2017 CCS HF Guidelines Medical Therapy for HFrEF When...What Order...and How Much?

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Disclosures

Consulting/Advisory Board:
Amgen, Astra Zeneca, Boehringer Ingelheim, Medtronic, Novartis, Servier

Speaker:
Boehringer Ingelheim, Medtronic, Novartis, Servier,
St. Jude Medical (Abbot)

Clinical Trials:
Amgen, Bayer, Boehringer Ingelheim, Medtronic, Merck, Novartis, Servier, Tenax

Research Grants:
Novartis

Educational Grants:
Servier

- I have received no commercial support for this talk
- Mitigating bias:
  - Based on CCS HF guidelines content and presentation Oct 2017

Other KT Tools

NEW!

- **Mobile Apps**: new **iCCS** App includes updated 2017 content and will be the single resource for CCS guidelines moving forward. The **Med-hf** app is also available to support the initiation, titration, assessment and monitoring of HF medications.

- **Pocket Guide**: pick up an updated pocket guide at the CCS booth

- **Slide Decks**: the slide decks for presentations at CCC 2018 will be made available on the CCS website after Congress

- **Compendium**: designed to help practitioners search, filter and quickly identify recommendations currently in force

www.ccs.ca

- **Website**: visit our website for more information and access to additional guideline tools

HEART FAILURE UPDATE 2019

Montreal May 10 – 11th

National HF Awareness Week May 6th – 12th

CHFS SCIC Canadian Heart Failure Society Société canadienne d'insuffisance cardiaque

CHFS

Canadian Heart Failure Society

@CanHFSociety

www.ccs.ca/en/affiliates/chfs

Mrs "rEF"

- **50 yr old F**
- **Followed by you for 3 months with HFrEF and wants to know "is she appropriate for one of those new fancy drugs"?**
- **PMHx**
  - **HTN, dyslipidemia**
- **Meds prior to HF diagnosis**
  - **amlodipine 5 mg od, rosuvastatin 10 mg od**
- **Initial HF Presentation**
  - **2 presentations to ER with "respiratory tract infection"**
  - **3 pillow orthopnea and moderate HF symptoms**
  - **Review of systems: unremarkable**
  - **BP 120/80, HR 90, volume overloaded (JVP, crackles, peripheral edema)…admitted to hospital**

Mrs. "rEF"

- **Investigations in hospital**
  - **ECG: sinus rhythm, QRS 116 ms, no Q waves**
  - **CXR: cardiomegaly**
  - **Echo: LVEF 25-30%, LVIDd 62 mm, moderate functional MR**
  - **MIBI scan: normal perfusion**
  - **Na 136, K 4.1, Creat 100, CBC normal**

- **Discharged home on**
  - **furosemide 40 mg/d**
  - **ramipril 2.5 mg bid**
  - **amlodipine and rosuvastatin continued**

- **Improved – fluctuates NYHA class II-III symptoms, no orthopnea**

- **Now what?**

Question 1

What is an appropriate next step in her medical therapy?

A. Carvedilol 3.125 mg bid; stop amlodipine

B. Digoxin .125 mg od

C. Spironolactone 12.5 mg po od

D. Add ivabradine 5 mg bid

E. Substitute ramipril for sacubitril-valsartan 50 mg bid

Question 1

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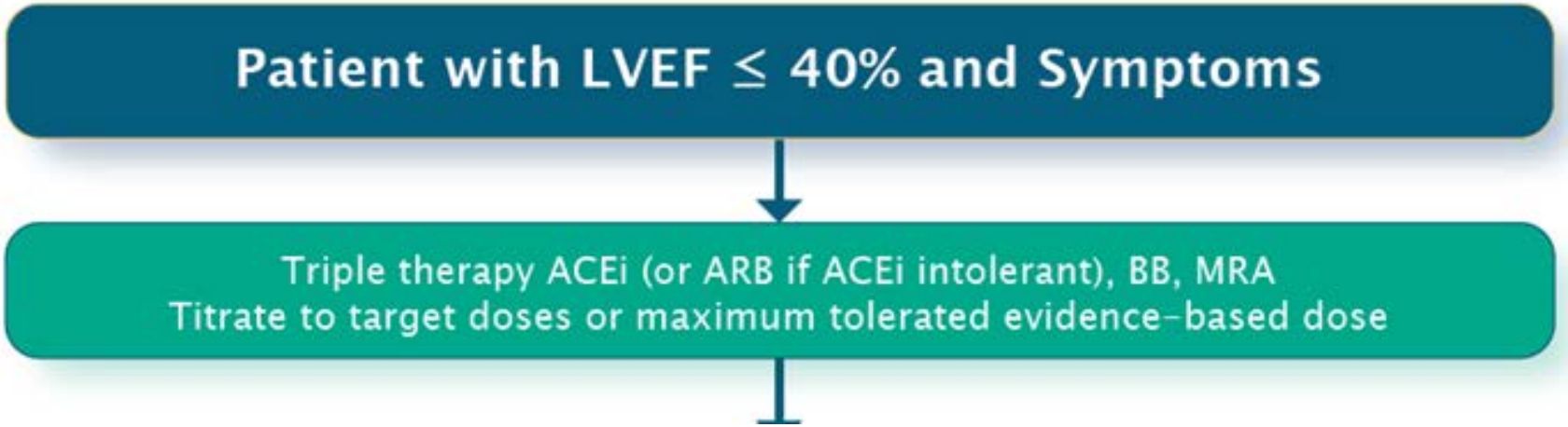
Step 1
Triple Therapy for HFrEF



