What’s New in Heart Failure?

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Disclosures

- I have no current or past relationships with commercial entities

Learning objectives

- Outline the major guideline updates
- Reflect on implications to current practice

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Society Guidelines

2017 Comprehensive Update of the Canadian Cardiovascular Society Guidelines for the Management of Heart Failure

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Prevention of heart failure

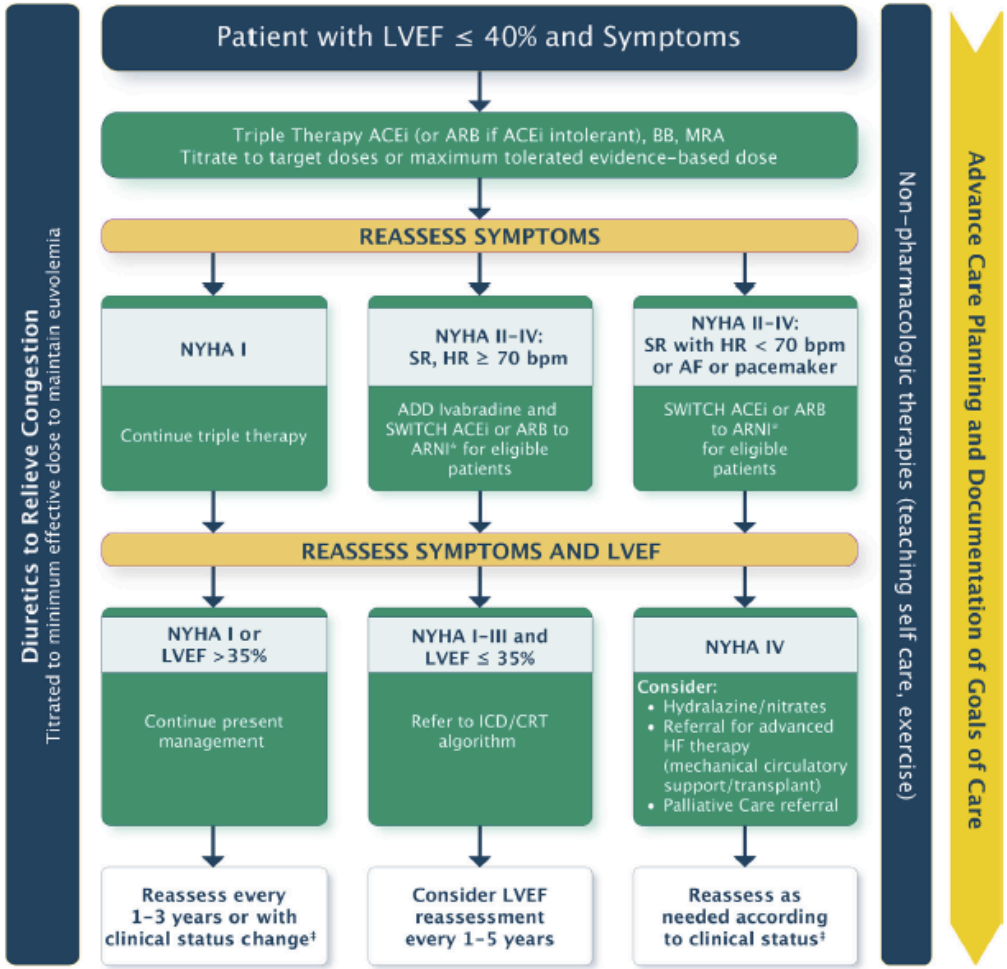
- We suggest that the use of empagliflozin be considered for patients with type 2 diabetes and established CVD for the prevention of HF-related outcomes. (weak recommendation; low-quality evidence)

- We do not recommend the use of the DPP-4 inhibitor saxagliptin in patients with or at risk for HF. (strong recommendation; moderate-quality evidence)

