

NT Pro B-Type Natriuretic Peptide (NTproBNP)

GP information sheet

February 2013

Sherwood Forest Hospitals
NHS Foundation Trust



NT Pro B-Type Natriuretic Peptide (NTproBNP)

CPA

Natriuretic Peptides

The use of natriuretic peptide measurements to act as an initial “rule-out” test for chronic heart failure in primary care has been recommended by NICE¹.

Both B-type natriuretic peptide (BNP) and the inactive N terminal portion of the pro hormone (NTproBNP) have both been recommended for this purpose. NTproBNP has superior stability in serum and is the peptide of choice.

- Therefore **NTproBNP** will be the test provided for the investigation of heart failure.

Diagnosing Heart Failure Pathway

The Nottinghamshire CHD network has proposed an algorithm for the diagnosis of Heart failure in primary care based on NICE¹ guidance (next page)

However, NICE cut off's for NTproBNP are higher than in some published articles². The higher cut off values used by NICE and the Nottinghamshire CHD Network guidance improves specificity of NTproBNP for the diagnosis of heart failure but as a consequence leads to a loss in sensitivity of the NTproBNP test for screening purposes. This means it is possible that up to 25% of patients with chronic heart failure may be missed by NTproBNP screening.

- Please note that NTproBNP can be elevated in conditions other than heart failure such as Left ventricular hypertrophy, ischaemia, tachycardia, right ventricular overload, hypoxaemia including PE, GFR<60mL/minute, sepsis, COPD, diabetes, age >70 and liver cirrhosis.
- Obesity, diuretics, ACE inhibitors, beta blockers, angiotensin receptor blockers (ARB's) and aldosterone antagonists can reduce NTproBNP levels.
- Thus in the interpretation of NTproBNP levels NICE cut off levels should be used initially, but drug therapy, age, other conditions and clinical suspicion should be taken into account.

Interpretation:

A routine serum clotted sample (gold top tube) is required for analysis. Request either using ICE or on a red Haematology/Biochemistry request form. The following comments will be attached to results:

- **NTproBNP <47pmol/L (Normal levels)**

Values up to 47pmol/L mean that heart failure is a very unlikely cause of patient symptoms. Obesity, diuretics, ACE inhibitors, beta blockers, angiotensin receptor blockers and aldosterone antagonists can reduce NTproBNP levels.

- **NTproBNP >47pmol/L and <236pmol/L**

NTproBNP values above 47pmol/L are compatible with heart failure and further investigation is suggested

- **NTproBNP >236pmol/L**

NTproBNP >236pmol/L are compatible with heart failure and indicate a poor prognosis. Suggest urgent referral to the cardiology team for ECHO and further investigation.

Contact details

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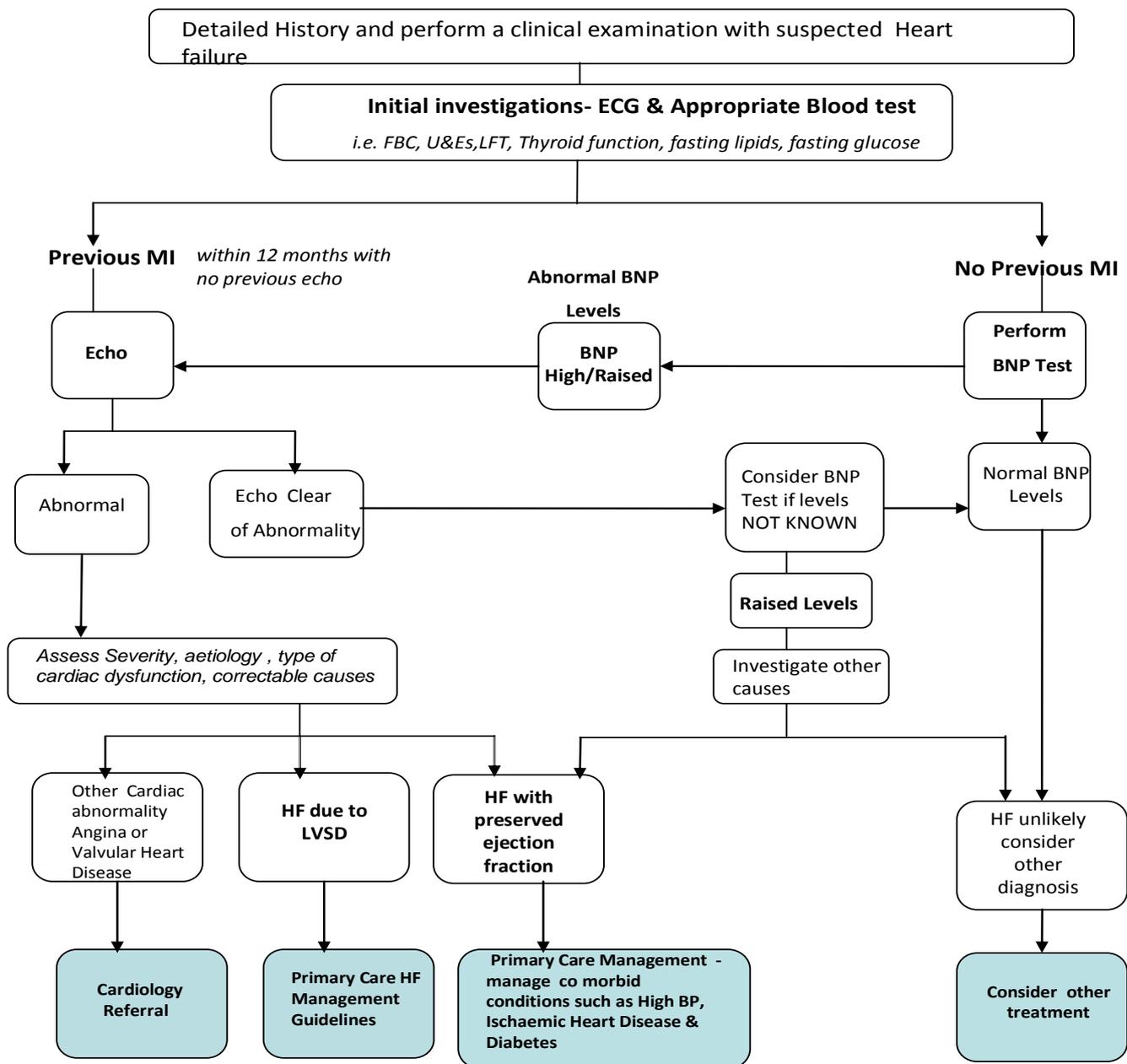
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1 NICE Clinical Guideline 108. Chronic Heart Failure:

Management of chronic heart failure in adults in primary and secondary care.

2 Hildebrandt P, Collinson PO, Doughty RN, et al; Age-dependent values of N terminal pro B type Natriuretic peptide are superior to a single cut point for ruling out suspected systolic dysfunction in primary care. European Heart Journal 2010; 31; 1881-1889

Nottinghamshire CHD Network: Diagnosing Heart Failure Pathway



NTproBNP definitions

- High Levels NTproBNP >236pmol/L
- Raised Levels NTproBNP 47-236pmol/L
- Normal Levels NTproBNP <47pmol/L