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)	$\leq$ 40% = systolic dysfunction 40-55% = mixed systolic and diastolic dysfunction $\geq$ 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, trastuzumab and other chemo, amphetamines ❍ 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	
		Digoxin-for persisting symptoms in NSR (systolic dysfunction) or symptoms and rate control in Afib. Dose: 0.125 mg – 0.25 mg (Lower dose in elderly or renal failure: 0.0625 mg)	

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	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 outcome trials** **† SoLVD/X-SoLVD § AIRE / AIREX ‡ TRACE** **Consider ISDN 5-40mg QID+Hydralazine 10-75mg QID for ACE-I/ARB intolerance VHeFT**
	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	**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 mg OD in post MI HF with LVEF ≤ 40% (EPHESUS Trial) • Follow K/Cr in 3-7 days/↓ furosemide to avoid azotemia)	
	Anti-coagulant anti-platelet therapy	**ASA** if CAD (↓dose to ↓ ACE inhibitor interaction) **Coumadin** 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 with IVCD or LBBB: MIRACLE / MUSTIC) or both CRT/AICD: (NYHA III-IV;QRS ≥ 0.12:COMPANION). EECP/Transplant for refractory CHF.

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