Heart Failure Today

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The Most Recent Data

- Heart Failure in the United States
- About **5.7 million** adults in the United States have heart failure.
- One in 9 deaths in 2009 included heart failure as contributing cause.
- **About half** of people who develop heart failure **die within 5 years** of diagnosis.
- Heart failure costs the nation an estimated **$30.7 billion** each year. This total includes the cost of health care services, medications to treat heart failure, and missed days of work.

- CDC data 2017

More Facts

- More than 20% of patients are readmitted within 30 days
- Up to 50% by 6 months
- Up to 50% of some patient populations end up in a skilled nursing facility
- Cost of initial admission
  - initial admission for CHF costs **$11,000**
- Cost of readmission
  - The mean cost per CHF readmission is **$13,000**

Guideline Update

- New Medications
  - Sacubitril-Valsartan (Entresto) – PARADIGM trial
    - Reduced the risk of death or re-hospitalization by 20 per cent compared with Enalapril after a median 27 months' follow-up
      - Both worsening HF and sudden death
    - may be result in a 1 to 2 year prolongation of survival free from HF.
    - estimated that more than 28,000 deaths may be prevented
    - Even those who are stable on and ACE or ARB showed benefit
  - Slow uptake – Worry about macular degeration and cognitive dysfunction
    - Lets hope they live long enough for that to be a problem!

Using Sacubitril-Valsartan (Entresto)

- If your institution uses BNP and not NT-Pro BNP, you can no longer trust the BNP, as sacubitril effects the BNP level but not the N terminal portion.
  - Sacubitril inhibits neprilysin, which degrades BNP
- You need to watch your diuretic doses, you may not need as much. If there is more circulating BNP, you should have more diuresis
- Wash out time required if pt is on an ACE
  - In a newly diagnosed pt with marginal BP, if you can't start Entresto right away, start and ARB and not an ACE to avoid the washout time.

Guideline Update

- Ivabradine – SHIFT trial
  - For use in patients who have a HR >70 (NSR) on max dose of BB
    - Always max out the BB first
  - Decreases the chance of re-hospitalization

