SIMPLIFIED TREATMENT ALGORITHM FOR HFrEF

Outlining the role of newer pharmacologic therapies for HFrEF.

HFrEF: LVEF ≤ 40% and Symptoms

Treat Comorbidities per CCS HF Recommendations (incl. AF, functional MR, iron def. CKD, DM)

Diuretics to Relieve Congestion (titrated to minimum effective dose to maintain euvolemia)

Initiate Standard Therapies

- **ARNI** or **ACEi/ARB** then substitute **ARNI**
- **Beta blocker**
- **MRA**
- **SGLT2 Inhibitor**

Assess Clinical Criteria for Individualized Therapies

- **HR >70 bpm and sinus rhythm**
  - Consider ivabradine*
- **Recent HF hospitalization**
  - Consider vericiguat**
- **Black patients on optimal GDMT, or patients unable to tolerate ARNI/ACEi/ARB**
  - Consider H-ISDN
- **Suboptimal rate control for AF, or persistent symptoms despite optimized GDMT**
  - Consider digoxin

Initiate standard therapies as soon as possible and titrate every 2-4 weeks to target or maximally tolerated dose over 3-6 months

Reassess LVEF, Symptoms, Clinical Risk

- **NYHA III/IV, Advanced HF or High-Risk Markers**
  - Consider:
  - Referral for advanced HF therapy (mechanical circulatory support/transplant)
  - Referral for supportive/ palliative care
- **LVEF ≤ 35% and NYHA I-IV (ambulatory)**
  - Refer to ICD/CRT recommendations
- **LVEF > 35%, NYHA I, and Low Risk**
  - Continue present management, reassess as needed

Non-pharmacologic Therapies (teaching, self-care, exercise)

Advance Care Planning and Documentation of Goals of Care

Standard therapies are applicable to most patients with HFrEF for reducing cardiovascular mortality and hospitalization for HF. Additional, pharmacologic therapies should be individualized on the basis of clinical factors as outlined in the text. Every attempt should be made to initiate and titrate therapies with the goal of medication optimization by 3-6 months after a diagnosis of HFrEF. Throughout the patient journey, nonpharmacologic therapies should be prescribed, along with judicious use of diuretics to maintain euvolemia. Evidence also supports interventions to treat important comorbidities including iron deficiency, atrial fibrillation (AF), and functional mitral regurgitation (MR) in selected patients.

ACEI, angiotensin converting enzyme inhibitor; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor-neprilysin inhibitor; CCS, Canadian Cardiovascular Society; CKD, chronic kidney disease; CRT, cardiac resynchronization therapy; DM, diabetes mellitus; GDMT, guideline-directed medical therapy; ICD, implantable cardioverter defibrillator; LVEF, left ventricular ejection fraction; MRA, mineralocorticoid receptor antagonist; NYHA, New York Heart Association; SGLT, sodium glucose transport.

* Health Canada has approved ivabradine for patients with HFrEF and heart rate (HR) ≥ 77 bpm in sinus rhythm.

** Vericiguat is not yet approved for use in Canada

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