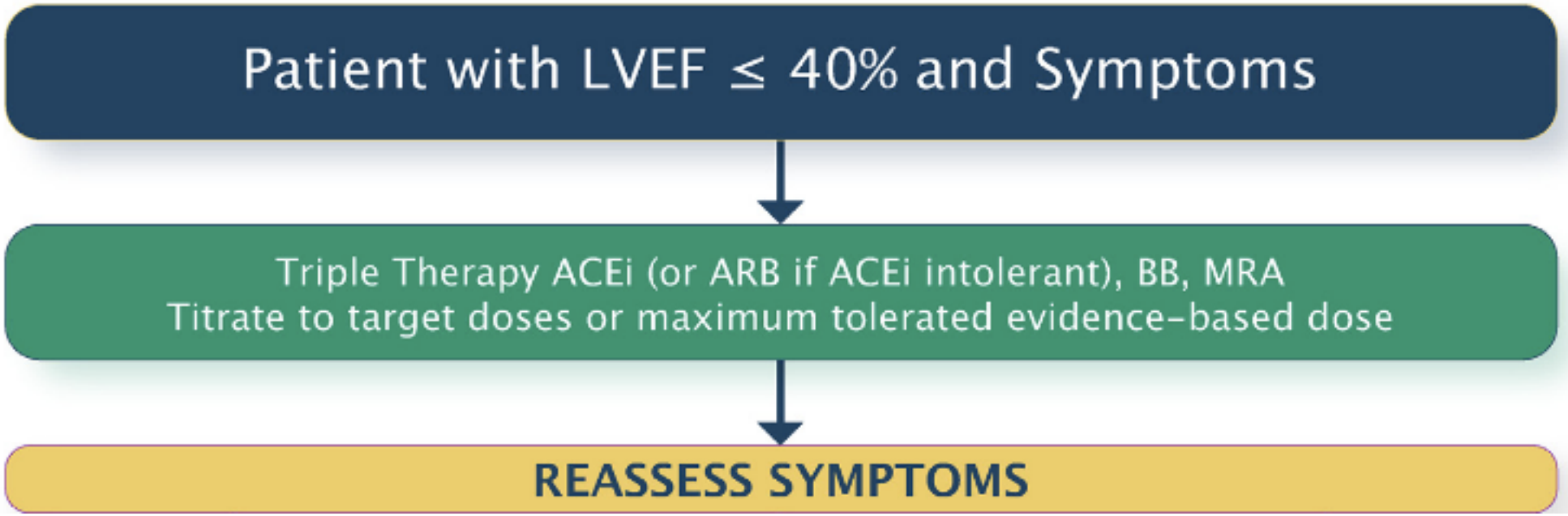
- We recommend that thiazolidinediones should not be used in patients with HF. (strong recommendation; high-quality evidence)

CVD: cardiovascular disease, HF: heart failure

Treatment of HF with reduced ejection fraction



Treatment of HF with reduced ejection fraction



*** Do not combine ACEi + ARB**

ACEi: angiotensin-converting enzyme inhibitor, ARB: angiotensin receptor blocker, BB: beta blocker, MRA: mineralocorticoid receptor antagonist

Treatment of HF with reduced ejection fraction

Drug	Start dose	Target dose
ACEi		
Enalapril	1.25-2.5 mg BID	10 mg BID/20 BID in NYHA class IV
Lisinopril	2.5-5 mg daily	20-35 mg daily
Perindopril	2-4 mg daily	4-8 mg
Ramipril	1.25-2.5 mg BID	5 mg BID
Trandolapril	1-2 mg daily	4 mg daily
ARB		
Candesartan	4-8 mg daily	32 mg daily
Valsartan	40 mg BID	160 mg BID
β-Blockers		
Carvedilol	3.125 mg BID	25 mg BID/50 mg BID (> 85 kg)
Bisoprolol	1.25 mg daily	10 mg daily
Metoprolol CR/XL*	12.5-25 mg daily	200 mg daily
MRA		
Spironolactone	12.5 mg daily	50 mg daily
Eplerenone	25 mg daily	50 mg daily
ARNI		
Sacubitril/valsartan	50-100 mg BID	200 mg BID
I_f inhibitor		
Ivabradine	2.5-5 mg BID	7.5 mg BID
Vasodilators		
Isosorbide dinitrate	20 mg TID	40 mg TID
Hydralazine	37.5 mg TID	75-100 mg TID or QID

