

Take 3 – Practical Practice Pointers[®] October 15, 2018 Edition

The Heart Failure Edition: HFpEF, Co-Management of HF, HFrEF

From the Guidelines and the ACC/AHA

1) Management of Heart Failure with Preserved Ejection Fraction

In 2013, the American Heart Association (AHA) in collaboration with the American College of Cardiology (ACC) released a guideline on the management of heart failure. This Pointer will focus on the treatment of Heart Failure with Preserved Ejection Fraction (HFpEF), formerly known as diastolic heart failure.

Interestingly, HFpEF has various definitions. Studies estimate that the prevalence of HFpEF is approximately 50%. These estimates vary largely because of the differing EF cut-off criteria and challenges in diagnostic criteria for HFpEF. HFpEF has been variably classified as EF >40%, >45%, >50%, and ≥55%. Because some of these patients do not have entirely normal EF but also do not have major reduction in systolic function, the term *preserved EF* has been used. Patients with an EF in the range of 40% to 50% represent an intermediate group. These patients are often treated for underlying risk factors and comorbidities and with guideline directed medical therapy (GDMT) similar to that used in patients with HFrEF. Several criteria have been proposed to define the syndrome of HFpEF. These include

- clinical signs or symptoms of HF;
- evidence of preserved or normal LVEF; and
- evidence of abnormal LV diastolic dysfunction that can be determined by Doppler echocardiography or cardiac catheterization
- In patients presenting with dyspnea, measurement of natriuretic peptide biomarkers is useful to support a diagnosis or exclusion of HF. (A)

Hypertension remains the most important cause of HFpEF. It has been recognized that a subset of patients with HFpEF previously had HFrEF.

Recommendations for the management of HFpEF include (Note that different classification terminology is used in this guideline compared with the AAFP and ACP):

SOR I (Strength of Recommendation – this guide refers to this as “class”)

- Systolic and diastolic blood pressure should be controlled in accordance with published clinical practice guidelines to prevent morbidity (B – Level of Evidence)
- Diuretics should be used for relief of symptoms due to volume overload (C)

SOR IIa

- The use of beta-blocking agents, ACE inhibitors, and ARBs in patients with hypertension is reasonable to control blood pressure (C)
- Coronary revascularization is reasonable in patients with CAD in whom symptoms (angina) or demonstrable myocardial ischemia is judged to be having an adverse effect on symptomatic HFpEF despite Guideline Directed Medical Therapy (GDMT) (C)
- Management of AF according to published clinical practice guidelines is reasonable to improve symptomatic HF (C)

My Comment:

The most significant focus for these patients is the control of blood pressure (target goal $\leq 130/80$). I see many patients who have only “diastolic dysfunction” by ECHO mistakenly designated as having HFpEF (“diastolic HF). This can be caused by left ventricular hypertrophy without any other evidence of heart failure. Note the criteria above. I personally find it helpful to use natriuretic peptide biomarkers for assistance in diagnosis. These are patients we should all be very comfortable to competently manage. See Pointer #2 below for more on this.

Reference:

Yancy CW et al. 2013 ACCF/AHA Guideline for the Management of Heart Failure. Jour Am Col Car. October 2013; 62 (16):e147-239. [Article](#)

From the Literature and the Carilion Clinic Specialty Council

2) Guide for Co-Managing Patients with CHF

Carilion Clinic is in the process creating a more explicit, collaborative, and consistent process for managing patients with heart failure, which would include both heart failure with preserved ejection fraction (HFpEF – aka diastolic heart failure) and heart failure with reduced ejection fraction (HFrEF – aka systolic heart failure). Part of that process is the creation of “co-management agreements.” This pointer highlights the recently distributed CHF co-management agreement and is certainly applicable beyond our system.

Primary Care Clinician Primarily Managed:

- Ejection fraction > 40
- Diastolic heart failure with < 2 hospitalizations in the previous 12 months
- Diastolic HF New York Heart Association (NYHA) class 1 and 2.
 - **Class I** - No symptoms and no limitation in ordinary physical activity, e.g. shortness of breath when walking, climbing stairs etc.
 - **Class II** - Mild symptoms (mild shortness of breath and/or angina) and slight limitation during ordinary activity.

Cardiology Primarily Managed:

- Ejection fraction ≤ 40
- Diastolic heart failure with ≥ 2 hospitalizations in the previous 12 months
- Diastolic HF NYHA class 3 and 4
 - **Class III** - Marked limitation in activity due to symptoms, even during less-than-ordinary activity, e.g. walking short distances (20–100 m). Comfortable only at rest.
 - **Class IV** - Severe limitations. Experiences symptoms even while *at rest*. Mostly bedbound patients.
- Right sided heart failure, cor pulmonale, pulmonary hypertension: refer for NYHA class 3 and 4 or class 2 not responding to treatment.

