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Therapy according to patient profile
- Uptitration
- Common Issues

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Heart Failure – A Swiss Webinar Series – 30.08.2022

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Disclosures

nothing to declare

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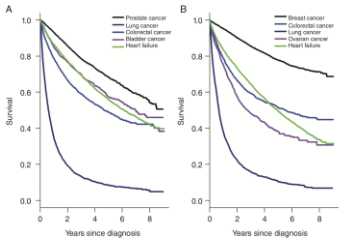

women

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Mamas MA et al., Eur J of Heart Failure 2017

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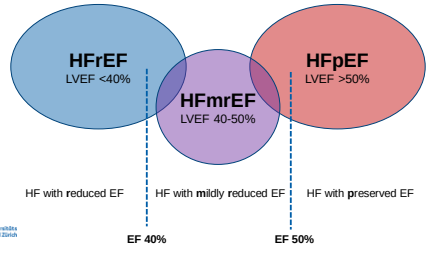
Classification by ejection fraction (EF)



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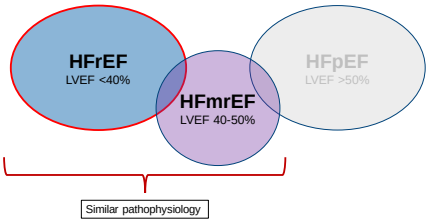
Classification by ejection fraction (EF)



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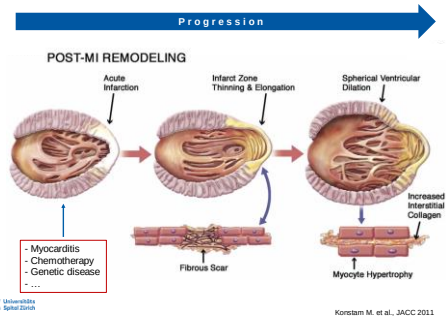

Konstam M. et al., JACC 2011

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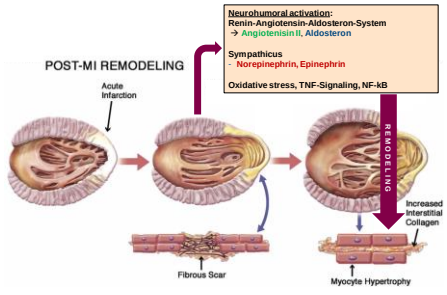

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proof of concept

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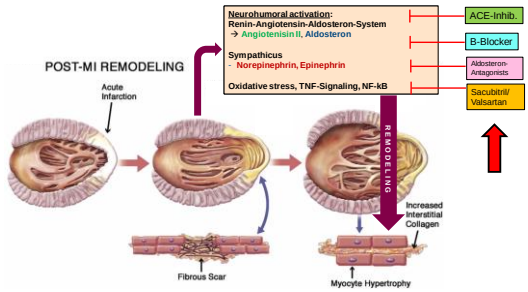

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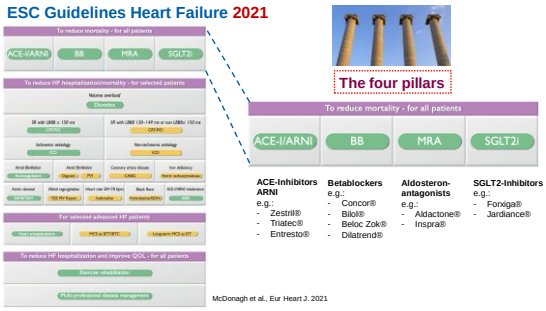

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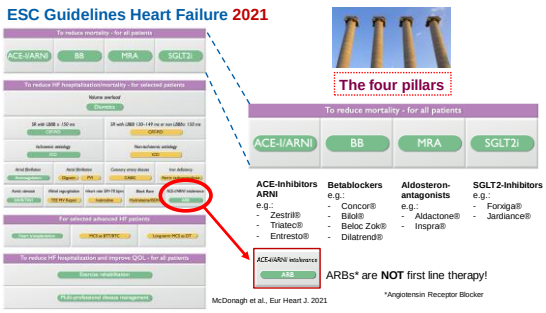

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What's the goal of heart failure therapy?

- prognosis – to live longer
- alleviate symptoms - better quality of life
- prevention – less hospitalisations

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Heart failure therapy

- when do I start therapy?
- how do I start / which drugs I start with?
- how to uptitrate?

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Heart failure therapy

- **when do I start therapy?**
- how do I start / which drugs I start with?
- how to uptitrate?

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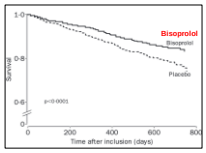
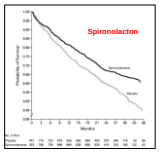
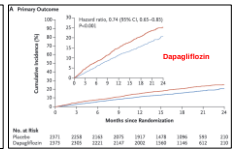
When to start therapy ?