Step 1
Triple Therapy for HFrEF

ACE INHIBITOR

+

B-BLOCKER

(max tolerated dose)

MRA

(max tolerated dose)

Mrs. "rEF" 4 months later after Triple Therapy Uptitration

- **Feels generally well**
  - **No hospitalizations**
  - **More stamina, but still fatigues with ordinary activities; NYHA II**
  - **Describes satisfactory quality of life**
  - **Meds:**
    1. **ramipril 5 mg bid**
    2. **carvedilol 12.5mg bid**
    3. **spironolactone 12.5 bid**
  - **BP 114/72, HR 72, euvolemic**
  - **CBC normal, creat 104, K 4.3**

Question 2

What is your next move?

A. Add ivabradine 5 mg bid

B. Substitute ramipril for sacubitril-valsartan 50 mg bid

C. Nothing; this patient feels well, is tolerating meds

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Mortality with NYHA II Symptoms

Lower risk….but not low risk

Integer score:	14
Risk of dying within 1 year:	5.8%
Risk of dying within 3 years:	14.6%
The patient is in the 1st to 2nd decile of risk in a heart failure population.	

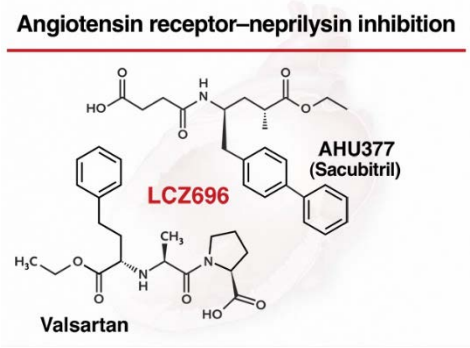
www.heartfailurerisk.org

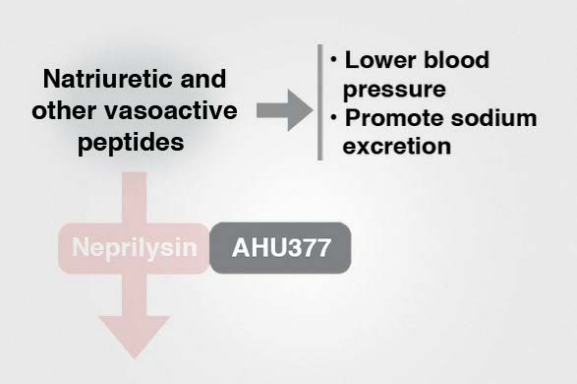
Pocock et al, Eur Heart J 2012

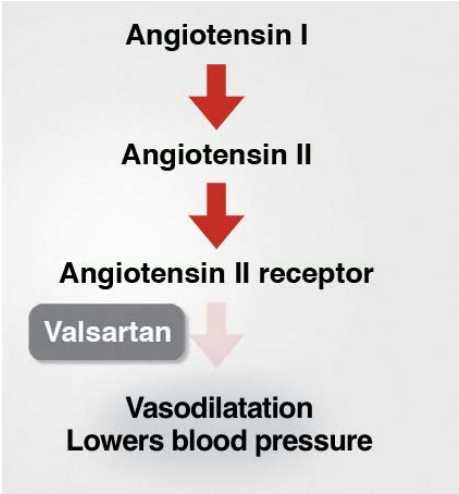
New Therapies for HFrEF: Sacubitril-Valsartan

PARADIGM-HF: Sac-Val/ARNI

Prospective Comparison of ARNI [Angiotensin Receptor–Neprilysin Inhibitor] with ACEI to Determine Impact on Global Mortality

