Actualització en patologies mèdiques prevalents

Insuficiència cardíaca

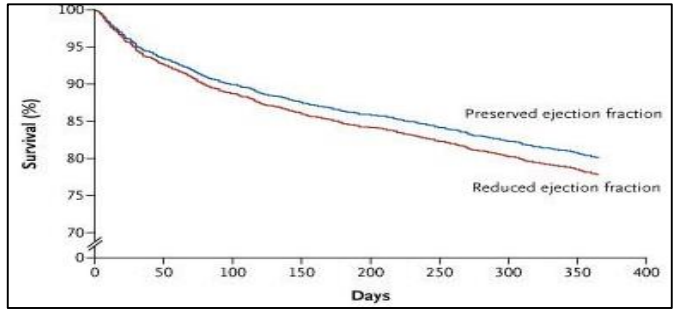
Insuficiència cardíaca amb Fracció d'ejecció del ventricle esquerre preservada: aspectes diagnòstics i tractament específic.

Hospital Universitari MútuaTerrassa

Epidemiologia de la insuficiència cardíaca amb FEVIp

- La **prevalença és 1,1-5,5%** en població general.
- És més freqüent en **dones**, i s'associa a **obesitat, hipertensió arterial** i genera major dependència funcional.
- Registres de USA/UE/Àsia demostren que **35-50% dels pacient amb ICA** hospitalitzats presenten IC FEVIp

- La mortalitat és similar a la reduïda
- Aproximadament el 30% dels pacients amb IC i FEVI preservada moren durant el primer any de diagnòstic



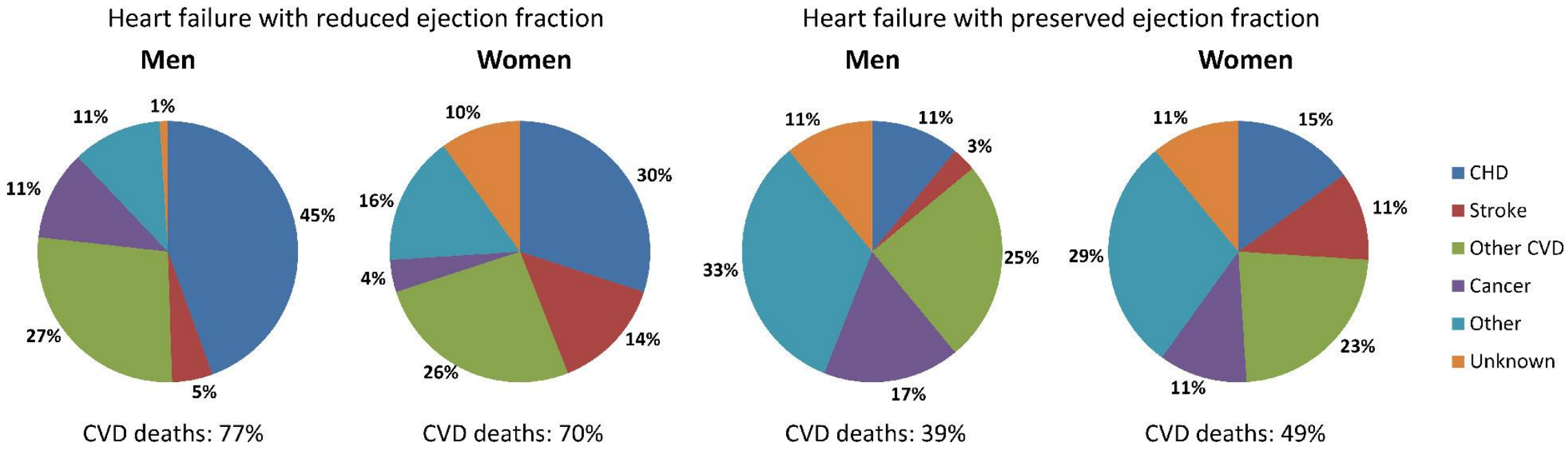
Bhatia RS et al. Outcome of heart failure with preserved ejection fraction in a population-based study. N Engl J Med. 2006 Jul 20;355(3):260-9.

Epidemiologia: Impacte dels reingressos en IC amb FEVIp

	30 dies	1 any
	8,5% Després d'hospitalització	35,6% Després hospitalització
	20,5% Rehospitalització per qualsevol causa	62,5% Rehospitalització per qualsevol causa
	20,5% Rehospitalització per IC	24,3% Rehospitalització per IC

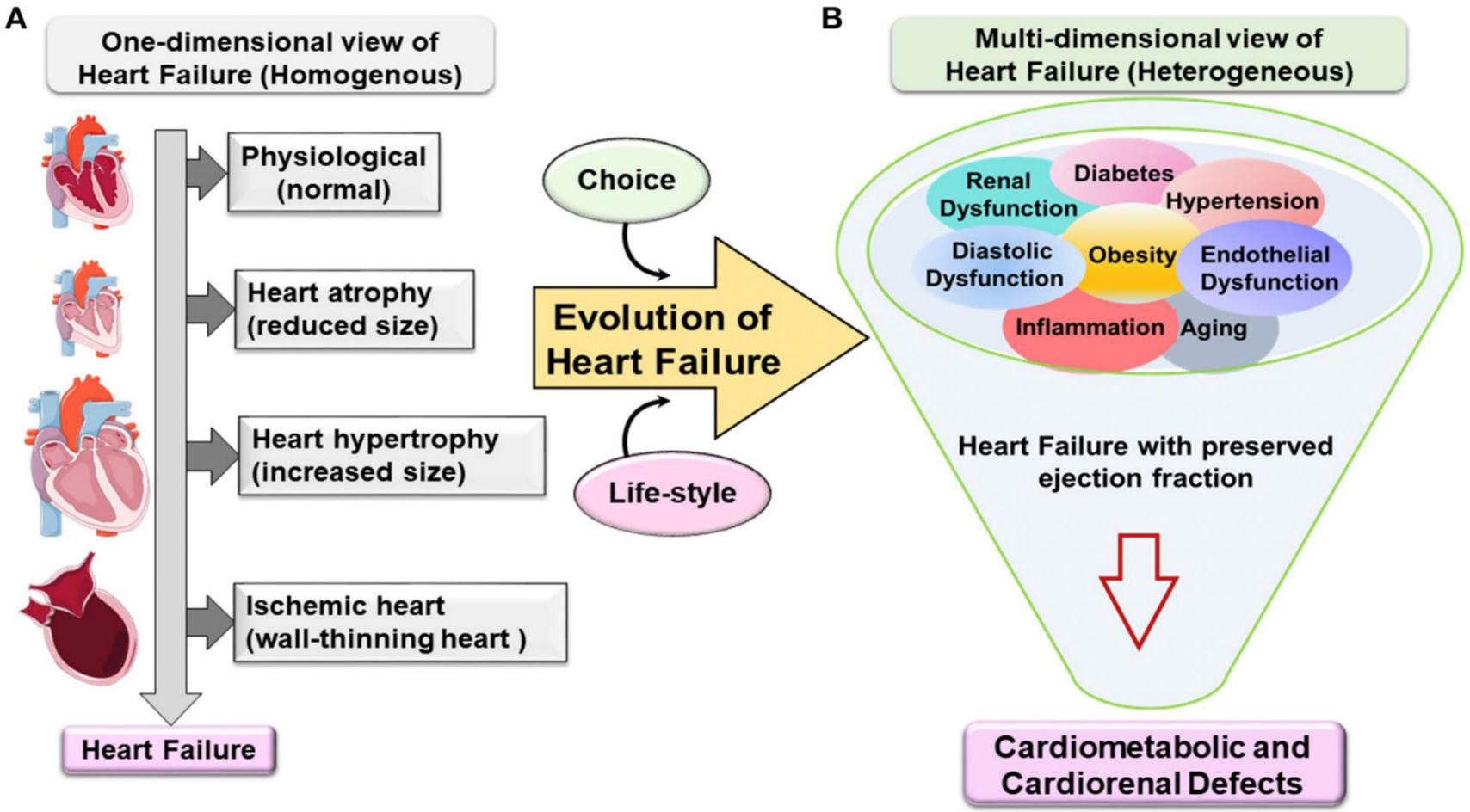
Cheng RK et al. Outcomes in patients with heart failure with preserved, borderline, and reduced ejection fraction in the Medicare population. Am Heart J. 2014 Nov;168(5):721-30.

Causes de mort en IC FEVIp



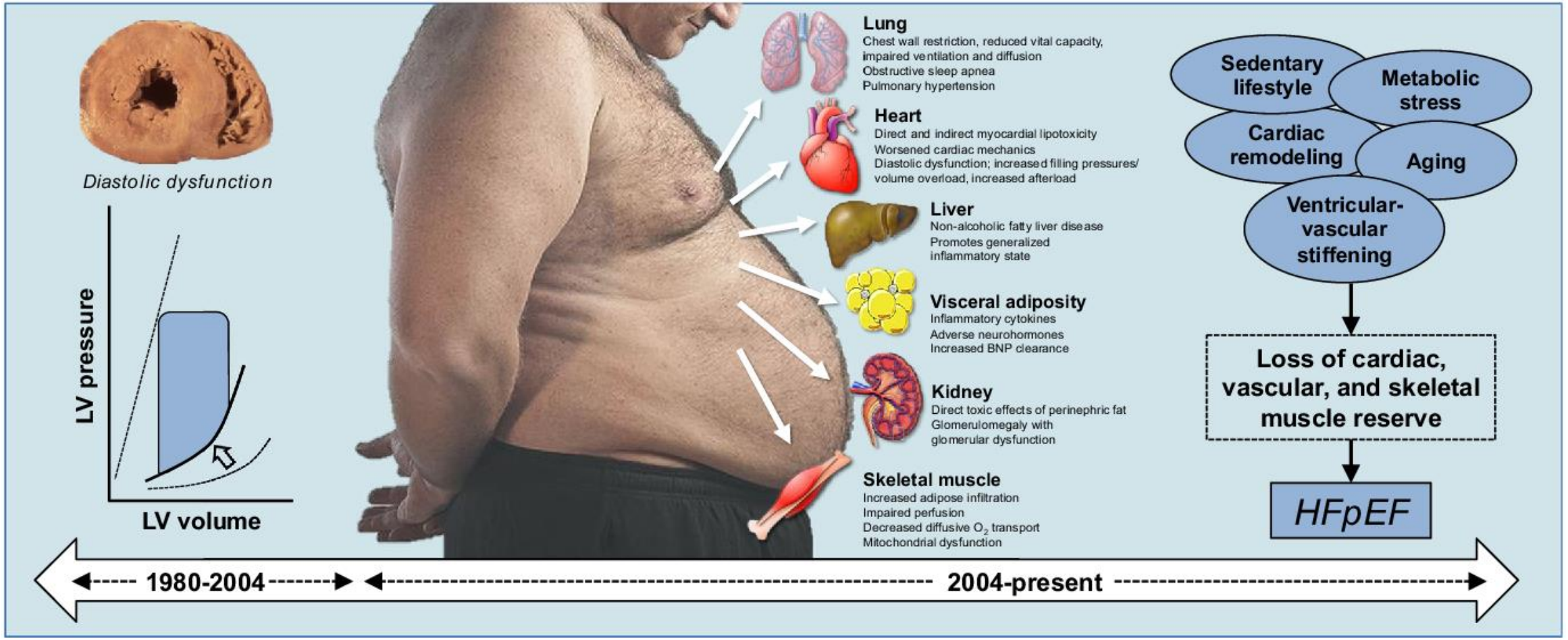
Groenewegen A et al. of heart failure. Eur J Heart Fail. 2020 Aug;22(8):1342-1356.

