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What's new in the 2017 heart failure guidelines

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Key points to remember

- 2017 guidelines recommend using natriuretic peptides as biomarkers to screen for heart failure in addition to diagnosis and prognosis.
- Focused update with regard to medication to treat heart failure remained the same as those released in a focused update last year, though, pathways were clarified.
- There are updates in management of important co-morbidities including anemia,hypertension and sleep apnea. Specifically, intravenous iron therapy is emphasized along with the recent data. New systolic BP threshold of <130 mmHg is set to prevent, treat HFrEF and HFpEF. Differential diagnosis of central versus obstructive sleep apnea is emphasized besides potential hazard of adaptive servo ventilation in patients with central sleep apnea is noted.

Biomarkers

Biomarkers for screening and prevention

COR	LOE	Recommendation	Comment/ Rationale
IIa	B-R	For patients at risk of developing HF, natriuretic peptide biomarker–based screening followed by team-based care, including a cardiovascular specialist optimizing GDMT, can be useful to prevent the development of left ventricular dysfunction (systolic or diastolic) or new-onset HF.	NEW: New data suggest that natriuretic peptide biomarker screening and early intervention may prevent HF.

Biomarkers

Biomarkers for Diagnosis

COR	LOE	Recommendation	Comment/ Rationale
I	A	In patients presenting with dyspnea, measurement of natriuretic peptide biomarkers is useful to support a diagnosis or exclusion of HF.	MODIFIED: 2013 acute and chronic recommendations have been combined into a diagnosis section.

Biomarkers

Biomarkers for Prognosis or Added Risk Stratification

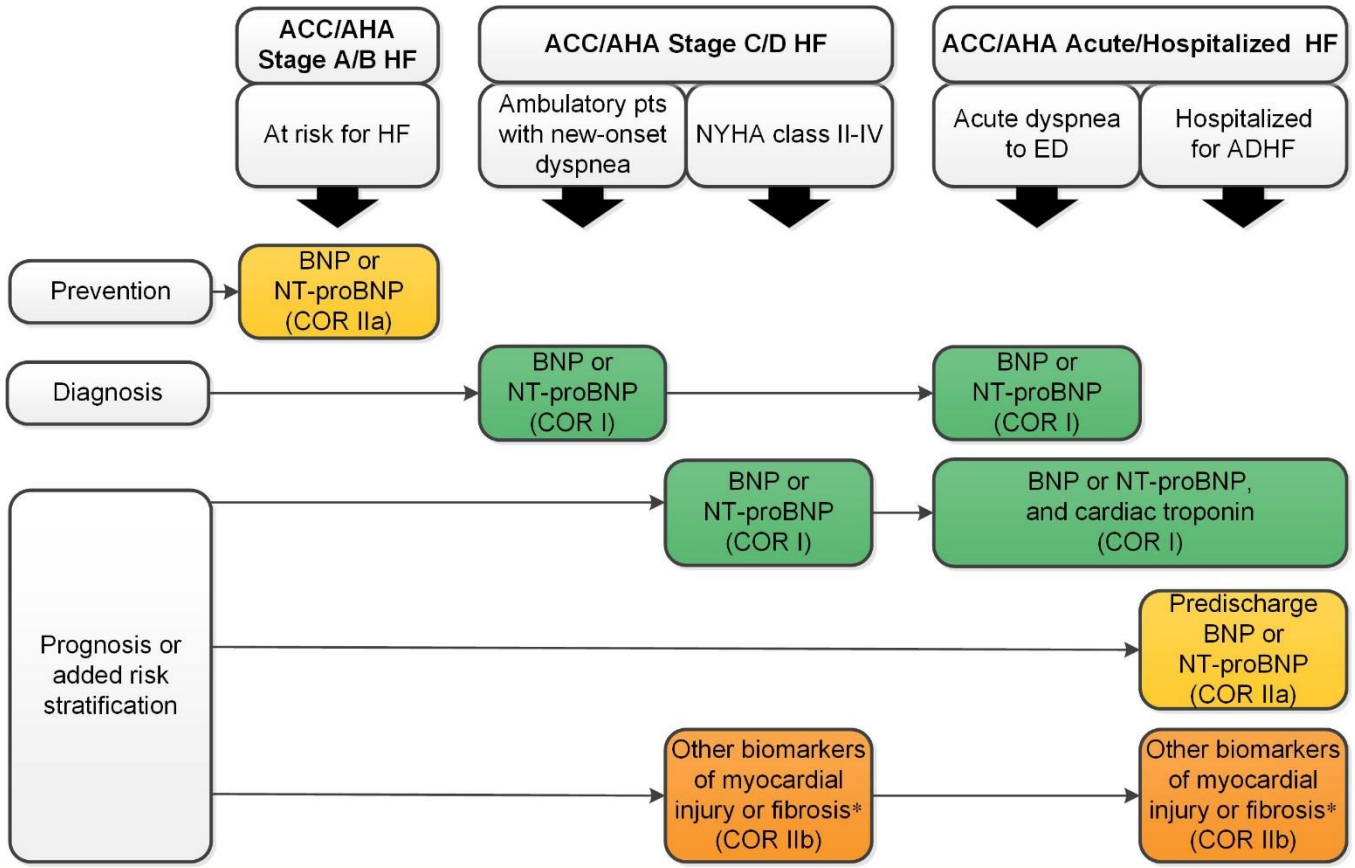
COR	LOE	Recommendations	Comment/ Rationale
I	A	Measurement of BNP or NT-proBNP is useful for establishing prognosis or disease severity in chronic HF.	2013 recommendation remains current.
I	A	**Measurement of baseline levels** of natriuretic peptide biomarkers and/or cardiac troponin on admission to the hospital is useful **to establish a prognosis in acutely decompensated HF.**	MODIFIED: Current recommendation emphasizes that it is admission levels of natriuretic peptide biomarkers that are useful.