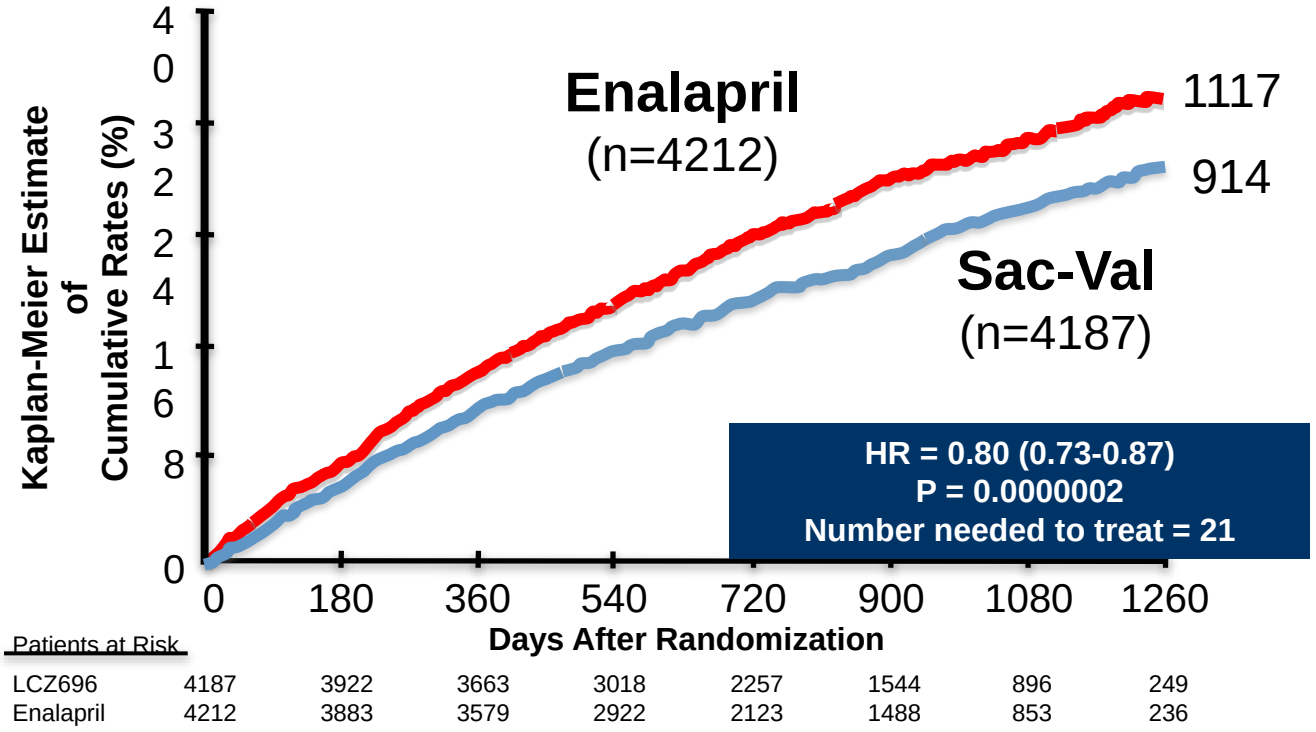






McMurray et al. N Engl J Med 2014;371(11):993-1004

PARADIGM-HF: Primary endpoint (CV death or HF hospitalization)



Patients at Risk

LCZ696	4187	3922	3663	3018	2257	1544	896	249
Enalapril	4212	3883	3579	2922	2123	1488	853	236

McMurray et al. N Engl J Med 2014;371(11):993-1004

How to Switch High Dose + Low Dose RAAS to Sacubitril-Valsartan in "Real Life"

Converting to LCZ696:[1]

- FROM ACEI: Stop ACEI, **wait at least 36 h** after last dose (↑ risk of angioedema), then start
- FROM ARB: Stop ARB, no washout period necessary, start when next dose would have been due

Initial dose and titration:[1,3,4]

High dose RAAS inhibitor		**Initial Dose**	**Titration**
ACEI	ARB		
Enalapril ≥10mg/d lisinopril ≥10 mg/d perindopril ≥4 mg/d ramipril ≥5 mg/d	candesartan ≥16mg/d irbesartan ≥150 mg/d losartan ≥50 mg/d olmesartan ≥10 mg/d telmisartan ≥40 mg/d valsartan ≥160 mg/d	**100 mg PO BID**[3]	Increase in **3-6 weeks** to target 200 mg PO BID[3,4]
Low dose RAAS inhibitor		***50 - 100mg PO BID**[1,4]	**Over 6 weeks**, increase to target 200 mg PO BID[4]
RAAS naïve		***50mg PO BID**[1,4]	
Higher risk of hypotension (eg. low baseline SBP)			

* Note: little data available using the 50 mg BID dose. PARADIGM had an option to down-titrate to 50mg BID, but no data was reported on the frequency of use.[3] TITRATION used 50mg BID as the starting dose for all patients (n=429). Few were RAAS naïve n = 30.[4]

Koshman, Ezekowitz Nov 2015

2017 Recommendation: ARNI

- **We recommend that an ARNI be used in place of an ACEi or ARB, in patients with HFrEF, that remain symptomatic despite treatment with appropriate doses of GDMT in order to decrease cardiovascular death, HF hospitalization and symptoms**

