

XII Meeting. State of the Art in

HEART FAILURE

CLINICAL PRACTICE AND ORGANIZATIONAL MODELS

Venue: Hotel Meliá María Pita, A Coruña

A Coruña 26-27 September 2025



#ACORUÑAHF2025



Understanding HF management Drugs and devices in cardio-renal syndrome Clinical case II

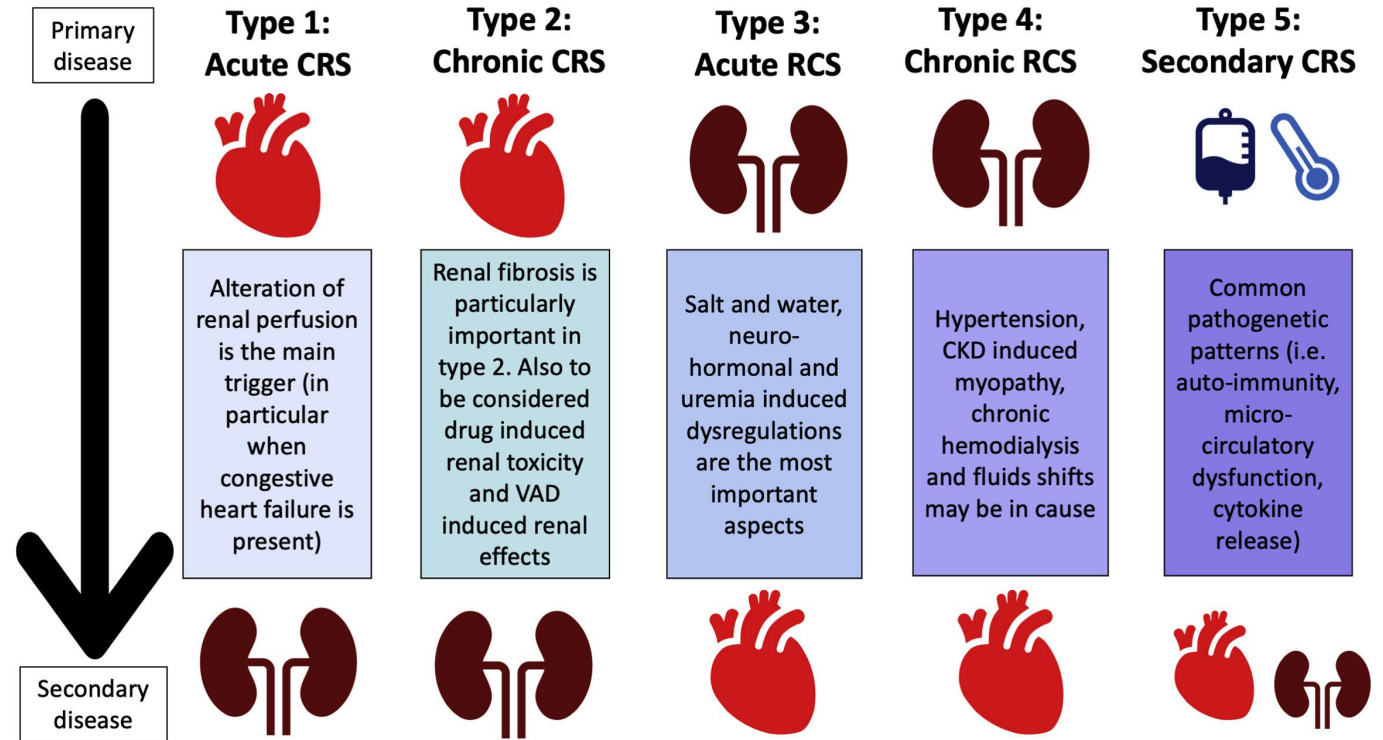
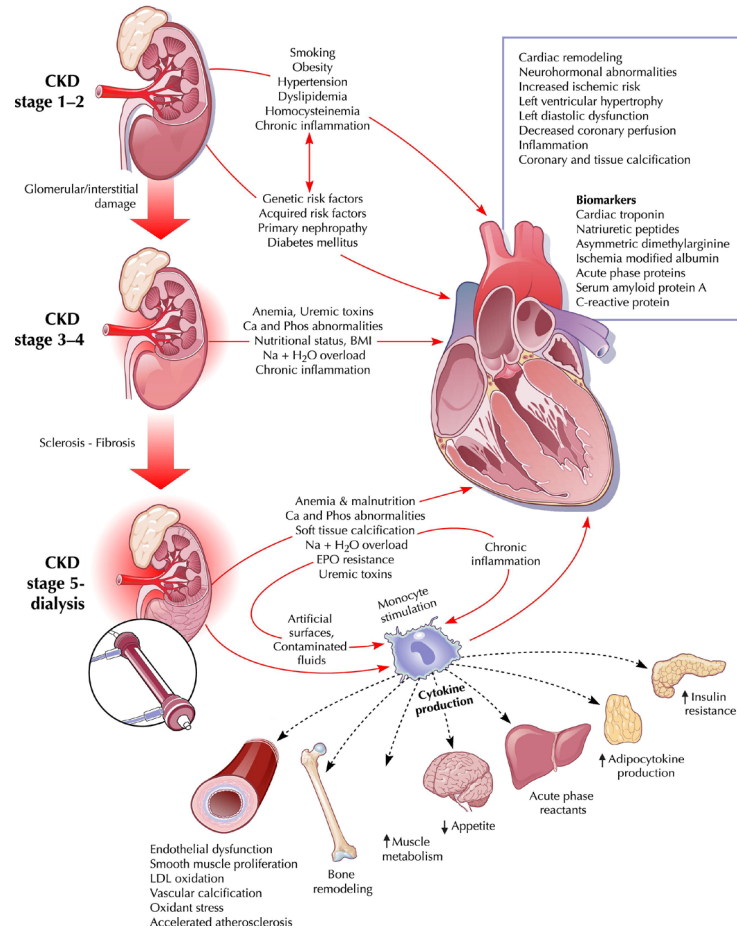
Daniel Enríquez Vázquez

Unidad de IC y TC. Servicio de Cardiología.

