THE CLEVELAND CLINIC FOUNDATION

HEART FAILURE MANAGEMENT
Standards of Care

Benchmark hospital LOS (DRG 127): 2 Days - decompensation from volume overload
3.8 Days - complicated decompensation

INITIAL EVALUATION:

- Determine Systolic vs. Diastolic Dysfunction
  (Echo, MUGA, Cath) - Obtain new Echo if previous Echo > 1 yr ago with EF > 40%
- Determine Etiology beyond LV function
  (CMP, TSH, T4, ECG, CXR, CBC, Hepatic function studies)
- Determine NYHA Functional Class
- Adjunct Studies: max O_2 Uptake, RVEF, PET scan

NON-PHARMACOLOGIC THERAPIES:

- Fluid Restriction < 2 L/day (2000 cc/day)
  --May < 1500 cc/day with Serum Na^+ below 130 mg/dl
- 3 gm Sodium Diet for mild HF (Class I/II)
- 2 gm Sodium Diet for moderate/advanced HF (Class III/IV)

- Cardiac Rehab Consult for Phase II program (if not home bound)
- Home Health Consult (if homebound)
- Dietary Consult
- Social Service Consult

> if noncompliant with diet, fluid and/or medication treatment plan

- Assess if patient has a scale at home --> daily weight monitoring
- Patient education regarding: diet, medications, fluid management (including daily weights, "dry" weight, and how to treat weight increases), activity, and signs & symptoms of worsening condition.

SYSTOLIC DYSFUNCTION PHARMACOLOGIC THERAPIES

IV/Oral Loop for volume overload
- Maintenance dosing vs. Aggressive dosing with symptoms
- Add Thiazide drugs for synergistic response as necessary

dose based on weight, age, gender, creatinine clearance, and concomitant meds

Titrate to target dose as tolerated
- Do not use if creatinine > 3.0 mg/dL or potassium > 5.5 mEq/L
- Begin therapy if SBP > 90 mmHg without vasodilator therapy or > 80 mmHg and asymptomatic with other vasodilator therapy
- Begin therapy if serum sodium > 134 mg/dL
- Alternative to ACEI: Hydralazine/Nitrate combination or Angiotensin II Receptor Blocker
- Do not hold vasodilator unless SBP < 80 mm Hg or 5% of orthostasis, mental obtundation, or ↓ urine output

Titrate to Therapeutic dosing
- Use in NYHA Class III not hospitalized pts
- Do not use if Hx of hepatic failure, bronchospasm, heart blocker SSS without permanent pacemaker, overt congestion/NYHA Class IV, symptomatic hypotension
- If ISCHEMIC cardiomyopathy: Add and

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VASODILATORS	START	TARGET	MAX
Captopril (Capoten)	6.25 - 12.5 tid	50 tid	100 tid
Enalapril (Vasotec)	2.5 - 5 bid	10 bid	20 bid
Lisinopril (Prinivil, Zestril)	2.5 - 5 qd	20 qd	40 qd
Losartan (Cozaar)	12.5 - 25 qd	50 qd	50 bid or 100 qd
Hydralazine (Apresoline)	25 qid	50 - 75 qid	100 qid
Isosorbide dinitrate (Isordil)	10 - 20 tid	20 -60 tid	80 tid
Isosorbide mononitrate (Imdur)	30 qd	60 - 120 qd	240 qd

DIURETICS	START	TARGET	MAX
Furosemide	20 - 40 qd	As Required	480 qd
HCTZ*	25 qd	As Required	200 qd
Metolazone*	2.5 qd	As Required	5 qd
Spironolactone	25 qd	As Required	50 bid

*"Watch K+" carefully; May cause hyponatremia; Give 30 minutes before loop agent.

BETA-BLOCKER	START	TARGET
Carvedilol (Coreg)	3.125 bid	25 mg bid if ≤ 85kg 50 mg bid if ≥ 85kg

DIGOXIN ADMINISTRATION CHART

Corrected creatinine clearance (CCC) formula = $\left(\frac{140 - \text{Age}}{\text{Serum Creatinine}}\right) \cdot X$ x = 1.0 males, x = 0.85 females

DIGOXIN Daily Maintenance Dose (mg / day)						
"Corrected Creatinine Clearance (CCC)" formula above						
CCC	Body Weight in kg (lbs.)					
	50 (110)	60 (132)	70 (154)	80 (176)	90 (198)	100 (220)
10	.125	.125	.125	.125	.250	.250
20	.125	.125	.125	.250	.250	.250
30	.125	.125	.250	.250	.250	.250
40	.125	.250	.250	.250	.250	.250
50	.125	.250	.250	.250	.250	.250
60	.250	.250	.250	.250	.250	.375
70	.250	.250	.250	.250	.250	.375
80	.250	.250	.250	.250	.375	.375
90	.250	.250	.250	.250	.375	.500
100	.250	.250	.250	.375	.375	.500