Visió multidimensional de la IC amb FEVIp



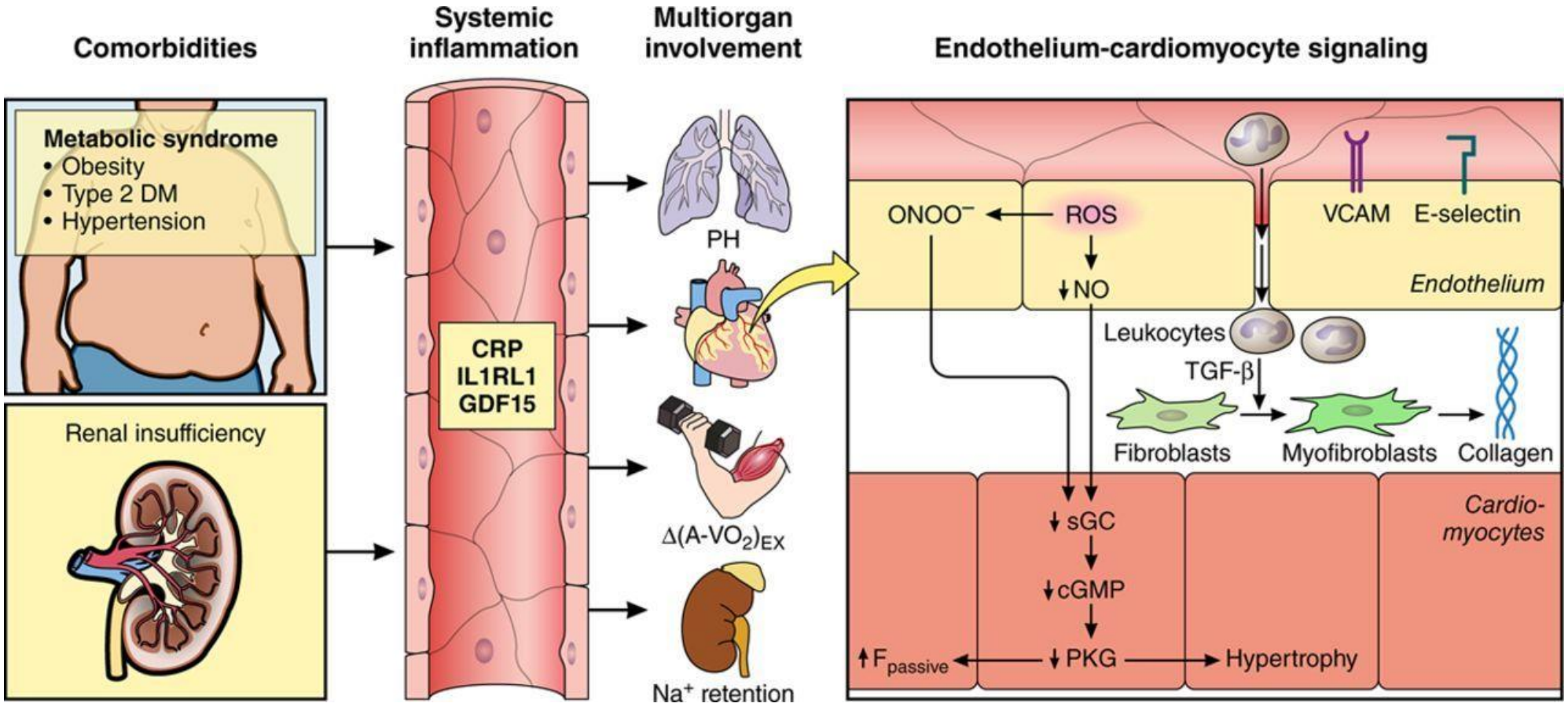
Tourki B et al. Heart Failure Syndrome With Preserved Ejection Fraction Is a Metabolic Cluster of Non-resolving Inflammation in Obesity. Front Cardiovasc Med. 2021 Aug 2;8:695952. d

IC preservada com a malaltia sistèmica



Shan et al. "Precision Medicine for Heart Failure with Preserved Ejection Fraction: An Overview." *Journal of Cardiovascular Translational Research* 10 (2017): 233-244.

Fisiopatologia: inflamació sistèmica



Shah SJ et al. Phenotype-Specific Treatment of Heart Failure With Preserved Ejection Fraction: A Multiorgan Roadmap. Circulation. 2016 Jul 5;134(1):73-90.

Definició de IC

Table 1. HF Definitions in Contemporary Clinical Practice Guidelines.

ACCF/AHA (2013)[3]	HF is a complex clinical syndrome that results from any structural or functional impairment of ventricular filling or ejection of blood. The cardinal manifestations of HF are dyspnea and fatigue, which may limit exercise tolerance, and fluid retention, which may lead to pulmonary and/or splanchnic congestion and/or peripheral edema. Some patients have exercise intolerance but little evidence of fluid retention, whereas others complain primarily of edema, dyspnea, or fatigue.
ESC (2016)[4]	HF is a clinical syndrome characterized by typical symptoms (eg, breathlessness, ankle swelling and fatigue) that may be accompanied by signs (eg, elevated jugular venous pressure, pulmonary crackles and peripheral edema) caused by a structural and/or functional cardiac abnormality, resulting in a reduced cardiac output and/or elevated intracardiac pressures at rest or during stress.
JCS/JHFS (2017)[5]	HF is a clinical syndrome consisting of dyspnea, malaise, swelling and/or decreased exercise capacity due to the loss of compensation for cardiac pumping function due to structural and/or functional abnormalities of the heart.

Falta d'homogeneïtat entre les diferents guies de pràctica clínica

Diferents criteris d'inclusió als assajos clínics.

Bozkurt B, et al. Universal Definition and Classification of Heart Failure: A Report of the Heart Failure Society of America,, J Card Fail. 2021 Mar 1:S1071-9164(21)00050-6

Definició de IC

Consensus Statement

Universal Definition and Classification of Heart Failure

A Report of the Heart Failure Society of America, Heart Failure Association of the European Society of Cardiology, Japanese Heart Failure Society and Writing Committee of the Universal Definition of Heart Failure

Endorsed by Canadian Heart Failure Society, Heart Failure Association of India, the Cardiac Society of Australia and New Zealand, and the Chinese Heart Failure Association

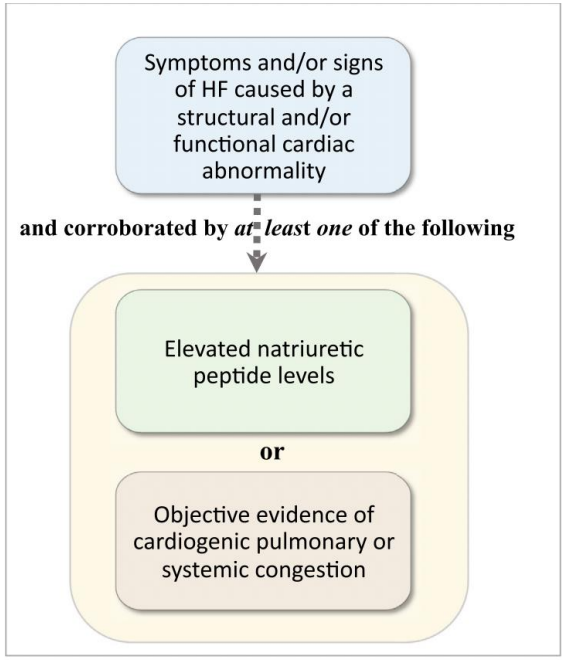


Figure 1. Universal definition of HF.

Table 6. Symptoms and Signs of HF

Symptoms of HF
Typical
Breathlessness
Orthopnea*
Paroxysmal nocturnal dyspnea*
Reduced exercise tolerance*
Fatigue, tiredness†
Ankle swelling*
Inability to exercise*
Swelling of parts of the body other than ankles
Bendopnea
Less typical
Nocturnal cough
Wheezing
Bloated feeling‡
Postprandial satiety‡
Loss of appetite
Decline in cognitive function, confusion (especially in the elderly)†
Depression
Dizziness, syncope†
Signs of HF
More specific
Elevated jugular venous pressure*
Third heart sound*
Summation gallop with third and fourth heart sounds
Cardiomegaly, laterally displaced apical impulse
Hepatojugular reflux
Cheyne Stokes respiration in advanced HF†
Less specific
Peripheral edema (ankle, sacral, scrotal)
Pulmonary rales*
Unintentional weight gain (>2 kg/week)
Weight loss (in advanced HF) with muscle wasting and cachexia
Cardiac murmur
Reduced air entry and dullness to percussion at lung bases suggestive of pleural effusion
Tachycardia, irregular pulse
Tachypnea
Hepatomegaly/ascites
Cold extremities†
Oliguria
Narrow pulse pressure

*Commonly used in clinical trials, registries, risk scoring, and have been tested for sensitivity and specificity.
†Common in low perfusion, low cardiac output states.
‡Can be typical in the setting of right HF or biventricular failure.

Bozkurt B, et al. Universal Definition and Classification of Heart Failure: A Report of the Heart Failure Society of America,, J Card Fail. 2021 Mar 1:S1071-9164(21)00050-6

Definició IC FEVIp

Type of HF		HFrEF	HFmrEF	HFpEF
CRITERIA	1	Symptoms ± Signs[a]	Symptoms ± Signs[a]	Symptoms ± Signs[a]
	2	LVEF ≤40%	LVEF 41–49%[b]	LVEF ≥50%
	3	–	–	Objective evidence of cardiac structural and/or functional abnormalities consistent with the presence of LV diastolic dysfunction/raised LV filling pressures, including raised natriuretic peptides[c]

HF = heart failure; HFmrEF = heart failure with mildly reduced ejection fraction; HFpEF = heart failure with preserved ejection fraction; HFrEF = heart failure with reduced ejection fraction; LV = left ventricle; LVEF = left ventricular ejection fraction.

[a]Signs may not be present in the early stages of HF (especially in HFpEF) and in optimally treated patients.

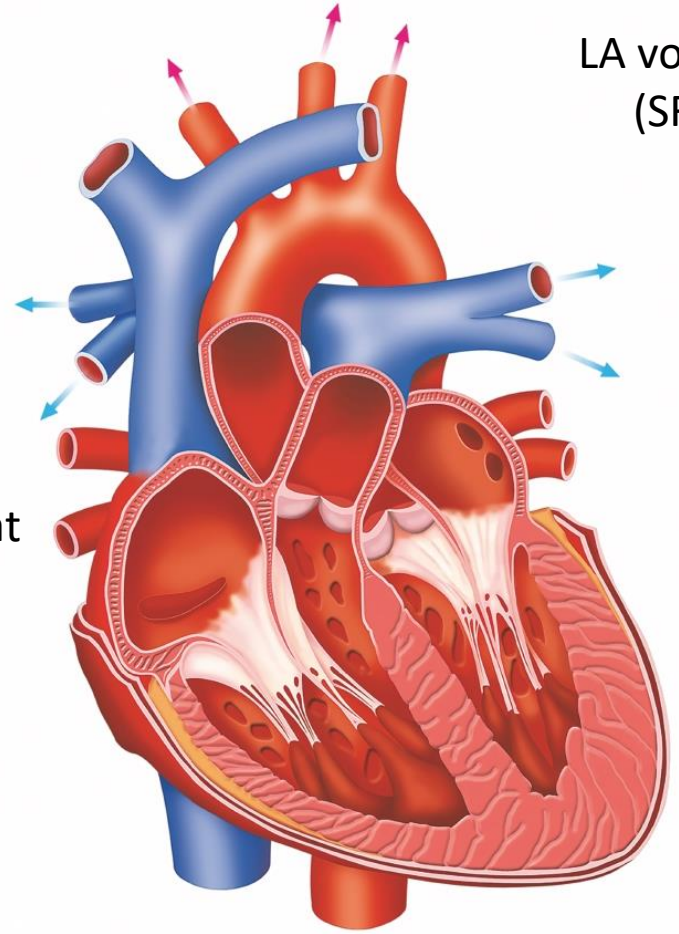
[b]For the diagnosis of HFmrEF, the presence of other evidence of structural heart disease (e.g. increased left atrial size, LV hypertrophy or echocardiographic measures of impaired LV filling) makes the diagnosis more likely.

[c]For the diagnosis of HFpEF, the greater the number of abnormalities present, the higher the likelihood of HFpEF.

McDonagh TA, ESC Scientific Document Group. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021 Sep 21;42(36):3599-3726.

Definició IC FEVIp

PA Systolic pressure >35 mmHg



LA volumen index >34mL/m^2 (SR) or >40 mL/m^2 (AF)

E/e' ratio at rest >9

TR velocity teast at reat >2,8ms

NT-proBNP
<125 pg/ml (SR) or >365pg/ml (AF)
BNP
>35pg/ml (SR) or 105 pg/ml (AF)

Relative Wall thickness >0,42

LV mass index >95 pg/m^2 (female) or >115 pg/m^2

McDonagh TA, ESC Scientific Document Group. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021 Sep 21;42(36):3599-3726.

Diagnòstic de FEVIp: SCORES

	Clinical Variable
H_2	**H**eavy
	Hypertensive
F	Atrial **F**ibrillation
P	**P**ulmonary Hypertension
E	**E**lder
F	**F**illing Pressure
	H_2FF
Total Points	0 1
Probability of HFpEF	0.2 0.

Patient with unexplained dyspnoea

Assessment of pre-test probability: clinical evaluation plus echocardiography

H_2FPEF score

Score label	Clinical variable	Characteristics	Points
H_2	Heavy	BMI >30 kg/m²	2
	Hypertension	≥2 antihypertensive medications	1
F	Atrial fibrillation	Persistent or paroxysmal	3
P	Pulmonary hypertension	Pulmonary artery systolic pressure >35 mmHg (measured on Doppler echocardiography)	1
E	Old age	Age >60 years	1
F	Filling pressure	E/e′ ratio >9 (measured on Doppler echocardiography)	1

HFA-PEFF score

Domains	Major criteria (2 points)	Minor criteria (1 point)
Functional	• Septal e′ <7 cm/s • Lateral e′ <10 cm/s • Average E/e′ ratio ≥15 • Velocity of the tricuspid regurgitation >2.8 m/s (pulmonary artery systolic pressure >35 mmHg)	• Average E/e′ ratio 9–14 • Global longitudinal strain <16%
Morphological	• LAVI >34 ml/m² • LVMI ≥149/122 g/m² (m/w) and relative wall thickness >0.42	• LAVI 29–34 ml/m² • LVMI >115/95 g/m² (m/w) • Relative wall thickness >0.42 • Left ventricular wall thickness ≥12 mm
Biomarker (sinus rhythm)	• NT-proBNP >220 pg/ml • BNP >80 pg/ml	• NT-proBNP 125–220 pg/ml • BNP 35–80 pg/ml
Biomarker (atrial fibrillation)	• NT-proBNP >660 pg/ml • BNP >240 pg/ml	• NT-proBNP 365–660 pg/ml • BNP 105–240 pg/ml

Low probability, unlikely HFpEF (H_2FPEF score of 0–1, HFA-PEFF score of 0–1)

Intermediate probability (H_2FPEF score of 2–5, HFA-PEFF score of 2–4)

High probability, likely HFpEF (H_2FPEF score of 6–9, HFA-PEFF score of 5–6)

Haemodynamic exercise test

	Biomarker (AF)
	NT-proBNP > 660 pg/ml or BNP > 240 pg/ml
	NT-proBNP 365-660 pg/ml or BNP 105-240 pg/ml
	modynamic Measurements

Reddy YNV, et al . Evidence-Based Approach to Help Guide Diagnosis of Heart Failure With Preserved Ejection Fraction. Circulation. 2018 Aug 28;138(9):861-870.
Pieske B, et al. How to diagnose heart failure with preserved ejection (ESC). Eur Heart J. 2019 Oct 21;40(40):3297-3317.