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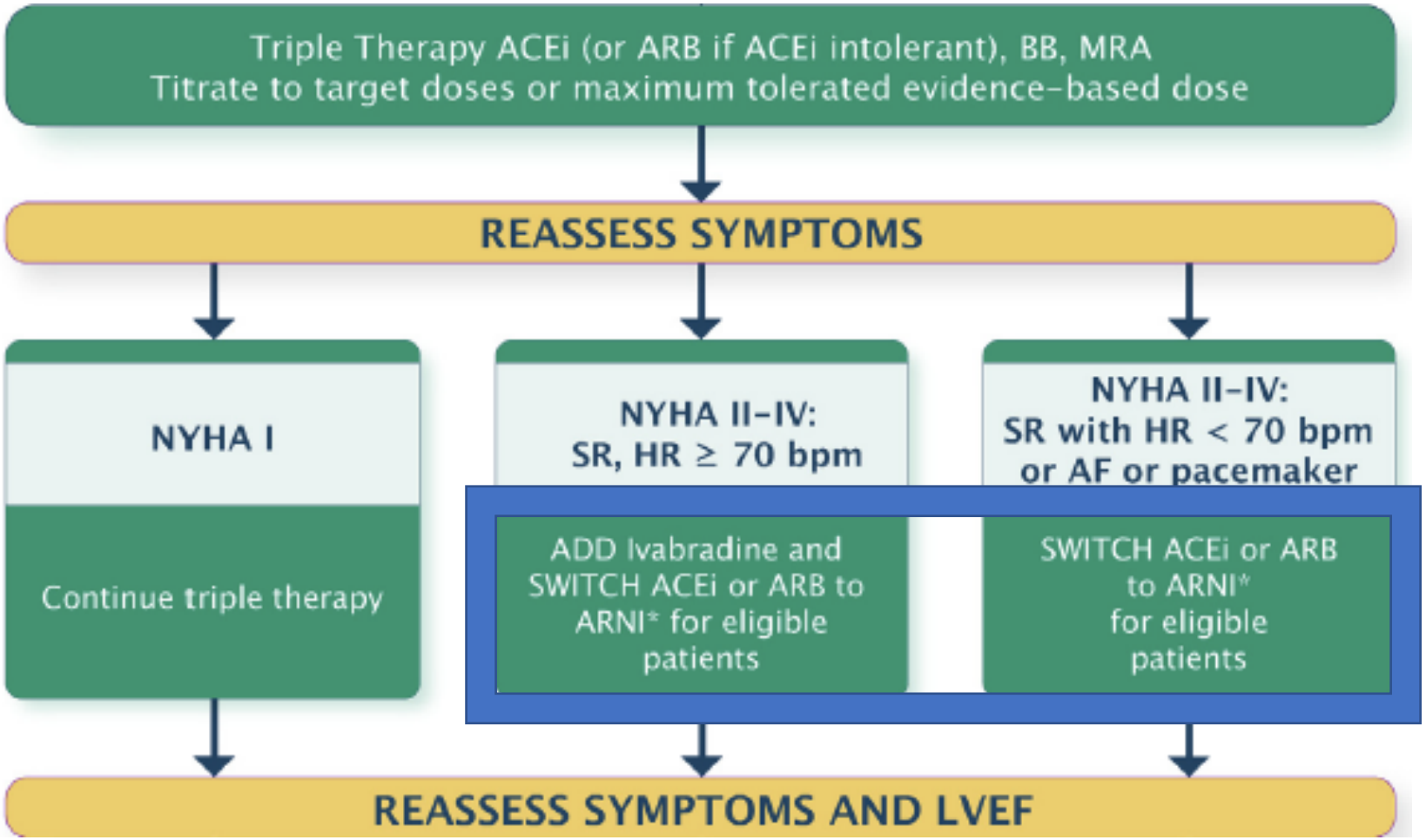
Treatment of HF with reduced ejection fraction



*** Do not combine ACEi + ARB**

NYHA: New York heart association, ARNI: angiotensin receptor-neprilysin inhibitor

