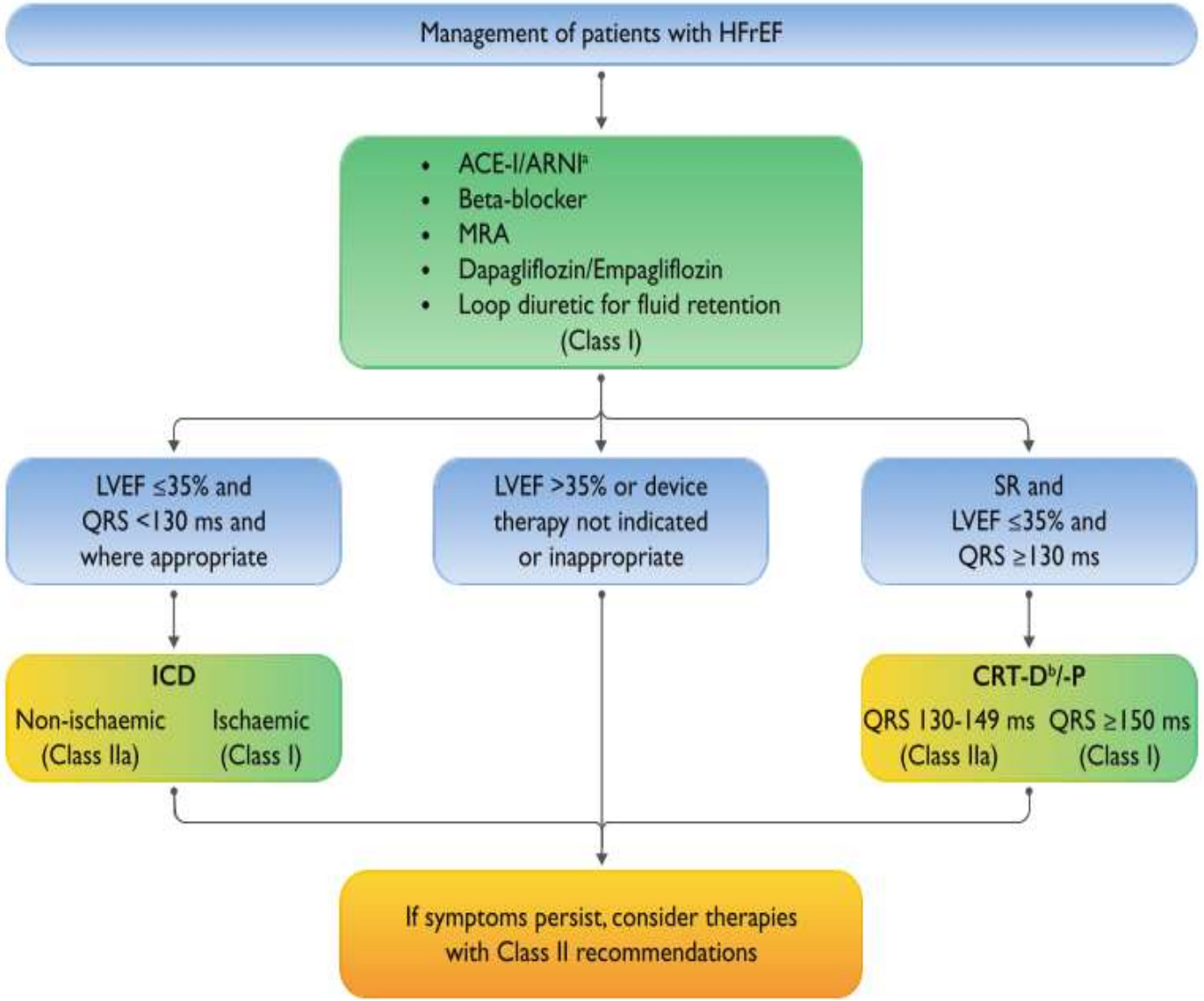
Ağırlaşan ürək çatışmazlığında öndə gedən yanaşmalar

Yeni və yaranmaqda olan müalicə üsulları

Dr. Xatirə Abduləlimova

Gəncə, 2026

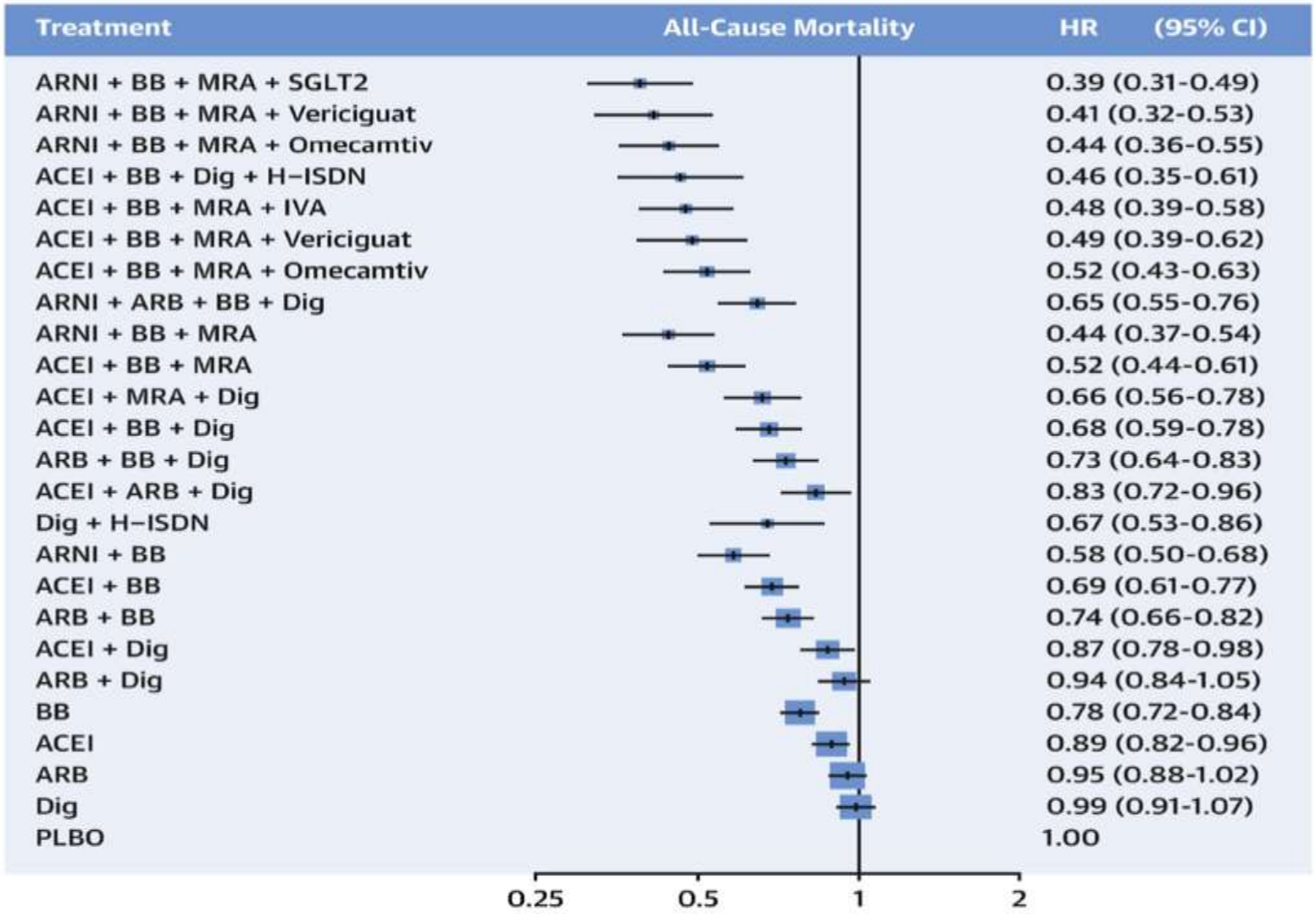
2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure



EHJ 2021;00:1-128; Circulation. 2022;145:00–00

CENTRAL ILLUSTRATION: Relative Risk Reduction of Different Pharmacological Treatment Combinations for Heart Failure

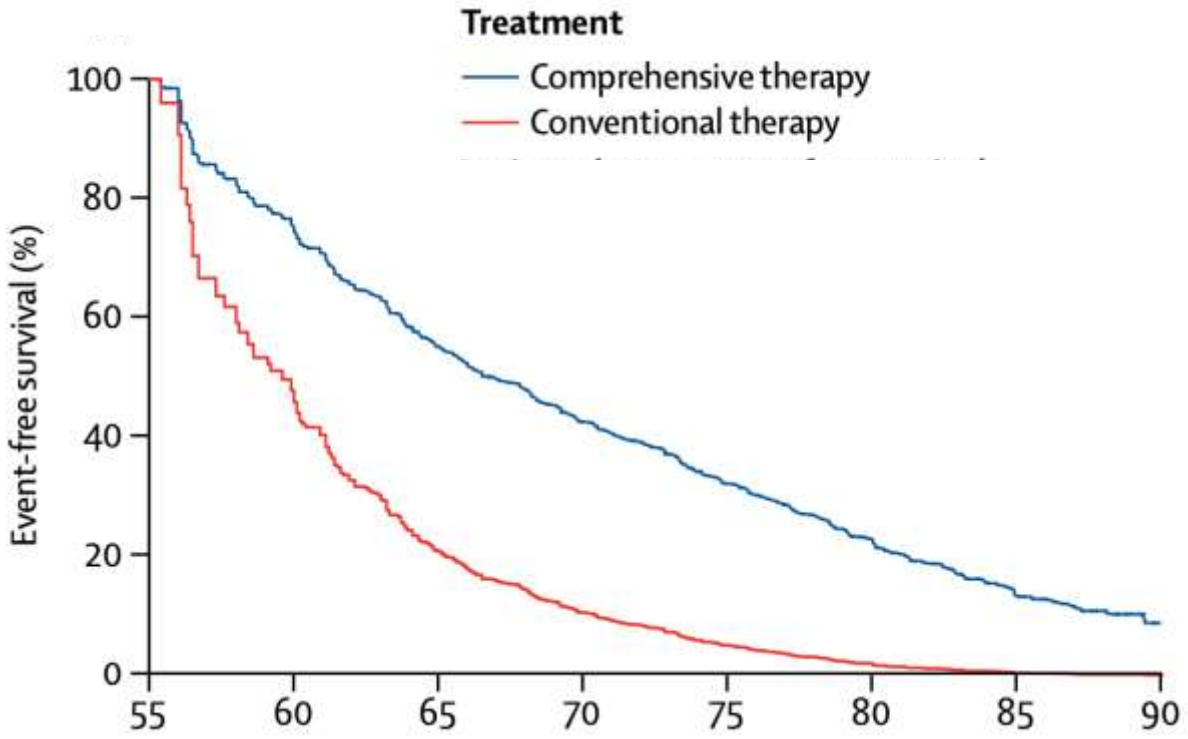
A



Tromp, J. et al. J Am Coll Cardiol HF. 2022;10(2):73–84.

Conventional vs. comprehensive HFrEF medical treatment

Cross-trial analysis EMPHASIS-HF (N=2,737), PARADIGM-HF (N=8,399), and DAPA-HF (N=4,744)



Projected mean **time to first hospitalisation for HF or CV death** for patients starting at age 55

Conventional therapy 6.4 years (4.8–8.0)
ACEi/ARB+β-blocker

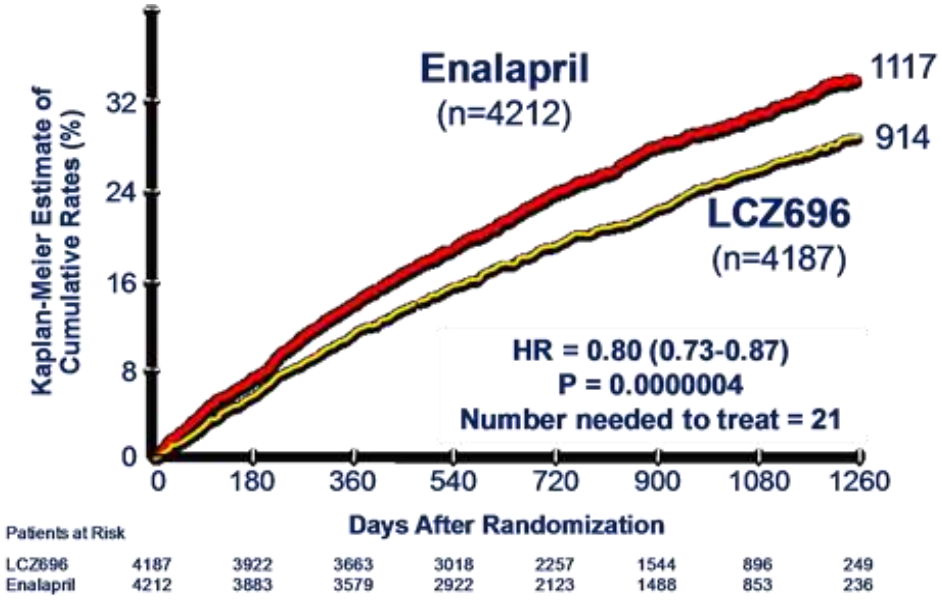
Comprehensive therapy 14.7 years (12.6–17.1) ARNi+β-blocker+MRA+SGLT2i

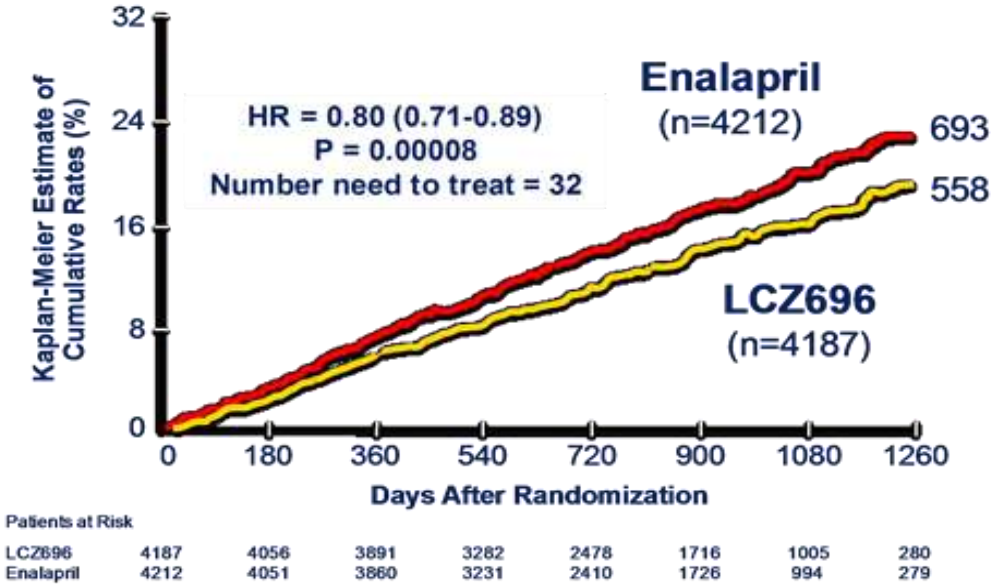
Difference +8.3 years (6.2–10.7) — by replacing ACEi/ARB with ARNi and adding MRA+SGLT2i