Complejo Hospitalario Universitario de A Coruña.



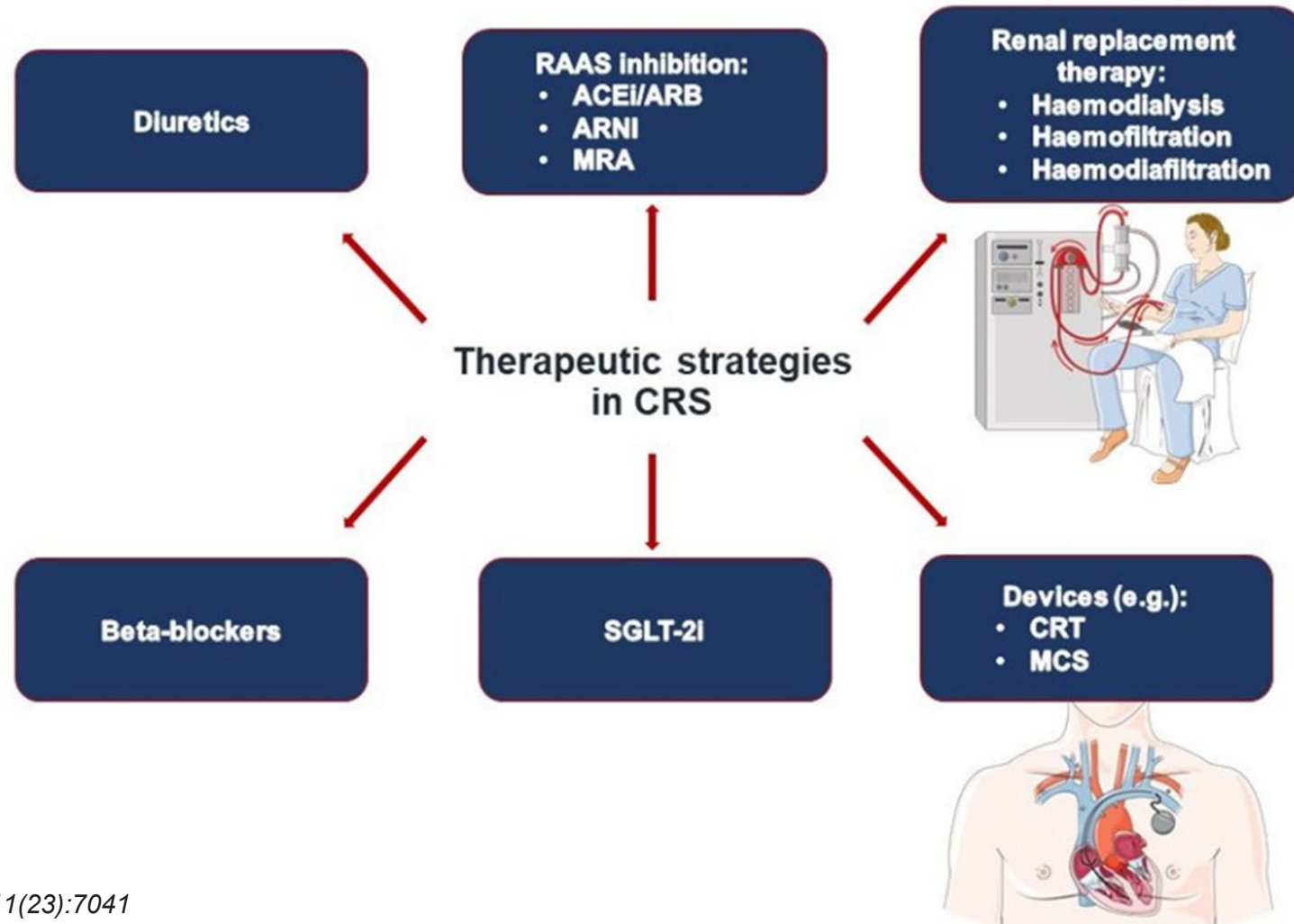
Cardio-renal syndrome



Ronco C, J Am Coll Cardiol. 2008;52(19):1527-1539

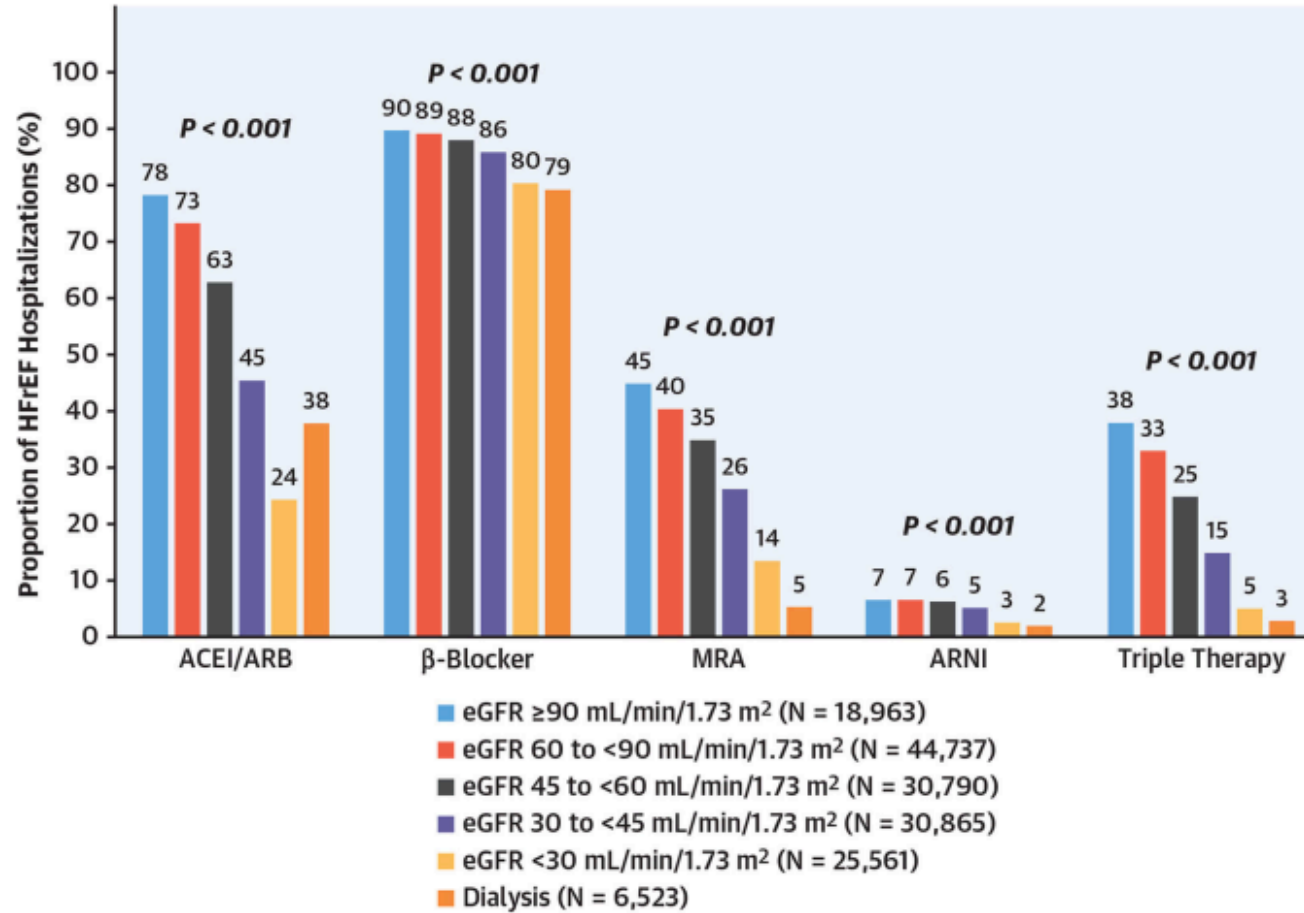


Cardio-renal syndrome



Mitsas AC. *J Clin Med.* 2022 Nov 28;11(23):7041

HF treatment in CKD



Patel, R.B. et al. J Am Coll Cardiol. 2021;78(4):330-43.



Cardio-Renal Units

- Improve the care and comprehensive clinical management of patients with **Cardiorenal Syndrome** (CRS).
- Personalized care, continuity of care, increased responsiveness, and **reduced clinical variability**.
- More flexible, patient- and outcome-oriented perspective.
- Ultimate goal of **reducing morbidity and mortality**.



De la Espriella R. REC CardioClinics. 2021. <https://10.1016/j.rccl.2021.05.005>



Common limitations in neurohormonal therapy

Clinical Case 2.1



Male, 77 yo

Referred to the Cardiology Clinic in July 2022 for dyspnea

CV risk factors

- Hypertension
- Dyslipidemia
- Former smoker

Past medical history

- 2014 Surgery: Abdominal Aorta Aneurysm
- 2017: Colon adenocarcinoma treated with right hemicolectomy and adjuvant chemotherapy
- Migraine-headache

