Key Components in Managing Systolic Heart Failure in Primary Care

Target Population: Adult ages 18 -85

Introduction

Systolic heart failure, HFr EF, is a major health problem in the United States with an estimated 5 million individuals currently diagnosed. Outpatient treatment has improved dramatically with the advent of neuro-hormonal and device approaches, patient education, and disease management strategies.

Diagnosis

1) In the primary care setting, patients with major heart failure commonly complain of:
   - Dyspnea at rest or exertion/orthopnea
   - Paroxysmal nocturnal dyspnea (PND)
   - Cough (recumbent or exertional)
   - Abdominal or epigastric discomfort; abdominal bloating; early satiety
   - Pedal/leg swelling; rapid weight gain
   - Sleep disturbances (anxiety or air hunger)
   - Unexplained confusion, altered mental status
   - Fatigue
   - Nausea or anorexia; dependent edema.

2) Clinical signs of HF
   - Rales/crackles
   - S3/S4
   - Evidence of pulmonary vascular congestion or cardiomegaly on chest x-ray
   - Bilateral peripheral edema, hepatic congestion, jugular venous congestion, hepatojugular reflux, increasing abdominal girth /“ascites”

3) Initial Evaluation
   - Past and current medical history should include assessment for: CHF, MI, HTN, Diabetes, Hyperlipidemia, Thyroid dysfunction; recently postpartum; snoring/sleep apnea; blunt chest injury; rheumatic fever; HIV; bacterial endocarditis; claudication; foreign travel
   - Assess for family history of: ischemic heart disease, CHF, congenital heart disease, risk factors for atherosclerotic cardiovascular disease
   - Assess social history: alcohol (abuse screen), drug, and tobacco use
   - Assess dietary history: salt and daily fluid intake; balanced diet
   - Physical exam: Vital signs, weight and height; assess for clinical signs of volume overload especially jugular venous distension and peripheral perfusion
   - Level of Physical Activity
     - ACC/AHA stage vs NYHA Functional classification
4) Initial testing

- Lab tests: CBC, Electrolytes (Na+, K+, Cl, Bicarb) , Ca++, Mg++
  - Lipids, Renal function (BUN, Cr), Liver function (AST, ALT,
  - Alk phos, Bili, T Prot, Alb), UA, TSH, PT/INR, glucose, pro BNP/BNP (proBNP/BNP could be useful to support clinical decision regarding diagnosis of heart failure especially in the setting of clinical uncertainty or used for establishing prognosis or disease severity)
  - Lab tests to consider to evaluate potential other causes: CBC, ferritin/iron/TIBC, lipid profile; blood culture (if endocarditis suspected); Lyme serology (if suspect bradycardia/heart block), connective tissue disease workup, HIV
- Chest X-Ray
- 12-Lead Electrocardiogram
- Left Ventricular imaging by echocardiography
- Ischemic evaluation in patient with CAD risk factors (stress test, angiography).
  - Two-thirds of systolic heart failure is due to ischemic heart disease, therefore identifying ischemia as a cause of heart failure is important

5) Serial Lab testing: Electrolytes, renal function

**Treatment and Management**

- Treat all patients with left ventricular systolic dysfunction with ACE inhibitors (or ARBs if intolerant) unless specific contraindications exist
- An angiotensin receptor-neprilysin inhibitor (ARNI) or angiotensin-converting-enzyme-inhibitor (ACE1) should be used for patients with stage C heart failure with reduced ejection fraction. An ARNI should not be coadministered with an ACE1 in patients with an angioedema history.
- Unless specific contraindications exist, treat all patients with beta-blockers, starting with a low dose and titrating upward. Aldosterone receptor antagonist should be considered for NYHA II-IV with LVEF less than or equal to 35% unless contraindicated (creatinine more than 2.5 mg/dL in men, more than 2 mg/dL in women or potassium more than 5 mEq/L)
- Ivabradine, a sinoatrial node modulator, may help to reduce hospitalizations in patients with symptomatic stable chronic heart failure with reduced ejection fraction who are taking a maximum tolerated dose of a beta-blocker or have a resting heart rate of 70 beat/min or more.
• Combination of hydralazine and isosorbide dinitrate could be considered in African American NYHA class III-IV with HfrEF

https://www.icsi.org/_asset/50qb52/HeartFailure.pdf Pharmacologic Management pages 28-38


http://circ.ahajournals.org/content/128/16/e240/T15.expansion.html

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**Non-Pharmacologic Management:**

• Risk Factor Modification
• Activity and exercise
• Diet and Sodium Intake
• Alcohol / Drugs
• Fluid Intake
• Influenza / Pneumovax
• Continuous Positive Airway Pressure
• Advanced Directive

https://www.icsi.org/_asset/50qb52/HeartFailure.pdf Non-Pharmacologic Management pages 38-47

**Patient Self Management Support**

It is important to partner with patients and family, and educate on self-management components. Focus is on those elements most appropriate for the individual patient.

https://www.icsi.org/_asset/50qb52/HeartFailure.pdf Strategies to Address Adherence to Treatment pages 82-87.

**Heart failure management in skilled nursing facility (SNF)**

Data available suggest that HF patients discharged to SNFs are at very high risk for re-hospitalization and death.
Decompensation is usually recognized by weight gain or worsening of HF symptoms or decline in function. Residents with HF should receive weight assessment, vital signs, and nursing assessments regarding signs and symptoms of HF. Initial management of volume overload is appropriate in the SNF. Decisions to hospitalize a HF SNF resident for symptomatic refractory volume overload, or to transition to end-of-life care should be based on goals of care, functional and cognitive status after efforts to optimize medical management to prevent avoidable admissions. Pharmacotherapy for HF in SNF residents should be individualized and should include consideration of prognosis, goals of care, comorbid conditions, potential adverse effects, medication costs and personal preferences. It is reasonable for patients with symptomatic HF to restrict dietary sodium. Individualized fluid restriction of 1.5 to 2 L is reasonable to improve symptoms for residents with hyponatremia or fluid retention in stage D HF. Body weight should be tracked over months. Individualized continuum of rehabilitation services based on patient preferences and level of care should be implemented, both aerobic and resistance training for all who are capable. For patient with cardiac implantable electronic devices, discussion should take place regarding each resident’s wishes for deactivation or continued activation. Monitoring of device should follow established guidelines (1/year in the office, every 3-6 months for ICD or 3-12 months (pacemaker) either remotely or in the office. Determination of ICD or CRT benefits should include consideration of comorbidities and prognosis, and discussion of ICD or CRT implantation should focus on overall goals of care. Discussion about goals of care and preferences for end-of-life care should be included in advance care planning at the time of admission to SNF and whenever there is a change in health status and level of care.

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**Follow-up**

Focus on optimizing pharmacologic and non-pharmacologic therapy and preventing heart failure exacerbations.

**Referral**

- Intolerance to therapy
- Worsening of clinical symptom despite adequate therapy
- Poor adherence
- Consideration for further therapies (those with EF<35% and life expectancy >1 year)
  - Pacemaker
  - AICD
  - Cardiac resynchronization
  - Transplant evaluation
  - Mechanical cardiac support - LVAD
This information is meant to serve as a guideline only, and is not a substitute for clinical judgment.

References

http://circheartfailure.ahajournals.org/

https://www.icsi.org/_asset/50qb52/HeartFailure.pdf

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