  (Strong Recommendation, High Quality Evidence)

- **Practical tips:**
  - Drug tolerability, side effects and laboratory monitoring with use of ARNIs is similar to that of ACEi or ARB
  - PARADIGM-HF excluded patients with a serum K > 5.2 and eGFR < 30 and SBP < 100mmHg
  - ACEi (not ARB) require a washout period of 36 hours to decrease the risk of angioedema

Mrs. “rEF” Next Follow Up: 3 Months

- **Feels ‘ok;’ but fatigues easily, persistent NYHA 2 symptoms**
- **Meds:**
  1. **carvedilol 12.5 mg bid**
  2. **spironolactone 12.5 mg bid**
  3. **sacubitril-valsartan 100 mg bid**
- **BP 100/70, HR 84, euvolemic**
- **BNP 185, CBC normal, creat 104, K 4.3**

Question 3

What is your next move?

A. Add ivabradine 5 mg bid

B. Reassess LVEF

C. Refer for ICD

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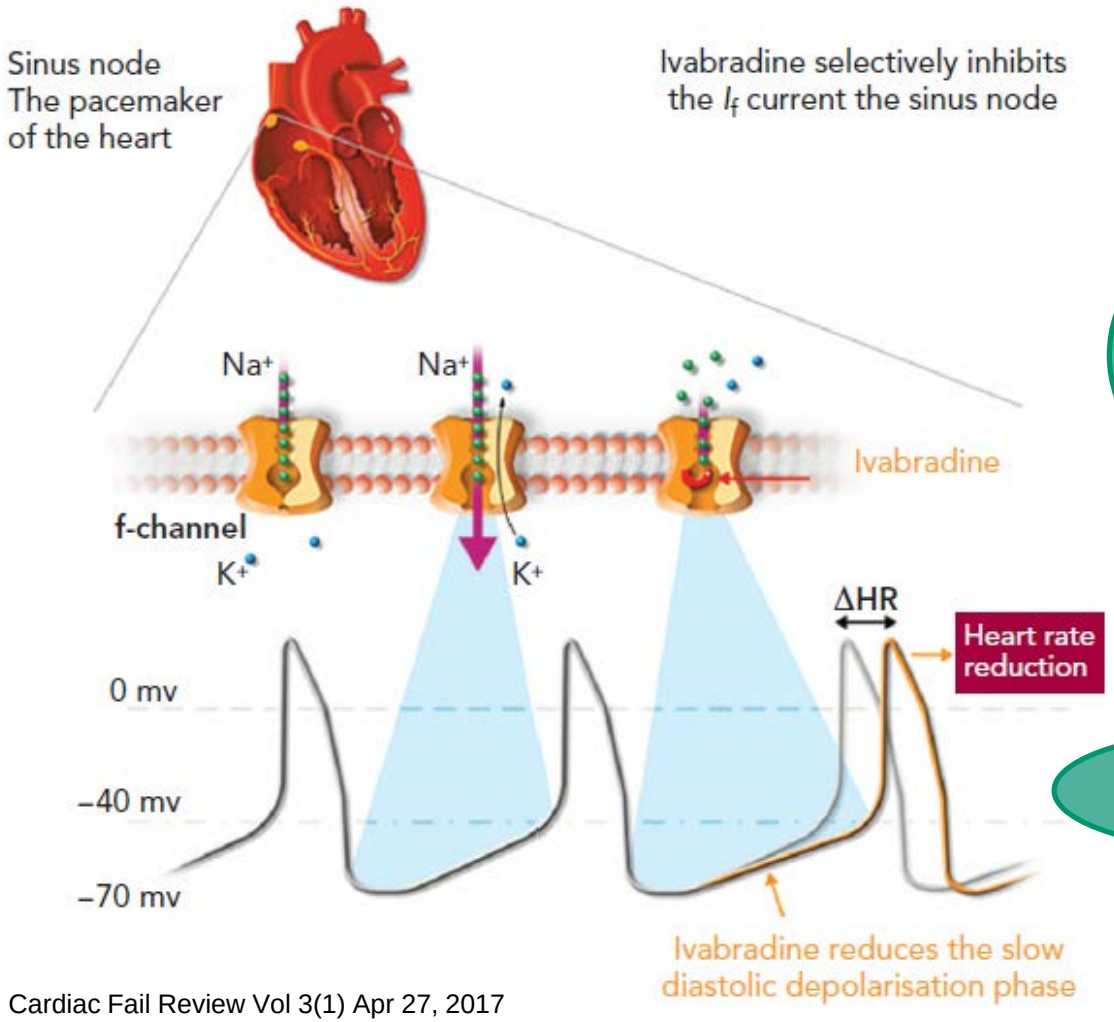
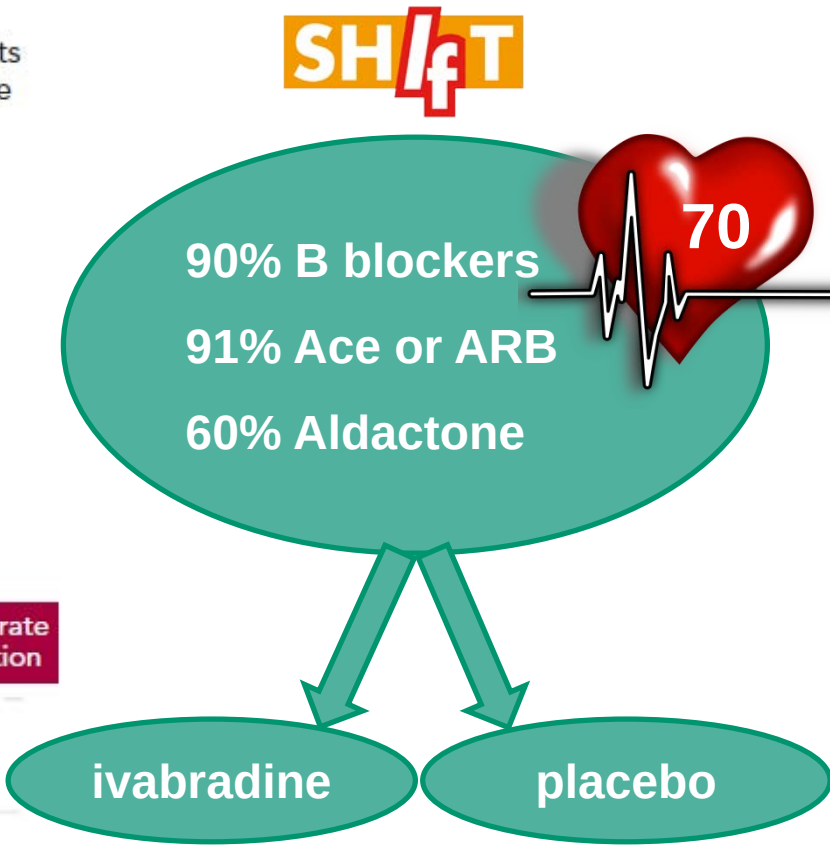
New Therapies for HFrEF: Ivabradine





