

Diagnosing Heart Failure

Detailed history and a clinical examination lead to suspicion of heart failure

Cardiac causes of elevated brain Natriuretic peptide (BNP)

Heart Failure
ACS
Myocarditis
LVH
Hypertrophic/restrictive CM
Valvular heart disease
Congenital heart disease
Arrhythmias
Cardioversion
ICD shock
Post cardiac surgery

Assessment of probability

- Clinical History**
History of CAD (MI, PCI, CABG)
Hypertension
Use of diuretics
SOB – orthopnoea and PND
- Physical Examination**
Crepitations
Bilateral ankle oedema
Heart murmur and or displaced apex beat
Elevated JVP
- ECG – any abnormality but especially the following 4:**
Previous MI or IHD
LVH
AF
Bundle branch block (especially left)

Non cardiac causes of elevated BNP

Elderly
Ischaemic stroke
Subarachnoid bleed
Renal dysfunction
Liver impairment
COPD
Severe infection
Severe burns
Anaemia
Metabolic (DKA)
Thyrotoxicosis

Any of the above present

All absent

Brain Natriuretic peptides (NTproBNP)

High levels >400 pg/ml
Normal levels <100 pg/ml

Initial investigations – NT-proBNP (if available), CXR, Bloods – FBC, U&Es (eGFR), LFTs, Thyroid Function, Lipids, Glucose (HbA1c), Ferritin, Iron Studies

Heart Failure unlikely, consider other diagnosis

BNP levels high

Normal BNP levels

Diastolic impairment
Dilated atria/ventricles
LVEF >40%

Echocardiogram

No echocardiographic abnormality

Heart Failure with **PRESERVED EJECTION FRACTION**
LVEF \geq 50%
(HFpEF)

Heart Failure with **MILDLY REDUCED EJECTION FRACTION**
LVEF 41-49%
(HFmrEF)

Heart Failure with **REDUCED EJECTION FRACTION**
LVEF \leq 40%
(HFrEF)

Valve Disease or other structural abnormality

Manage comorbidities – BP, AF, CAD and diabetes.

Refer to HFpEF / HFmrEF diagnosis and treatment algorithm

Determine aetiology and commence treatment

Refer to **HFrEF** treatment algorithm

Cardiology Referral

