

XI Reunión. Estado del Arte en  
**INSUFICIENCIA CARDIACA**

PRÁCTICA CLÍNICA Y MODELOS ORGANIZATIVOS

Sede: Hotel Meliá MaríaPita, A Coruña

**A CORUÑA** 27-28 SEPTIEMBRE 2024



XI Meeting. State of the Art in  
**HEART FAILURE**

CLINICAL PRACTICE AND ORGANIZATIONAL MODELS

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#ACoruñaHF2024

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# Cardio-renal syndrome. Renal replacement therapy at home

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*Home Dialysis Unit*  
*Renal Medicine Department*  
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**Table 1. The chronic cardiovascular–kidney disorder can be diagnosed when at least one cardiovascular component (either a major cardiovascular event or evidence of acquired or congenital cardiovascular disease of any sort or a biomarker alteration) and either stage G2 CKD or albuminuria/proteinuria are present**

### Cardiovascular components

#### Major cardiovascular events

*Myocardial infarction*

*Heart failure*

*Stroke*

*Peripheral vascular disease*

*Arrhythmias (atrial fibrillation/flutter, ventricular tachycardia/fibrillation)*

*Evidence of acquired or congenital cardiovascular disease of any sort*

#### Cardiac biomarkers

• *Left ventricular hyperrophy (by electrocardiogram or other imaging techniques)*

• *Left ventricular systolic or diastolic dysfunction*

• *Brain natriuretic peptides (NT-proBNP or BNP)*

• *High-sensitivity troponin T or I*

#### Vascular disease biomarkers

• *Increased carotid intima-media thickness or incidentally discovered aortic or major arteries calcification*

• *Invasive or noninvasive angiography or other imaging techniques to evaluate atherosclerosis*