Biomarkers

Biomarkers for Prognosis or Added Risk Stratification

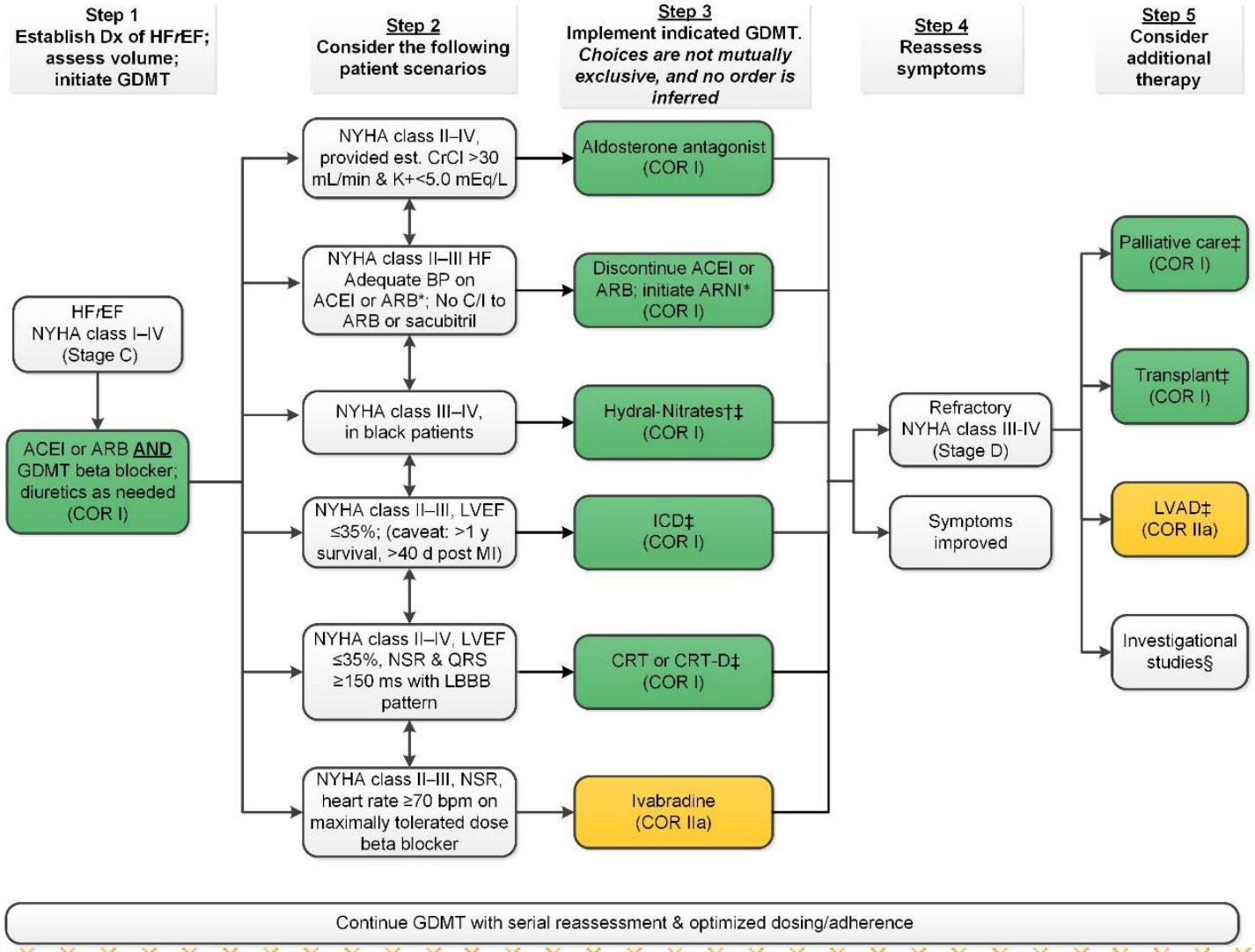
COR	LOE	Recommendations	Comment/ Rationale
IIa	**B-NR**	During a hospitalization for HF, a predischarge natriuretic peptide level can be useful to establish a postdischarge prognosis.	NEW: Current recommendation reflects new observational studies.
IIb	**B-NR**	In patients with chronic HF, measurement of **other clinically available tests, such as biomarkers of myocardial injury or fibrosis**, may be considered for additive risk stratification.	MODIFIED: 2013 recommendations have been combined into prognosis section, resulting in LOE change from A to B-NR.

