

Heart Failure: When to and when not to worry

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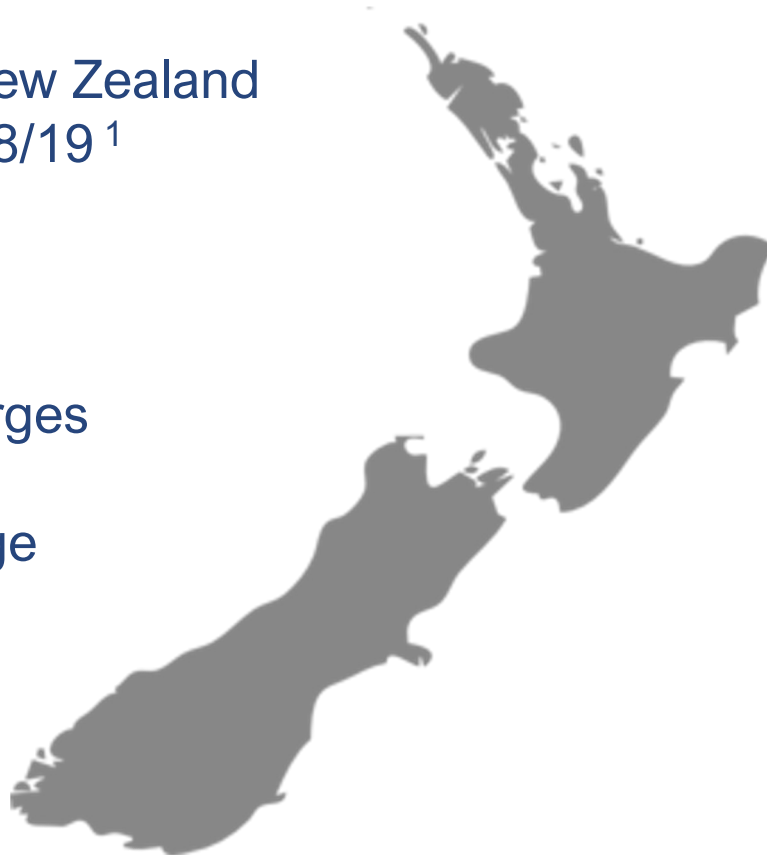
16th September 2023

Heart Failure (HF) | Prevalence

1.9 percent of New Zealand's population live with heart failure. ¹

Est 75,000 adults in New Zealand have heart failure 2018/19 ¹

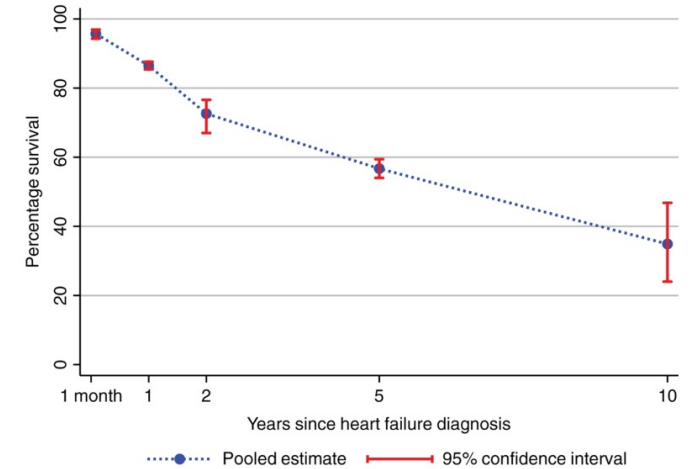
11,018 hospital discharges for heart failure in NZ 2017/18 with an average stay of 13.1 days ²