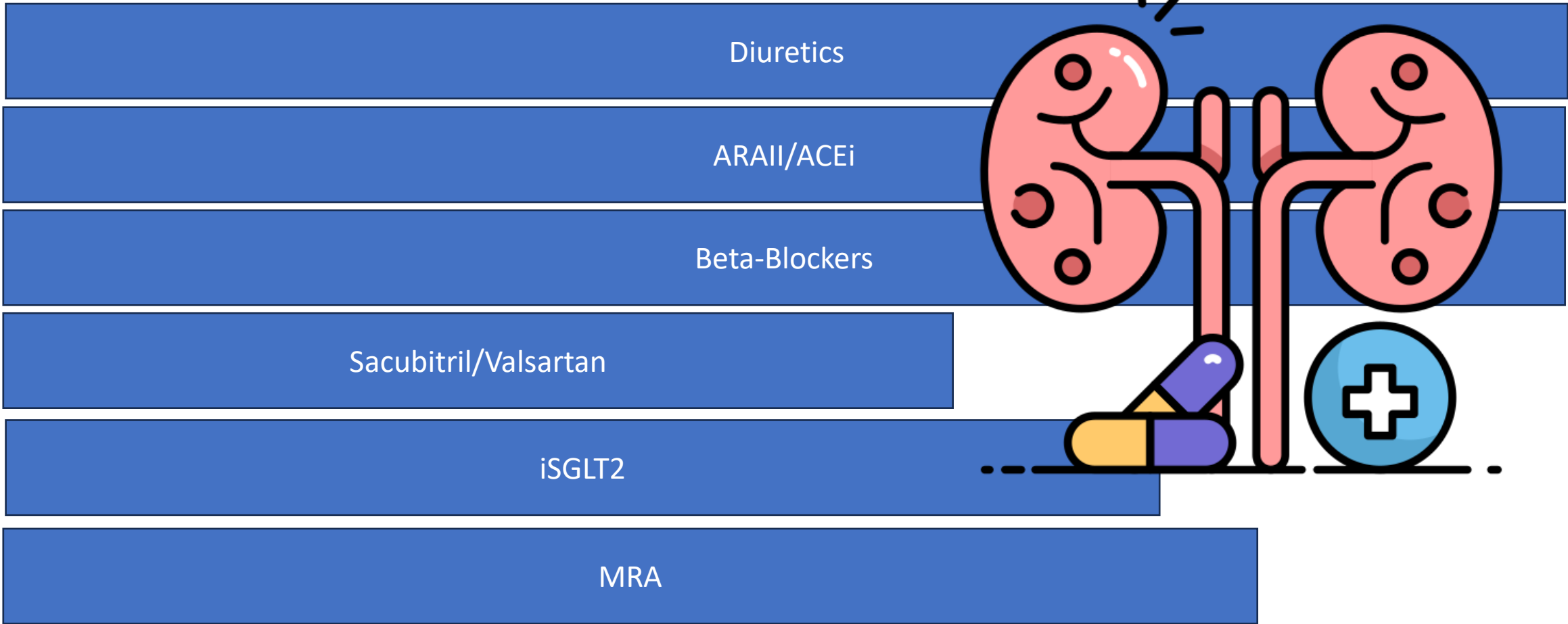
• *Coronary calcium scoring*

### Kidney components

• *eGFR calculated by the CKD-EPI formula or by the creatinine–cystatin equation  $<60$  ml/min per  $1.73$  m<sup>2</sup> on at least two occasions*

• *Albuminuria  $>30$  mg/g creatinine or proteinuria  $>150$  mg/g creatinine*