Tractament no específic de la IC amb FEVIp

Recommendations for the treatment of patients with heart failure with preserved ejection fraction

Recommendations	Class[a]	Level[b]
Screening for, and treatment of, aetiologies, and cardiovascular and non-cardiovascular comorbidities is recommended in patients with HFpEF (see relevant sections of this document).	I	C
Diuretics are recommended in congested patients with HFpEF in order to alleviate symptoms and signs.[137]	I	C

McDonagh TA, ESC Scientific Document Group. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021 Sep 21;42(36):3599-3726.

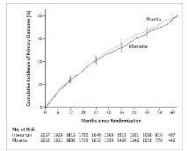
Tractament de la comorbilitat

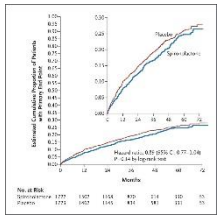
Associations Between Preserved Ejection Fraction (HFpEF) and Reduced Ejection Fraction (HFrEF), With Comorbidities

	Inflammation; hypoxia; parenchymal changes; airflow limitation, leading to pulmonary congestion; abnormal left ventricular (LV) diastolic filling; inhaled beta-agonist cardiovascular effects	More prevalent in preserved ejection fraction (HFpEF), compared to reduced (HFrEF)
	Elevated LV end diastolic pressure and beta-blocker use may compromise lung function	Higher mortality risk in HFpEF
	Adverse LV remodeling; adverse cardiorenal effects; increased neurohormonal and inflammatory cytokines	More prevalent in HFpEF
	Inflammation; hemodilution; renal dysfunction; metabolic abnormalities exacerbate	Similar increased risk for mortality in both groups
	Diabetic cardiomyopathy; mitochondrial dysfunction; abnormal calcium homeostasis; oxidative stress; renin-angiotensin-aldosterone system (RAAS) activation; atherosclerosis; coronary artery disease	More prevalent in HFpEF
	Incident and worsening diabetes mellitus via sympathetic and RAAS activation	Similar increased risk for mortality in both groups
	Sodium and fluid retention; anemia; inflammation; RAAS and sympathetic activation	Similar prevalence in both groups
	Cardiorenal syndrome through low cardiac output; accelerated atherosclerosis; inflammation; increased venous pressure	Similar increased risk for mortality in both groups
	Hypoxia; systemic inflammation; sympathetic activation; arrhythmias; hypertension (pulmonary and systemic); RV dysfunction; worsening congestion	Similar prevalence in both groups
	Rostral fluid movement may worsen pharyngeal obstruction; instability of ventilatory control system	Unknown mortality differential associated with HFpEF vs. HFrEF
	Inflammation; reduced physical activity and deconditioning; hypertension; metabolic syndrome; diabetes mellitus	More prevalent in HFpEF
	Fatigue and dyspnea may limit activity; spectrum of metabolic disorders including nutritional deficiencies	Obesity paradox; potential for a U-shaped association with mortality

Mentz RJ et al. Noncardiac comorbidities in heart failure with reduced versus preserved ejection fraction. J Am Coll Cardiol. 2014 Dec 2;64(21):2281-93.

Principals assajos clínics en IC FEVI preservada





1997► 2003► 2006► 2007► 2008► 2010► 2011► 2012► 2014► 2019► 2021►

DIG-PEF
Digoxina

PEF-CHF
Perindopril

I-PRESERVED
Irbesartan

RAAM-PEF
Eplerenona

TOPCAT
Espironolactona

EMPEROR-preserved
Empagliflozina

CHARM-Preserved
Candesartán

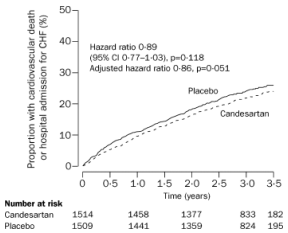
VALIDD
Valsartan

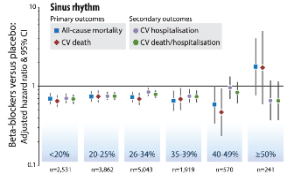
ALDO-CHF
Espironolactona

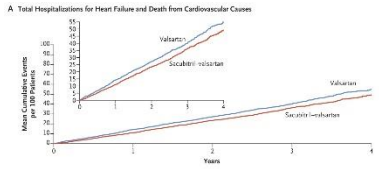
ELANDD
Nevibolol

PARAGON
Sacubitril-Valsartan

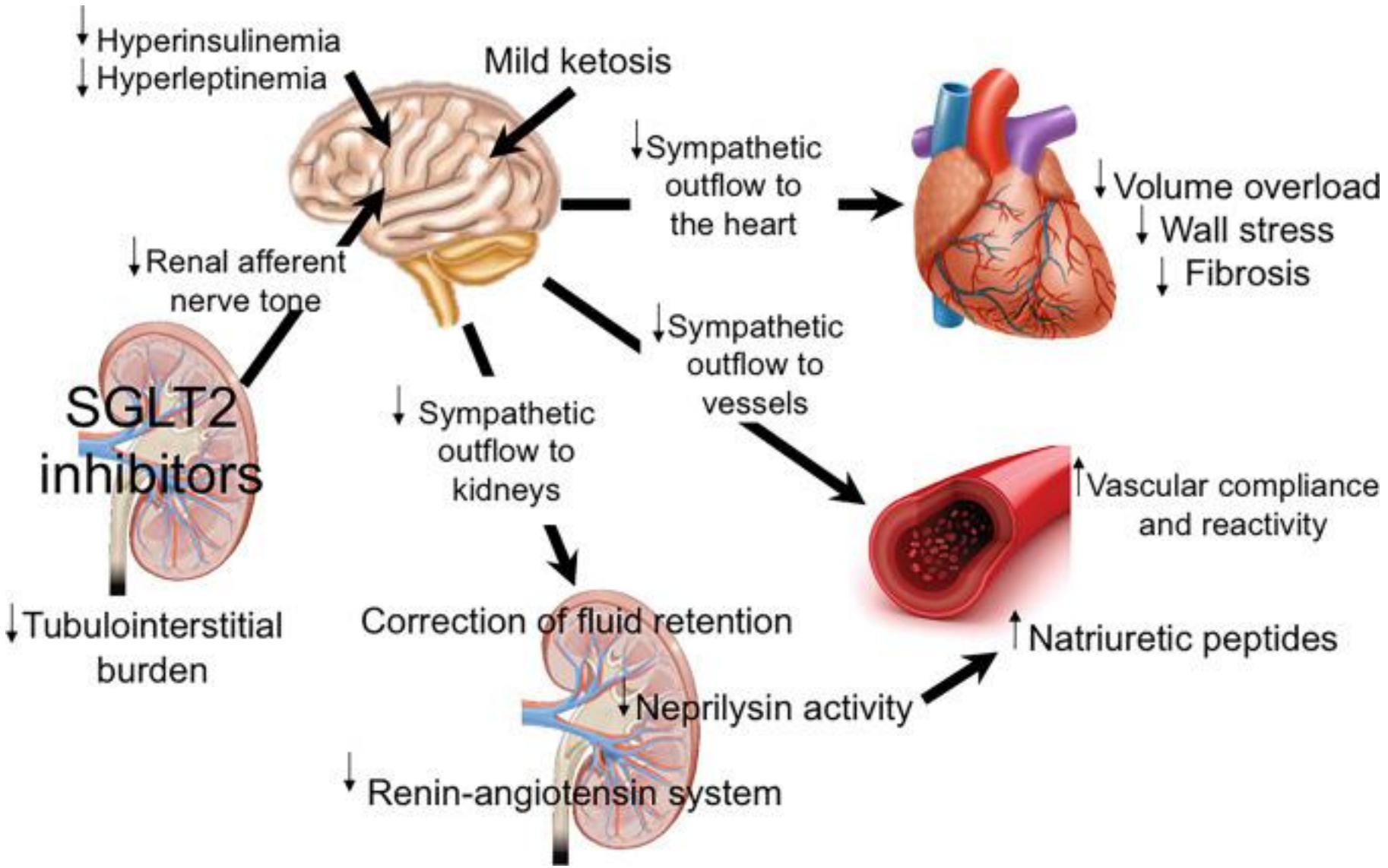
J-DHF
Carvedilol







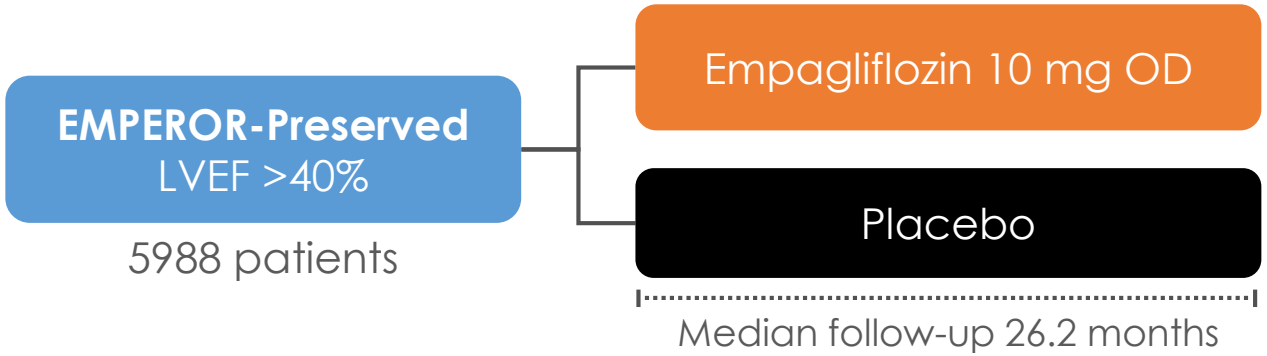
iSGLT2


Hyperinsulinemia
Hyperleptinemia
Mild ketosis
Sympathetic outflow to the heart
Volume overload
Wall stress
Fibrosis
Renal afferent nerve tone
SGLT2 inhibitors
Sympathetic outflow to vessels
Sympathetic outflow to kidneys
Vascular compliance and reactivity
Tubulointerstitial burden
Correction of fluid retention
Natriuretic peptides
Neprilysin activity
Renin-angiotensin system

EMPEROR-preserved: disseny del estudi

Aim: To investigate the safety and efficacy of empagliflozin versus placebo in patients with HF with **preserved ejection fraction**

Population: T2D and non-T2D, aged ≥18 years, chronic HF (NYHA class II–IV)



COMPOSITE PRIMARY ENDPOINT

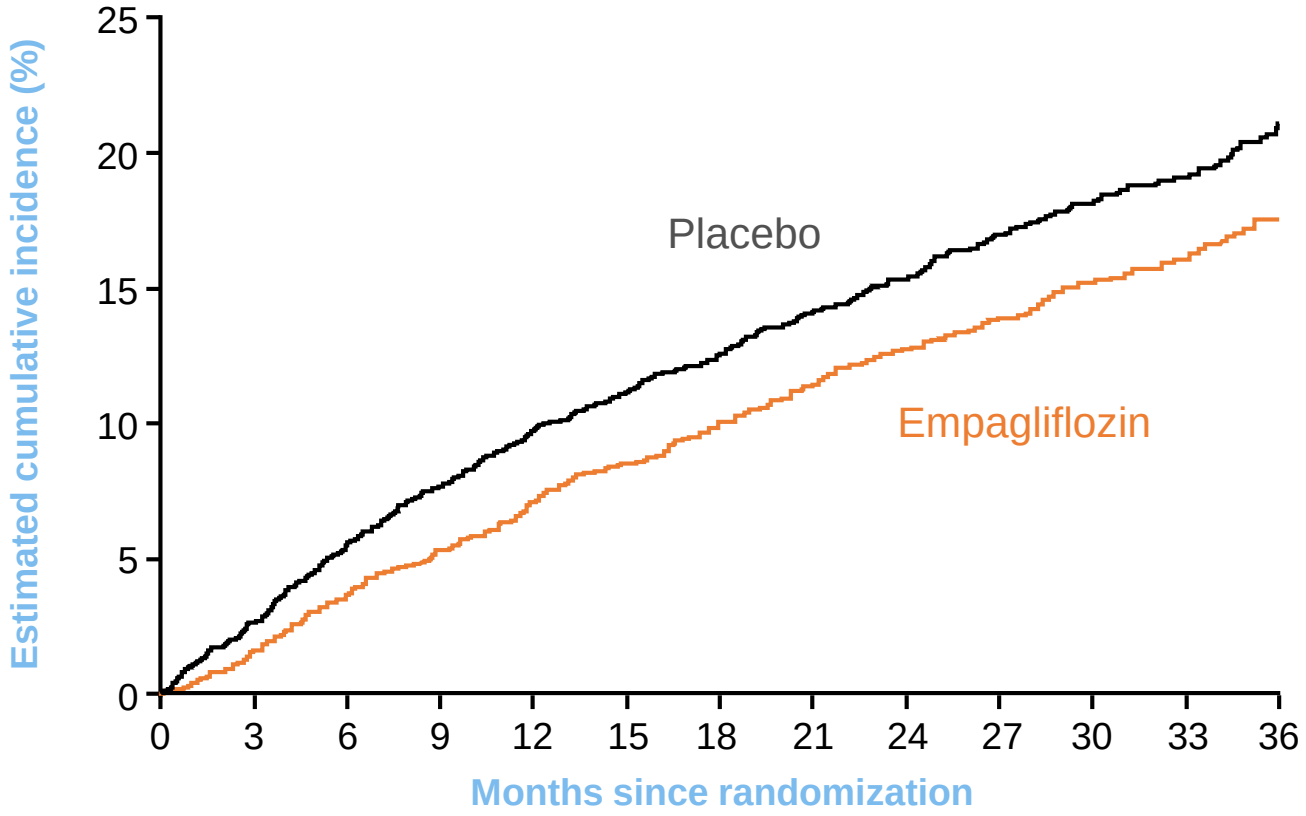
- **Time to first event of adjudicated CV death or adjudicated HHF**

CONFIRMATORY KEY SECONDARY ENDPOINTS

- **First and recurrent adjudicated HHF**
- **Slope of change in eGFR (CKD-EPI) from baseline**

*Randomized, double-blind, placebo-controlled trial.
CKD-EPI, Chronic Kidney Disease Epidemiology Collaboration; eGFR, estimated glomerular filtration rate; NYHA, New York Heart Association; OD, once daily.
Anker S *et al. N Engl J Med*. 2021;XX:XXX.