Cardiac Fail Review Vol 3(1) Apr 27, 2017

Swedberg K, et al. Eur j Heart Fail 2010;12:75-81

Effects of Ivabradine on Primary and Secondary Endpoints in the SHIFT Study

	Ivabradine group (n=3241)	Placebo group (n=3264)	HR (95% CI)	p value
Primary endpoint				
Cardiovascular death or hospital admission for worsening heart failure	793 (25%)	937 (29%)	0.82 (0.75-0.90)	<0.0001
Mortality endpoints				
All-cause mortality	503 (16%)	552 (17%)	0.90 (0.80-1.02)	0.092
Cardiovascular mortality	449 (14%)	491 (15%)	0.91 (0.80-1.03)	0.128
Death from heart failure	113 (3%)	151 (5%)	0.74 (0.58-0.94)	0.014
Other endpoints				
Hospital admission for worsening heart failure	514 (16%)	672 (21%)	0.74 (0.66-0.83)	<0.0001
Any cardiovascular hospital admission	977 (30%)	1122 (34%)	0.85 (0.78-0.92)	0.0002

Data are number of first events (%), hazard ratio (HR; 95% CI), and p values.

- **Ivabradine resulted in 18% reduction in the primary end point**
- **Effect mainly driven by reduction in hospital admissions for worsening HF (26%) and deaths due to HF (26%)**

Swedberg K, et al. Eur j Heart Fail 2010;12:75-81

2017 Recommendation: Ivabradine

- **We recommend that ivabradine be considered in patients with HFrEF, who remain symptomatic despite treatment with appropriate doses of GDMT with a resting HR > 70 BPM, in sinus rhythm and a prior HF hospitalization within 12 months, for the prevention of cardiovascular death and HF hospitalization**

  (Strong Recommendation, Moderate Quality Evidence)

