Guide for Heart Failure (HF) Management

✓	Approach	Reccomendations	
	Symptoms & Signs of HF:	Fatigue (low cardiac out-put), SOB, ↑JVP, rales, S3, edema, radiologic congestion, cardiomegaly. Elevated BNP. CXR to r/o infection, interstitial lung disease & PPH (Primary Pulmonary Hypertension)	
	Ejection fraction (echocardiogram, LV gated study, CT angiogram or MRI)	≤ 40% = systolic dysfunction 40-55% = mixed systolic and diastolic dysfunction ≥ 55% = diastolic dysfunction - **treat underlying disorder: HPT/ischaemia/pericardial constriction/restrictive CM (cardiomyopathy)/infiltrative disorders**	
	Consider etiology	**❍ Ischemic-CM ❍ HPT- CM ❍ Valvular HD-CM (AS/AR/MR) ❍ Metabolic: hyper/hypo-thyroidism/hemochromatosis/pheochromocytoma ❍ Toxins: Alcohol/anthracyclines/cocaine/trastuzumab/amphetamines and other chemotherapy ❍ Viral CM ❍ Idiopathic Dilated CM**	
	Identify triggers		
	Acute-sudden onset	Ischaemia, arrhythmia, infection, pulmonary embolism, acute valvular pathology	
	Chronic-gradual onset	Anemia, thyrotoxicosis, non-compliance, diet, Rx e.g. NSAID's	
	Treatment:	Correct triggers and precipitants of acute and chronic Heart Failure	
	General measures	• Low sodium diet/protein nutrition • Regular exercise/activity • D/C smoking • Control hypertension	• Treat and control diabetes • Identify & Rx depression • Treat lipid abnormalities • Tx ischemia:PCI,CABG/Valve Sx
	Symptomatic therapy Goals: ↓symptoms ↑Quality of Life	**Diuretics** - titrate to euvolemic state • Maintain Ideal Body Weight (dry weight = JVP normal/trace pedal edema) • Furosemide 20 mg – 80 mg OD-BID • HCT/Zaroxolyn for refractory congestion	
	Therapy to: • Improve prognosis 🗝 • Prevent progressive LV dysfunction	**ACE Inhibitors-General Guideline: Start low and titrate to the target dose used in the clinical trials or the MAXIMUM TOLERATED DOSE:** **• Captopril 6.25→50 mg BID-TID** **• Enalapril 2.5mg→10 mg BID†** **• Ramipril 2.5 mg → 5 mg BID §** **• Lisinopril 2.5 mg → 30-40 mg OD**	**• Trandolapril 1→4 mg OD‡** **• *Quinapril 10 mg→40 mg OD** **• *Cilazapril 0.5 mg →10 mg OD** **• *Fosinopril 5 mg→40 mg OD** **• *Perindopril 4 mg→8 mg OD** ***No large scale HF outcome trials** **† SoLVD/X-SoLVD § AIRE / AIREX ‡ TRACE** **Consider ISDN 5-40mg QID+Hydralazine 10-75mg QID for ACE-I/ARB intolerance VHeFT**

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	ARB's	**Angiotensin II receptor antagonists (ARB's)** • **ACE-Inhibitors remain first line therapy** • **ARB's indicated in ACE-I intolerant patients** • **(CHARM candesartan 16-32 mg OD) (Val-HeFT /VALIANT valsartan 160 mg BID)**
	Beta Blockers **Limit β blocker dose in the elderly:** Bisoprolol 5 mg daily (CIBIS-ELD) Carvedilol 12.5 mg BID (COLA II)	**General Guidelines** - Add Beta-blocker* to ACE-inhibitor/diuretic/+/- digoxin in stable Class II-IV CHF/LVEF < 40% (*No outcome data for other beta-blockers) • Bisoprolol* 1.25→10 mg OD (CIBIS II Trial) • Carvedilol* 3.125 mg BID→25 mg BID (50 mg BID if weight > 85 kg) • Metoprolol* 12.5 mg BID→75 mg BID (MERIT Trial)
	Aldosterone antagonists *Caution: diabetics/renal disease/elderly/ NSAIDs & COX-2 inhibitors*	• Spironolactone 12.5-25 mg OD added to ACE-inhibitor/diuretic/+/- digoxin in stable Class III-IV CHF/LVEF ≤ 35%/CR<220/K<5.0 (RALES Trial) • Eplerenone 25-50 mg OD in post MI HF (heart failure) with LVEF ≤ 40% (EPHESUS Trial) or 25 mg every 2nd day to 50 mg daily depending on GFR) in Class II HF with LVEF ≤ 35% (EMPHASIS Trial). • Follow K/Cr in 3-7 days/↓ furosemide to avoid azotemia)
	DIG Trial: 6%↓in all cause hospitalization and 8%↓in HF hospitalization. With Dig level < 0.9 ng/mL – 23%↓in all cause mortality, 37%↓in HF mortality and 38%↓in HF hospitalization.	Digoxin-for persisting symptoms in NSR (systolic dysfunction) or symptoms and rate control in Afib. Dose: 0.125 mg – 0.25 mg OD (Lower dose in elderly or renal failure: 0.0625 mg OD or less frequently) Digoxin used as foundation therapy in major HF Trials (SOLVD 68% on Digoxin; US Carvedilol 90% on digoxin; RALES 72% on Digoxin.)
	Anti-coagulant anti-platelet therapy	**ASA** if CAD (↓dose to ↓ ACE inhibitor interaction) **Coumadin** or **NOAC** for Afib, LV thrombus, ↓LVEF ≤ 20%, DVT or pulmonary embolism Duration of A/C therapy: Indefinite for Afib/recurring systemic TE or DVT/PE

Consider Internal Medicine/Cardiology or Heart Failure Clinic referral for initiation/titration of ß-blocker. Consider EPS referral for symptomatic sustained or non-sustained ventricular arrhythmia (LVEF 30-40%) or AICD: Prior MI/CAD (LVEF ≤ 30% with IVCD ≥ 0.12 sec: MADIT II) CHF: (NYHA II-III & LVEF <35% SCD-HeFT) Cardiac Resynchronization Therapy(CRT):(NYHA Class III-IV with reduced ejection fractions; LVEF < 35%; QRS duration ≥ 0.13 seconds with LBBB or ≥ 0.15 seconds with non-LBBB: MIRACLE / MUSTIC) or both CRT/AICD: (NYHA III-IV;QRS ≥ 0.12:COMPANION). LVAD/ Transplant for refractory CHF.

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