

24. Heart Failure-Chronic Therapy

- Consider starting low doses of all three for synergy: ACEI, Beta blocker, Aldosterone blockers
- These neuromodulators have synergy, avoid starting each separately.

ACE Inhibitors/ARB

- Most effective at (or near) maximal doses, but even lower doses have significant benefit
- ARB-angiotensin II blockers (eg. Valsartan/DIOVAN) equally effect as ACEI

β-Blocking agents (Start Low and Slow)

- Carvedilol/COREG at 3.125mg bid and increase to goal 25-50mg po bid
Carvedilol (beta and alpha-blocker) overall mean EF increased after 3 months by 8%.
- Metoprolol-XL/TOPROL at 12.5 to 25 mg qd, target 200 mg day, better tolerate initially

Aldosterone Receptor Blocker (Watch K+)

- Spironolactone 25 mg qd, Reduces vascular fibrosis, decreases norepinephrine that leads to arrhythmias.
10% gynecomastia or breast pain in males "RALES Study" NEJM. 341(10):709-17, 1999 Sep 2
- Eplerenone /INSARA, 25 mg "SARA-Selective Aldosterone Receptor Blocker" (Ephesus Trial)
1% Gynecomastia (same as placebo but more hyperkalemia).

Diuretics (Use Minimum Doses)

- Usually Furosemide/Lasix®
- Torsemide/DEMADEX® rather than Furosemide more consistent oral absorption if severe CHF
- Thiazide-type diuretic (distal tubule function) Metolazone/ZAROXOLYN® 2.5-5.0 mg qd-qd
30 minutes before Loop Diuretic
- Potassium (and magnesium) supplementation is often important

Digitalis (Optional-no mortality benefit)

- Dig + ACE Inhibitors more effective (improved symptoms, EF, delayed progression) Class II, III

Inotropic Pressor Short term gains, with long term deterioration

Anti-Coagulation (Consider)

- Many experts recommend anti-coagulation for EF < 15-20%
- No compelling data to support empiric anticoagulation in CHF in normal sinus rhythm

Vasodilators

- Amlodopine/NORVASC, Calcium blocker, does not worsen mortality in CHF
- Bosentan/TRACLEER, Early on in treatment increased hospitalization
- PDE-5 Sildenafil/VIAGRA 50 mg bid, Vardenafil/LEVETRAL 20 mg qd, Tadalafil/CIALIS 20 mg qd

Theophylline (Consider)

- Interferes with adenosine receptors to improve central breathing
- May also induce mild diuresis and improved cardiac output, improved O2 saturation

Biventricular Pacing

- *InSync*TM pacing both ventricles from RV apex and LV via the coronary sinus venous system
- Indication NYHA Class III, QRS Duration > 150 msec

AICD

- Defibrillator for those with EF < 35%? (SCD-HeFT,2004)

Therapy of Diastolic Failure

1. Treat underlying hypertension. ACE inhibitors, especially in diabetics.
2. Slow Heart Rate: β-Blockers are highly preferred by most cardiologists (higher dose if tolerated)
3. Low dose diuretics for symptomatic improvement.
4. Aldosterone blocker?

Poor Prognostic Factors 1) Hypotension, 2) Tachypnea, 3) Hyponatremia 4) Diastolic Restrictive filling