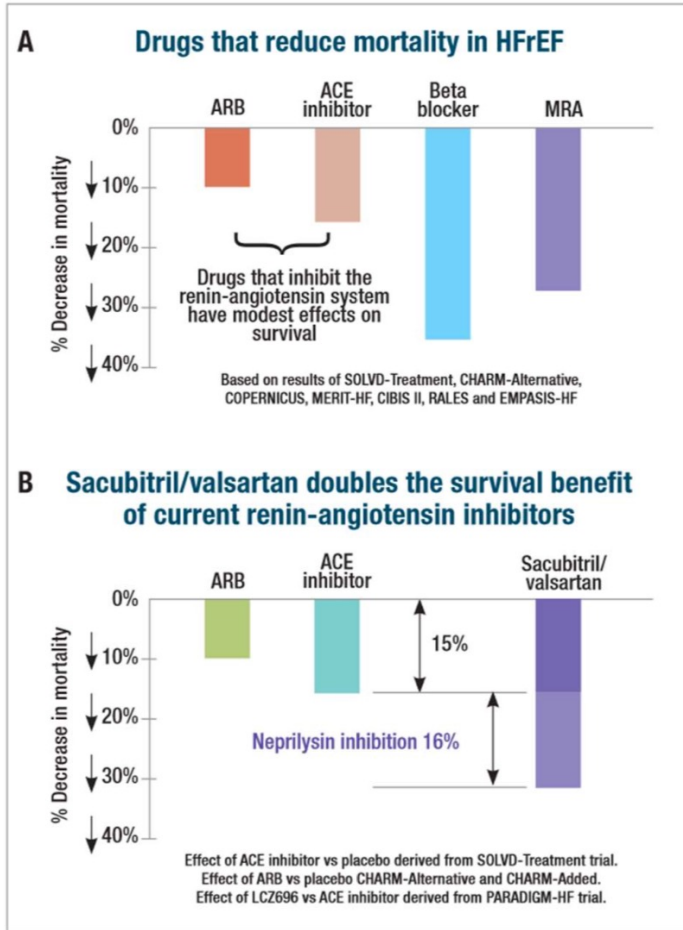
Māori are at 1.81 greater risk of Heart Failure than non-Māori. ¹

Pacific Islanders are at 1.92 greater risk of Heart Failure than non-Pasifika. ¹

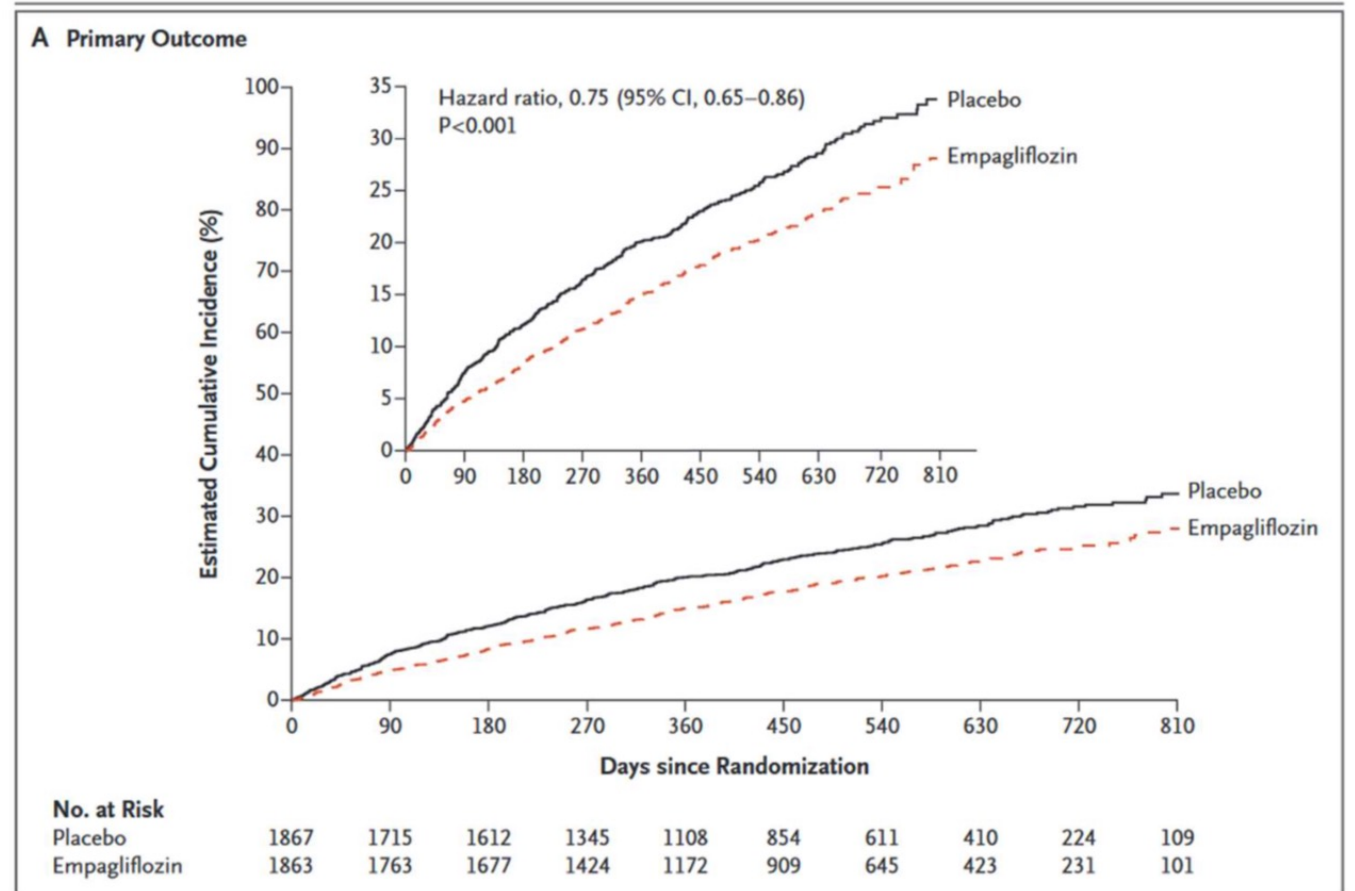
Combined survival rates for people with heart failure over time. Adapted from Jones *et al.*¹¹