Treatment

- Enalapril 10 mg bid
- AAS 100 mg
- Atorvastatin 20 mg

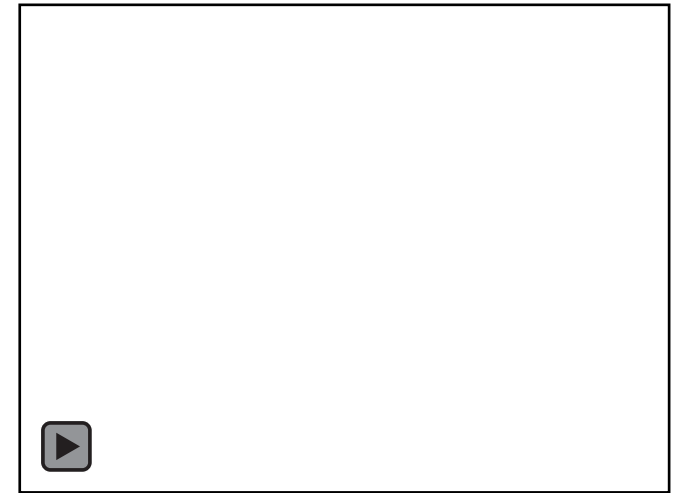
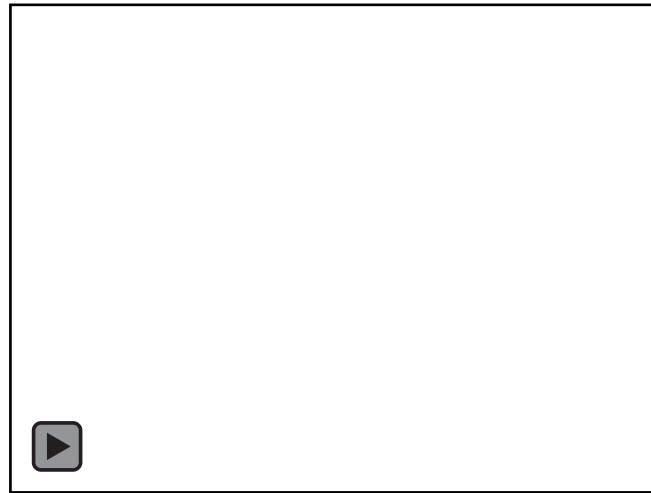
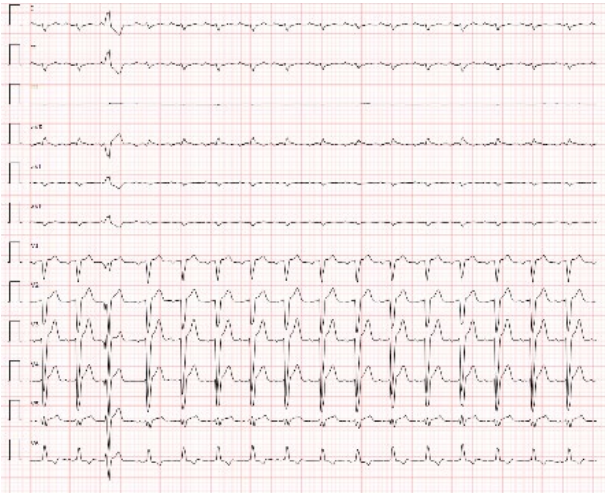


Male, 77 yo

PE

BP: 110/60 mmHg. **HR:** 80 bpm. **W:** 86.2 kg **H:** 176 cm **BMI:** 28,4 kg/m²

Without clinical congestion on PE



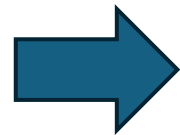
Cr 1.4 mg/dl (eGFR 48 ml/min)

Albuminuria 185 mg/L

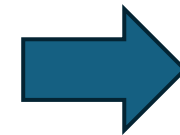
Na 140

K 5.1 mEq/L

Iron OK, Hb 15,6 g/dl



HFrEF



Start Sacubitril Valsartan 49/51 mg

Start Bisoprolol 2,5 mg

Stop enalapril

Referral to HF Unit

Male, 77 yo

HF Unit



NYHA II
Cr 1.3 mg/dl (GFR 54 ml/min)
Na 140
K 5.6 mEq/L
ECG: SR, LBBB
NTproBNP 1970 pg/ml

15-7-2022

SV 49/51 mg
Bisoprolol 2,5 mg
Furosemide 40 mg
AAS 100 mg
Atorvastatin 20 mg

17-7-2022

STOP SV
Start dapagliflozin 10 mg
Start calcium polystyrene sulfonate
(Resincalcio)

NYHA II
Cr 1.23 mg/dl (GFR 56 ml/min)
Na 140
K 4,4 mEq/L
ECG: SR, LBBB
NTproBNP 1770 pg/ml

Bisoprolol 2,5 mg
Dapagliflozin 10 mg
Furosemide 40 mg
AAS 100 mg
Atorvastatin 20 mg
SV 24/26 mg
Resincalcio 15 gr



Male, 77 yo

NYHA II
 sBP > 100 mmHg
 Cr 1.5 mg/dl (GFR 43 ml/min)
 Na 140
K 5.0 mEq/L
 ECG: SR, LBBB
 NTproBNP 1350 pg/ml

22-7-2022

SV 49/51 mg
 Bisoprolol 2,5 mg
 Dapagliflozin 10 mg
 AAS 100 mg
 Atorvastatin 20 mg

Digestive Intolerance To Resincalcio **SZC 5 gr**

NYHA II
 sBP > 100 mmHg
 Cr 1.25 mg/dl (GFR 58 ml/min)
K 4,8 mEq/L
 ECG: SR, LBBB
 NTproBNP 1310 pg/ml

SV 49/51 mg
 Bisoprolol 2,5 mg
 Dapagliflozin 10 mg
Eplerenone 12,5 mg
 AAS 100 mg
 Atorvastatin 20 mg
 SZC 5 gr

NYHA I-II
 BP > 100 mmHg
 Cr 1.3 mg/dl (GFR 52 ml/min)
K 4,6 mEq/L
 ECG: SR, LBBB
 NTproBNP 1070 pg/ml