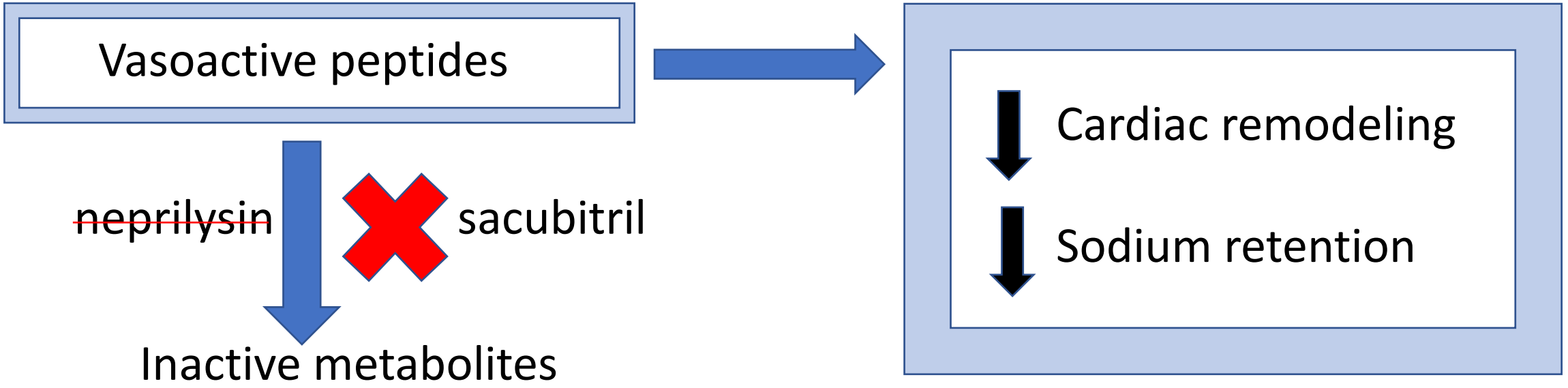
Treatment of HF with reduced ejection fraction

- We recommend that an ARNI be used in place of an ACEi or ARB, in patients with HFrEF, who remain symptomatic despite treatment with appropriate doses of GDMT to decrease cardiovascular death, HF hospitalizations and symptoms. (strong recommendation; high-quality evidence)

HFrEF: heart failure with a reduced ejection fraction, GDMT: guideline-directed medical therapy

Treatment of HF with reduced ejection fraction

- Sacubitril-Valsartan (Entresto®)
- Dose: 50 mg bid, 100 mg bid, 200 mg bid
  - Double the dose q2-4 weeks until target
- Mechanism of action:



Treatment of HF with reduced ejection fraction

- Sacubitril-Valsartan (Entresto®)
- Study: PARADIGM-HF
  - excluded: angioedema, hyperkalemia, eGFR < 30 mL/min, hypotension