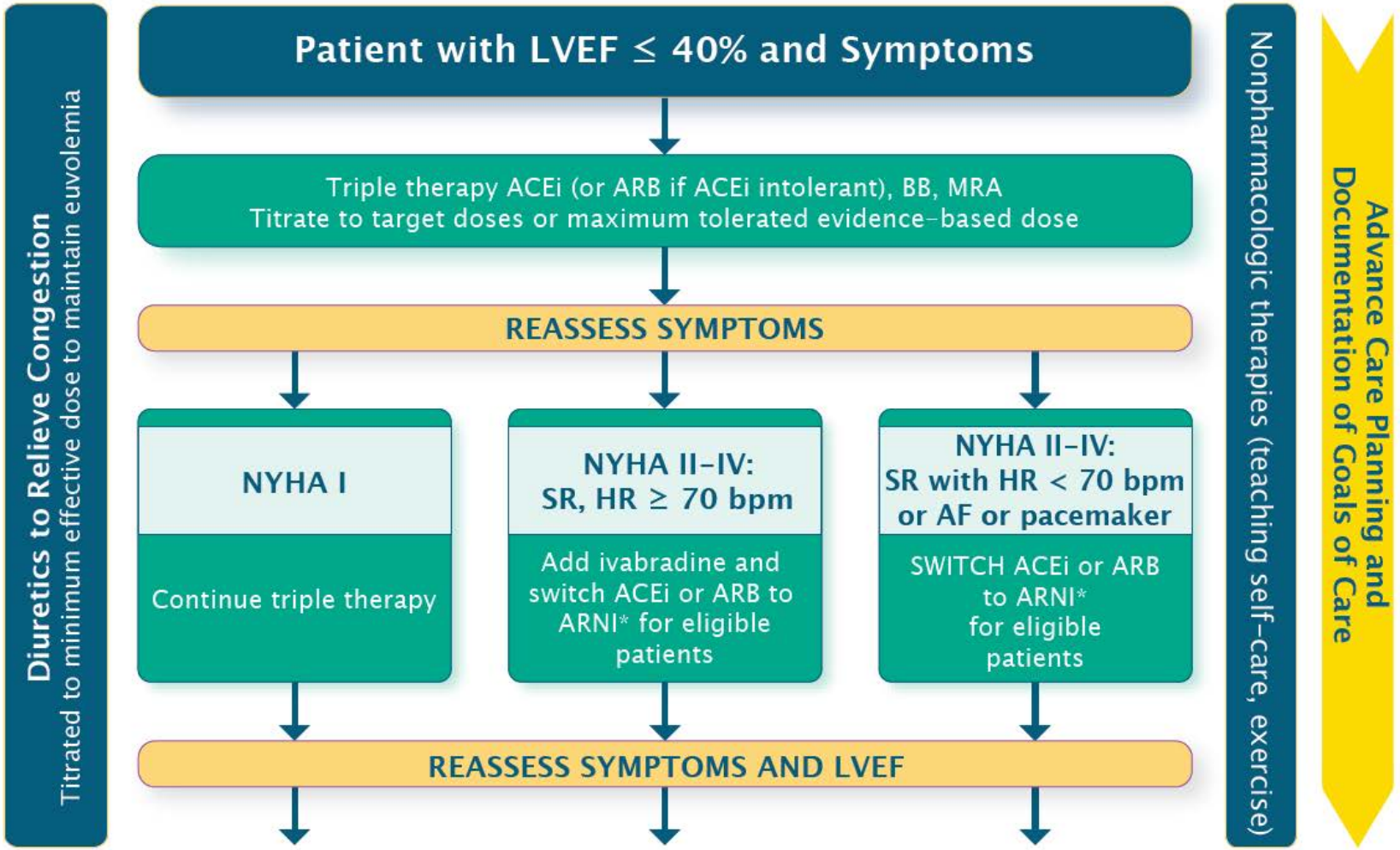
- **Practical tips:**
  - Every effort should be made to achieve target or maximally tolerated doses of beta-blockers prior to initiation of ivabradine
  - Ivabradine has no effect on BP or myocardial contractility