Entresto



Empagliflozin



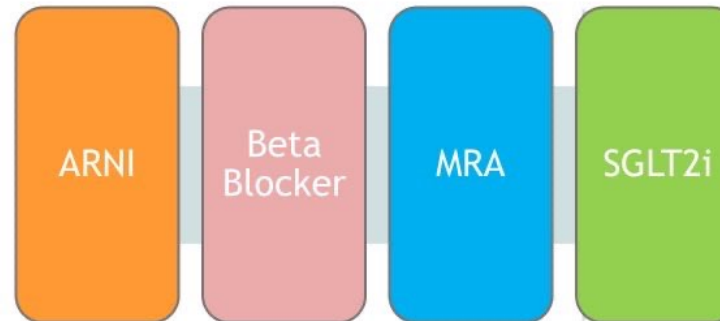
Packer et al. 2020. NEJM

The Four Pillars of heart failure

Simultaneous Initiation and Rapid Titration of
The Four Pillars
is Safe and Effective Leading to Substantial Reduction in
Mortality and HFH⁵

Clinical benefits:

8.3 additional years
Free from CV Death or HFH
for a 55 yr old
(2.7 yrs / 80yr old)¹¹



Cumulative risk reduction in all-cause mortality if all four evidence-based medical therapies are used:
Relative risk reduction 72.9%, Absolute risk reduction: 25.5%, NNT = 3.9, over 24 months