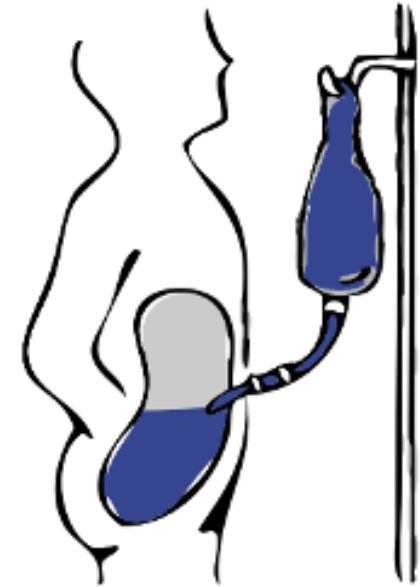
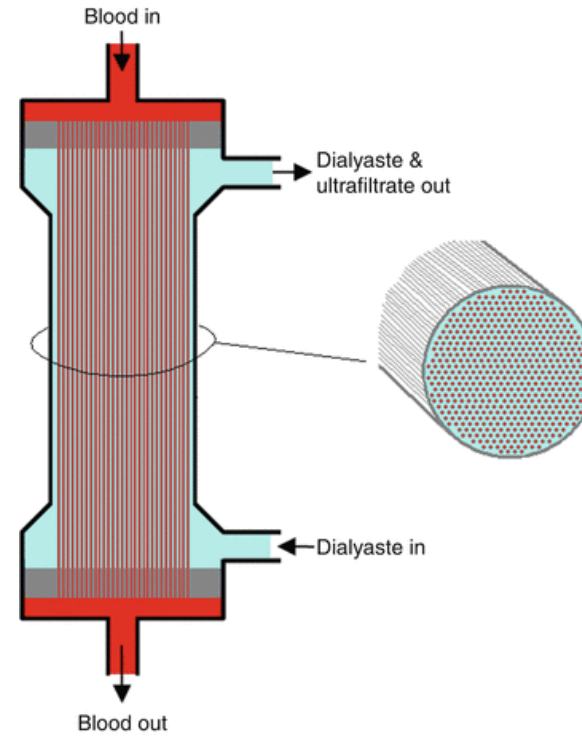
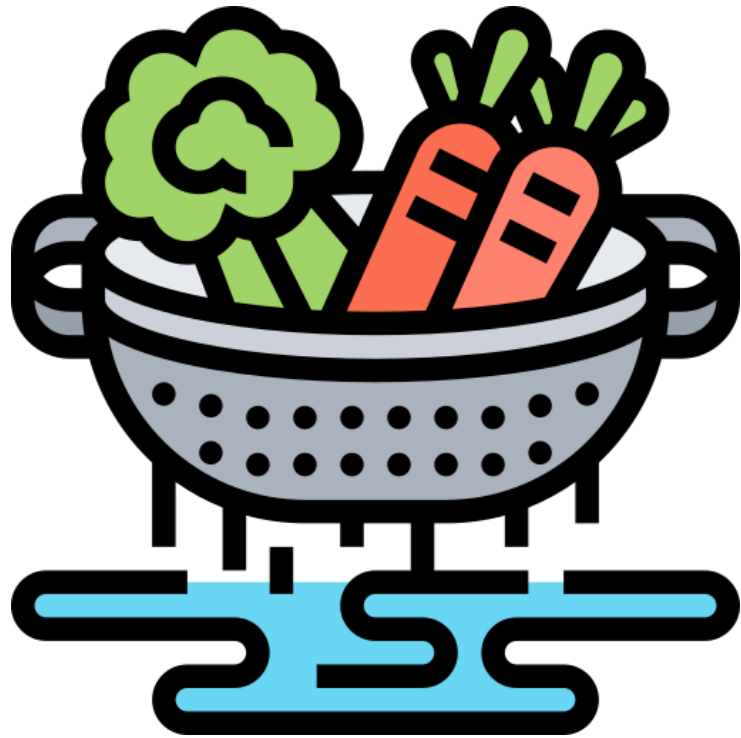
BNP, brain natriuretic peptide; CKD-EPI, CKD Epidemiology Collaboration; NT-proBNP, N-terminal pro-b-type natriuretic peptide.