Prepping and Documenting for referral:

- Signs & symptoms
- Medication list updated
- Diagnostic testing including: ECHO, EKG (12-lead), TSH with reflex T4, Metabolic panel, BNP, CBC

My Comment:

This is the 2nd Take 3 installment to highlight our recently approved Primary Care/Subspecialty Care Co-Management Agreements. These are intended to improve patient care by improving coordination of care for patients with specific medical issues. Remember this is not an “either/or” management approach, but rather a way to better understand primary roles/responsibilities under different circumstances. Communication with our cardiology colleagues is always encouraged.

Reference:

Carilion Clinic Heart Failure Co-Management Agreement (attachment 2). NOTE: Atrial Fibrillation will be covered in a future Take 3.

From the Guidelines and the ACC/AHA**3) Management of Heart Failure with Reduced Ejection Fraction**

This Pointer is a continuation of the ACC/AHA Guideline for the management of HF, in this case for patients with reduced ejection fraction (HFrEF).

Stage B Recommendations (Note: Stage B is considered pre-heart failure. It means a diagnosis of systolic left ventricular dysfunction but no history of HF):

SOR I

- ACE inhibitors should be used in all patients with a reduced EF to prevent symptomatic HF, even if they do not have a history of MI. (A) In patients intolerant of ACE inhibitors, ARBs are appropriate unless contraindicated. (A)
- In all patients with a recent or remote history of MI or ACS and reduced EF, evidence-based beta blockers should be used to reduce mortality (B), and in all others to prevent symptomatic HF. (C) Three beta blockers have been shown to be effective in reducing the risk of death in patients with chronic HFrEF: carvedolol, bisoprolol and sustained-release metoprolol (succinate).

SOR IIa

- To prevent sudden death, placement of an ICD is reasonable in patients with asymptomatic ischemic cardiomyopathy who are at least 40 days post-MI, have an LVEF of $\leq 30\%$, are on appropriate medical therapy, and have reasonable expectation of survival with a good functional status for more than 1 year. (B)

SOR III: Harm

- Nondihydropyridine calcium channel blockers with negative inotropic effects may be harmful after MI (C)

Stage C Recommendations (In addition to the above – Note: Stage C have (currently) or had (previously) signs/symptoms of HF):

SOR I

- Diuretics are recommended in patients with HFrEF who have evidence of fluid retention, unless contraindicated, to improve symptoms. (C) Loop diuretics (bumetanide, furosemide, and torsemide) are the preferred agents for use in most patients with HF. Thiazide diuretics may be considered in hypertensive patients with HF and mild fluid retention because they confer more persistent antihypertensive effects.

- Use of 1 of the 3 beta blockers proven to reduce mortality is recommended for all patients with current or prior symptoms of HFrEF, unless contraindicated, to reduce morbidity and mortality. (A)
- Aldosterone receptor antagonists (or mineralocorticoid receptor antagonists) are recommended in patients with NYHA class II–IV HF and who have LVEF of 35% or less, unless contraindicated, to reduce morbidity and mortality. Creatinine should be ≤ 2.5 in men or ≤ 2.0 in women (or estimated glomerular filtration rate >30), and potassium should be less than 5.0. (A)
- Aldosterone receptor antagonists are recommended to reduce morbidity and mortality following an acute MI in patients who have LVEF of 40% or less who develop symptoms of HF or who have a history of diabetes mellitus, unless contraindicated (B)
- The combination of hydralazine and isosorbide dinitrate is recommended to reduce morbidity and mortality for patients self-described as African Americans with NYHA class III–IV HFrEF receiving optimal therapy with ACE inhibitors and beta blockers, unless contraindicated. (A)

SOR IIa

- A combination of hydralazine and isosorbide dinitrate can be useful to reduce morbidity or mortality in patients with current or prior symptomatic HFrEF who cannot be given an ACE inhibitor or ARB because of drug intolerance, hypotension, or renal insufficiency, unless contraindicated. (B)
- Digoxin can be beneficial in patients with HFrEF, unless contraindicated, to decrease hospitalizations for HF. (B)

SOR IIb

- Addition of an ARB may be considered in persistently symptomatic patients with HFrEF who are already being treated with an ACE inhibitor and a beta blocker in whom an aldosterone antagonist is not indicated or tolerated. (A)

SOR III:

No Benefit

- Calcium channel blockers are not recommended for patients with HFrEF. (A)

My Comment:

As noted in Pointer #2, all of these patients are recommended for co-management with a cardiologist. The 2017 update guideline introduced the use of two newer medications: 1) the combination product valsartan plus sacubitril (Entresto), which is an angiotensin receptor-neprilysin inhibitor (ARNI) and 2) ivabradine (Corlanor), a sinoatrial node modulator. Details of these are beyond the scope of this Pointer.

Reference:

Yancy CW et al. 2013 ACCF/AHA Guideline for the Management of HF. *Jour Am Col Car.* October 2013; 62 (16):e147-239. [Article](#)

Yancy CW et al. 2017 ACC/AHA/HFSA Focused Update of the 2013 ACCF/AHA Guideline for the Management of HF. *Circulation* August 8, 2017. 136 (6). [Article](#)

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Mark

Carilion Clinic Department of Family and Community Medicine