Updated from Fonarow GC, et al. Am Heart J

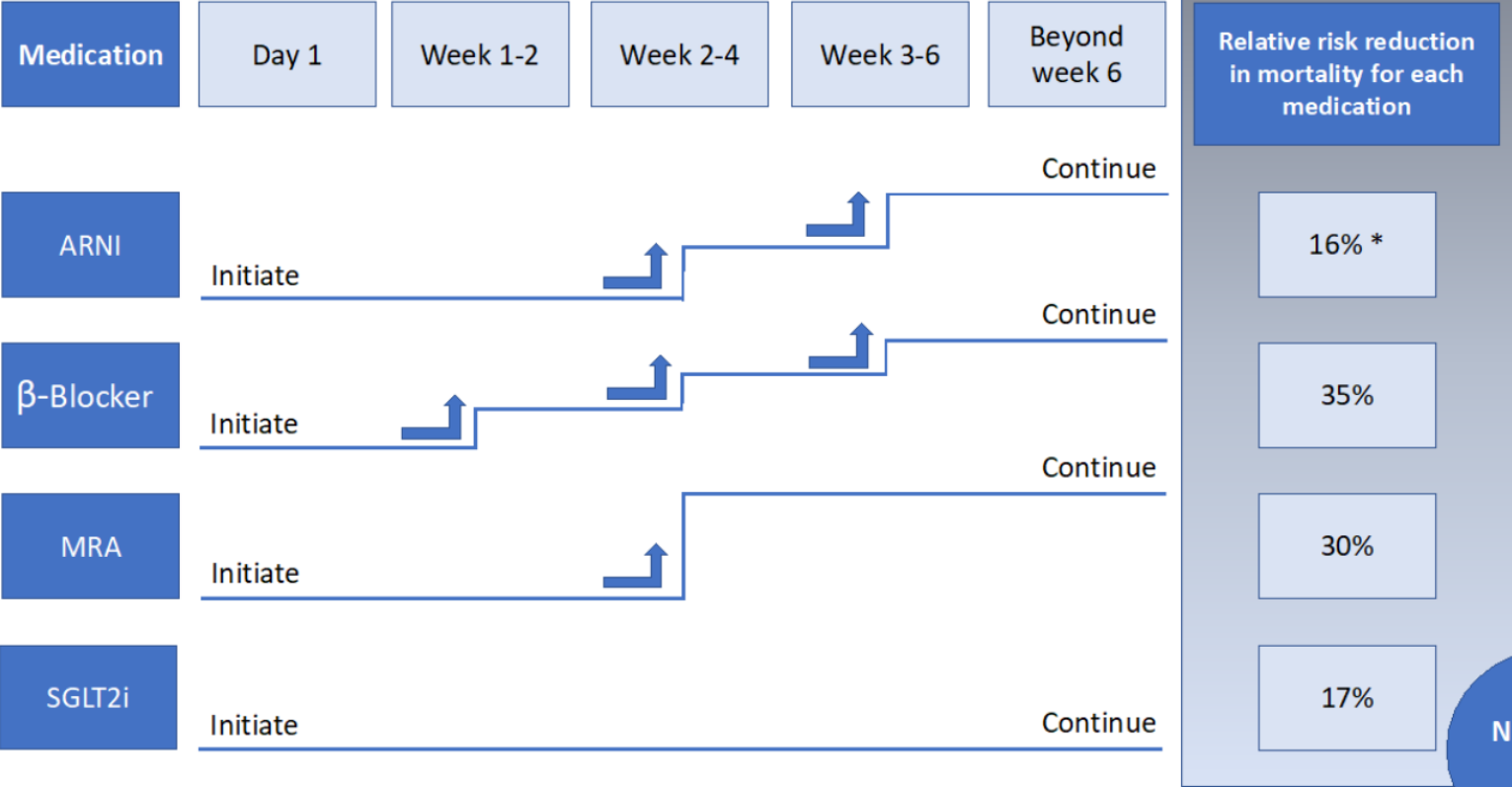
Each class works uniquely on a maladaptive mechanism⁶

And has an **INDEPENDENT** and **ADDITIVE** therapeutic beneficial
effect

Renal function changes with heart failure medications Vs pathology

- Case 1
- 42 year old woman
- LVEF 30%
- DM II, HTN, Smoker
- Renal function at baseline: Creatinine 120, eGFR 45ml/min
- **How should we initiate treatment?**

Ideal Medication Titration



JACC Mar 7; 2022, McMurray et al

HF Medications and renal function

	Initiate		
ARB/ACEi	Adjust for eGFR		
ENTRESTO (ARNI)	eGFR* >30 dose 49/51 mg eGFR <30 dose 24/26mg		
SPIRONOLACTONE (MRA)	eGFR >30 dose 12.5 - 25mg		
SGLT2i	eGFR >20 dose 10mg		
BB	No change for eGFR		

* eGFR units mL/min/1.73m²

Renal function changes with heart failure medications Vs pathology

- Case 1
- 42 year old woman
- LVEF 20%
- DM II, HTN, Smoker
- Renal function at baseline: Creatinine 120, eGFR 45ml/min
- How should we initiate treatment?
- **When should we pull back on treatment?**