Empaglifozina en IC amb FEVI preservada



RRR 21%

ARR 3.3%

NNT*=31

HR: 0.79
(95% CI: 0.69, 0.90)
p<0.001

Patients at risk

Placebo	2991	2888	2786	2706	2627	2424	2066	1821	1534	1278	961	681	400
Empagliflozin	2997	2928	2843	2780	2708	2491	2134	1858	1578	1332	1005	709	402

Empagliflozin:
415 (13.8%) patients with event
Rate: 6.9/100 patient-years
Placebo:
511 (17.1%) patients with event
Rate: 8.7/100 patient-years

*During a median trial period of 26 months. ARR, absolute risk reduction; CI, confidence interval; HR, hazard ratio; NNT, number needed to treat; RRR, relative risk reduction. Anker S *et al. N Engl J Med*. 2021;XX:XXX.

EMPEROR-preserved: End-points

		EMPEROR-Preserved
 Primary endpoint: Adjudicated CV death or HHF	Confirmatory*	**HR: 0.79 (95% CI: 0.69, 0.90) *p*<0.001**
 Key secondary endpoint: Adjudicated first and recurrent HHF	Confirmatory†	**HR: 0.73 (95% CI: 0.61, 0.88) *p*<0.001**
 Key secondary endpoint: eGFR slope	Confirmatory‡	**+1.36 mL/min/1.73 m^2 per year *p*<0.001**

Empagliflozina en IC amb FEVI preservada

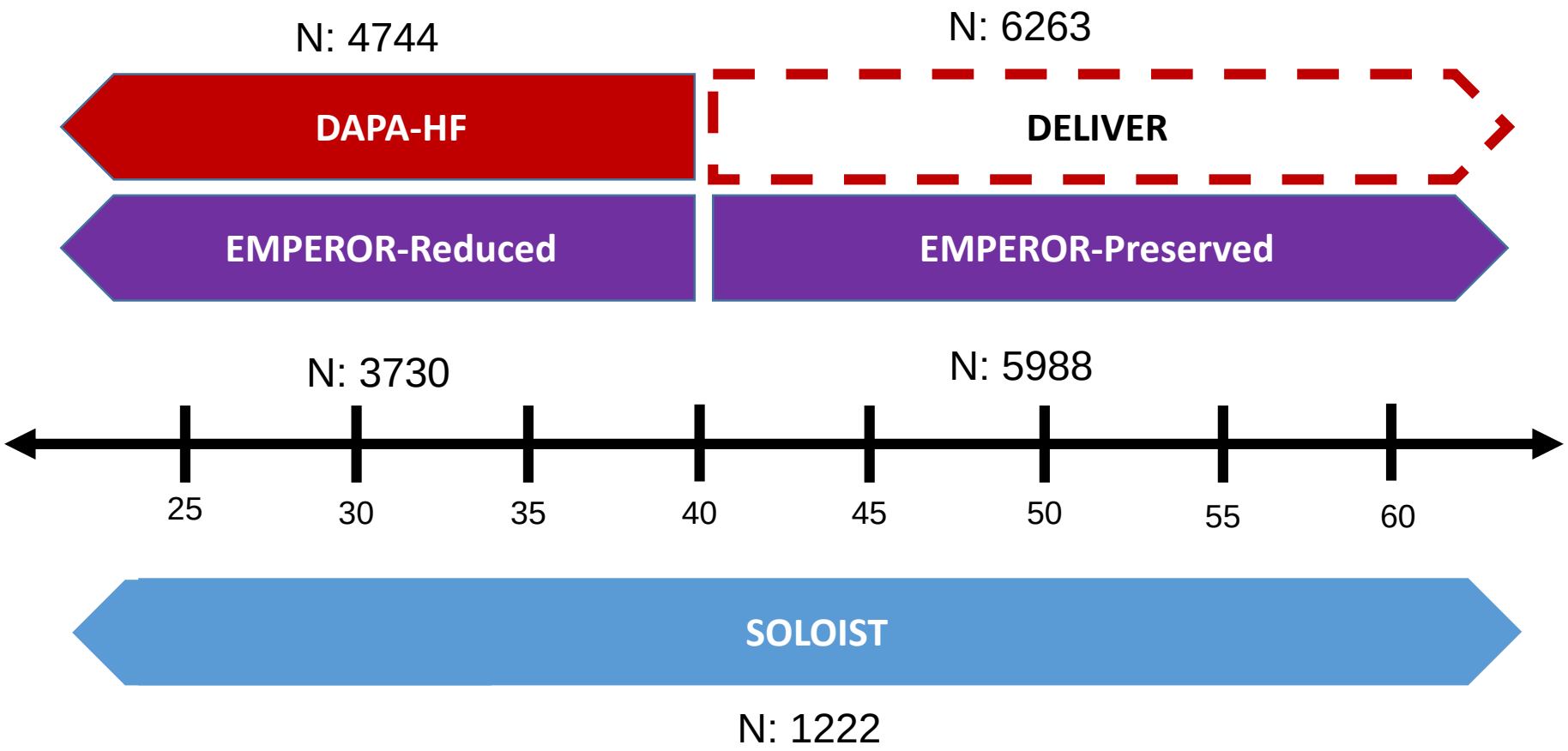
	Empagliflozin	Placebo	HR (95% CI)
	n with event/N analysed		
Overall	415/2997	511/2991	0.79 (0.69, 0.90)
Baseline LVEF			
<50%	145/995	193/988	0.71 (0.57, 0.88)
≥50% to <60%	138/1028	173/1030	0.80 (0.64, 0.99)
≥60%	132/974	145/973	0.87 (0.69, 1.10)
Baseline diabetes status			
Diabetes	239/1466	291/1472	0.79 (0.67, 0.94)
No diabetes	176/1531	220/1519	0.78 (0.64, 0.95)
Baseline eGFR (CKD-EPI)			
≥60 mL/min/1.73 m²	152/1493	189/1505	0.81 (0.65, 1.00)
<60 mL/min/1.73 m²	263/1504	321/1484	0.78 (0.66, 0.91)
Baseline NYHA class			
II	275/2435	361/2452	0.75 (0.64, 0.87)
III/IV	140/562	150/539	0.86 (0.68, 1.09)
HF hospitalization in ≤12 months			
No	258/2298	319/2321	0.81 (0.68, 0.95)
Yes	157/699	192/670	0.73 (0.59, 0.90)
Cause of HF			
Ischaemic	157/1079	177/1038	0.85 (0.69, 1.06)
Non-ischaemic	258/1917	334/1953	0.75 (0.64, 0.89)

Anker S *et al. N Engl J Med*. 2021;XX:XXX.

EMPEROR-preserved: End-points en grups estratificats per FEVIp

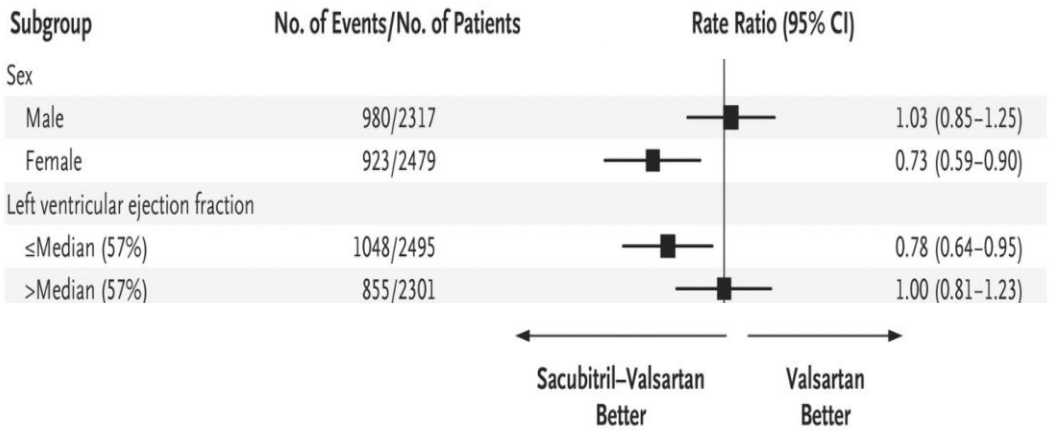
	FEVI >50%
Endpoint primari: Mort CV o ingrés per IC	↓ 17% *P 0.024*
Endpoint secundari: Ingrés per IC (primera hospitalització per IC)	↓ 22% *P 0.013*
Qualitat de vida KCCQ-CSS	**1.46 punts de milloria**
Funció renal: eGFR slope	**+1.24mL/min/1.73m^2 per year *p*<0.001**

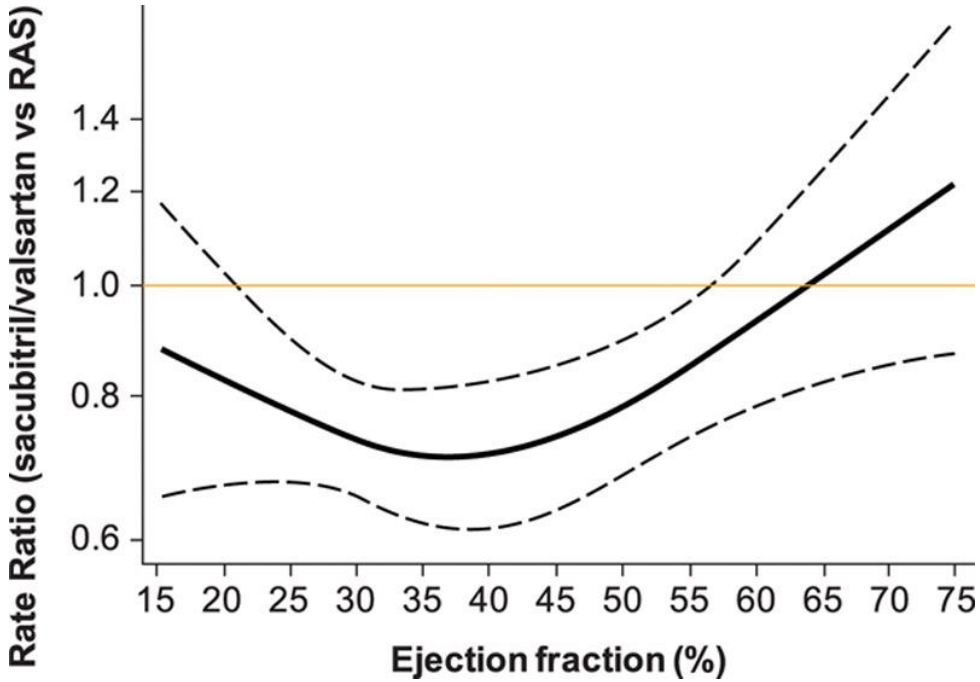
iSGLT2: tractament no específic en tot l'espectre de la IC