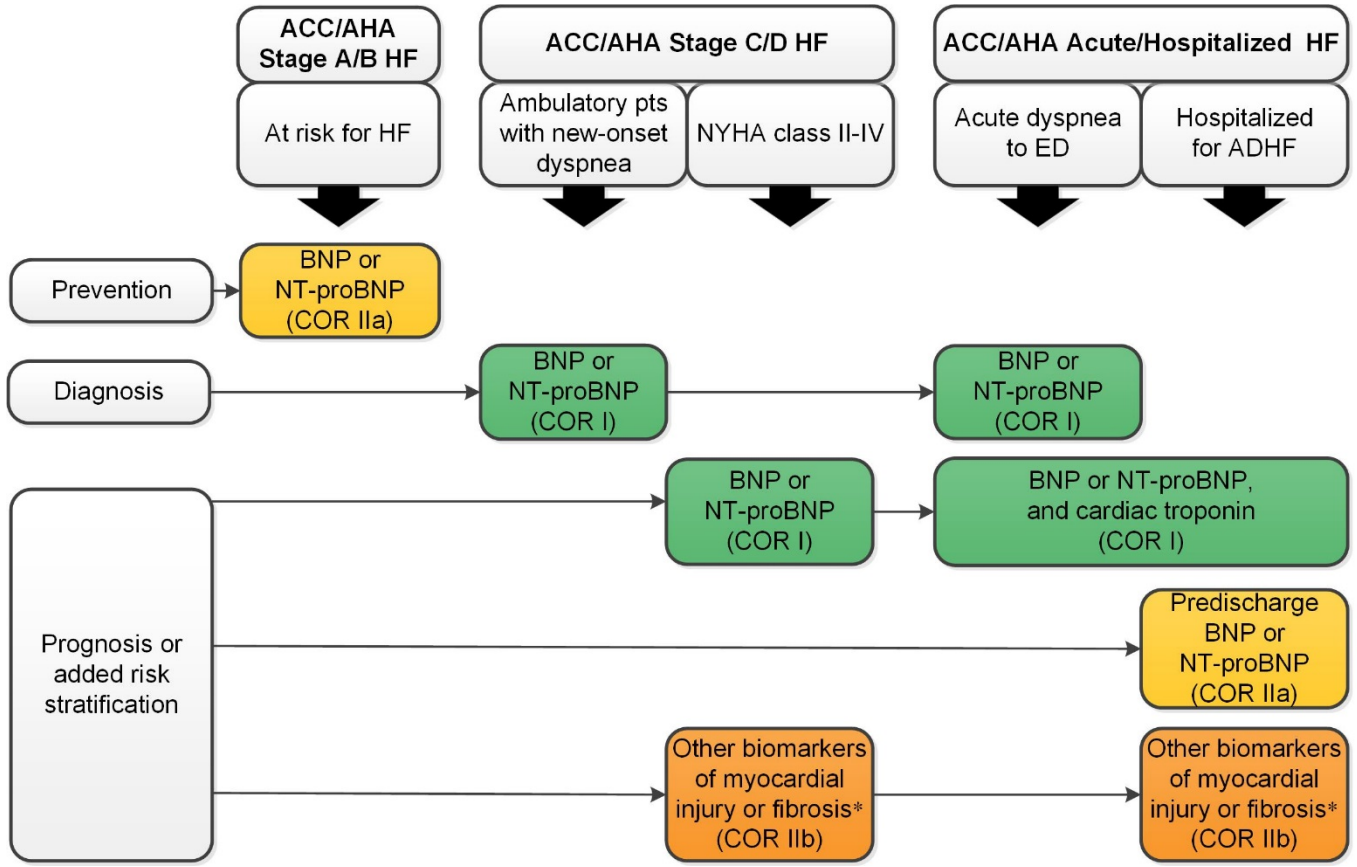
  - Inhibits the Cardiac Pacemaker Channel (funny chanel)
  - Works via prolonging diastolic depolarization, slowing firing in the SA node, and ultimately reducing the heart rate.

  - reduced the risk of the primary composite endpoint of hospitalization for worsening heart failure or cardiovascular death by 18% ($P<0.0001$) compared with placebo on top of optimal therapy.

Guideline Shift for Biomarkers

- Primarily recommended on admission to diagnose HF
- Can be used for prognostication

Biomarkers Indications for Use



*Other biomarkers of injury or fibrosis include soluble ST2 receptor, galectin-3, and high-sensitivity troponin.
ACC indicates American College of Cardiology; AHA, American Heart Association; ADHF, acute decompensated heart failure; BNP, B-type natriuretic peptide; COR, Class of Recommendation; ED, emergency department; HF, heart failure; NT-proBNP, N-terminal pro-B-type natriuretic peptide; NYHA, New York Heart Association; and pts, patients.

Anemia

COR	LOE	Recommendations	Comment/ Rationale
IIb	**B-R**	In patients with NYHA class II and III HF and iron deficiency (ferritin <100 ng/mL or 100 to 300 ng/mL if transferrin saturation is <20%), intravenous iron replacement might be reasonable to improve functional status and QoL.	NEW: New evidence consistent with therapeutic benefit.
III: No Benefit	**B-R**	In patients with HF and anemia, erythropoietin-stimulating agents should not be used to improve morbidity and mortality.	NEW: Current recommendation reflects new evidence demonstrating absence of therapeutic benefit.

Sleep Disorders

COR	LOE	Recommendations	Comment/ Rationale
IIa	**C-LD**	In patients with NYHA class II–IV HF and suspicion of sleep disordered breathing or excessive daytime sleepiness, a formal sleep assessment is reasonable.	NEW: Recommendation reflects clinical necessity to distinguish obstructive versus central sleep apnea.
IIb	**B-R**	In patients with cardiovascular disease and obstructive sleep apnea, CPAP may be reasonable to improve sleep quality and daytime sleepiness.	NEW: New data demonstrate the limited scope of benefit expected from CPAP for obstructive sleep apnea.
III: Harm	**B-R**	In patients with NYHA class II–IV HF*r*EF and central sleep apnea, adaptive servo-ventilation causes harm.	NEW: New data demonstrate a signal of harm when adaptive servo-ventilation is used for central sleep apnea.