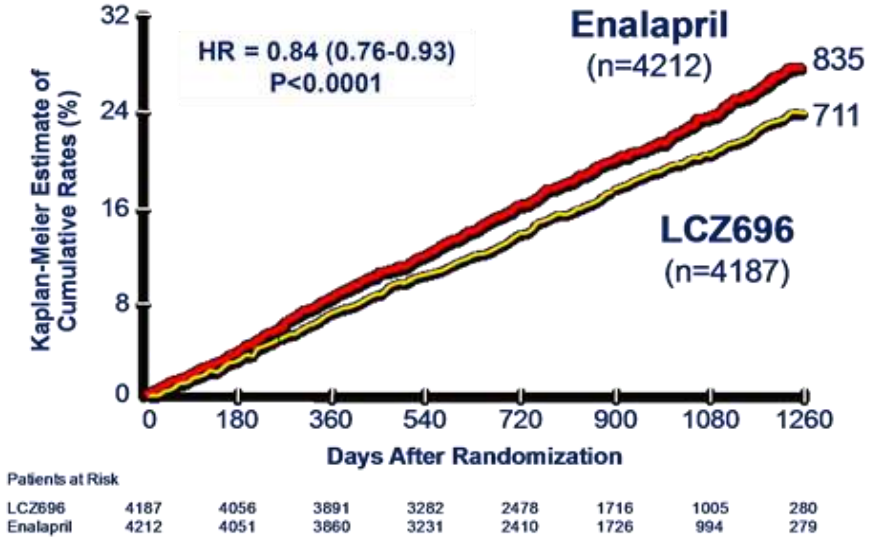
Values shown include 95% CI.
Vaduganathan et al. Lancet. 2020;396:121–8.

PARADIGM-HF ilkin nəticələr

Significant Reduction in Primary Endpoints (CV death or heart failure hospitalization), CV Death and All-Cause Mortality

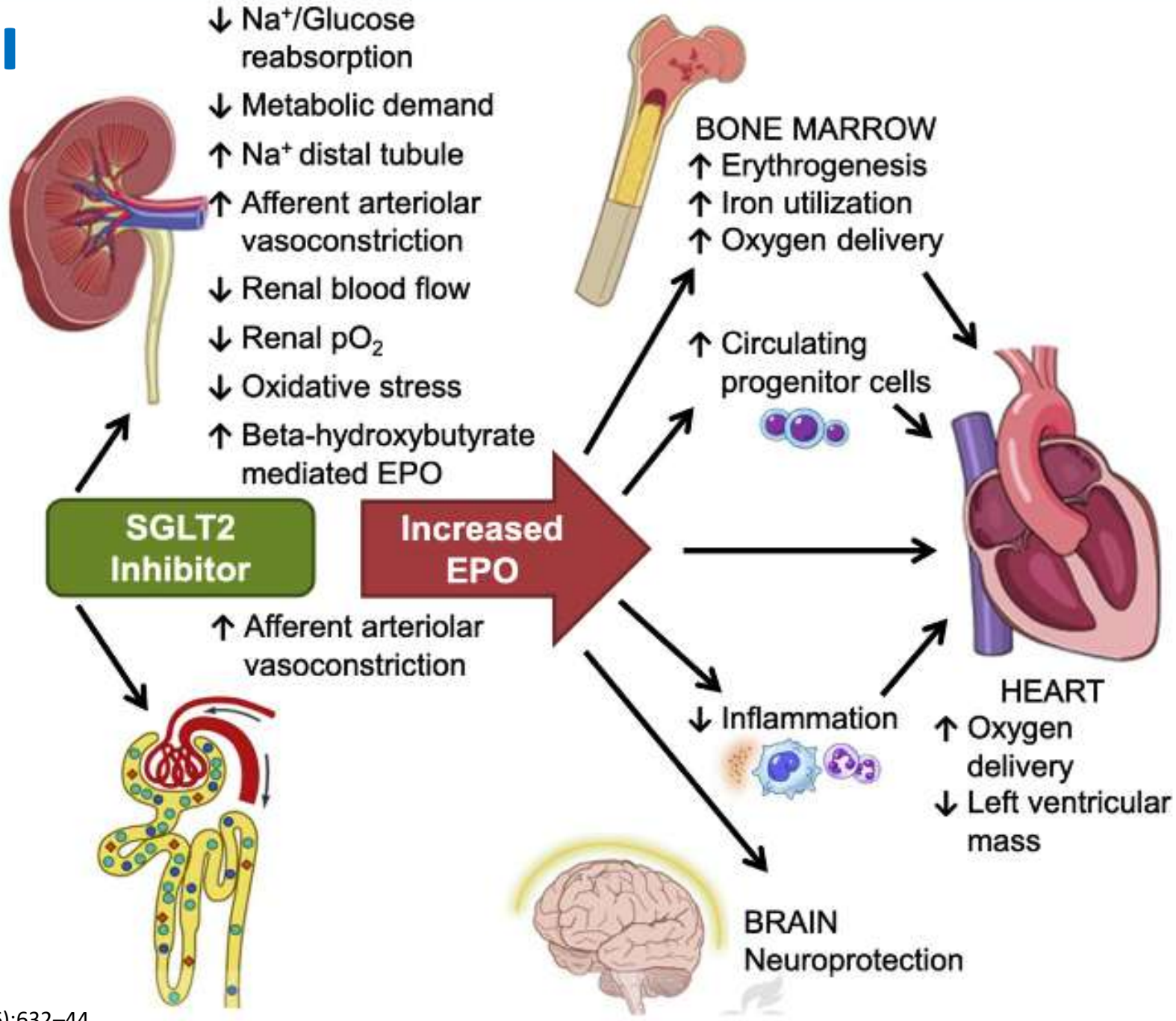






McMurray et al. N Engl J Med 2014; 371(11):993-1004.