Tractament segons fenotips: Sacubitril-Valsartan

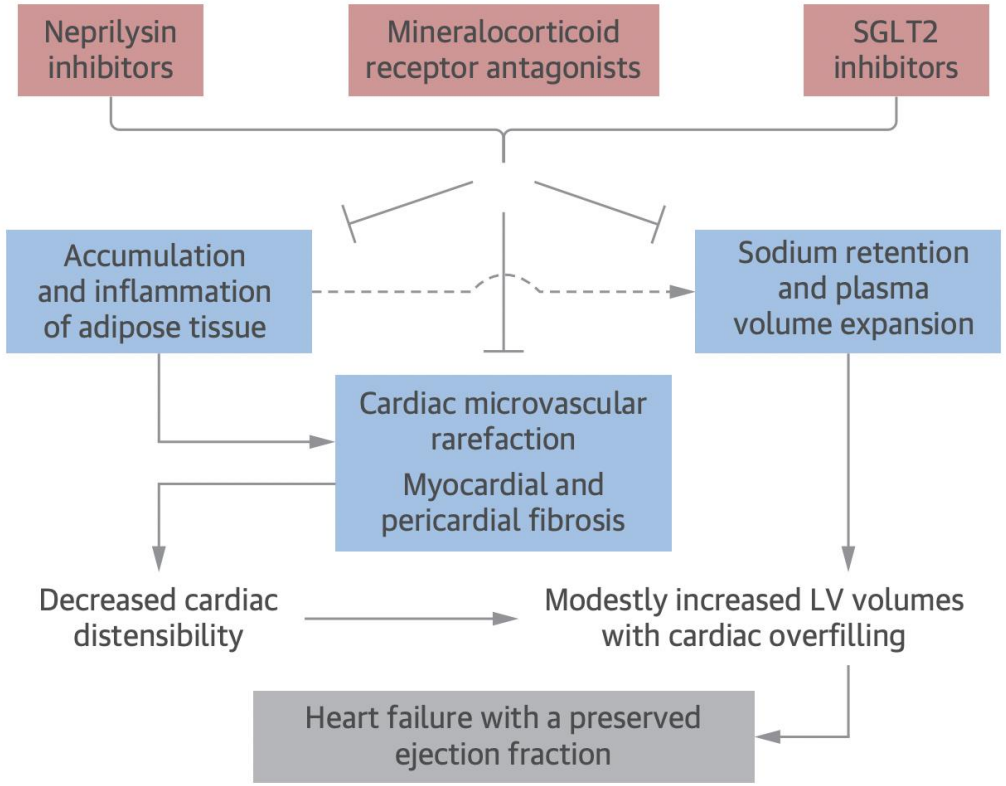
PARAGONHF





Solomon SD et al. Sacubitril/Valsartan Across the Spectrum of Ejection Fraction in Heart Failure. Circulation. 2020 Feb 4;141(5):352-361.

Tractament segons fenotip: obesitat-IC



Packer, M. et al. J Am Coll Cardiol HF. 2018;6(8):633-9.

- Signes i símptomes de IC
- Augment de presions d'ompliment
- Expansió de volum plasmàtic
- Pèptids baixos
- Poca representació en assajos clínics

Packer M, Obesity-Related Heart Failure With a Preserved Ejection Fraction. JACC Heart Fail. 2018 Aug;6(8):633-639.

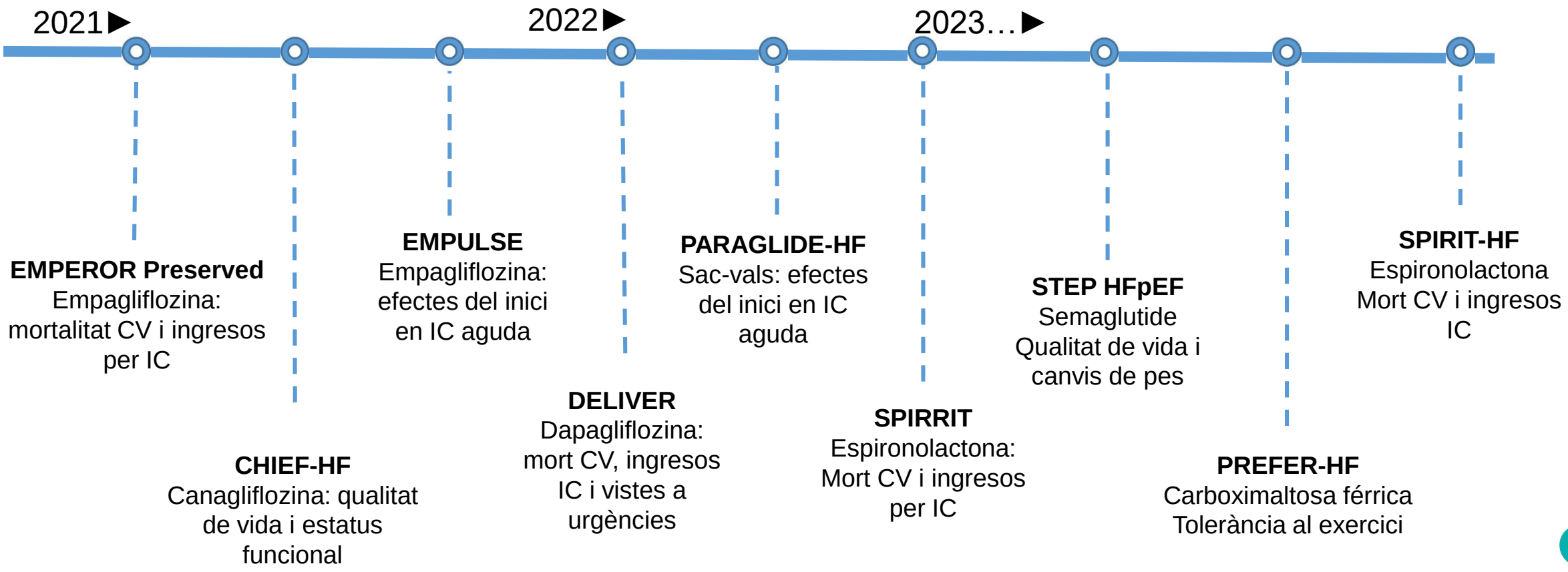
Tractament segons fenotips: ús espironolactona

	LV Geometry	Arterial Stiffness / Pulsatile Arterial Load	Resistive Arterial Load	Mitral Doppler E/e'	Natriuretic Peptides	Other Biomarker Features	Other Clinical Features
P1	Normal	↔	↔	↔	↔	• Higher MMP-9 • Higher Syndecan 4	• Mild symptoms • Smoking • Confounded by lung disease? (not genuine HFpEF) • Preferential enrollment in Russia/Georgia
P2	Concentric Remodeling	↑↑	↑↑	↑	↑↑	• Osteoprotegerin (calcification) • Biomarkers of Innate Immunity / inflammation • TIMP-4	• CKD • Left atrial enlargement • AF
P3	Concentric Hypertrophy	↑	↔	↑↑	↑↔	• Inflammation (TNF-α pathway) • Abnormal intermediary metabolism • Liver fibrosis (NAFLD?) • Renal injury/dysfunction • High renin and FAB4 • Angiogenesis • Mineral metabolism	• Favorable response to spironolactone • CKD • Advanced NYHA class • Depression

HR: 0.75
(95% CI: 0.59-0.95)
p 0.016

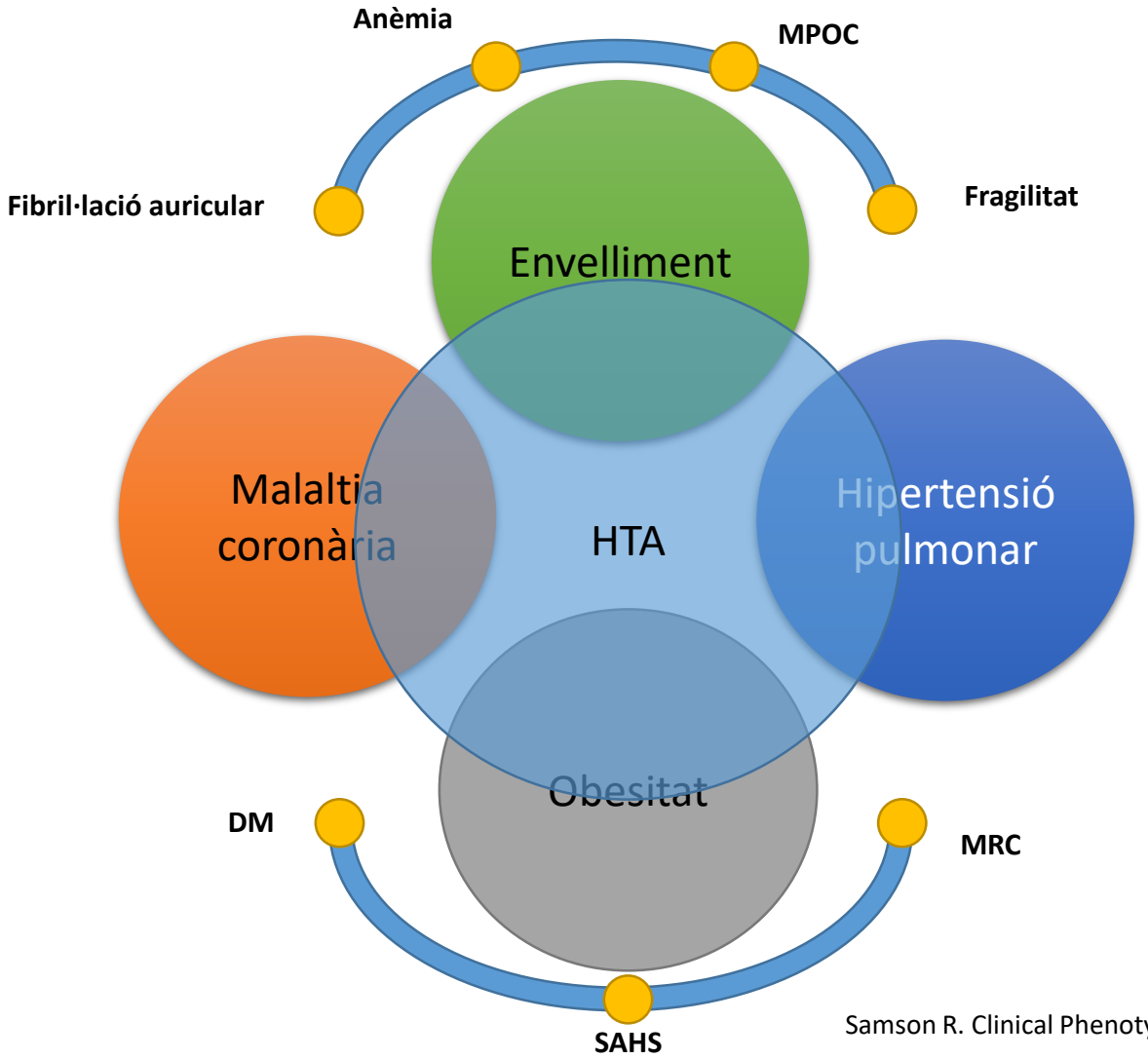
Cohen JB et al. Clinical Phenogroups in Heart Failure With Preserved Ejection Fraction: Detailed Phenotypes, Prognosis, and Response to Spironolactone. JACC Heart Fail. 2020 Mar;8(3):172-184.

Investigació actual en la IC FEVIp



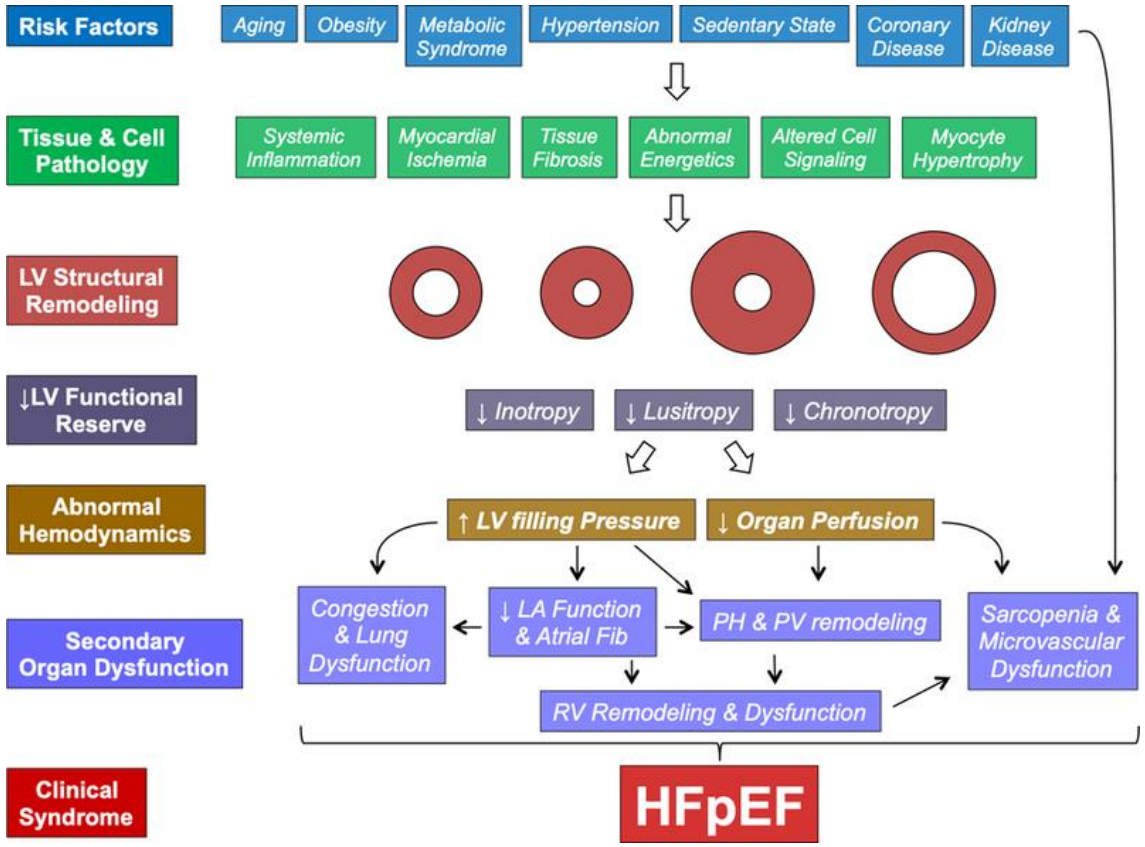
IC amb FEVI preservada: cap a on anem?