AHA GWTG Markers for Adv HF Referral

- More than 2 hospitalizations (or ED visits) in the past year
- End organ dysfunction (ie progressive CKD)
- Symptomatic hypotension
- Dose reduction of ACE or BB
- Weight loss without trying – cachexia
- Unable to walk one block – progressive dyspnea

WTR - Continued

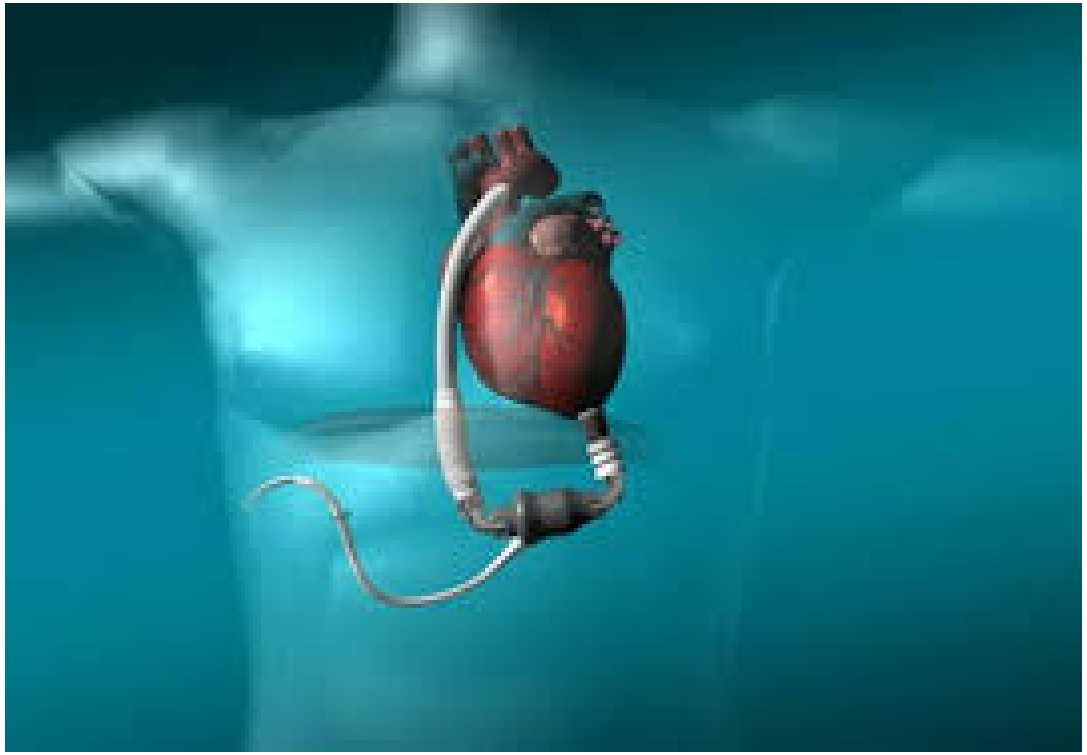
- Repeated ICD shocks – VT
- Daily lasix dosing of 160 mg or more with the occasional metolazone
- Hyponatremia <133 mEq/L
- High BNP that does not decrease by 50% with GDMT
- No reversible causes or precipitants

Mnemonic for When to Refer: I Need Help

- I - Inotrope (previous or ongoing requirement)
- N – NYHA class III or IV or persistently high BNP or NT-pro-BNP
- E – End Organ Dysfunction: worsening renal or liver dysfunction
- E – Ejection Fraction: <20%
- D – Defibrillator Shocks- Recurrent, Appropriate
- H – Hospitalizations >1 in the last 12 months
- E – Edema/Escalating Diuretics
- L – Low BP <90 to 100 mm Hg
- P – Prognostic medication: inability to uptitrate or need to decrease dose

HeartWare LVAD

HeartMate IILVAD



HeartMate 3

Patient View