7-9-2022

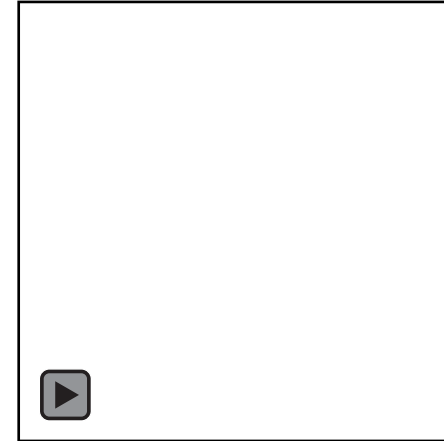
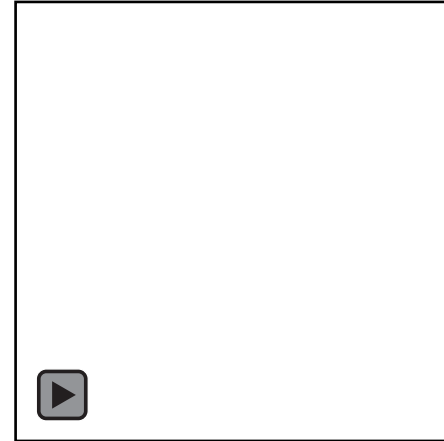
SV 97/103 mg
 Bisoprolol 2,5 mg
 Dapagliflozin 10 mg
 Eplerenone 12,5 mg
 AAS 100 mg
 Atorvastatin 20 mg
 SZC 5 gr



Male, 77 yo

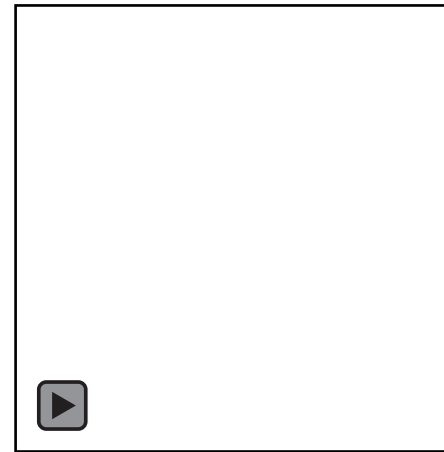
Multivessel disease
CCS 0
Medical management

NYHA I-II
BP > 100 mmHg
Cr 1.25 mg/dl (EGF 58 ml/min)
K 4,6 mEq/L
ECG: SR, LBBB
NTproBNP 755 pg/ml



22-12-2022

SV 97/103 mg
Bisoprolol 2,5 mg
Dapagliflozin 10 mg
Eplerenone 12,5 mg
AAS 100 mg
Atorvastatin 20 mg
CSZ 10 gr