HF Medications and renal function

	Initiate	Titration	Illness/ AHF in OP setting
ARB/ACEi	Adjust for eGFR	▲ Creat increase: < 30% continue 30 – 50% 1/2 dose > 50% temp stop Severe (eGFR <20) anytime stop if symptomatic with uraemia ▲ K > 5.5 decrease dose > 6 stop	Monitor closely: K >5.5 Creatinine <30% rise Stop: K >6 Creatinine >30% rise
ENTRESTO (ARNI)	eGFR* >30 dose 49/51 mg eGFR <30 dose 24/26mg		
SPIRONOLACTON E (MRA)	eGFR >30 & K <5 dose 12.5		
SGLT2i	eGFR >20 dose 10mg	Persistent eGFR drop >50%	Withhold if decreased intake or acute fluid loss
BB	No change for eGFR		

* eGFR units mL/min/1.73m²

SGLT-2 Inhibitors: Renal outcomes

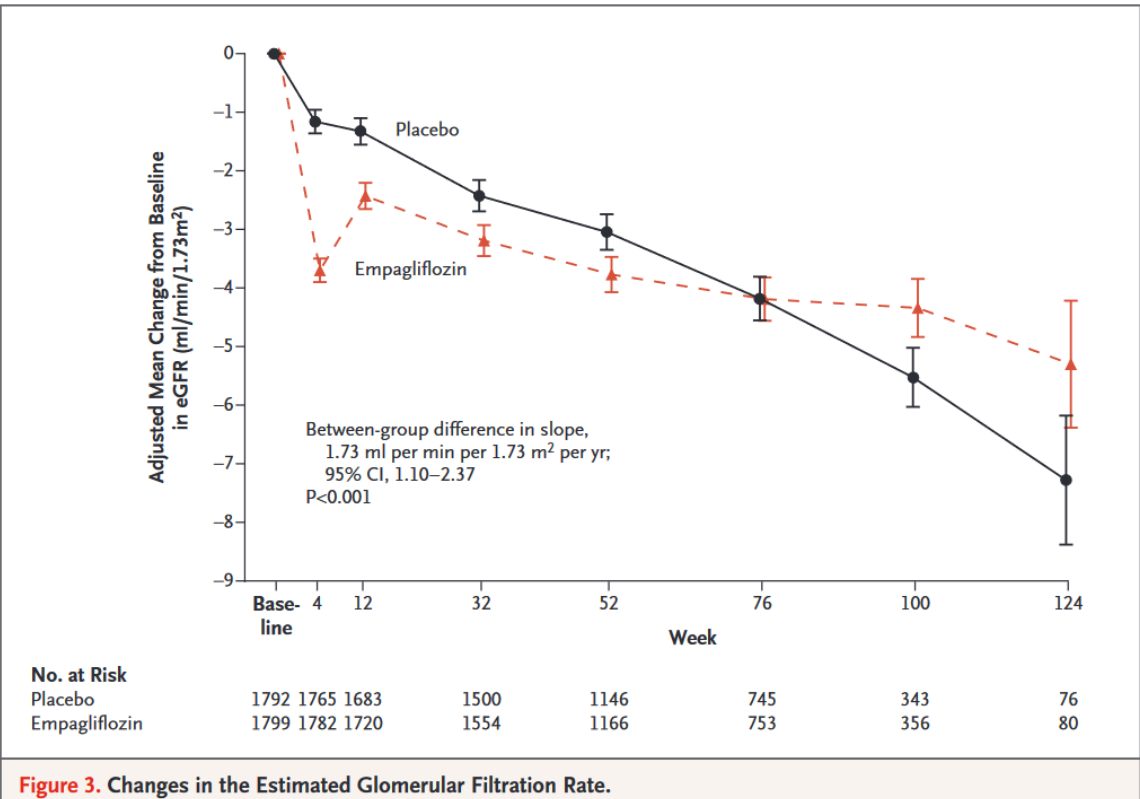
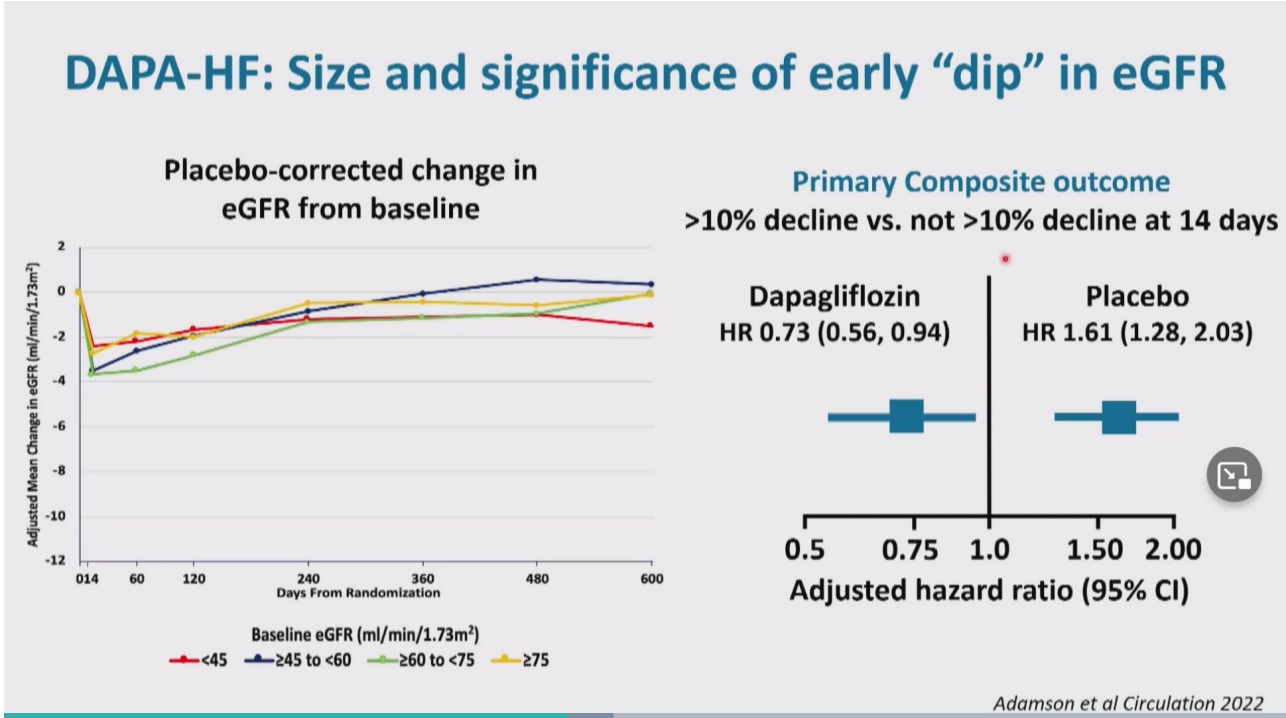