Sacubitril-Valsartan

Enalapril

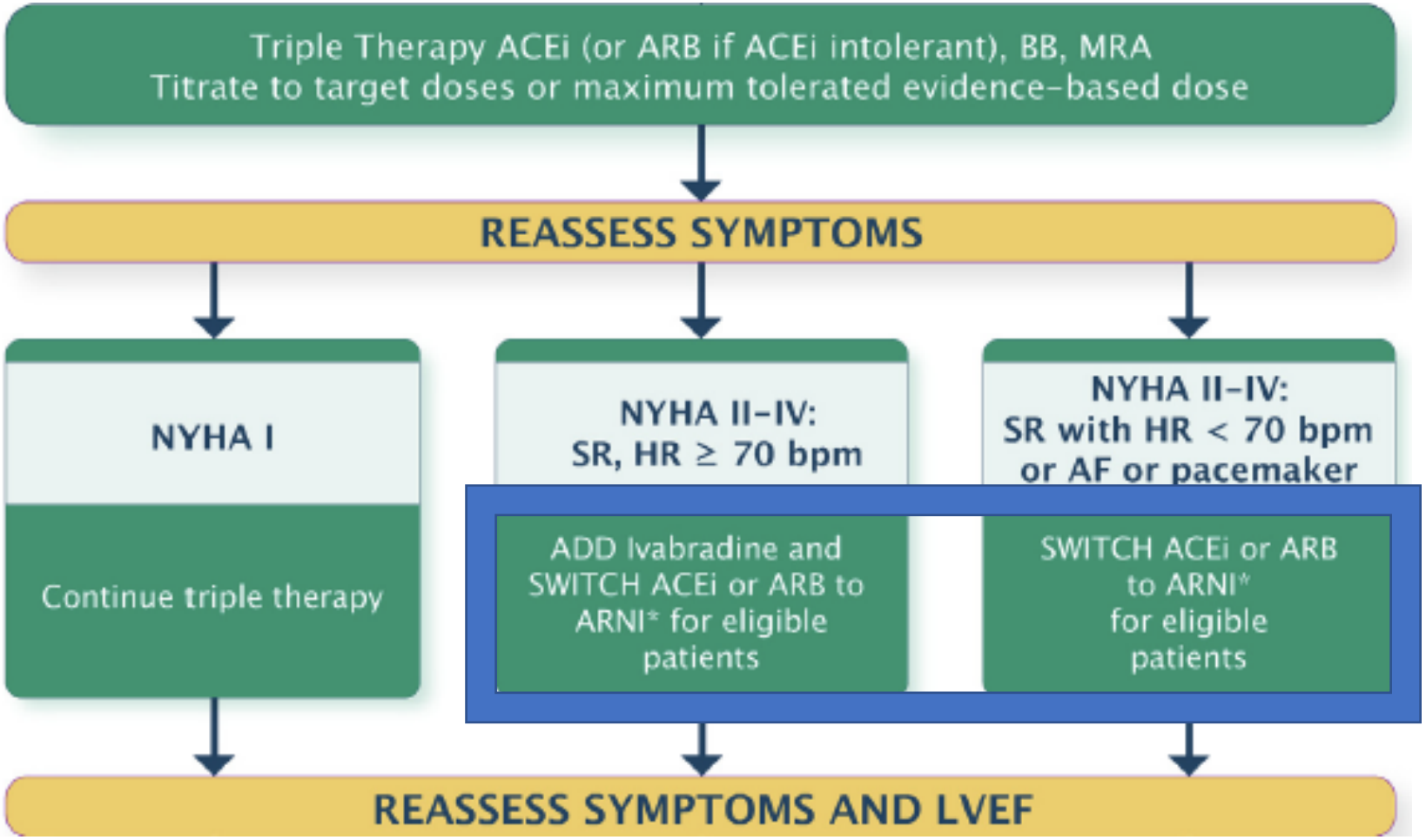
CV death, hospitalization for HF
HR 0.80, p < 0.001

Treatment of HF with reduced ejection fraction

- Sacubitril-Valsartan (Entresto®)
- Key contraindication: history of angioedema
  - When switching from ACEi, washout period of at least 36 hours
- Side effects:
  - **Hypotension** (more than enalapril)
  - Angioedema
  - Renal impairment
  - Hyperkalemia
  - Cough

Less than enalapril

Treatment of HF with reduced ejection fraction



*** Do not combine ACEi + ARB**

Treatment of HF with reduced ejection fraction

- We recommend that ivabradine be considered in patients with HFrEF, who remain symptomatic despite treatment with appropriate doses of GDMT, with a resting heart rate > 70 bpm, in sinus rhythm, and a previous HF hospitalization within 12 months, for the prevention of cardiovascular death and HF hospitalization. (strong recommendation; moderate-quality evidence)

Treatment of HF with reduced ejection fraction

- Ivabradine (Lancora®)
- Dose: 2.5 mg bid, 5 mg bid, 7.5 mg bid with meals

Serial heart rate measurements	Dose adjustment
> 60 bpm →	Increase dose by 2.5 mg bid
50-60 bpm →	Maintain dose
< 50 bpm or symptom of bradycardia →	Decrease dose by 2.5 mg bid

- Mechanism of action: inhibits the I_f currents in sinus node

Treatment of HF with reduced ejection fraction

- Ivabradine (Lancora®)
- Study: SHIFT
  - Only included patients in sinus rhythm with a HR ≥ 70 bpm

Ivabradine

Placebo

CV death, hospitalization for HF
HR 0.82, p < 0.0001

Treatment of HF with reduced ejection fraction

- Ivabradine (Lancora®)
- Key contraindications:
  - Strong CYP 3A4 inhibitors
  - Diltiazem, verapamil
- Side effects:
  - Bradycardia
  - Phosphenes (transient enhanced brightness)
  - Blurred vision

Treatment of HF with reduced ejection fraction

Medication	Cost per tablet	Coverage by ODB
Entresto®	$ 4.70	√ LU 497
Lancora®	$ 1.20	✗
Ramipril	$ 0.10	√
Bisoprolol	$ 0.10	√