- Start as soon as possible!







CIBIS-II Investigator Group, Lancet 1999 RALES - Pitt B. et al, NEJM 1999 DAPA-HF - McMurray et al., NEJM 2019

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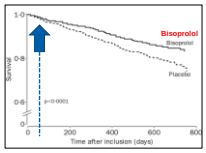
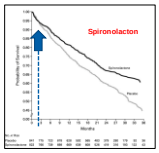
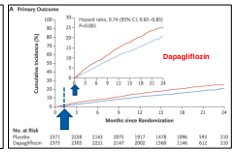
When to start therapy ?

- Start as soon as possible!







CIBIS-II Investigator Group, Lancet 1999 RALES - Pitt B. et al, NEJM 1999 DAPA-HF - McMurray et al., NEJM 2019

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When to start therapy ?

- Early therapy is life saving
- Early therapy is safe
- No need to wait for deterioration to start the next drug class
- The worst thing you can do is to withold therapy in a patient with HF

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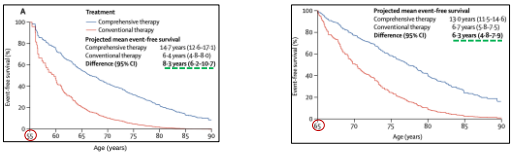
When to start therapy ? – nice to know

Conventional therapy: ACE-I or ARB + Betablocker
Comprehensive therapy: ARNI + Betablocker + MRA + SGLT2-I



event free survival: freedom of cardivascular death or first hospital admisson

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Vaduganathan M. et al., Lancet 2020

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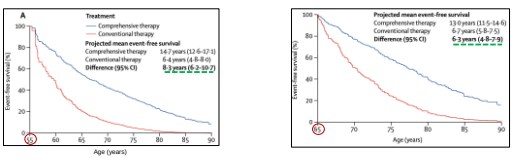
When to start therapy ? – nice to know

Conventional therapy: ACE-I or ARB + Betablocker
Comprehensive therapy: ARNI + Betablocker + MRA + SGLT2-I

for a **80** year old: **+ 2.7**years



event free survival: freedom of cardivascular death or first hospital admisson

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Vaduganathan M. et al., Lancet 2020

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Heart failure therapy

- when do I start therapy?
- **how do I start / which drugs I start with?**
- how to uptitrate?

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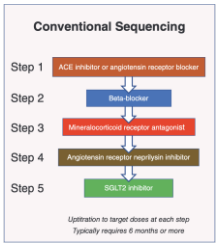
how do I start / which drugs I start with?



Packer M, McMurray JJV. Eur J Heart Fail. 2021

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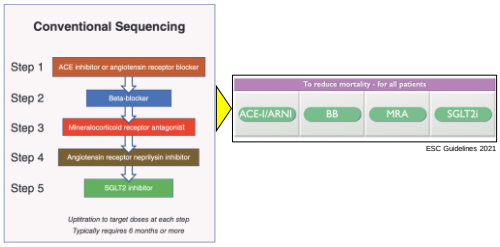
how do I start / which drugs I start with?



ESC Guidelines 2021

Packer M, McMurray JJV. Eur J Heart Fail. 2021

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how do I start / which drugs I start with? - evidence

- each drug class has an therapeutic effect that is independent of the other drugs given
- Background therapy does not influence the response to each of the drug classes

- Starting dose already has a lot of therapeutic effect
- Initiation of a new drug class is likely to have more therapeutic effect than uptitration of an existing drug

Adapted from: Packer M, McMurray JJV. Eur J Heart Fail. 2021

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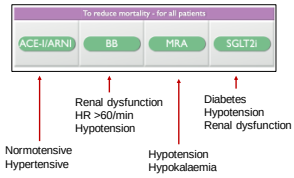
how do I start / which drugs I start with?

Our approach* in case of new HF diagnosis

- stabilize/ recompensate the patient
- Tailor therapy to patient characteristics
- Start with a very low dose of each drug class in a sequential but rapid way
- Ideally have established each drug class at discharge (after ~1-3 weeks)



*real life

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Heart failure therapy

- when do I start therapy?
- how do I start / which drugs I start with?
- **how to uptitrate?**

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How to uptitrate?

General advice:

- uptitrate only one drug class at a time
- increase dosage every ~2 weeks
- engange patient
- asymptomatic hypotension is no reason to stop drug

Monitor

- symptoms/ side effects
- blood pressure/ heart rate
- renal function and potassium/ sodium

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How to uptitrate?

