EXAMING HEART FAILURE: HOW TO RECOGNIZE AND TREAT THE WEAK HEART

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Objectives

- What is Heart Failure?
- Types of Heart Failure
- How common is HF?
- Sign/Symptoms, when to see a doctor?
- Diagnostic testing
What is Heart Failure?

Definition: Heart Failure or congestive heart failure (CHF) is a condition in which the heart is unable to pump adequate blood to meet the needs of the organs of the body.

Types of Left Heart Failure

Diastolic (or relaxation) heart failure
- Thick Muscle
- Heart does not fill with blood properly
- This results in fluid backup in the lungs and heart failure

Systolic (or squeezing) heart failure
- Decreased pumping function of the heart, which results in fluid backup in the lungs and heart failure

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Risk Factors/Causes for Heart Failure

- CAD
- MI (Heart Attack)
- Hypertension (LVH)
- Valvular heart disease
- Cardiomyopathy
- Alcoholism
- Drugs (METH)
- Thyroid disorders
- Infection (viral)

- Diabetes
- Abnormal Heart Rhythm
- Congenital heart defects
- Other:
  - Obesity
  - Age
  - Smoking
  - High or low hematocrit level
  - Obstructive Sleep Apnea

Epidemiology of Heart Failure in the US

- More deaths from heart failure than from all forms of cancer combined
- 550,000 new cases/year
- 4.7 million symptomatic patients; estimated 10 million in 2037

CVD=coronary artery disease; LVH=left ventricular hypertrophy.
Increasing Heart Failure Prevalence

Mean age at diagnosis: 74 years
60% over age 75


Cardiovascular Mortality (800,000/yr)

280,000 deaths/yr with primary or underlying

Coronary Heart Disease
Stroke
Congestive Heart Failure
High Blood Pressure
Diseases of the Arteries
Rheumatic Fever/Rheumatic Heart Disease


Heart Failure Care is Expensive

Physicians/Other Providers ($3 billion) 7%
Drugs/Medical Durables ($5 billion) 10%
Hospital /Nursing Homes ($26 billion) 73%
Home Health ($3 billion) 10%

Total Direct Costs: $31 billion in 2012 ---+ $70 billion in 2030


Classifying Heart Failure: Terminology and Staging
Classification of HF: Comparison Between ACC/AHA HF Stage and NYHA Functional Class

<table>
<thead>
<tr>
<th>ACC/AHA HF Stage</th>
<th>NYHA Functional Class</th>
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<tbody>
<tr>
<td>A</td>
<td>I Asymptomatic</td>
</tr>
<tr>
<td>B</td>
<td>II Symptomatic with moderate exertion</td>
</tr>
<tr>
<td>C</td>
<td>III Symptomatic with minimal exertion</td>
</tr>
<tr>
<td>D</td>
<td>IV Symptomatic at rest</td>
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</tbody>
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- A: At high risk for heart failure but without structural heart disease or symptoms of heart failure (eg, patients with hypertension or coronary artery disease)
- B: Structural heart disease but without symptoms of heart failure
- C: Structural heart disease with prior or current symptoms of heart failure
- D: Refractory heart failure requiring specialized interventions

Signs/Symptoms

- Tiredness
- Shortness of breath
- Swelling in legs
- Numbness or tingling
- Fatigue
- Palpitations

When to see a Doctor?

- I'm having trouble breathing
How Heart Failure Is Diagnosed

- Medical history is taken to reveal symptoms
- Physical exam is done

Labs

Common Blood Tests:
- CBC
- Chemistry Panel
- Urine Tests
- BNP
- TSH
- HIV
- Iron Studies

Testing for specific patients:
- HIV
- Iron
- Sleep Study
- Protein (Light Chains)
- Genetic screening

EKG

CXR

Normal CHF
ECHO: Gold Standard

Normal Heart Function

Systolic Heart Failure

A Key Indicator for Diagnosing Heart Failure

- Ejection Fraction (EF) is the percentage of blood that is pumped out of your heart during each beat
- Important objective criteria in evaluating cardiac function
- Reflects strength of ventricular contraction

Imaging

MRI

Nuclear Imaging

CAD Evaluation
Summary

• Disorder of the Heart
• Prevention
• SS: Symptoms related to congestion/decrease output
• Diagnosis: ECHO