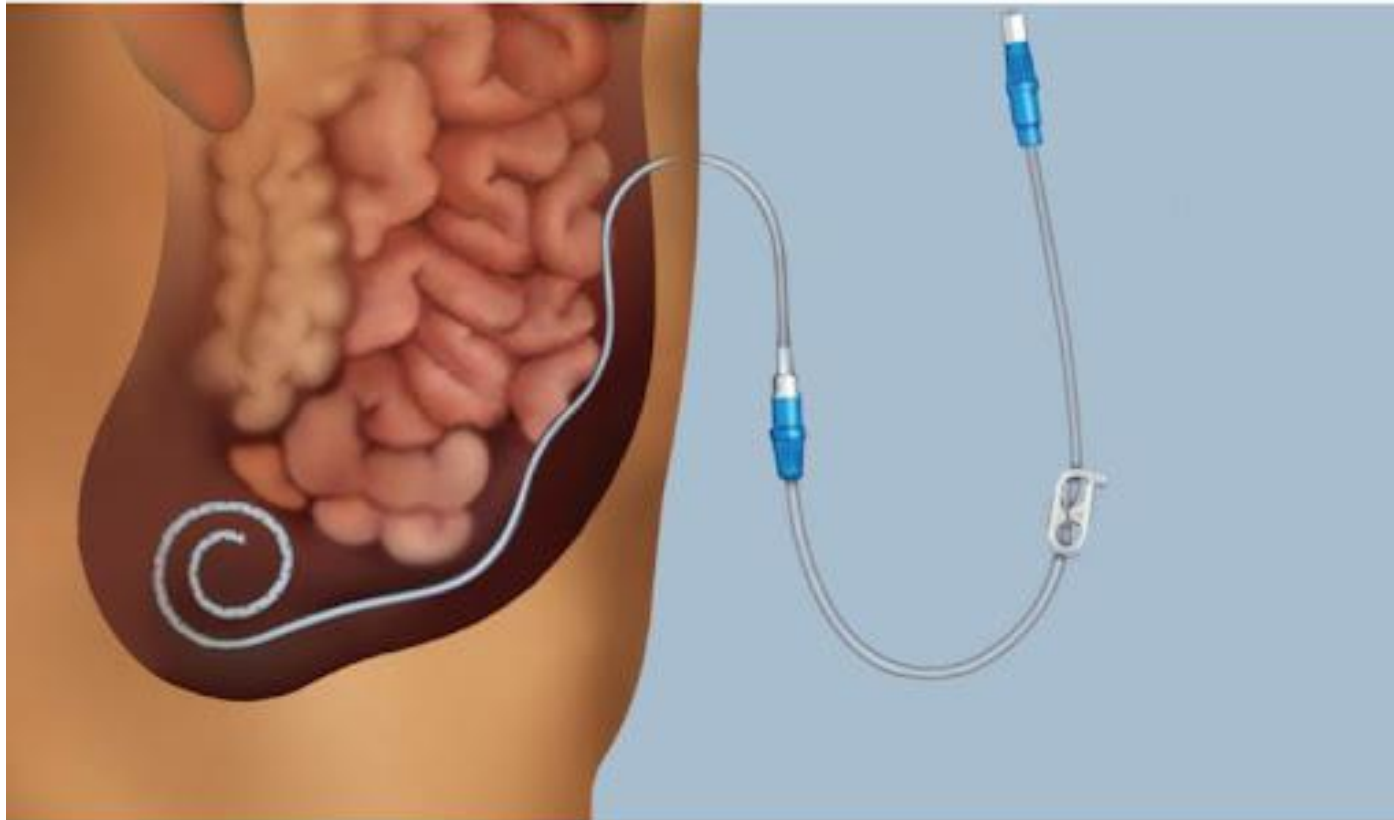
# CONGESTION

- Main cause for admissions and persistent symptoms
- Diuretics still cornerstone therapy
  - Chronic use and diuretic resistance
  - Lower strength associated to CKD and HF
- Mechanical ultrafiltration