Comparison: Ivabradine vs Sacubitril-Valsartan

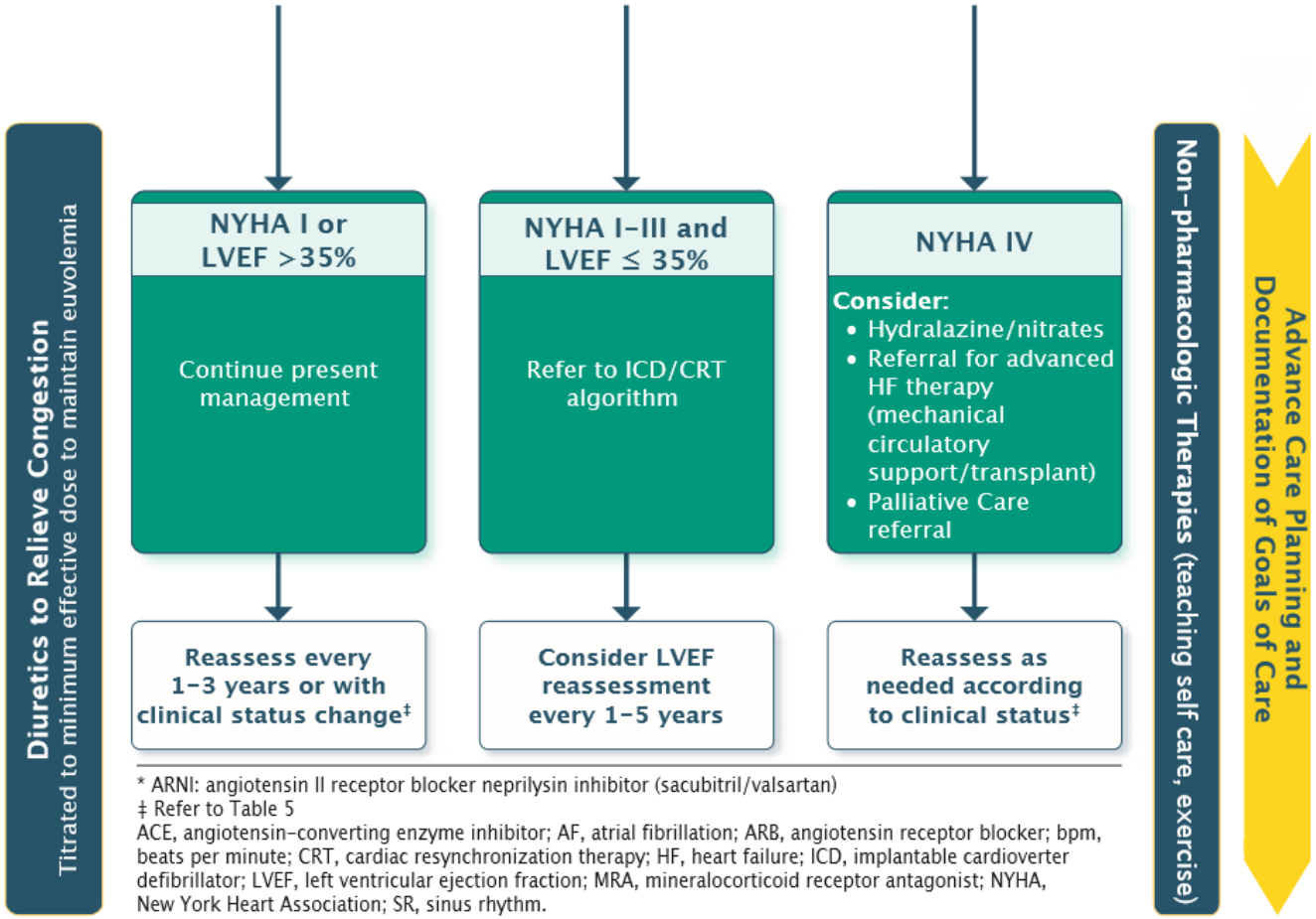
- **Ivabradine**
- **Add on therapy**
  - Little evidence for de novo HF
    - Need BB titrated first
  - Indicated for those in NSR and HR >70 bpm
  - Limited by bradycardia, fatigue
  - Not affected by BP, creatinine
  - Other side effects less common
  - One titration (5, 7.5 bid) at 2 week interval

- **Sacubitril-Valsartan**
- **Replacement for ACE/ARB**
  - Little evidence for de novo HF
    - Needs ACE/ARB first (for now)
  - Indicated for those on ACE/ARB and ↑ BNP (if available)
  - Limited by hypotension, creatinine, potassium
  - Not affected by HR
  - Other side effects not common
  - Two titrations (50, 100, 200 bid) for 6-12 weeks

Therapeutic Approach to Patients With HFrEF



Don't forget Device Optimization



* ARNI: angiotensin II receptor blocker neprilysin inhibitor (sacubitril/valsartan)
‡ Refer to Table 5
ACE, angiotensin-converting enzyme inhibitor; AF, atrial fibrillation; ARB, angiotensin receptor blocker; bpm, beats per minute; CRT, cardiac resynchronization therapy; HF, heart failure; ICD, implantable cardioverter defibrillator; LVEF, left ventricular ejection fraction; MRA, mineralocorticoid receptor antagonist; NYHA, New York Heart Association; SR, sinus rhythm.

Heartfailure.ca

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The heartfailure playbook

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Take the Kidney QUIZ

Info for Primary Care

NEWS & EVENTS

Registration Open for Spring Session of Lean Keen Kidney Machines

APRIL 2018

MRP patients can sign up for our spring session! Lean Keen Kidney Machines is a program that helps people living with kidney disease learn how to incorporate more activity into their lives. All skill/activity levels welcome!

Heart Failure Zones

EVERY DAY

EVERY DAY

- Weigh yourself in the morning before breakfast. Write it down. Compare your weight today to your weight yesterday.
- Keep the total amount of fluids you drink to only 6 to 8 glasses each day. (6-8 glasses equals 1500-2000 mL or 48-64 oz)
- Take your medicine exactly how your doctor said.
- Check for swelling in your feet, ankles, legs, and stomach.
- Eat foods that are low in salt or salt-free.
- Balance activity and rest periods.