EF < 35%

QRS 160 ms

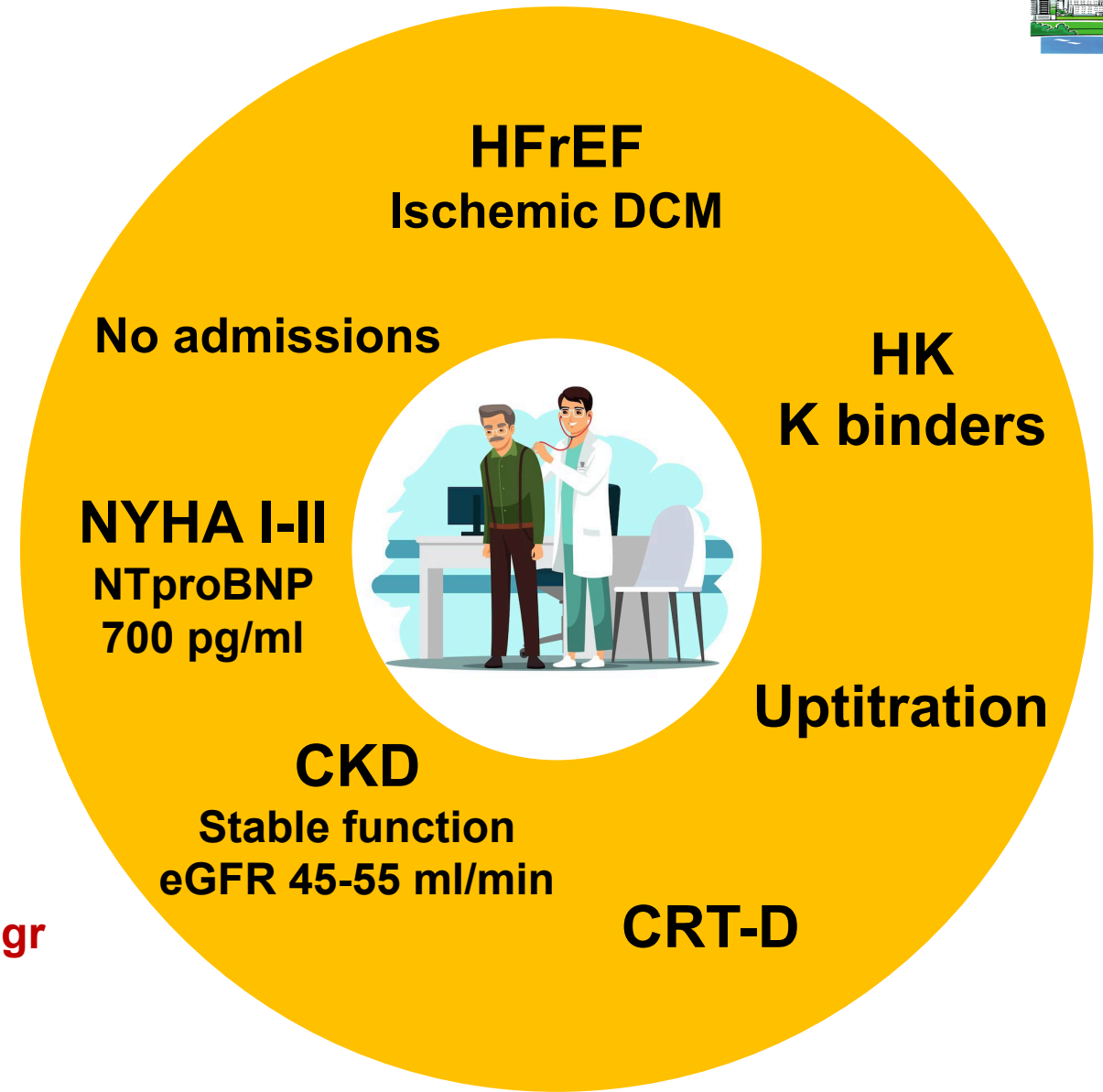
CRT-D



Male, 77 yo. Follow up



- SV 97/103 mg
- Bisoprolol 10 mg bid
- Dapagliflozin 10 mg
- Eplerenone 12,5 mg
- AAS 100 mg
- Rosuvastatin 40 mg + Ezetimibe 10 mg
- Torasemide 5 mg
- **SZC(sodium zirconium cyclosilicate) 10 gr**





Tackling complexity together

Clinical Case 2.2



Male, 59 yo

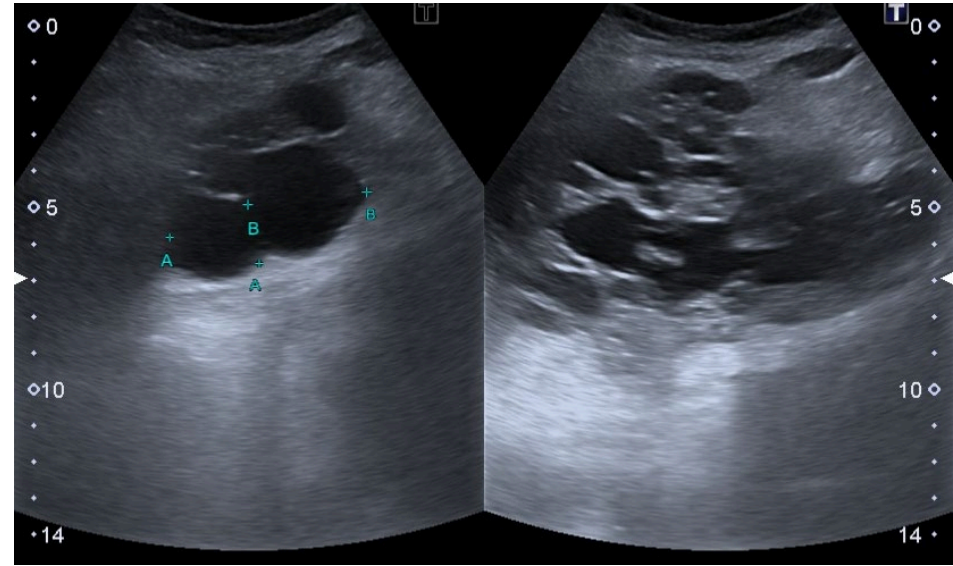
Referred to the Cardiorenal Unit in June 2024

CV risk factors

- T2DM
- Former smoker

Past medical history

- Hepatorenal polycystic disease
- Advanced CKD. Peritoneal Dialysis since October 2021.
- Monoclonal gammopathy of undetermined significance (MGUS).
- Leukocyte myeloperoxidase deficiency.





Male, 59 yo

Cardiovascular history

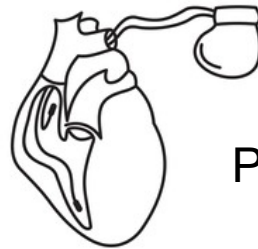
2006

Severe Aortic Regurgitation
EF 45%
Normal coronaries

Complete
AV block



Mechanical
prosthetic valve

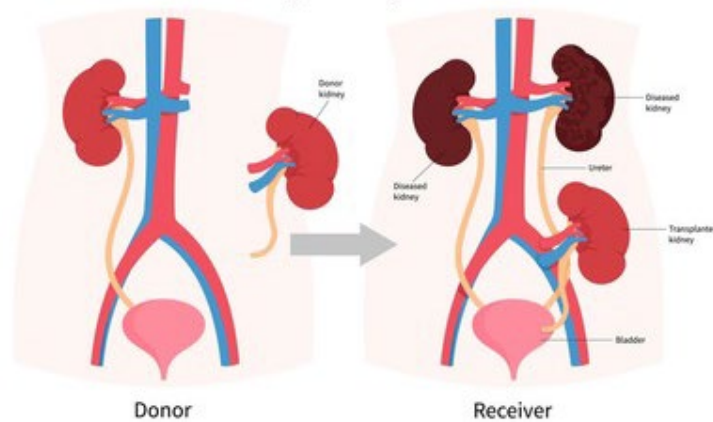
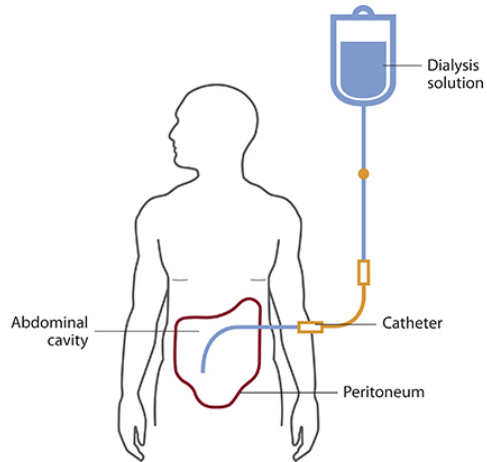