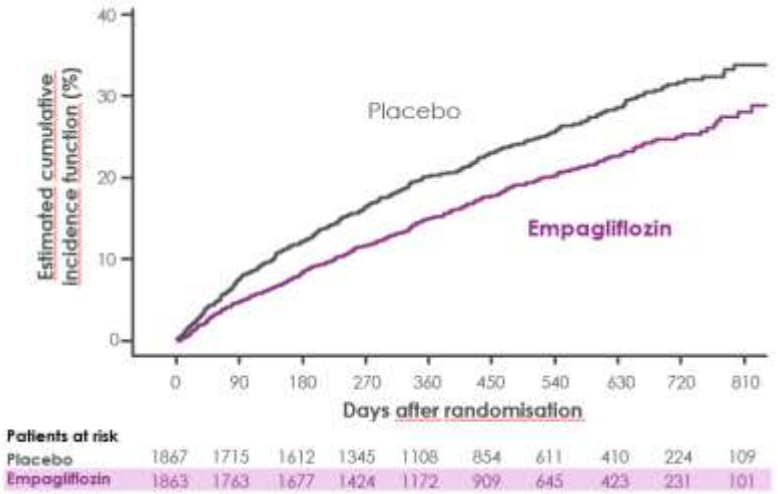
SGLT2 inhibitorları



Lopaschuk, G.D. et al. J Am Coll Cardiol Basic Trans Science. 2020;5(6):632–44

EMPEROR Reduced

Primary endpoint: First adjudicated CV death or HF hospitalisation



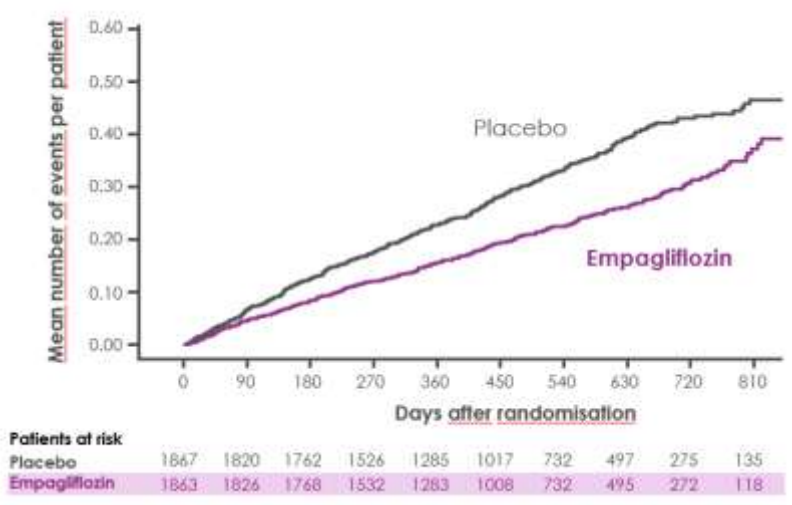
RRR 25%

ARR 5.2%

NNT = 19

HR 0.75
(95% CI 0.65, 0.86)
p<0.001

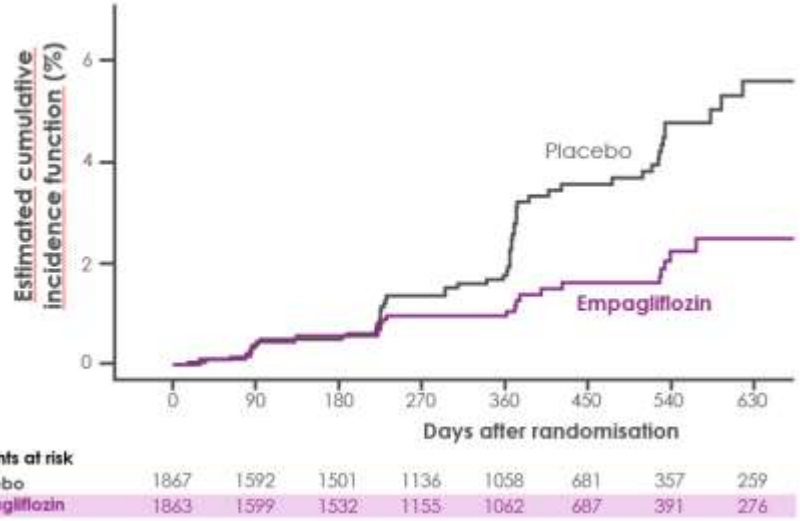
Key secondary: Adjudicated total HF hospitalisations (first and recurrent)



RRR 30%

HR 0.70
(95% CI 0.58, 0.85)
p<0.001

Composite renal endpoint (ESKD or sustained profound decrease in eGFR)



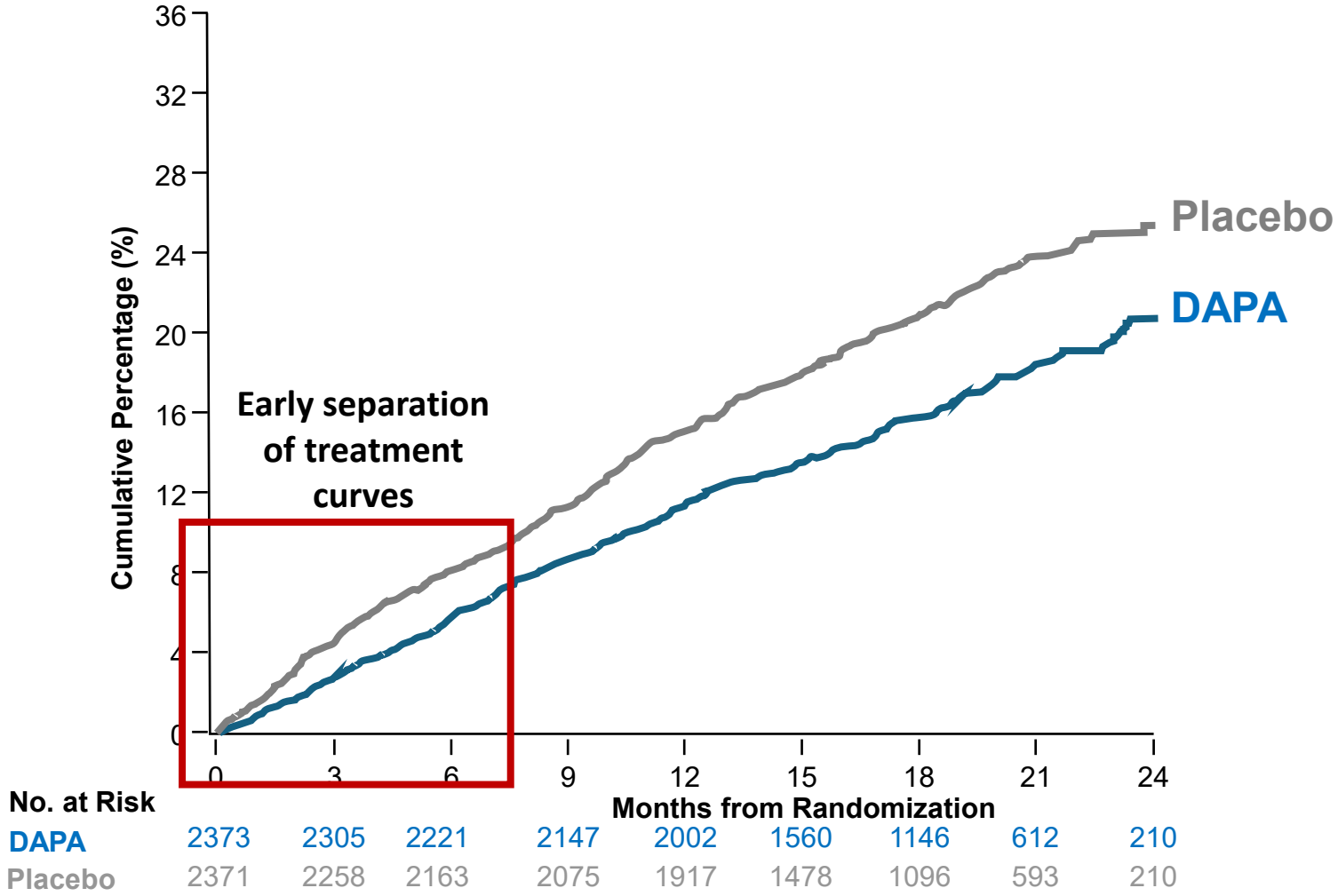
RRR 50%

ARR 1.5%

HR 0.50
(95% CI 0.32, 0.77)

N Engl J Med 2020; 383:1413-1424

DAPA-HF: primary composite outcome
CV mortality / HF hospitalisation / Urgent HF visit



HR 0.74 (0.65, 0.85)
p=0.00001

26% RRR

NNT = 21

DAPA = dapagliflozin; HF = heart failure; hHF = hospitalization for heart failure; HR = hazard ratio; NNT = number needed to treat.