Which zone are you in today?

GREEN SAFE ZONE

ALL CLEAR – This zone is your goal!

Your symptoms are under control. You have:

- No shortness of breath.
- No chest discomfort, pressure, or pain.
- No swelling or increase in swelling of your feet, ankles, legs, or stomach.
- No weight gain of more than 4 lbs (2 kg) over 2 days in a row or 5 lbs (2.5 kg) in 1 week.

YELLOW CAUTION ZONE

CAUTION – This zone is a warning

Call your Health Care provider (eg. Doctor, nurse) if you have any of the following:

- You gain more than 4 lbs (2 kg) over 2 days in a row or 5 lbs (2.5 kg) in 1 week.
- You have vomiting and/or diarrhea that lasts more than 2 days.
- You feel more short of breath than usual.
- You have increased swelling in your feet, ankles, legs, or stomach.
- You have a dry hacking cough.
- You feel more tired and don't have the energy to do daily activities.
- You feel lightheaded or dizzy, and this is new for you.
- You feel uneasy, like something does not feel right.
- You find it harder for you to breathe when you are lying down.
- You find it easier to sleep by adding pillows or sitting up in a chair.

Healthcare Provider: _____ **Phone Number:** _____

RED DANGER ZONE

EMERGENCY – This zone means act fast!

Go to emergency room or call 9-1-1 if you have any of the following:

- You are struggling to breathe.
- Your shortness of breath does not go away while sitting still.
- You have a fast heartbeat that does not slow down when you rest.
- You have chest pain that does not go away with rest or with medicine.
- You are having trouble thinking clearly or are feeling confused.
- You have fainted.

Heart & Stroke – Living with Heart Failure

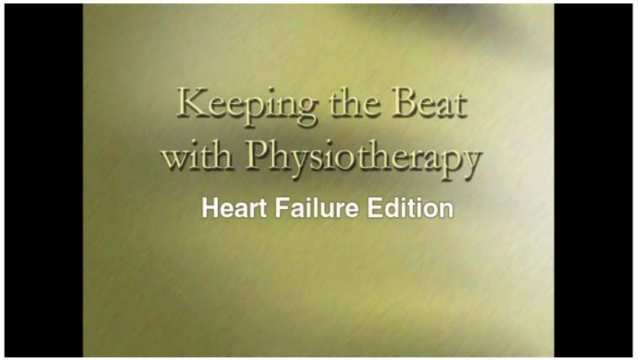
Heart & Stroke

Living with Heart Failure

Resources to help you manage your heart failure

YouTube CA

Search



Keeping The Beat With Physiotherapy - Heart Failure Edition ENGLISH

248 views LIKE DISLIKE SHARE

CardiacSciences
Published on Jan 13, 2015

SUBSCRIBE 11

An English language version of the patient education video created by Rehabilitation Services at St. Boniface Hospital with support from the Karyn Globerman Endowment Fund

1500 HF admissions as MRD

-C Referral Criteria

Referral Criteria:

Must have documented ejection fraction (EF) or radiographically proven heart failure (HF) and one of the following:

1. Persistent NYHA 3-4 symptoms; or
2. NYHA 2 + at least 2 hospital admissions or emergency room (ER) visits in past year for decompensated HF; or
3. NYHA 2 + 1 hospital admission or ER visit for decompensated HF and with a significant comorbidity (eg. Chronic Kidney Disease, arrhythmia, COPD) specify comorbidity _____; or
4. Special request by Internal Medicine or Cardiologist for advanced HF or complex cases

Type/Etiology of HF (Please place an X")

- ❑ HFrEF (EF ≤ 40%)
  - ❑ Ischemic ❑ Non Ischemic
- ❑ HFpEF (EF > 50%)
- ❑ HF mid range EF (EF 41 - 50%)
- ❑ Hypertrophic
- ❑ Other (specify): _____

We require the following information to process this referral

- ❑ Completed referral form
- ❑ Cardiac history (ie. Hospital admission note and discharge summary)
- ❑ Most recent Electrocardiogram
- ❑ Most recent lab work
- ❑ Relevant diagnostic test results (ie. Echocardiogram, MUGA, angiogram, Chest X-ray)
- ❑ Medications

Please place an "X" Functional Class (NYHA)

- ❑ **Class 1** No limitation of physical activity.
- ❑ **Class 2** Slight limitation of physical activity.
- ❑ **Class 3** Marked limitation of physical activity.
- ❑ **Class 4** Symptoms at rest.

EF _____% **Date** D D M M M Y Y Y Y **Method**_____

Dates of HF hospitalization **Facility**

D D M M M Y Y Y Y _____

D D M M M Y Y Y Y _____

Dates of ER visits **Facility**

D D M M M Y Y Y Y _____