other diagnoses (if not already carried out)

Perform an ECG.

Consider chest X-ray, blood tests (electrolytes, urea and creatinine, eGFR [estimated glomerular filtration rate], thyroid function tests, fasting lipids, fasting glucose, full blood count), urinalysis and peak flow or spirometry.

10 Other cardiac abnormality

No additional information

11 Heart failure due to left ventricular systolic dysfunction

No additional information

12 No clear abnormality

No additional information

13 Consider measuring serum natriuretic peptides if levels not known

No additional information

14 Normal levels of serum natriuretic peptides

Be aware that:

- BNP < 100 pg/ml (29 pmol/litre) or NTproBNP < 400 pg/ml (47 pmol/litre) in an untreated patient make heart failure unlikely
- obesity, diuretics, ACE inhibitors, beta-blockers, ARBs and aldosterone antagonists can reduce levels.

15 Heart failure unlikely, other diagnosis

No additional information

16 Other causes of high levels of serum natriuretic peptides

Be aware that high levels can have causes other than heart failure, including left ventricular hypertrophy, ischaemia, tachycardia, right ventricular overload, hypoxaemia (including pulmonary embolism), GFR less than 60 ml/minute, sepsis, COPD, diabetes, age greater than 70 and liver cirrhosis.

17 Investigating other diagnoses

Tests for evaluating possible precipitating factors and other diagnoses (if not already carried out)

Perform an ECG.

Consider chest X-ray, blood tests (electrolytes, urea and creatinine, eGFR [estimated glomerular filtration rate], thyroid function tests, fasting lipids, fasting glucose, full blood count), urinalysis and peak flow or spirometry.

18 Heart failure with preserved ejection fraction

No additional information

19 Treatment for heart failure

[See Chronic heart failure / Chronic heart failure treatment and monitoring](#)

Glossary

Sources

Chronic heart failure: management of chronic heart failure in adults in primary and secondary care. NICE clinical guideline 108 (2010)

Your responsibility

The guidance in this pathway represents the view of NICE, which was arrived at after careful consideration of the evidence available. Those working in the NHS, local authorities, the wider public, voluntary and community sectors and the private sector should take it into account when carrying out their professional, managerial or voluntary duties. Implementation of this guidance is the responsibility of local commissioners and/or providers. Commissioners and providers are reminded that it is their responsibility to implement the guidance, in their local context, in light of their duties to avoid unlawful discrimination and to have regard to promoting equality of opportunity. Nothing in this guidance should be interpreted in a way which would be inconsistent with compliance with those duties.

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