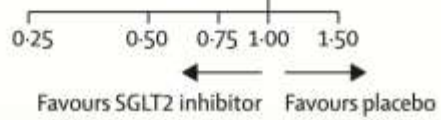
1. McMurray J. Presentation at: European Society of Cardiology Congress. September 1, 2019; Paris, France.

Impact of diabetes on the effects of sodium glucose co-transporter-2 inhibitors on kidney outcomes: collaborative meta-analysis of large placebo-controlled trials

A meta-analysis of clinical trials with patients with CKD (CREDENCE, SCORED, DAPA-CKD, EMPA-Kidney) with and without T2DM demonstrated a favourable impact of SGLT2 inhibition of CKD progression, regardless of T2DM status or the type of CKD

	Mean baseline eGFR, mL/min per 1·73m²	Events/participants		Event rate per 1000 patient-years		RR (95% CI)
		SGLT2 inhibitor	Placebo	SGLT2inhibitor	Placebo	
Diabetic kidney disease or nephropathy*						
CREDENCE	56	153/2202	230/2199	27	41	0·64 (0·52–0·79)
SCORED	44	37/5292	52/5292	5	7	0·71 (0·46–1·08)
DAPA-CKD	43	93/1271	157/1239	36	64	0·55 (0·43–0·71)
EMPA-KIDNEY	36	85/1032	133/1025	42	67	0·56 (0·43–0·74)
Subtotal	**46**	**368/9797**	**572/9755**	..	..	**0·60 (0·53–0·69)**
Ischaemic and hypertensive kidney disease						
DAPA-CKD	43	18/324	26/363	28	37	0·74 (0·40–1·36)
EMPA-KIDNEY	35	37/706	52/739	27	37	0·69 (0·45–1·05)
Subtotal	**38**	**55/1030**	**78/1102**	..	..	**0·70 (0·50–1·00)**
Glomerular disease						
DAPA-CKD	43	21/343	46/352	33	70	0·43 (0·26–0·72)
EMPA-KIDNEY	42	69/853	95/816	44	64	0·68 (0·50–0·93)
Subtotal	**42**	**90/1196**	**141/1168**	..	..	**0·60 (0·46–0·78)**
Other kidney disease or unknown						
DAPA-CKD	43	10/214	14/198	25	37	0·81 (0·35–1·83)
EMPA-KIDNEY	36	36/713	52/725	26	36	0·72 (0·47–1·10)
Subtotal	**38**	**46/927**	**66/923**	..	..	**0·74 (0·51–1·08)**
Any diagnosis						
CREDENCE	56	153/2202	230/2199	27	41	0·64 (0·52–0·79)
SCORED	44	37/5292	52/5292	5	7	0·71 (0·46–1·08)
DAPA-CKD	43	142/2152	243/2152	33	58	0·56 (0·45–0·68)
EMPA-KIDNEY	37	227/3304	332/3305	36	52	0·64 (0·54–0·76)
Total	**44**	**559/12 950**	**857/12 948**	..	..	**0·62 (0·56–0·69)**

Heterogeneity across groups of primary kidney disease: p=0·67
Trend across trials sorted by eGFR for any diagnosis: p=0·88

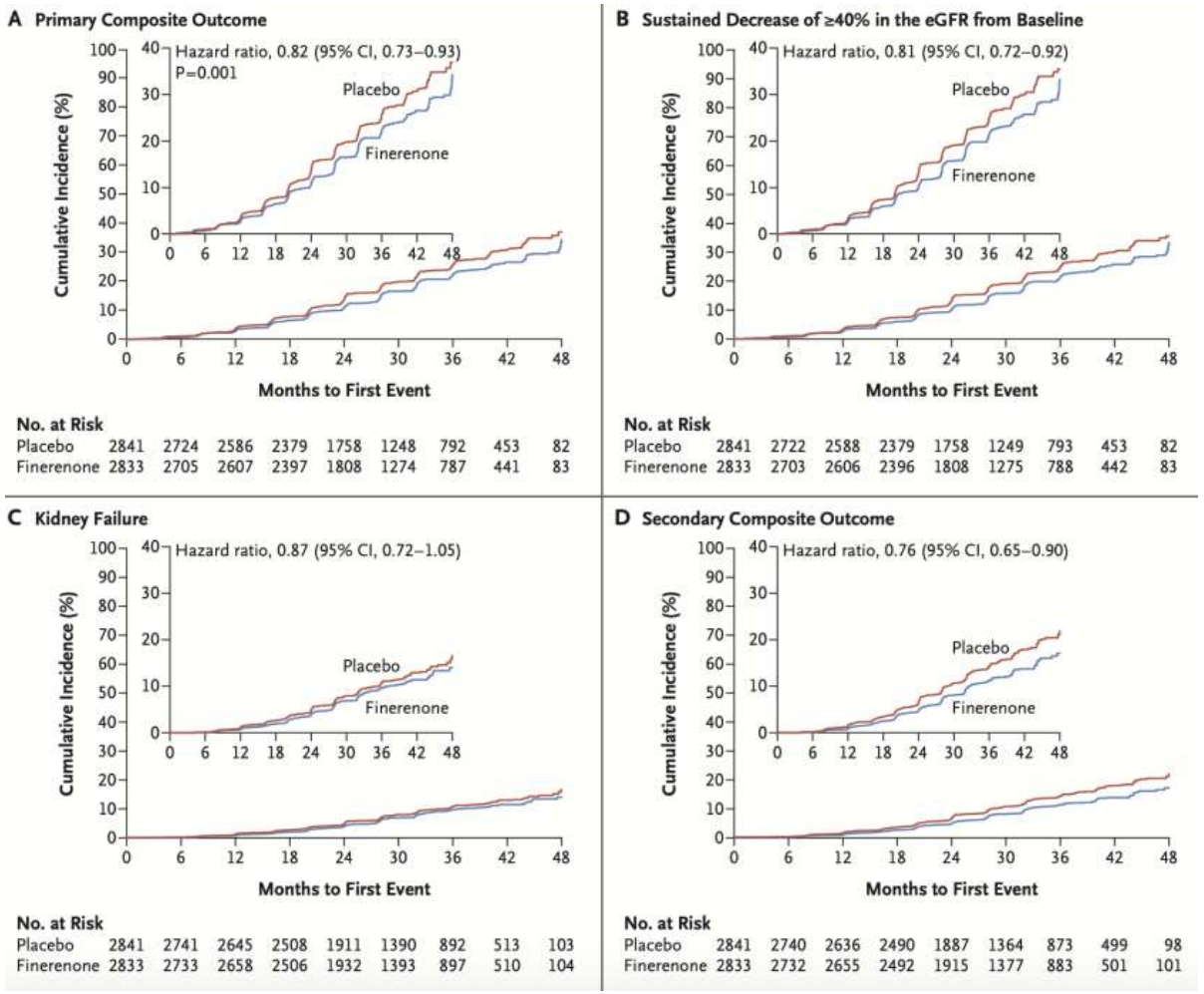


The Nuffield Department of Population Health Renal Studies Group* and the SGLT2 inhibitor Meta-Analysis Cardio-Renal Trialists' Consortium Lancet 2022; 400: 1788–801