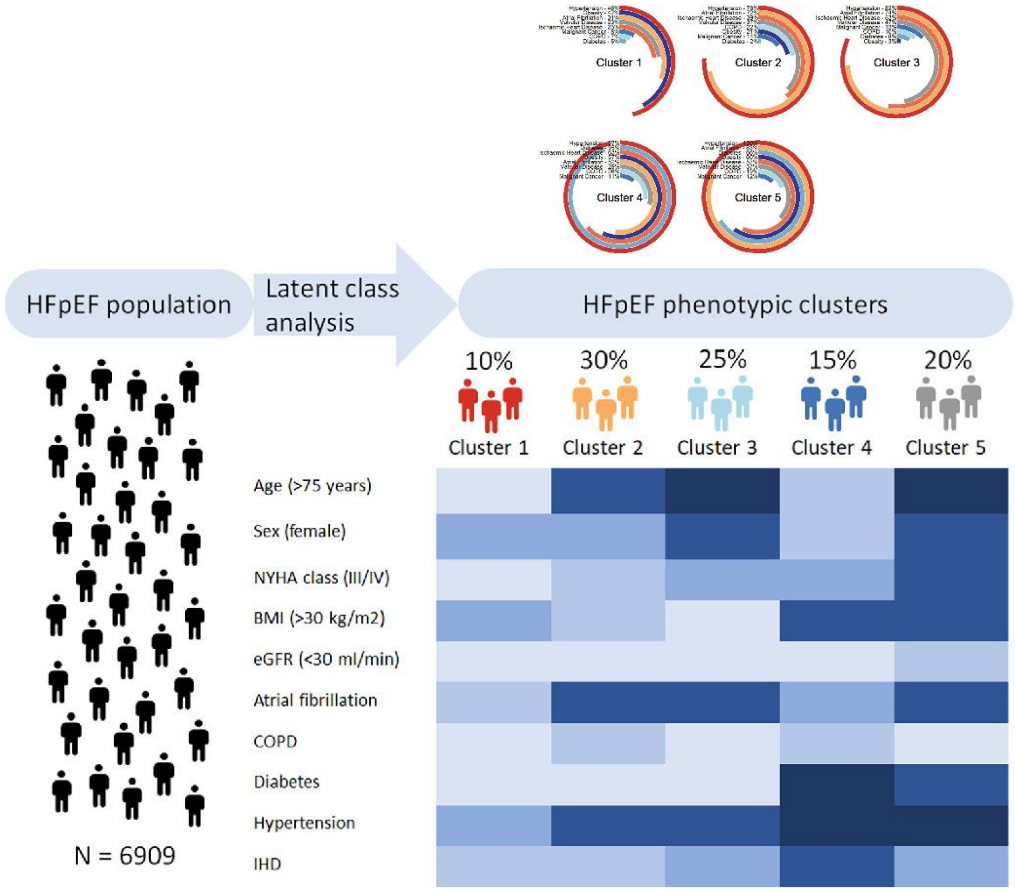
Fenotips en IC amb FEVI preservada



Samson R. Clinical Phenotypes in Heart Failure With Preserved Ejection Fraction

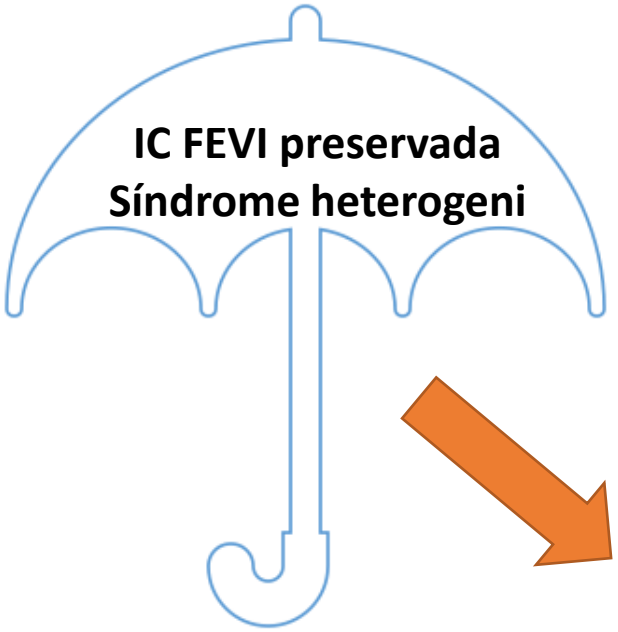
Fenotips en IC amb FEVI preservada: tractament no específic → específic





Pfeffer MA, Shah AM, Borlaug BA. Heart Failure With Preserved Ejection Fraction In Perspective. Circ Res. 2019 May 24;124(11):1598-1617.
Uijl A. Identification of distinct phenotypic clusters in heart failure with preserved ejection fraction. Eur J Heart Fail. 2021 Jun;23(6):973-982

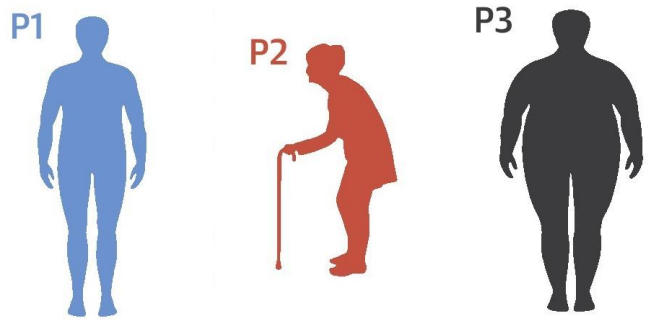
Fenotips en IC amb FEVI preservada



FENOTIPAR

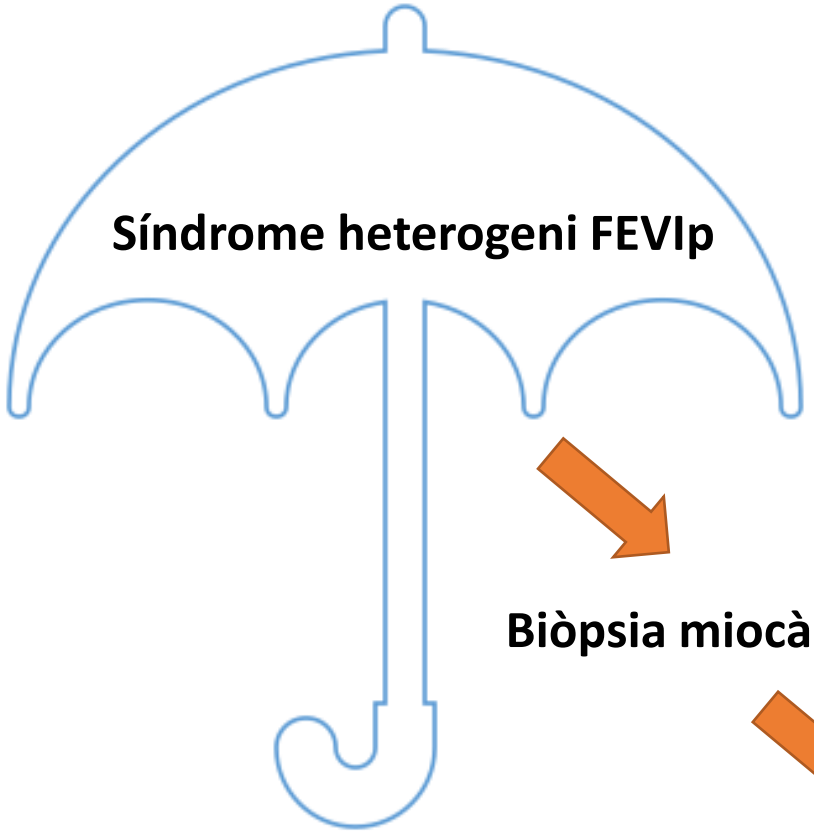
- Biomarcadors
- Proves d'imatge
- Biòpsia cardíaca
- Proves durant exercici
- "Machine learning"

TRACTAMENT ESPECÍFIC SEGONS FENOTIP



Shah S. Research Priorities for Heart Failure With Preserved Ejection Fraction: National Heart, Lung, and Blood Institute Working Group Summary. Circulation. 2020 Mar 24;141(12):1001-1026.

Fenotips en IC amb FEVI preservada



Biòpsia miocàrdica

Anàlisis histològic i molecular

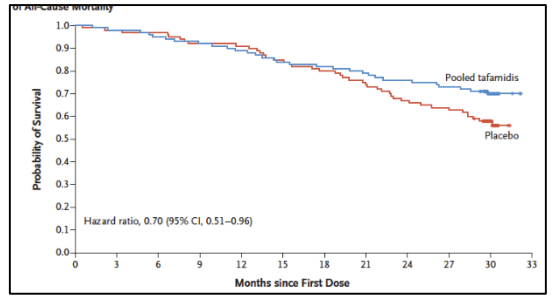
Marcadors
Estudis d'imatge

Tractament específic"

Assajos clínics positius

Cohen JB, JA. Clinical Phenogroups in Heart Failure With Preserved Ejection Fraction: Detailed Phenotypes, Prognosis, and Response to Spironolactone. JACC Heart Fail. 2020 Mar;8(3):172-184.

Fenotips en IC amb FEVI preservada: Amiloidosis



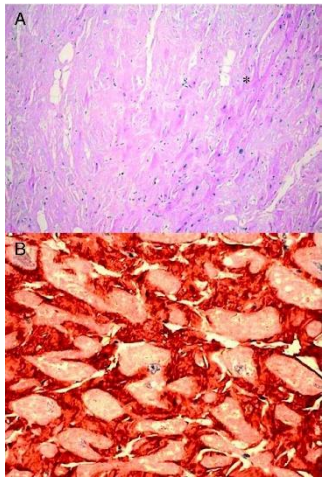
Assajos clínics positius

Síndrome heterogeni FEVIp

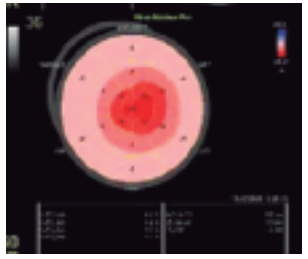
Tafamidis

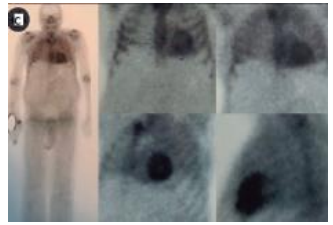
Amiloide TTR

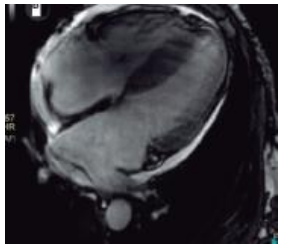
Biòpsia miocàrdica



Marcadors
Estudis d'imatge



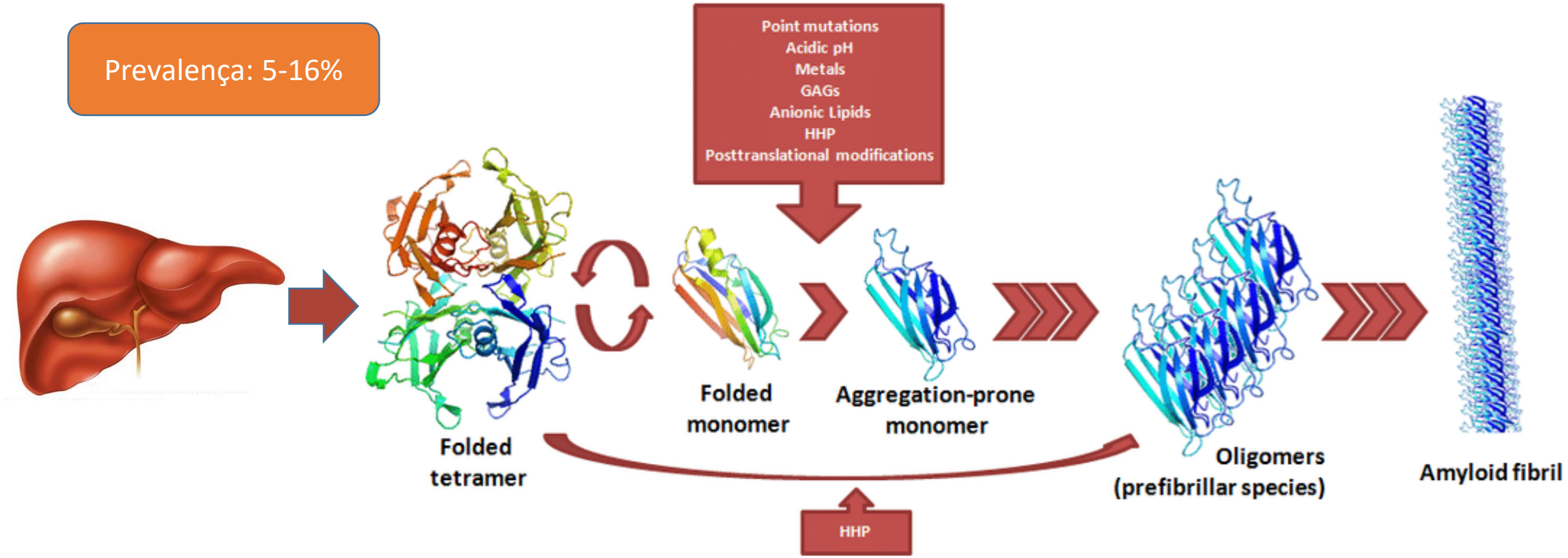




Cohen JB, JA. Clinical Phenogroups in Heart Failure With Preserved Ejection Fraction: Detailed Phenotypes, Prognosis, and Response to Spironolactone. JACC Heart Fail. 2020 Mar;8(3):172-184.