Special advice for ARNIs and SGLT2-I:

- if patient is on diuretics:
  - DECREASE or STOP diuretics if you start or uptitrate drug (danger of worsening renal function)

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Different patient profiles

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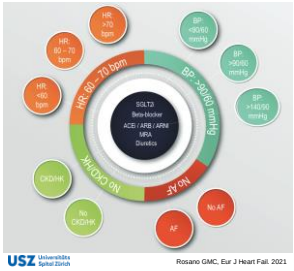
Different patient profiles



Variabels with impact on choice of therapy:

- Heart rate
- Blood pressure
- Atrial fibrillation
- Chronic kidney disease

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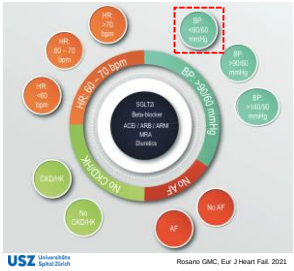
Different patient profiles – Hypotension



Identify causes of hypotension
- hypovolemia (diuretics!)
- bleeding
- Infection
- medication (calcium channel blockers)

Drugs with low impact on BP:
- MRA (e.g. Spironolactone)
- SGLT2-Inhibitors

Sacubitril/ Valsartan
- contraindicated in BP <100mmHg

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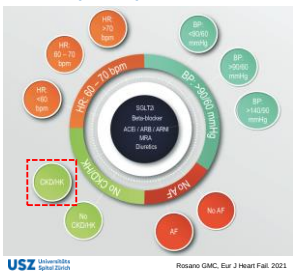
Different patient profiles – chronic kidney disease



ACE-I/ ARNI/ ARB
- do stop only if creatinine increases
  - >100%
  - >300ug/L
  - <20ml/min (eGFR)
- renoprotective

Betablockers are mostly safe
- bisoprolol, metoprolol, carvedilol

MRA (e.g. Spironolacton)
- Safe if eGFR >30ml/min
- Potassium <5mmol/L

SGLT2-Inhibitors
- safe if eGFR >20-25ml/min
- renoprotective

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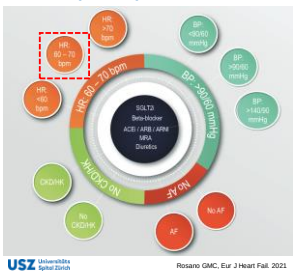
Different patient profiles – heart rate



Most favourable outcome
- HR ~60/min

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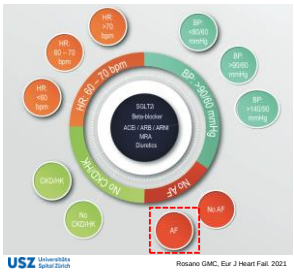
Different patient profiles – atrial fibrillation (AF)



Rosano GMC, Eur J Heart Fail. 2021

Heart rate is *not* a predictor of mortality in Patients with HFrEF and AF!

No clear prognostic benefit of betablockers in AF!

HR < 70/min in patients with AF has been associated with worse outcome.

Anticoagulation (CHADS-VASC-Score)

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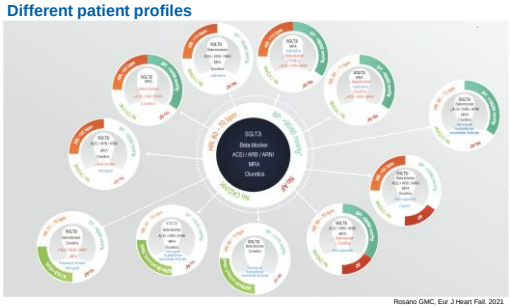
Different patient profiles



Rosano GMC, Eur J Heart Fail. 2021

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Examples

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Patient A, 43y, male

- newly diagnosed dilative cardiomyopathy of unknown cause
- LVEF 28%, dilated left ventricle

- BMI 35kg/m2
- BP 150/90mmHg
- HR 75/min, Sinusrythm
- renal function: normal
- Diabetes: no

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Question 1

What's the most appropriate therapy you would offer this patient?

A – start Sacubitril/ Valsartan and Betablocker and discharge the patient to rehab clinic

B – The most likely cause of his cardiopathy is hypertension. Start Amlodipin and Sacubitril/ Valsartan first.

C – start the "four pillars" in low dose (ARNI, MRA, BB, SGLT2-I) and uptitrate thereafter

D – start Candesartan, Torasemid, Betablocker and SGLT2-I

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Patient A, 43y, male

- newly diagnosed dilative cardiomyopathy of unknown cause
- LVEF 28%, dilated left ventricle

- BMI 35kg/m2
- BP 150/90mmHg
- HR 75/min, Sinusrythm
- renal function: normal
- Diabetes: no

Suggestion:

1. start ACE-I or ARNI (lowers afterload); start SGLT2-I full dose
2. start Betablocker after ~2 days
3. add MRA before discharge if no hyperkalemia
4. Discharge in Rehab
5. Uptitrate each drug one at a time thereafter, monitor renal function

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Patient B, 60years, male

- Large anterior infarction 3 month ago
- LVEF 25%, dilated left ventricle

- NYHA II-III, BMI 26kg/m2
- BP 95/68mmHg, HF 58/min
- Renal function: eGFR 45ml/min
- HbA1c = 7.2%
- Potassium = 4.3mmol/L

Therapy:

- Lisinopril 5mg ½ - 0 - ½
- Bisoprolol 2.5mg 1-0-1
- Metformin 1000mg 1-0-1
- Torasemid 20mg 1-0-0

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Question 2

What's the most appropriate next step for this patient?