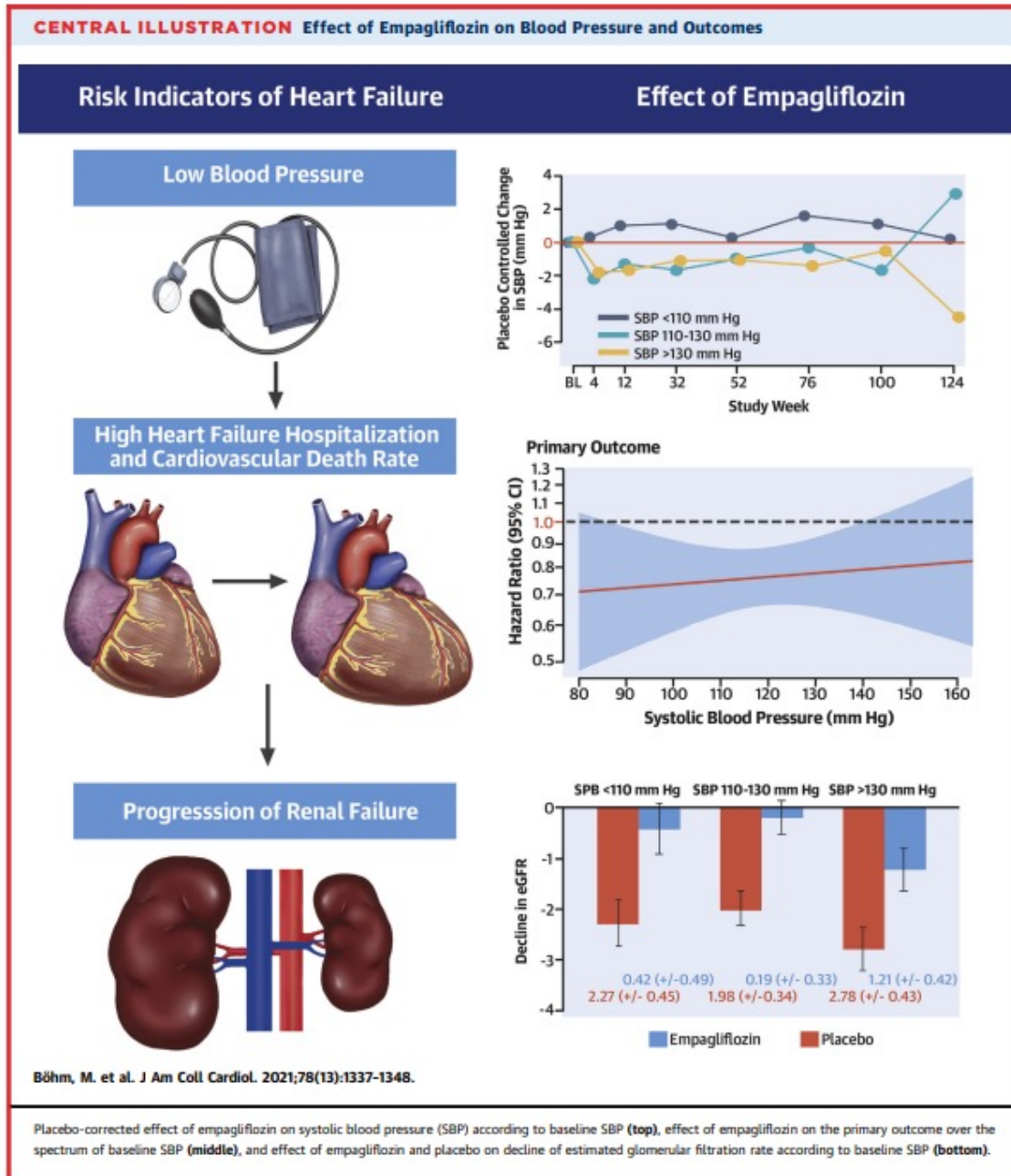
Figure 3. Changes in the Estimated Glomerular Filtration Rate.