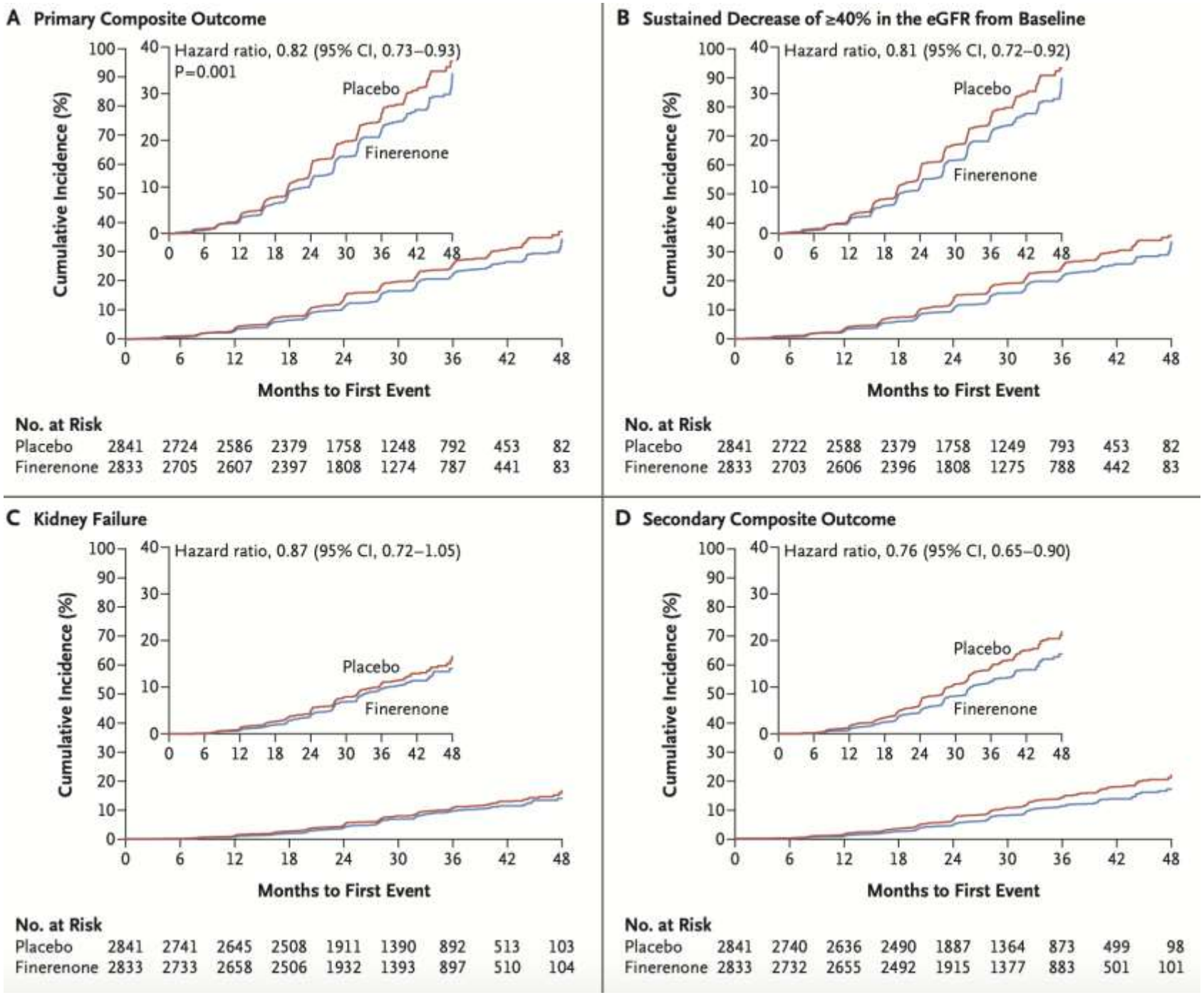
Effect of Finerenone on Chronic Kidney Disease Outcomes in Type 2 Diabetes: FIDELIO-DKD

N=5734 pts with CKD and T2DM, UACR 30 to <300, eGFR 25 to <60 ml/min/1.73 m^2, and diabetic retinopathy, or UACR 300- 5000, eGFR of 25 to <75 ml/min/1.73 m^2, median FUP, 2.6 years.

In patients with CKD and T2DM, treatment with finerenone resulted in lower risks of CKD progression and cardiovascular events than placebo.

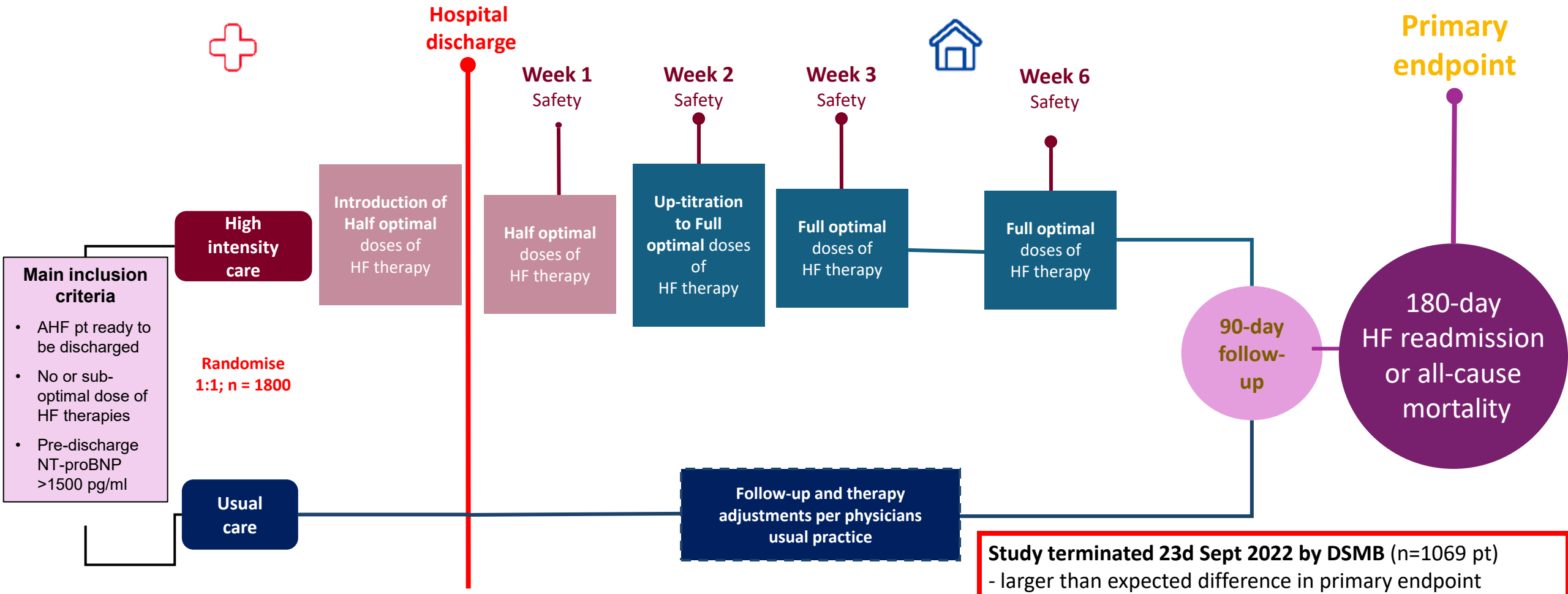


Bakris G et al.N Engl J Med 2020;383:2219-29



Bakris G et al.N Engl J Med 2020;383:2219-29

STRONG-HF – Study



HF therapy: combining ACEi/ARB/ARNi & BB & MRA

Safety = clinical exam & biology (NT-proBNP, K, Creat, hemoglobin)