Pacemaker
DDDR

Regular follow up

Male, 59 yo

2023



4 changes (2000 ml)

2,27%

Nutrineal

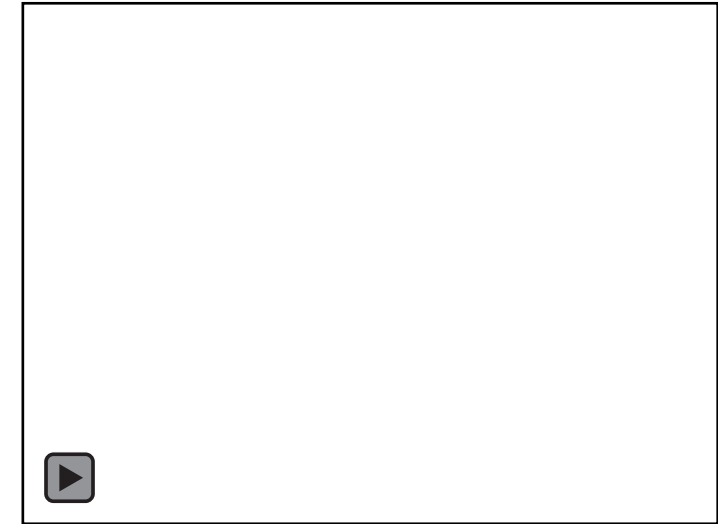
2,27%

Extraneal

Pretransplant evaluation

Increase dyspnea (NYHA II-III)

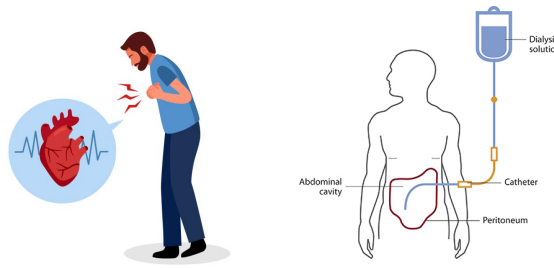
Fluid retention



EF 24%



Male, 59 yo



Follow up in CR Unit

Bisoprolol 2,5 mg
Furosemide 40 mg
Atorvastatin 20 mg
Renagel 800 mg
Fosrenol 1000 mg
Carbonato Calcico
Vit.D
Sintrom

NYHA II-III
No congestion
BP 110/70 mmHg
Sinus rythm

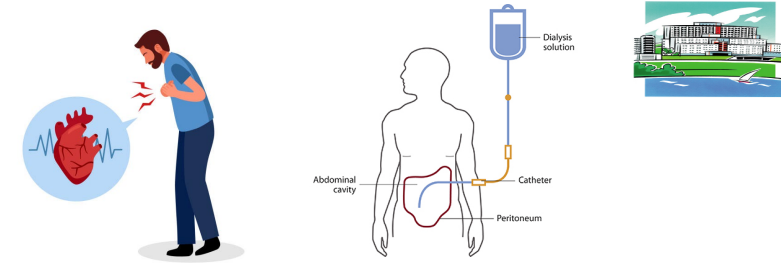
Cr 8,4
Na 137
K 5
NTproBNP 8476

Bisoprolol 2,5 mg
Ramipril 2,5 mg
Dapagliflozin 10 mg
Furosemide 40 mg
Atorvastatin 40 mg
Renagel 800 mg
Fosrenol 1000 mg
Carbonato Calcico
Vit.D
Sintrom

2024

Male, 59 yo

Follow up in CR Unit



Bisoprolol 2,5 mg
Sacubitril Valsartan 24/26 mg
Dapagliflozin 10 mg
Furosemide 120 mg
Atorvastatin 40 mg
Renagel 800 mg
Fosrenol 1000 mg
Mastical
Hidroferol
Sintrom