Amiloïdosis cardíaca

Prevalença: 5-16%

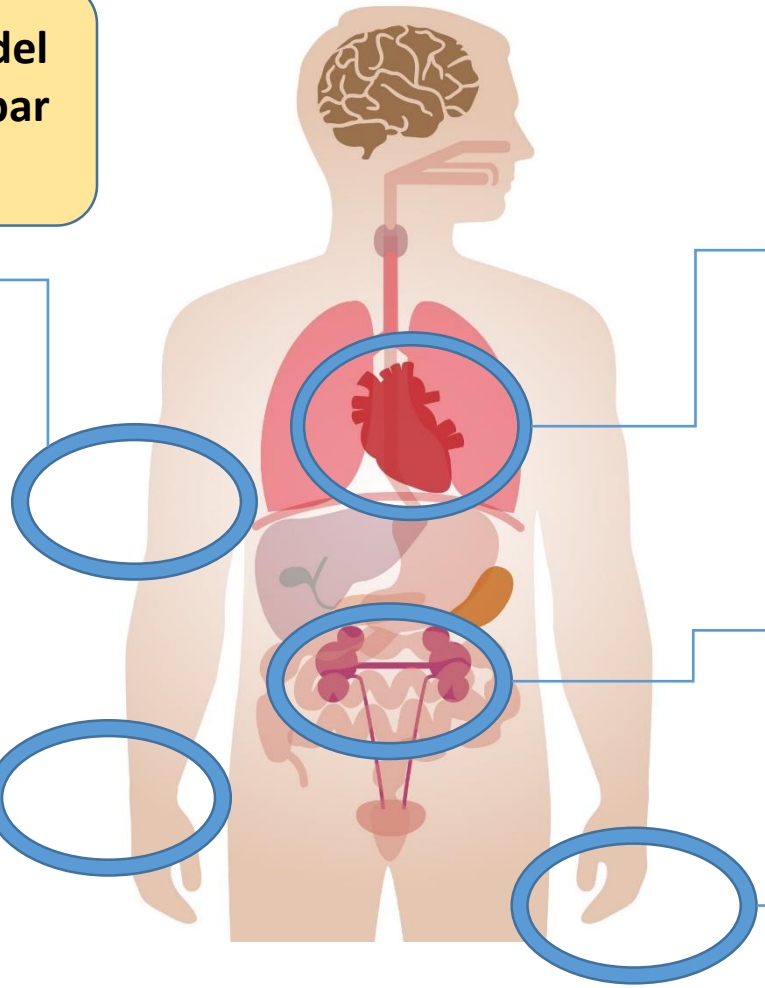


Garcia-Pavia P et al. Diagnosis and treatment of cardiac amyloidosis. Eur Heart J. 2021 Apr 21;42(16):1554-1568.

Amiloïdosis cardíaca

Estenosis del canal lumbar (14%)

Ruptura atraumàtica del tendó del bíceps braquial
(signe de Popeye)
30%



Manifestacions cardíaques (100%)
- **IC (50-85%**
- **FA (43-67%)**
- **Trastorns conducció (BAV) (20%**
- **eAo degenerativa (6-15%)**

Neuropatia autonòmica
- **Ortostatisme**
- **Disfunció sexual**
- **ITU recurrent**

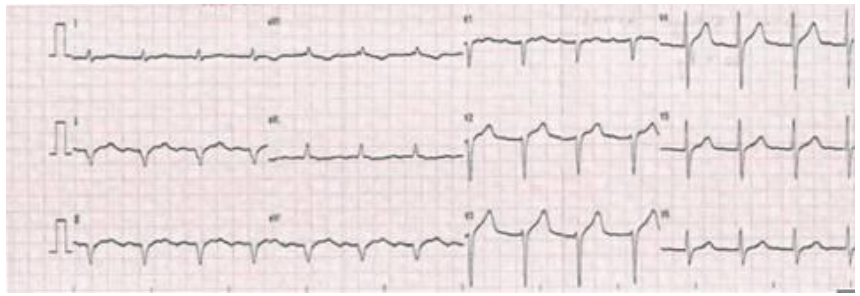
Síndrome del túnel del carp
(20-45%)

Polineuropatia perifèrica
Axonal, simètrica, distal-->proximal

Garcia-Pavia P et al. Diagnosis and treatment of cardiac amyloidosis. Eur Heart J. 2021 Apr 21;42(16):1554-1568.

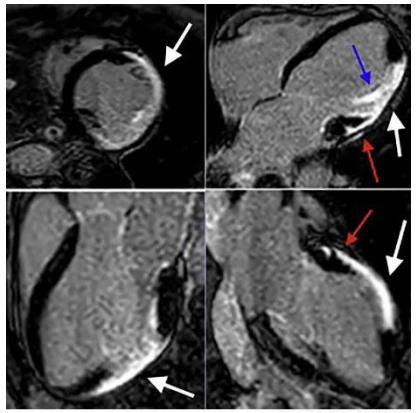
Amiloïdosis cardíaca

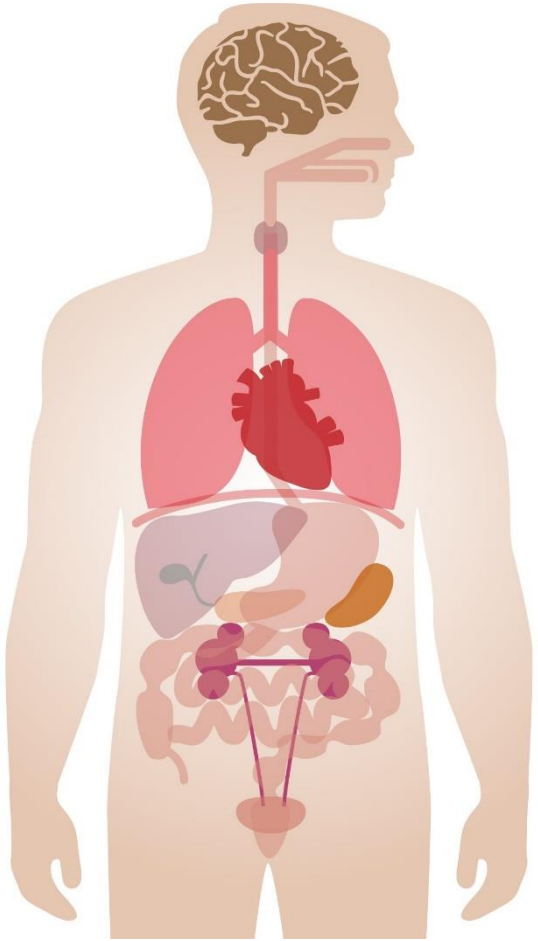
Patró de pseudoinfart



RMN

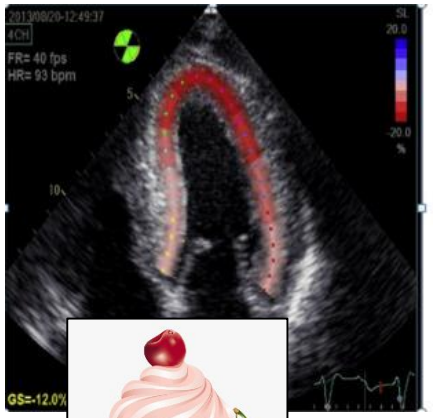
Patró subendocàrdic global amb realç tardà

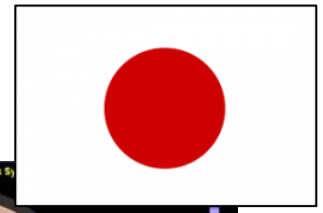


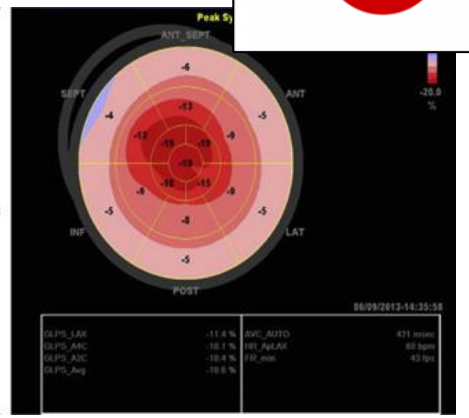


Strain

"Apical sparring", "Bandera de japó" o "Cherry on top pattern"

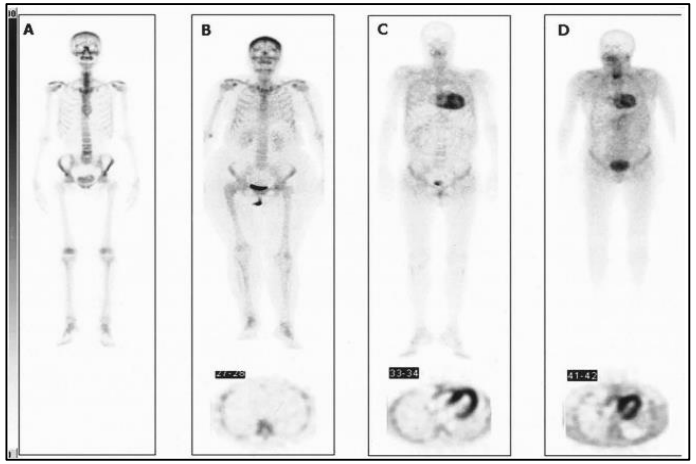


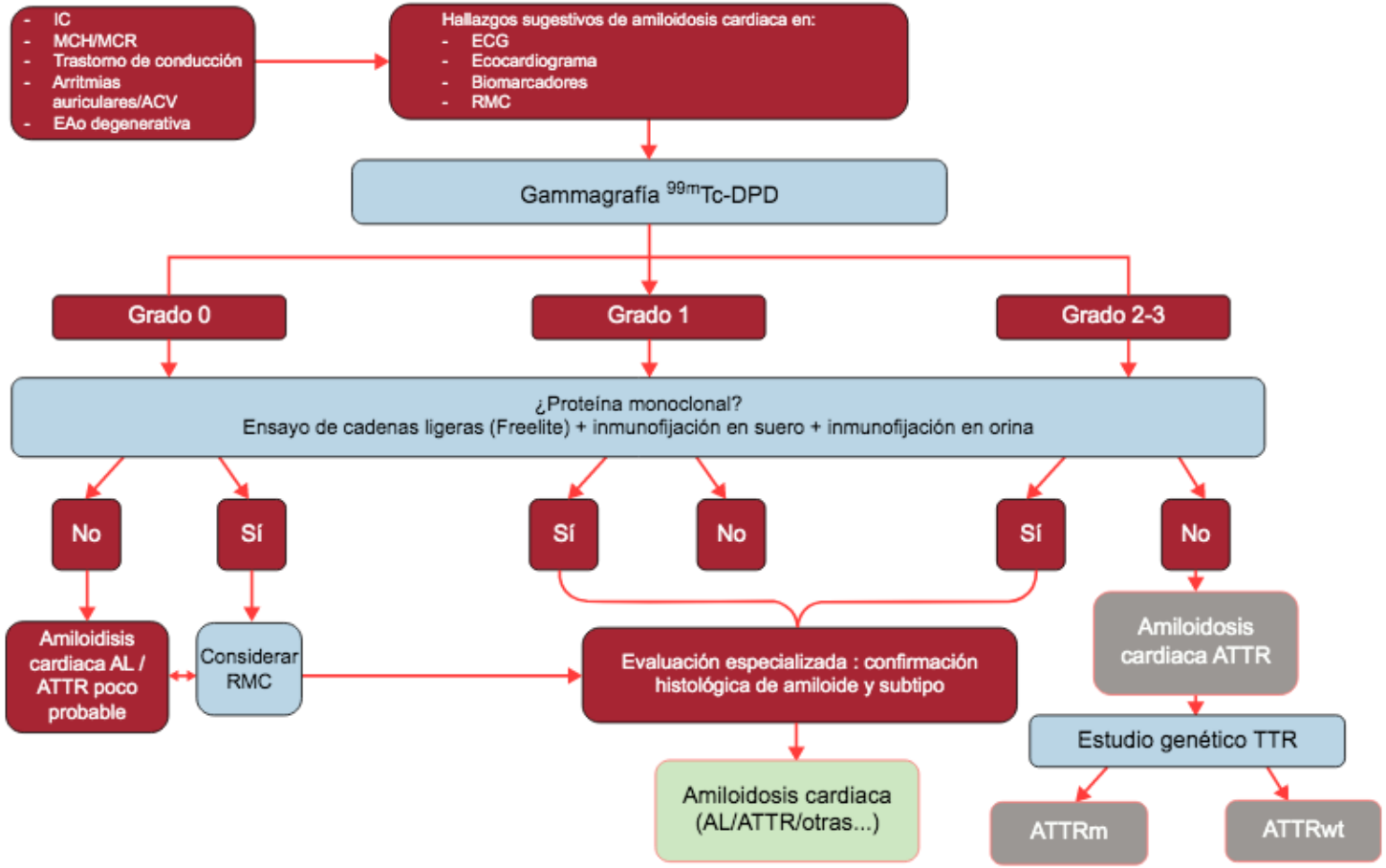




Garcia-Pavia P et al. Diagnosis and treatment of cardiac amyloidosis. Eur Heart J. 2021 Apr 21;42(16):1554-1568.