Hypotension: When should we down titrate treatment

- Case 2
- 70yr old man
- HFrEF for many years, EF 35%
- Blood pressure 88/50, symptomatic
- Medications: Entresto 24/26mg BD, Bisoprolol 5mg OD, Spironolactone 12.5mg OD, Empagliflozen 12.5mg OD, frusemide 80mg OD
- **What should we do next?**

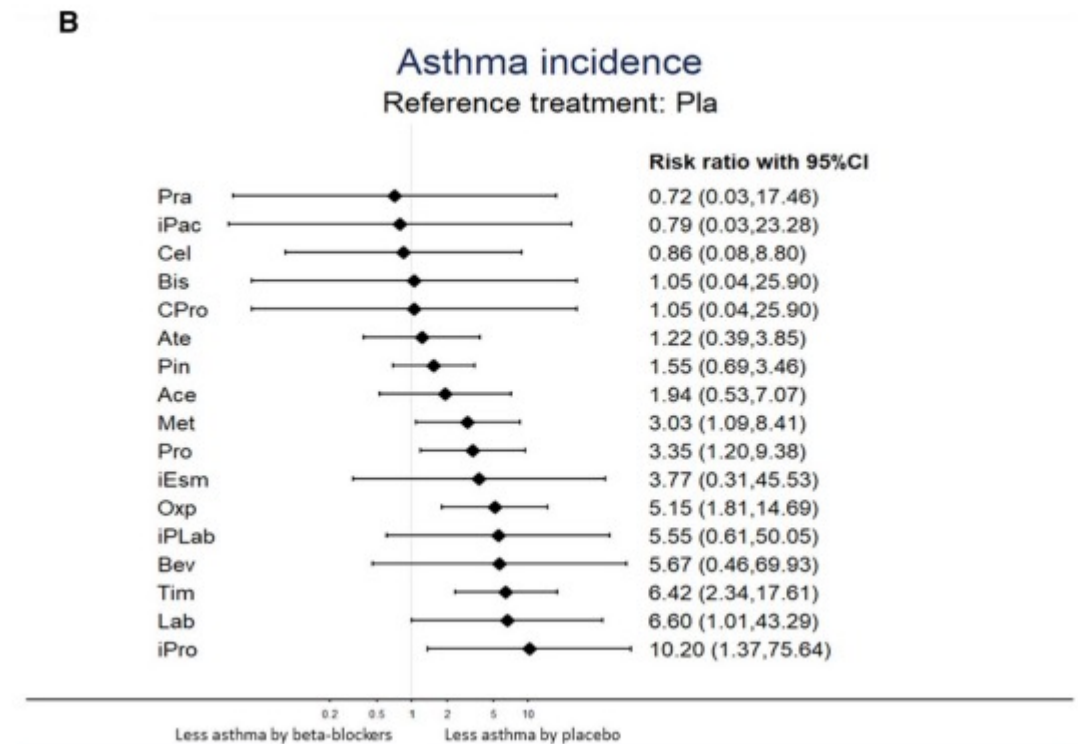
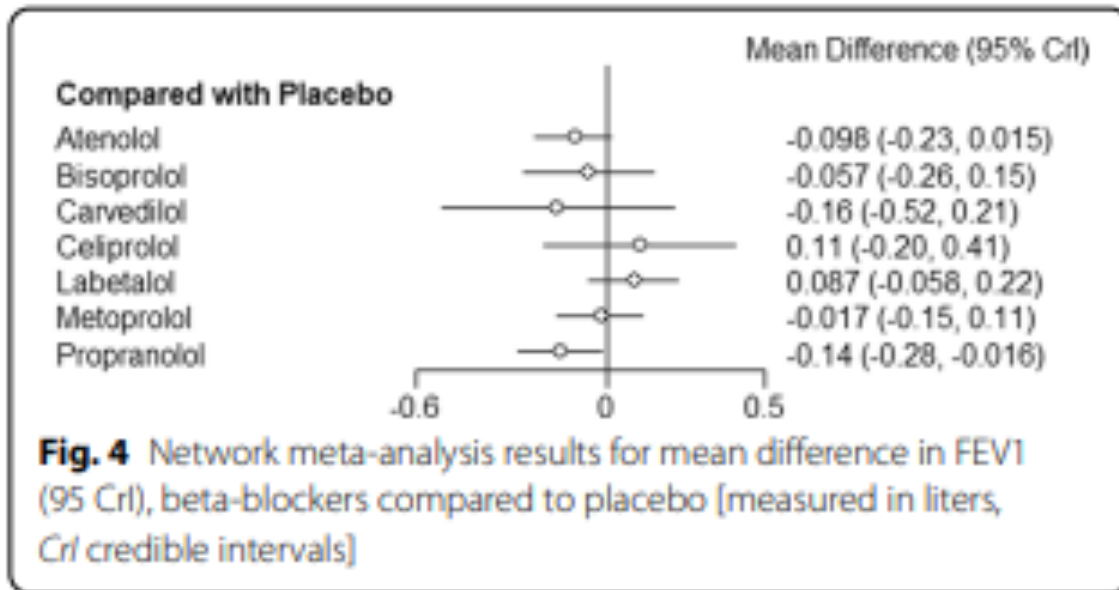
Empagliflozen



Substitutions for other side effects

- Case 2
- 70yr old man
- HFrEF for many years, EF 35%
- Blood pressure 88/50mmHg, symptomatic
- Medications: Entresto 24/26mg BD, Bisoprolol 5mg OD, Spironolactone 12.5mg OD, Empagliflozen 12.5mg OD, frusemide 80mg OD
- He has developed sore breast tissue
- He is very fatigued
- He is wheezy

Change in FEV1 in COPD Vs Asthma incidence



Take home messages

- Four Pillars of heart failure should be applied to every patient with HFrEF
- Accept up to 50% drop in eGFR when titrating the four pillars
- Caution with dehydration and concurrent acute illness
- Consider down-titration if symptomatic hypotension (<85mmHg)

- Watch this space for approval of SGLT2i in all HFrEF patients (and potentially HFpEF patients)