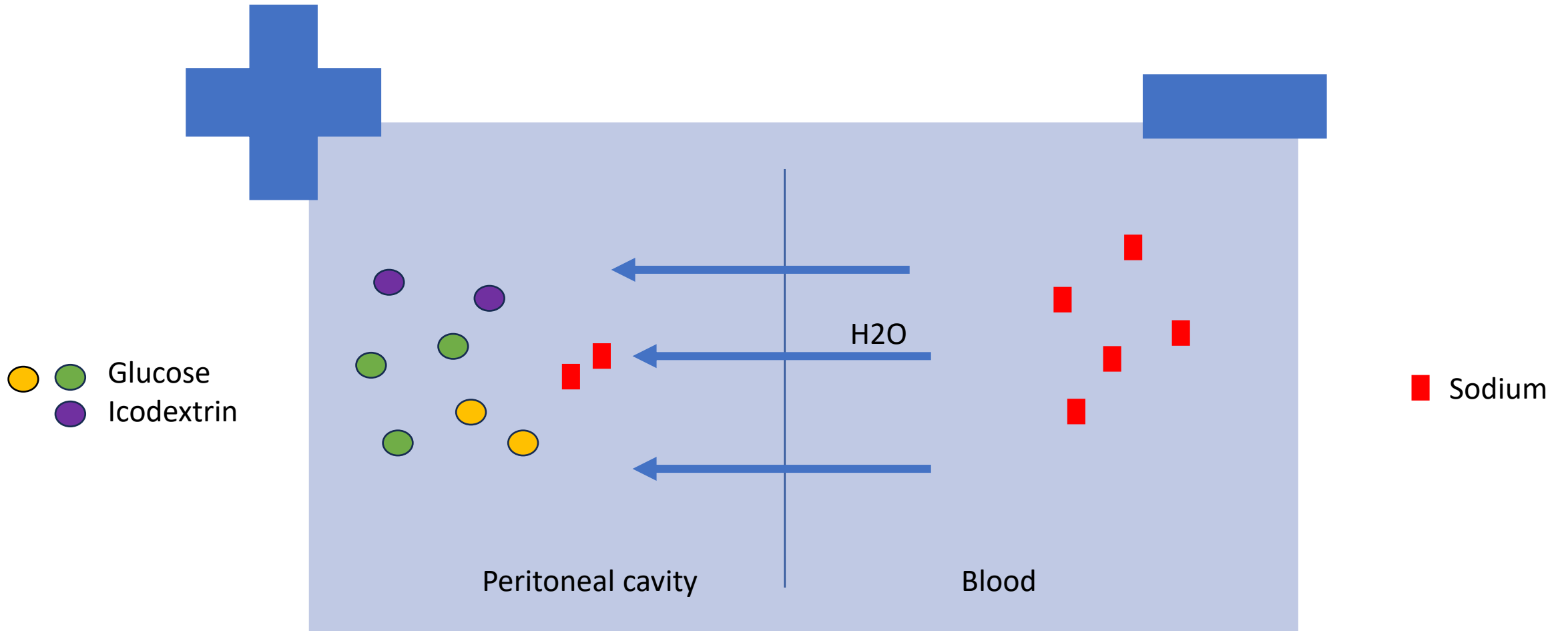
# Ultrafiltration



# Peritoneal Dialysis



# UF in peritoneal dialysis





# Pros with PD ultrafiltration

Smooth daily UF

No neurohormonal responses

Removal of sodium

Decreases intra-abdominal pressure if ascites

HOME BASED



ESC

European Society  
of Cardiology

European Heart Journal (2021) 42, 3599–3726

doi:10.1093/eurheartj/ehab368

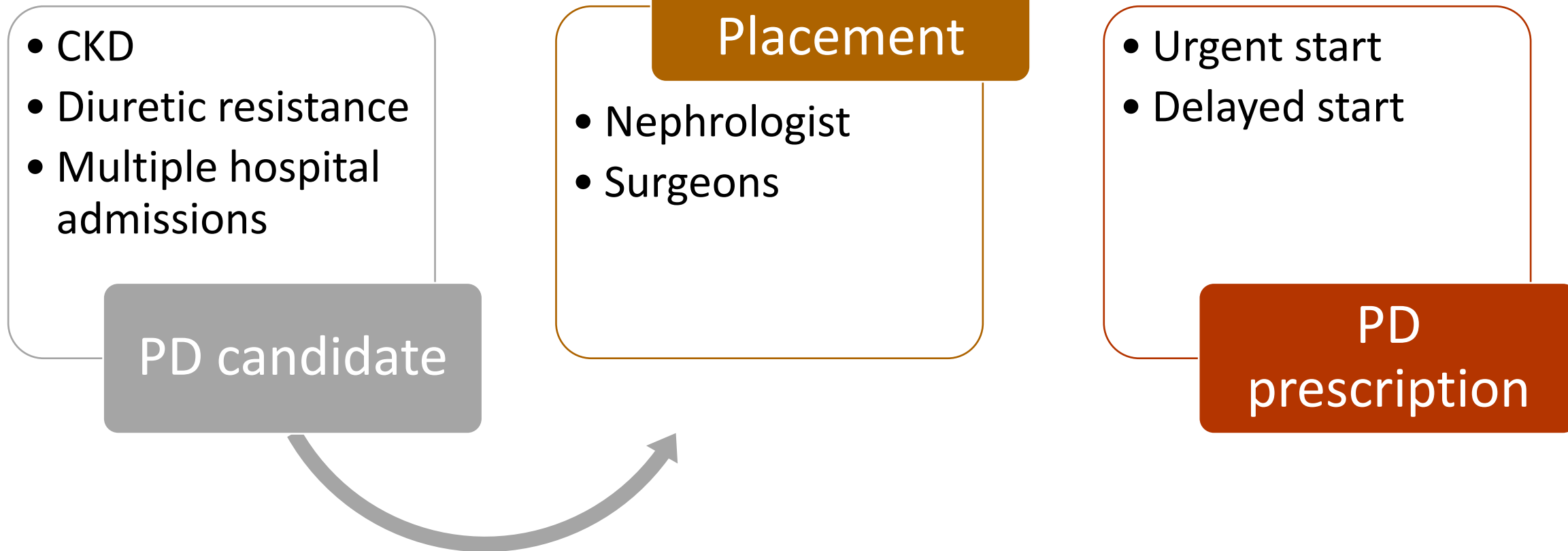
ESC GUIDELINES