NYHA II
No congestion
BP 100/60 mmHg
Sinus rythm

Cr 8,4
Na 137
K 5,9
NTproBNP 7500

Patiromer 8,4 g



Cr 10,1
Na 140
K 4,7
NTproBNP 7200

August 2024

September 2024



Male, 59 yo

Follow up in CR Unit

NYHA II
No congestion
BP 90/60 mmHg
Sinus rhythm

Cr 8,8
Na 139
K 5,0
NTproBNP 6300



VP 99%

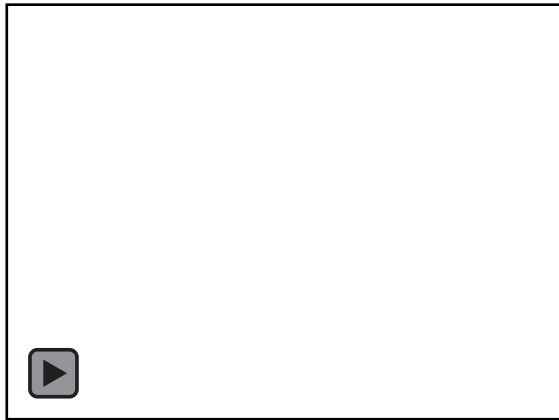


**Upgrade
CRT-P**

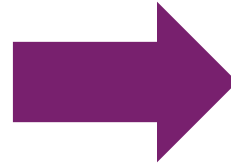
October 2024



Male, 59 yo Follow up in CR Unit



Upgrade
CRT-P



EF 45%

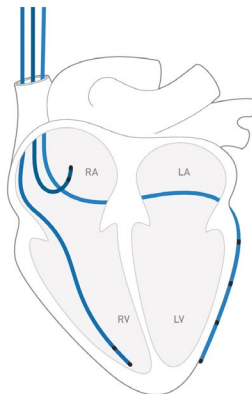
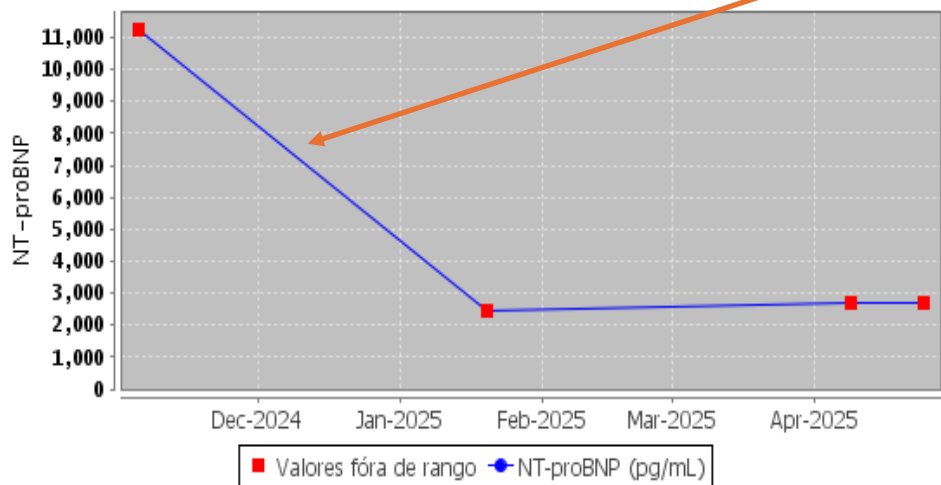


November 2024

February 2025

Male, 59 yo

Follow up in CR Unit



Kidney Transplant List Inclusion

NYHA I-II

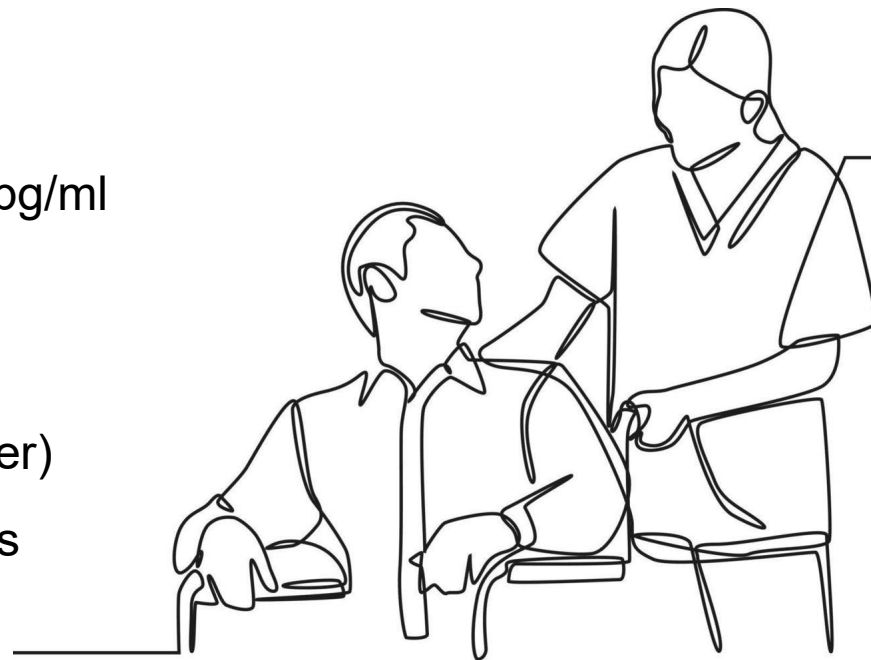
NTproBNP 2240 pg/ml

EF 42%

“4 fantastic”

K binder (patiromer)

Peritoneal Dialysis





Conclusions

- **Chronic kidney disease** (CKD) is very common in patients with heart failure (HF).
- It is associated with a **worse prognosis** in HF patients.
- CKD can **limit the use of certain therapies** that improve patient outcomes.
- It is important to avoid therapeutic inertia and discontinuation of treatment—risk-benefit assessment is essential.
- There is **limited evidence** for some therapies, but existing data support maintaining treatment when possible.
- **Complications are common** in patients with both HF and CKD.
 - **Hyperkalemia** is a frequent complication—**treatment options** are available.
- Team-based care is essential: **Cardiorenal Units** play a key role.

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Muchas gracias