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.

Treatment of HFrEF Stage C and D



†Hydral-Nitrates green box: The combination of ISDN/HYD with ARNI has not been robustly tested. BP response should be carefully monitored.
‡See 2013 HF guideline.
§Participation in investigational studies is also appropriate for stage C, NYHA class II and III HF.
ACEI indicates angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor-blocker; ARNI, angiotensin receptor-neprilysin inhibitor; BP, blood pressure; bpm, beats per minute; C/I, contraindication; COR, Class of Recommendation; CrCl, creatinine clearance; CRT-D, cardiac resynchronization therapy–device; Dx, diagnosis; GDMT, guideline-directed management and therapy; HF, heart failure; HFrEF, heart failure with reduced ejection fraction; ICD, implantable cardioverter-defibrillator; ISDN/HYD, isosorbide dinitrate hydral-nitrates; K+, potassium; LBBB, left bundle-branch block; LVAD, left ventricular assist device; LVEF, left ventricular ejection fraction; MI, myocardial infarction; NSR, normal sinus rhythm; and NYHA, New York Heart Association.

Treatment of HFrEF

ARNI

COR	LOE	Recommendations	Comment/ Rationale
I	**ARNI: B-R**	In patients with chronic symptomatic HF*r*EF NYHA class II or III who tolerate an ACE inhibitor or ARB, replacement by an ARNI is recommended to further reduce morbidity and mortality.	NEW: New clinical trial data necessitated this recommendation.

Treatment of HFrEF

ARNI

COR	LOE	Recommendations	Comment/ Rationale
III: Harm	**B-R**	ARNI should not be administered concomitantly with ACE inhibitors or within 36 hours of the last dose of an ACE inhibitor.	NEW: Available evidence demonstrates a potential signal of harm for a concomitant use of ACE inhibitors and ARNI.
III: Harm	**C-EO**	ARNI should not be administered to patients with a history of angioedema.	NEW: New clinical trial data.

Treatment of HFpEF

COR	LOE	Recommendations	Comment/ Rationale
IIb	**B-R**	In appropriately selected patients with HF*p*EF (with EF ≥45%, elevated BNP levels or HF admission within 1 year, estimated glomerular filtration rate >30 mL/min, creatinine <2.5 mg/dL, potassium <5.0 mEq/L), aldosterone receptor antagonists might be considered to decrease hospitalizations.	NEW: Current recommendation reflects new RCT data.

IIb	**B**	The use of ARBs might be considered to decrease hospitalizations for patients with HF*p*EF.	2013 recommendation remains current.

Treatment of HFpEF

COR	LOE	Recommendations	Comment/ Rationale
III: No Benefit	**B-R**	Routine use of nitrates or phosphodiesterase-5 inhibitors to increase activity or QoL in patients with HF*p*EF is ineffective.	NEW: Current recommendation reflects new data from RCTs.
III: No Benefit	**C**	Routine use of nutritional supplements is not recommended for patients with HF*p*EF.	2013 recommendation remains current.

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.

Hypertension

Treating Hypertension to prevent HF

COR	LOE	Recommendations	Comment/ Rationale
I	**B-R**	In patients at increased risk, stage A HF, the optimal blood pressure in those with hypertension should be less than 130/80 mm Hg.	NEW: Recommendation reflects new RCT data.

Treating Hypertension in HF*r*EF

COR	LOE	Recommendations	Comment/ Rationale
I	**C-EO**	Patients with HF*r*EF and hypertension should be prescribed GDMT titrated to attain systolic blood pressure less than 130 mm Hg.	NEW: Recommendation has been adapted from recent clinical trial data but not specifically tested per se in a randomized trial of patients with HF.

Treating Hypertension in HF*p*EF

COR	LOE	Recommendations	Comment/ Rationale
I	C-LD	Patients with HF*p*EF and persistent hypertension after management of volume overload should be prescribed GDMT titrated to attain systolic blood pressure less than 130 mm Hg.	NEW: New target goal blood pressure based on updated interpretation of recent clinical trial data.

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.

Conclusions

- HF remains a challenge, though, therapy improves prognosis of patients, particularly those with HFrEF.
- Biomarkers are integral parts of prevention, diagnosis and prognostication of HF
- ARNI will have role in management of HFrEF, though, some degree of cautiousness is necessary. Post-MI profile is still unanswered (waiting for PARADISE-AMI trial)
- HFpEF still remains as a open area for research.
- Co-morbidities are important determinants of prognosis of HF, and timley and accurate intervention might save lives.

References

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