Treatment of HF with reduced ejection fraction

- We recommend against the use of nonsteroidal anti-inflammatory drugs as well as cyclooxygenase-2 inhibitors in patients with HFrEF. (strong recommendation; high-quality evidence)

- We recommend against the routine use of calcium channel blockers in patients with HFrEF. (strong recommendation; moderate-quality evidence)

Treatment of HF with preserved ejection fraction

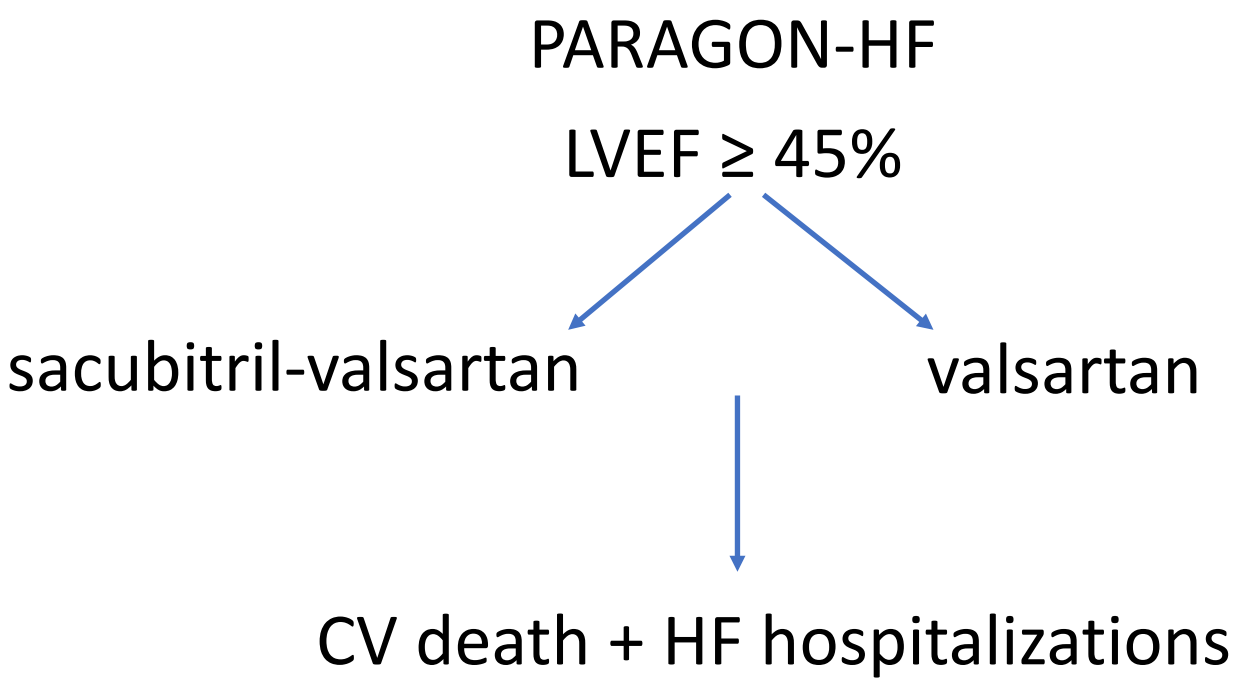
- We suggest candesartan be considered to reduce HF hospitalizations in patients with HFpEF. (weak recommendation; moderate-quality evidence)

- We suggest that in individuals with HFpEF, serum potassium < 5 mmol/L, and an eGFR > 30 mL/min, an MRA like spironolactone should be considered. (weak recommendation; moderate-quality evidence)

HFpEF: heart failure with a preserved ejection fraction

Treatment of HF with preserved ejection fraction

- Does sacubitril-valsartan have a role in HFpEF?



Practical tips

- ✓HF therapies in frail or older patients should be similar to those in younger patients.
- ✓If hypotension, separate the administration of the dose from the timing of other hypotensive medications.
- ✓After an ACEi, ARB or MRA is initiated and with a change in dose, potassium and creatinine should be monitored in the first week.
- ✓Recommend annual influenza vaccine and periodic pneumococcal pneumonia immunizations.

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