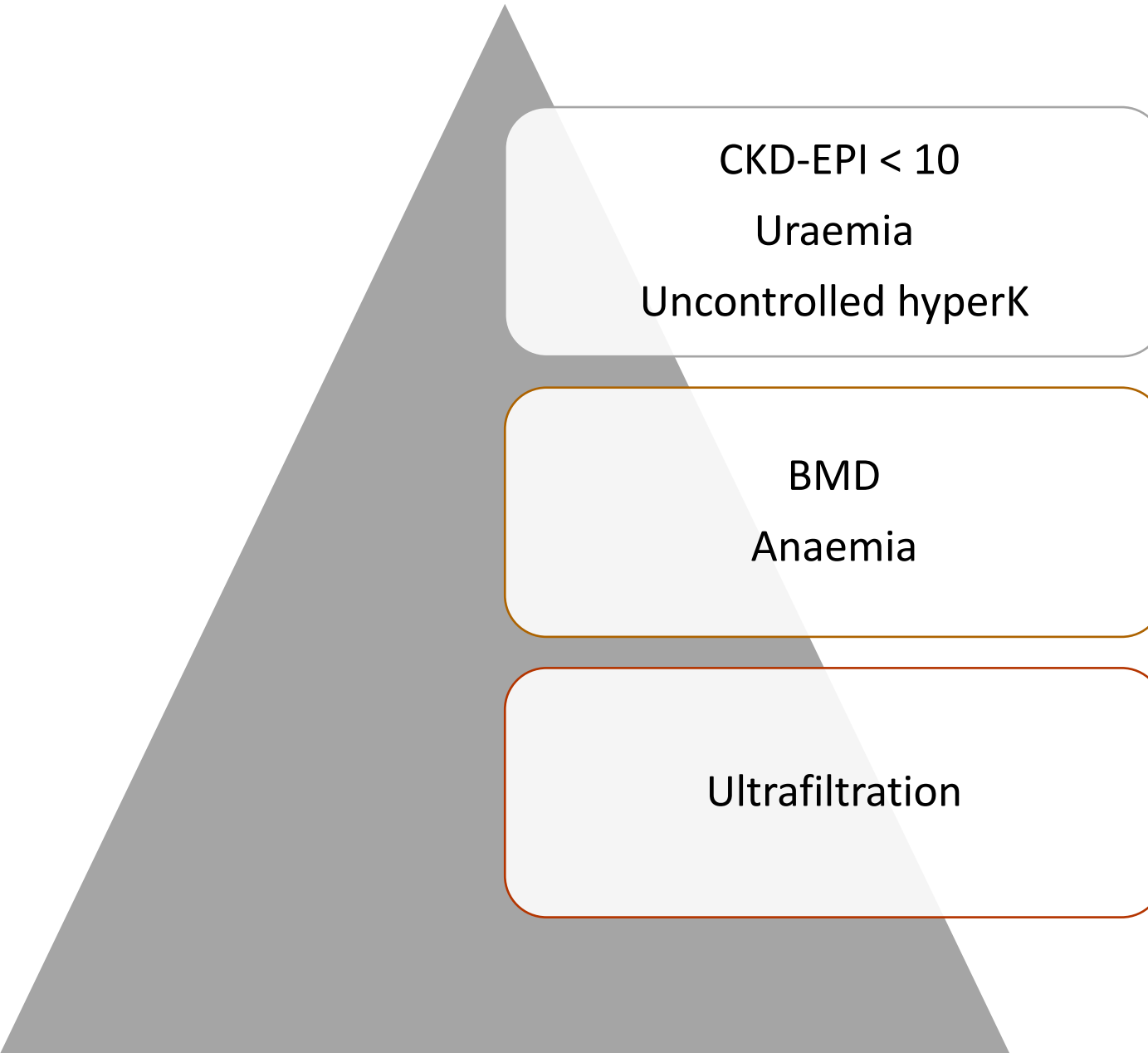
## 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

With the special contribution of the Heart Failure Association (HFA) of the ESC

*“In patients who **fail to respond to diuretic-based strategies**, renal replacement therapies should be considered. **Ultrafiltration** is one of the most common approaches. It **may be considered in those with diuretic resistance** even if data about its effects on **outcomes are unsettled**”*





