

Heart Failure

Classification Schemes

ACC/AHA Classification

Stage A: At Risk

- At risk for heart failure,
- No symptoms, No signs of HF, No structural or functional HF
- No abnormal biomarkers

Stage B: Pre-HF

Pre-heart failure: Stage A + either of the following:

- Structural heart disease: Reduced LV or RV function (reduced EF or reduced strain), LVH or RVH, Chamber enlargement, wall motion abnormalities, valvular heart disease,
- Evidence of increased filling pressures: invasive measurement or Echo
- Risk factors + increased BNP or high troponin w/o competing diagnoses.

Stage C

Symptomatic heart failure – current or previous

Stage D

Advanced heart failure – affects daily life, hospitalizations despite GDMT

NYHA Classification

Class 1: no limitations

Class II: slight limitations with ordinary activity

Class III: symptoms with less than ordinary activity

Class IV: symptoms with minimal activity and/or rest

Echo Based Classification

- HFrEF: EF \leq 40%
- HmrEF: EF 41-49%
- HFpEF: EF \geq 50
- HFimpEF: EF previously \leq 40% but now over 40%.

Testing

Initial Testing:

- CBC, CMP, BNP, Lipids, HgA1c, TSH, Iron Studies, CXR (2 view), EKG, TTE

Additional testing:

- Ischemic evaluation - if chest pain, new LBBB, new HFrEF, angina
- Urine Drug Screen (based on history)
- Secondary HTN workup (if over 3 meds and BP uncontrolled).

Routine Follow-up testing:

- CBC annually, BMP semiannually or with medication changes (ACEi/ARBs/Diuretics/MRAs), TSH annually (if on amiodarone), Lipids Annually, HgA1c annually (if normal)

BNP and NT-proBNP*

To **rule out** HF as cause of symptoms:

- Acute HF:** NT-proBNP $<$ 300 or BNP $<$ 100
- Chronic HF:** NT-proBNP $<$ 125 or BNP $<$ 35

To **rule in** HF

- NT-proBNP (Age-Adjusted, Acute HF)
 - $<$ 50 years: $>$ 450 pg/mL
 - 50-75 years: $>$ 900 pg/mL
 - $>$ 75 years $>$ 1800 pg/mL
- BNP (Acute HF)
 - $>$ 100 pg/mL ($>$ 400 pg/mL more specific for acute HF)

* BNP & NT-proBNP falsely elevated by CKD, A. fib, old age; falsely low by obesity

Management of Heart Failure

Stage A	<ul style="list-style-type: none"> HTN - Optimize control DM - SGLT2i if either established CV disease or multiple CV risk factors; GLP1a or GLP1a/GIPa if obese. Avoid TZDs CV Disease - Optimize BP/BS control, statin, aspirin or plavix Check BNP for higher risk individuals
Stage B	<p>HFrEF</p> <ul style="list-style-type: none"> EF \leq 40% - ACEi/ARB, EBM BB. Avoid nondihydropyridine CCB Recent MI + EF \leq 40%: ACEi/ARB, EBM BB EF \leq 30%, $>$ 1yr survival, $>$40 days post MI: ICD Avoid TZDs, NSAIDs CAD/CVD: antiplatelet agents, statins, RAASi Get Ischemic evaluation <p>HFpEF</p> <ul style="list-style-type: none"> HTN: Optimize control DMII: SGLT2i if either established CV disease or multiple CV risk factors; add GLP1a or GLP1a/GIPa if obese. Avoid TZDs Check BNP for patients at higher risk CAD/CVD: antiplatelet agents, statins

Stage C HFpEF*
Diuretics prn (1)
SGLT2i (2a)
ACE, ARB, ARNI (2b)
MRA (2b)

Stage C HFmrEF*
Diuretics prn (1)
SGLT2i (2a)
ACE, ARB, ARNI (2b)
MRA (2b)
BB (2b)

Stage C HFrEF*/D Heart Failure