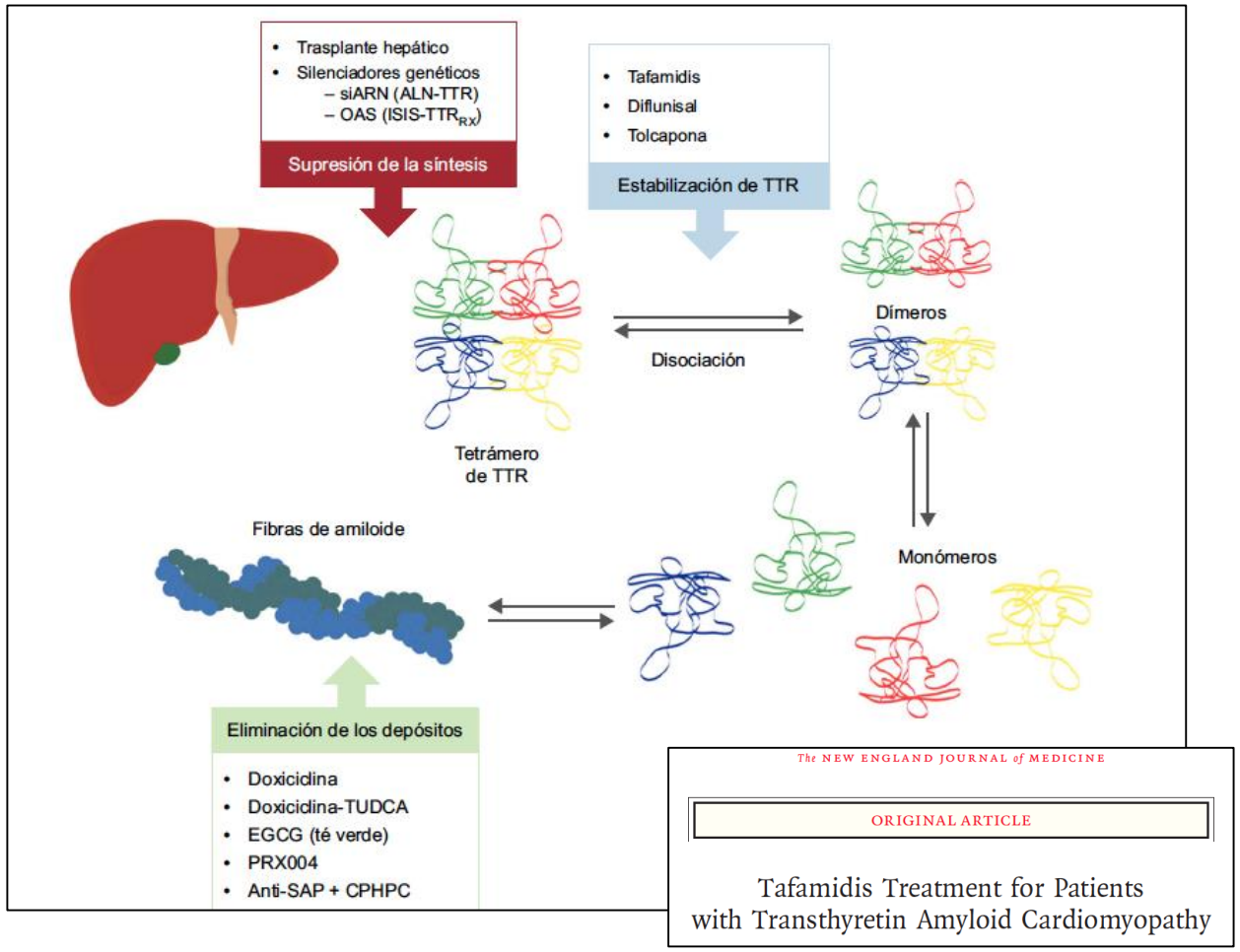
Amiloïdosis cardíaca: Diagnòstic





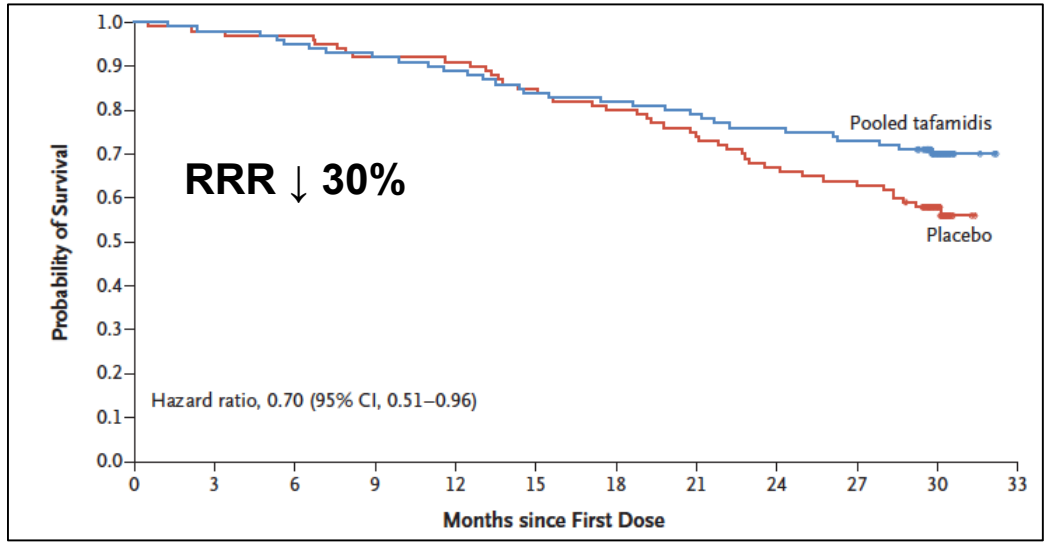
Garcia-Pavia P et al. Diagnosis and treatment of cardiac amyloidosis. Eur Heart J. 2021 Apr 21;42(16):1554-1568.

Amiloïdosis cardíaca



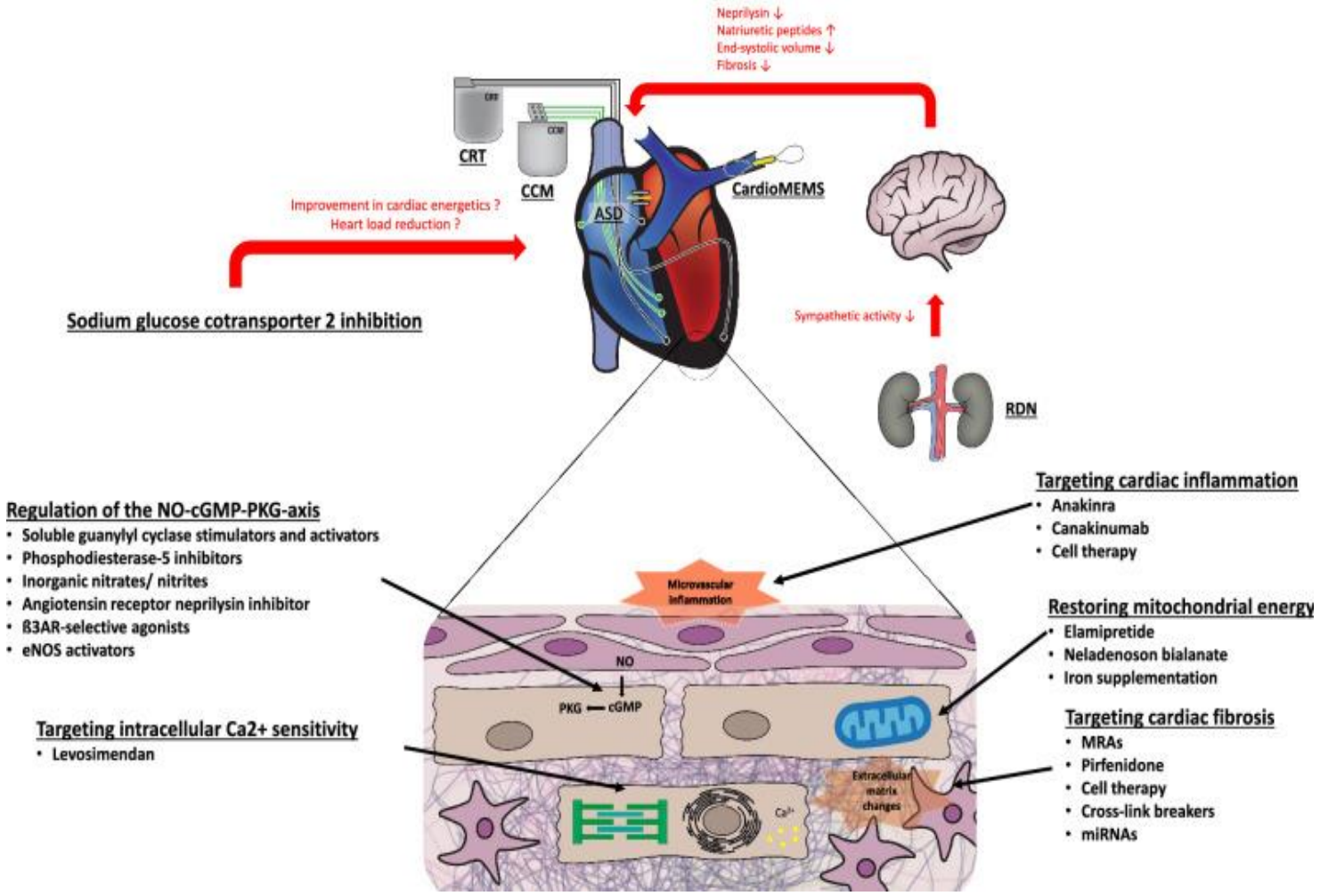
ESC European Society of Cardiology

Recommendations	Class[a]	Level[b]
Tafamidis is recommended in patients with genetic testing proven hTTR-CA and NYHA class I or II symptoms to reduce symptoms, CV hospitalization and mortality.[979]	I	B
Tafamidis is recommended in patients with wtTTR-CA and NYHA class I or II symptoms to reduce symptoms, CV hospitalization and mortality.[979]	I	B



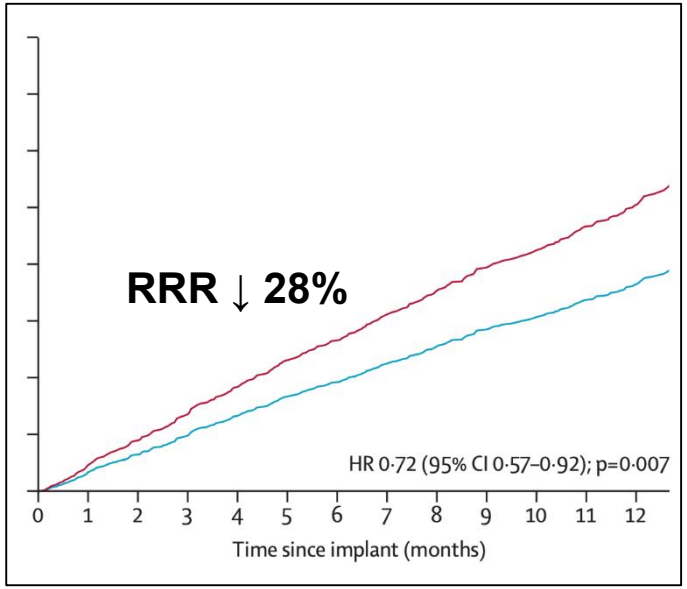
McDonagh TA, ESC Scientific Document Group. 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. Eur Heart J. 2021 Sep 21;42(36):3599-3726.

Dispositius i tractament en investigació en IC amb FEVIp



GUIDE-HF

Hospitalització per IC
Anàlisis pre-COVID



Wintrich J. Therapeutic approaches in heart failure with preserved ejection fraction: past, present, and future. Clin Res Cardiol. 2020 Sep;109(9):1079-1098

Conclusions

- La disfunció diastòlica no és sinònim de IC FEVIp
- S'associa a diferents **comorbiditats** que s'han de tractar eficaçment
- **L'afectació multiorgànica** té fins i tot més importància que l'afectació cardíaca
- És una **patologia heterogènia**, pel que és poc probable que un únic tractament millori a tots els pacients
- **Empagliflozina** és el primer fàrmac que ha demostrat benefici: a l'espera de DELIVER per efecte classe.
- La combinació de biomarcadors, proves d'imatge i dades clíniques en ajuden a establir **fenotips**
- **Amiloïdosis** com a entitat emergent
- Es necessitat afegir pacients fenotipats en els assajos clínics