CKD-EPI < 10  
Uraemia  
Uncontrolled hyperK

3-4 dwells per day – Icodextrin in longest dwell  
Automatic PD

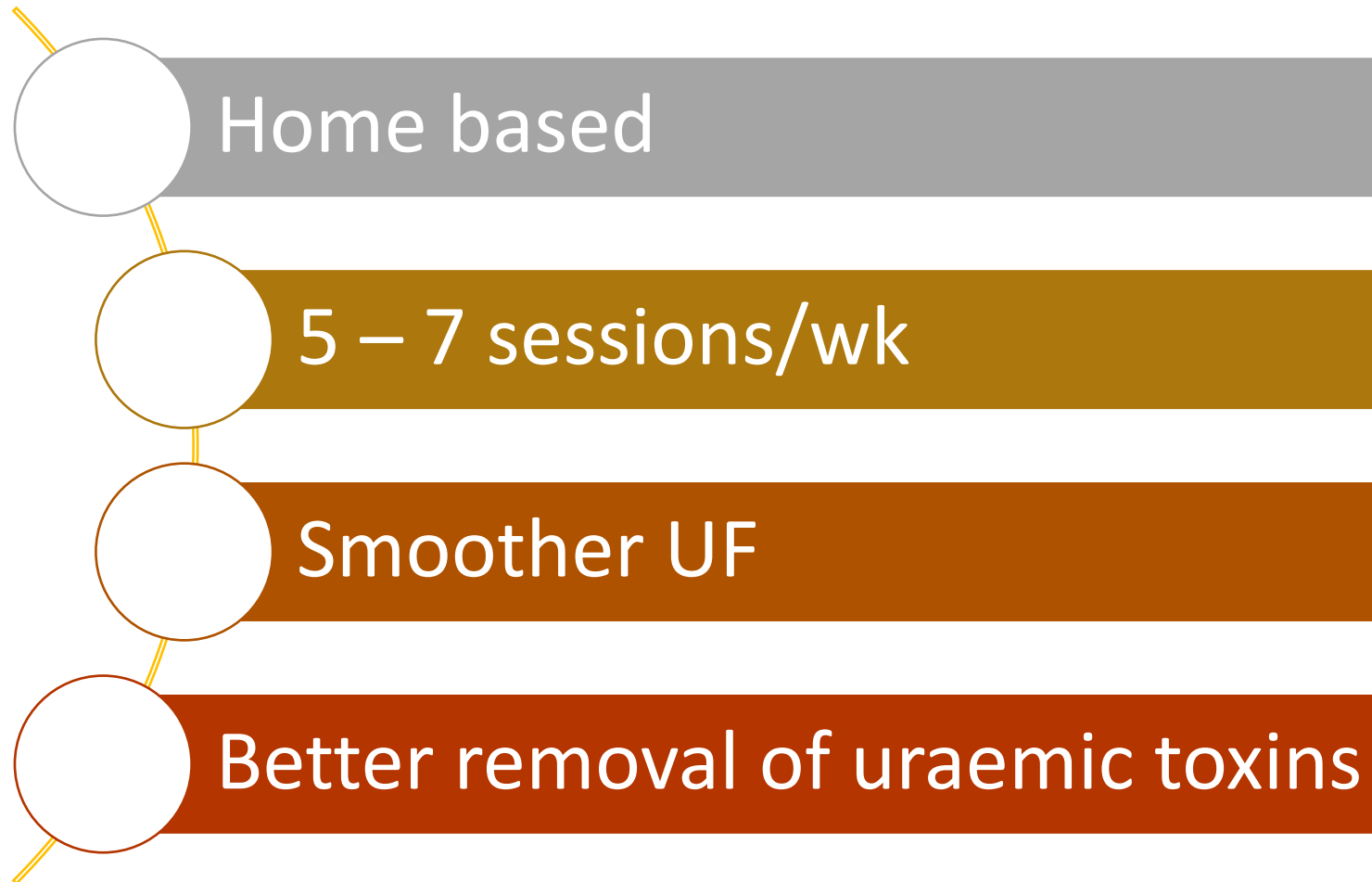
BMD  
Anaemia

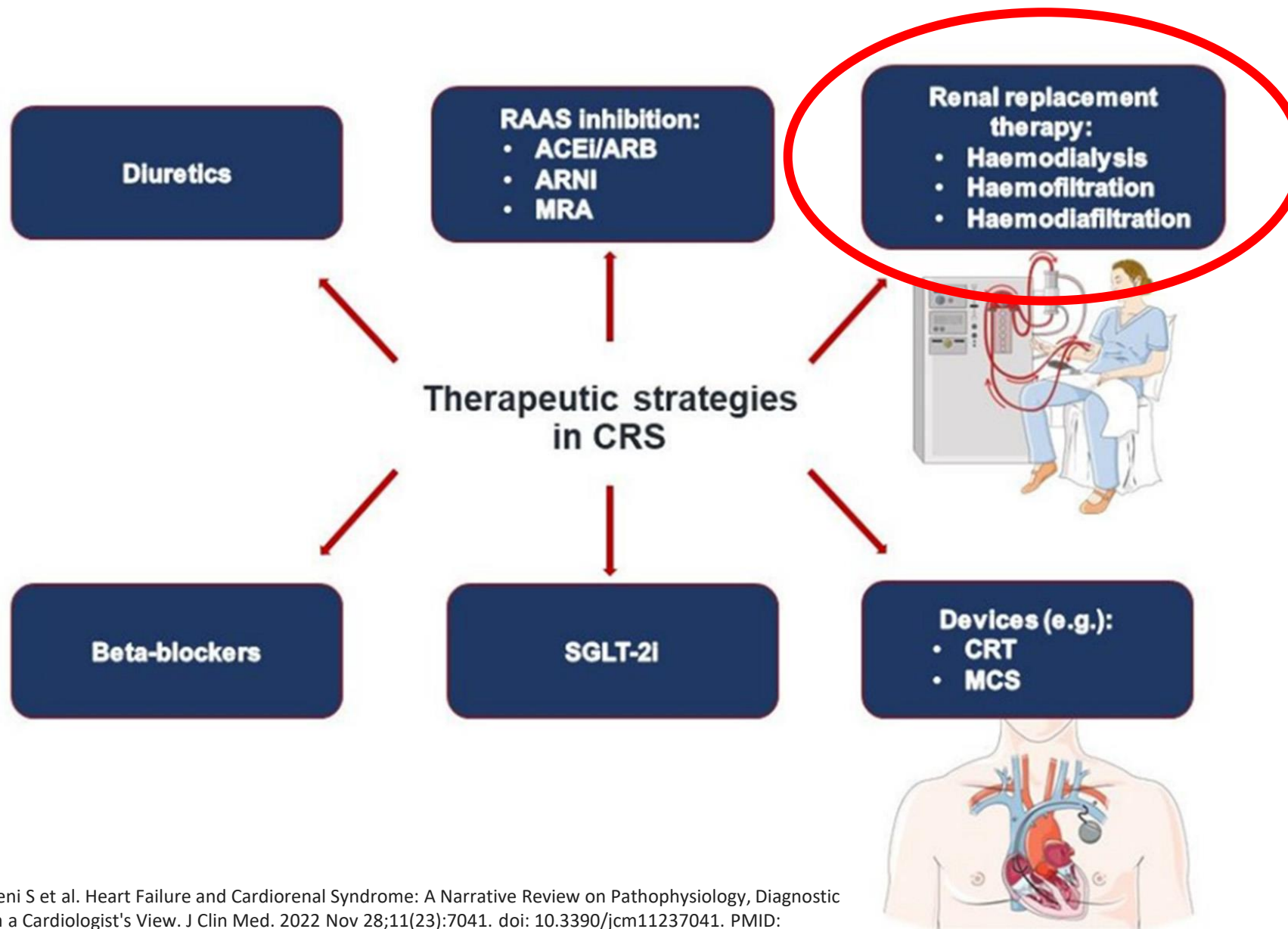
Nocturnal dwell with Icodextrin  
One- Two Diurnal dwells

Ultrafiltration

Nocturnal dwell with Icodextrin

# Other home therapies: home hemodialysis





Mitsas AC, Elzawawi M, Mavrogeni S et al. Heart Failure and Cardiorenal Syndrome: A Narrative Review on Pathophysiology, Diagnostic and Therapeutic Regimens-From a Cardiologist's View. J Clin Med. 2022 Nov 28;11(23):7041. doi: 10.3390/jcm11237041. PMID: 36498617; PMCID: PMC9741317.

# Before UF... Cardiorenal medicine

- Decreasing number of hospital appointments
- Intensification of medical treatment
  - Both HF and CKD
- Early identification of candidates for UF
- Timing for catheter placement

# Conclusions

- Cardiorenal syndrome is a frequent cause of morbidity in HF and CKD patients
- Management of volume overload is more challenging in patients with low GFR
- Home dialysis should be a real possibility for any cardiorenal patient in need.
- Starting cardiorenal units will improve medical management and an earlier identification of home dialysis candidates.



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