A- switch to Sacubitril/ Valsartan

B – reduce Torasemid and start SGLT2-Inhibitor

C - start MRA and uptitrate Betablocker

D – reduce Lisinopril as the patient is hypotensive but add SGLT2-Inhibitor

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Patient B, 60years, male

- Large anterior infarction 3 month ago
- LVEF 25%, dilated left ventricle

- NYHA II-III, BMI 26kg/m2
- BP 95/68mmHg, HR 58/min
- Renal function: eGFR 45ml/min
- HbA1c = 7.2%
- Potassium = 4.3mmol/L

Suggestion:

Step 1:
- Lisinopril 5mg ½ - 0 - ½
- Bisoprolol 2.5mg 1-0-1
- Metformin 1000mg 1-0-1
- Dapagliflozin 10mg 1-0-0 NEW
- Torasemid 20mg 1-0-0 → reduce or stop

Step 2:
- Spironolactone 25mg ½ - 0 - 0

Step 3:
- if possible uptitrate slowly but steadily
- refer to heart failure specialist

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Patient C, 84y, female

Coronary 3-vessel disease with bypass surgery 15years ago
- LVEF 28%, mildly dilated LV, mod. mitral regurgitation
- AV-Block III° → Pacemaker

- NYHA III, BMI 26kg/m2
- BP 145/80mmHg, HR 78/min
- Renal function: Creatinin 165umol/L, eGFR 31ml/min
- Potassium 4.8mmol/L

Current Therapy
- Valsartan 80mg 1-0-0
- Amlodipin 5mg 1-0-0
- Torasemid 10mg 1-0-0

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Question 3

Which of the following drugs has **no** prognostic effect in heart failure (HFrEF)?

A - Amlodipin

B – Betablocker

C - ACE-Inhibitor

D – SGLT2-Inhibitor

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Patient C, 84y, female

Coronary 3-vessel disease with bypass surgery 15years ago
- LVEF 28%, mildly dilated LV, mod. mitral regurgitation
- AV-Block III° → Pacemaker

- NYHA III, BMI 26kg/m2
- BP 145/80mmHg, HR 78/min
- Renal function: Creatinin 165umol/L, eGFR 31ml/min
- Potassium 4.6mmol/L

Suggestion
- Valsartan 80mg 1-0-0 STOP
  - Entresto 50mg 1-0-1 NEW
- Amlodipin 5mg 1-0-0 STOP
- Torasemid 10mg 1-0-0 STOP
  - Empagliflozin 10mg 1-0-0 NEW
- Spironolactone?
- Betablocker?

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Patient D, 36years, female

- Workup for palpitations
- LVEF 42%, LV normal size

- NYHA I, sporty, BMI 23kg/m2
- BP 100/70mmHg, HR 65/min, VES
- Renal function: normal
- Diabetes: no

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Question 4

How would you classify her heart failure according to left ventricular ejection fraction (LVEF)?

A - Heart failure with preserved LVEF (HFpEF)

B – Heart failure with mildly reduced LVEF (HFmrEF)

C – Heart failure with reduced LVEF (HFrEF)

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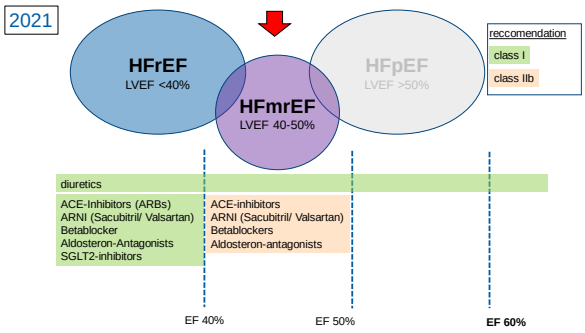

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Patient D, 36years, female

- Workup for palpitations
- LVEF 42%, LV normal size

- NYHA I, sporty, BMI 23kg/m2
- BP 100/70mmHg, HR 65/min, VES
- Renal function: normal
- Diabetes: no

Suggestion:

- look for possible cause of heart failure !!
- Start Bisoprolol 2.5mg ½ - 0 – 0
- Start Lisinopril 2.5mg 0 – 0 – ½

- observe / discuss with patient/ uptitrate
- Refer to cardiologist/ heart failure specialist

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Thank you!

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