Chronic heart failure: Algorithm for the diagnosis of HF-REF or LVEF <50%

adapted from ESC HF guideline 2012[1]

General assessment
- Risk factor profile (hypertension, etc.)
- Family history
- Recent pregnancy <1 year

Symptoms
- Shortness of breath - on effort
- - lying flat
- - during night
- New cough
- - irregular or fast palpitation
- - More frequent nocturia

Signs
- Signs of congestion:
  - raised JVP
  - peripheral oedema
  - (tender) hepatomegaly
  - ascites
- Chest signs:
  - inspiratory crackles
  - pleural effusion
- Signs of heart disease:
  - tachycardia
  - presence of S3
  - displaced apex beat
  - cool peripheries
  - presence of cardiac murmur

Holistic care
- Salt restriction (in hypertensives only)
- Exercise (once stabilised)
- Heart failure management programme
- Renal: N, K, glucose, CO2
- Permissive analgesia (to avoid diuretic dependency)
- Palliative Care

Suspected heart failure/LV dysfunction because of signs and symptoms

HF-REF unlikely

HF-REF excluded

HF-REF unlikely

Precipitating Factors
- Mandatory: U & E, glucose, TSH
- Possible: LFT, ferritin, calcium, hsTroponin T, Troponin I

Mortality
- ACEI
- B blocker
- Aldosterone Antagonist (MRA)
- Hydralazine + nitrate
- Biventricular pacing ± ICD (CRT-P/CRT-D)

Hospitalisation
- ABB
- Ibudroin
- Digoxin

Symptoms
- Diuretic
- Heart transplant
- Valvular intervention
- LV assist device

Management of HF-REF
(Trial data applicable to EF <40%)

Therapy that reduces:
- Mortality
- Hospitalisation
- Symptoms

Special consideration
- Digoxin (AF-resistant symptomatic heart failure)
- Warfarin (AF, LV clot)
- Amiodarone (sustained symptomatic atrial fibrillation)
- Aldosterone antagonist (early post-MI heart failure)
- ACEI + ARB if aldosterone antagonist (MRA) cannot be used

ESC = European Society of Cardiology; HF-REF = heart failure with reduced ejection fraction; LV = left ventricular; EF = ejection fraction; JVP = jugular venous pressure; NSAID = nonsteroidal anti-inflammatory drug; CCB = calcium channel blockers; MRI = magnetic resonance imaging; ECG = electrocardiogram; CXR = chest X-ray; NT-ProBNP = N-terminal pro-B-type natriuretic peptide; RNP = B-type natriuretic peptide; NYHA = New York Heart Association; U & E = urea and electrolytes; TSH = thyroid-stimulating hormone; hs = high-sensitivity; AF = atrial fibrillation; VT = ventricular tachycardia; ICD = implantable cardioverter-defibrillator; MI = myocardial infarction; ACEI = angiotensin-converting enzyme inhibitor; MRA = mineralocorticoid (aldosterone) receptor antagonist; ARB = angiotensin receptor blocker; CRT = cardiac resynchronisation therapy; CRT-P = CRT pacemaker; CRT-D = CRT defibrillator.