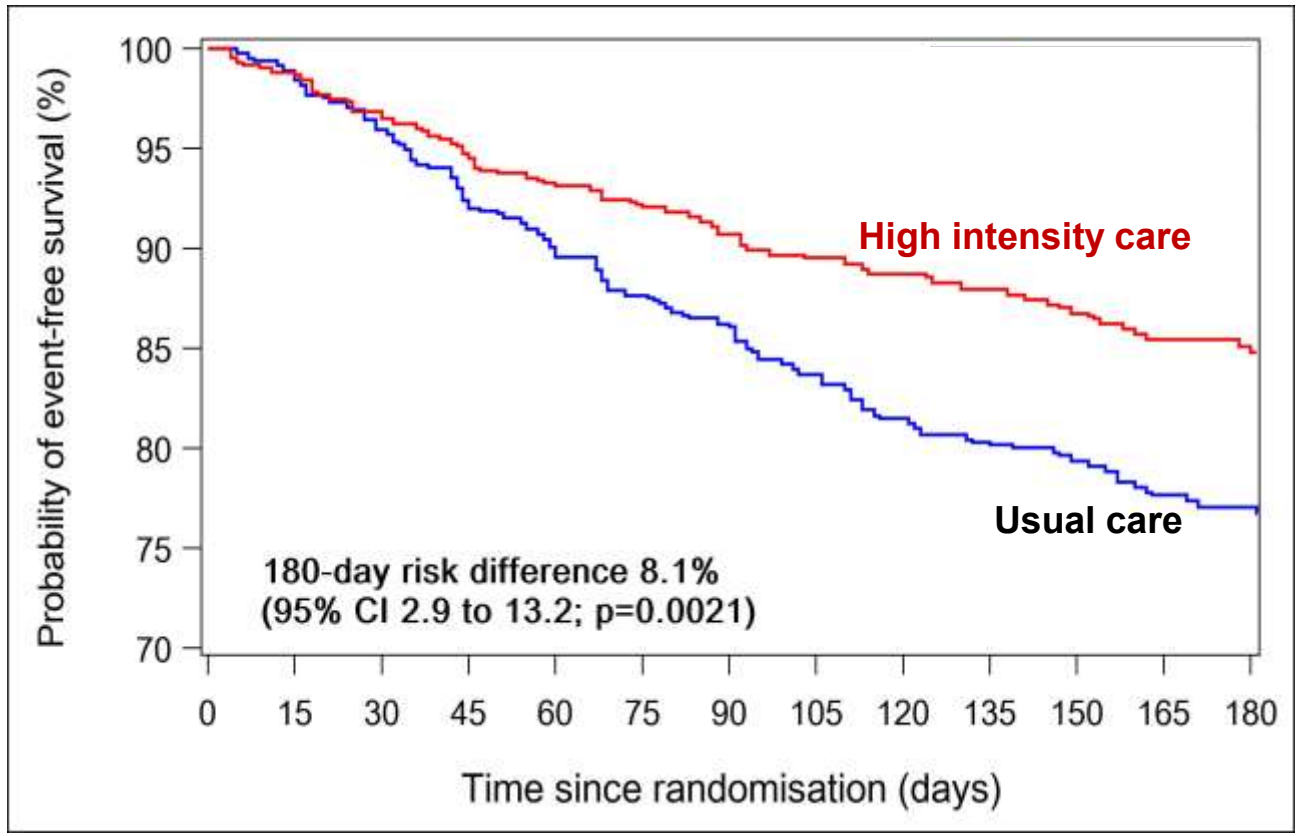
Study terminated 23d Sept 2022 by DSMB (n=1069 pt)
- larger than expected difference in primary endpoint
- unethical to keep patients in usual care

Mebazaa A et al. The Lancet 2022

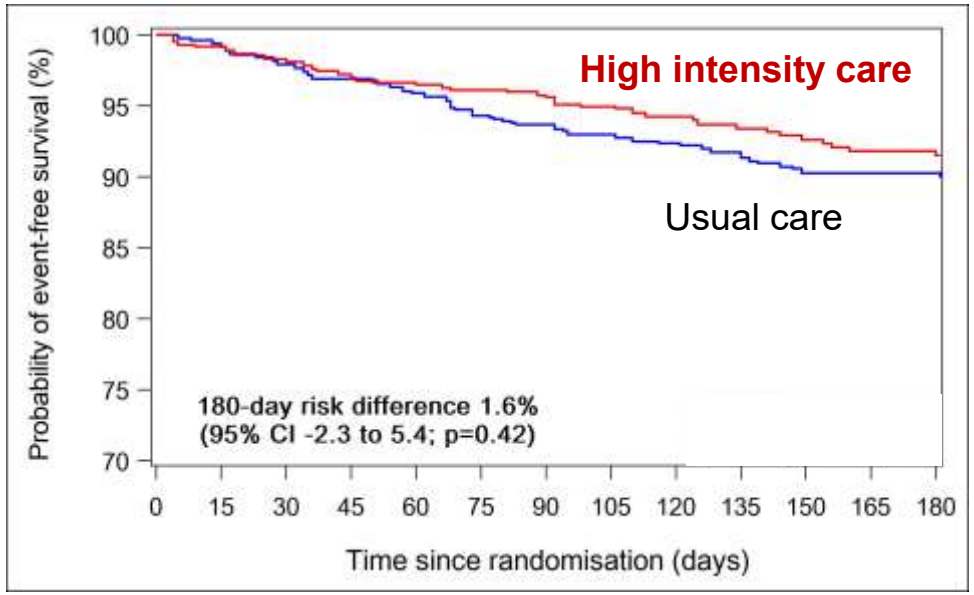
STRONG-HF: Primary Endpoint

Primary endpoint:

180-Day Readmission for HF or All-Cause Death



180-Day All-Cause Death

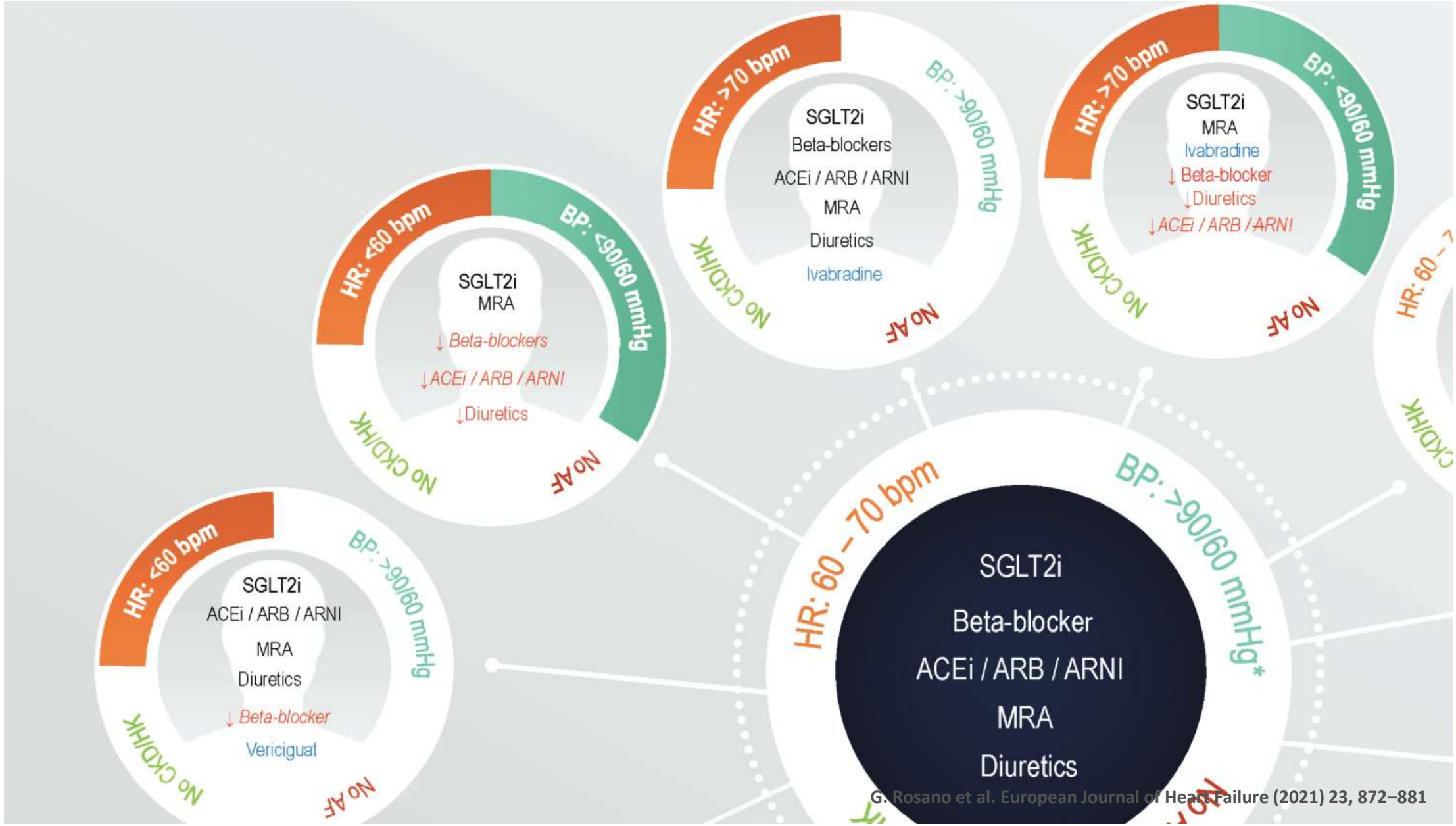


Mebazaa A et al. The Lancet 2022

Ürək çatışmazlığında xəstə profili

G. Rosano et al. European Journal of Heart Failure (2021) 23, 872–881

Ürək çatışmazlığında xəstə profili



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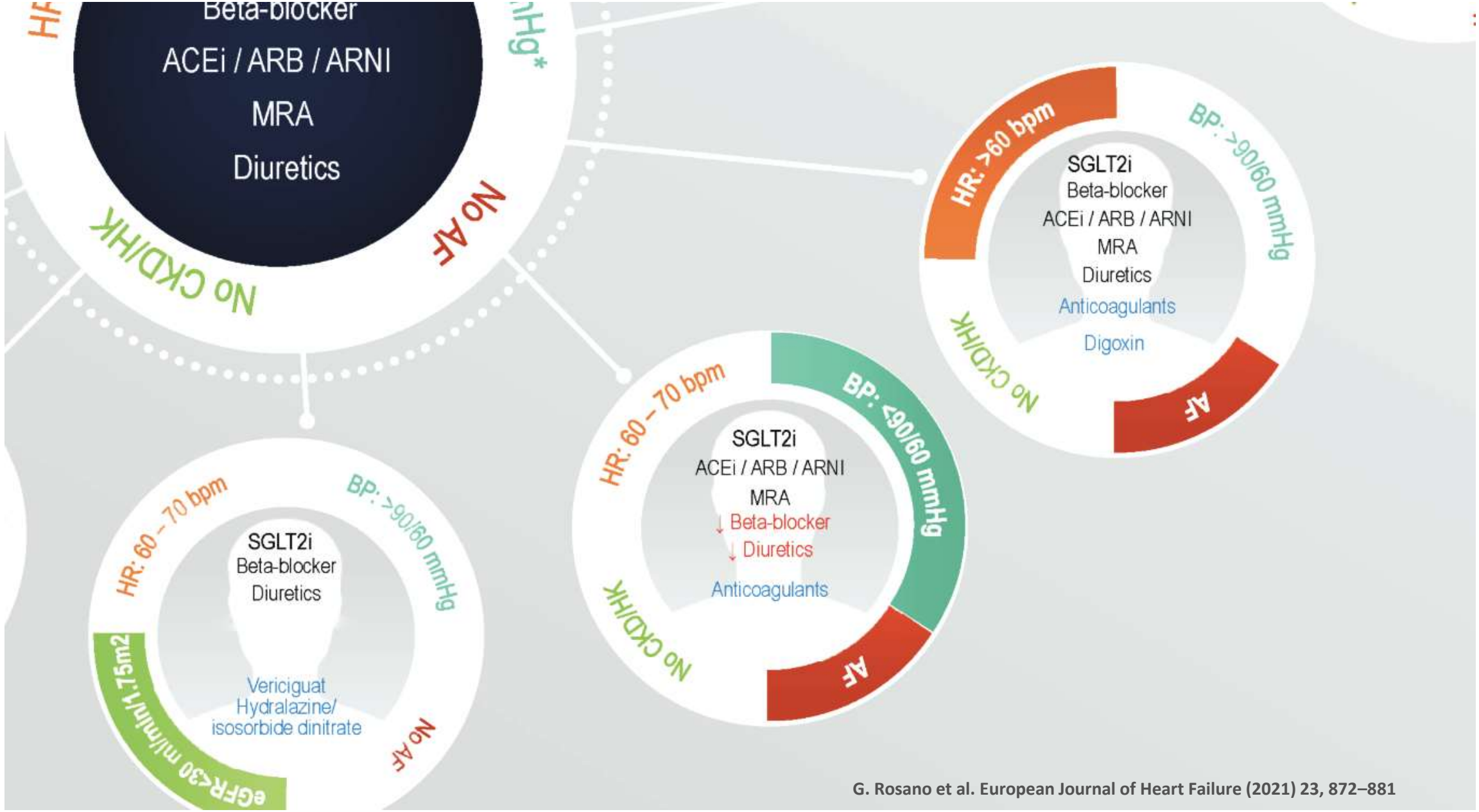

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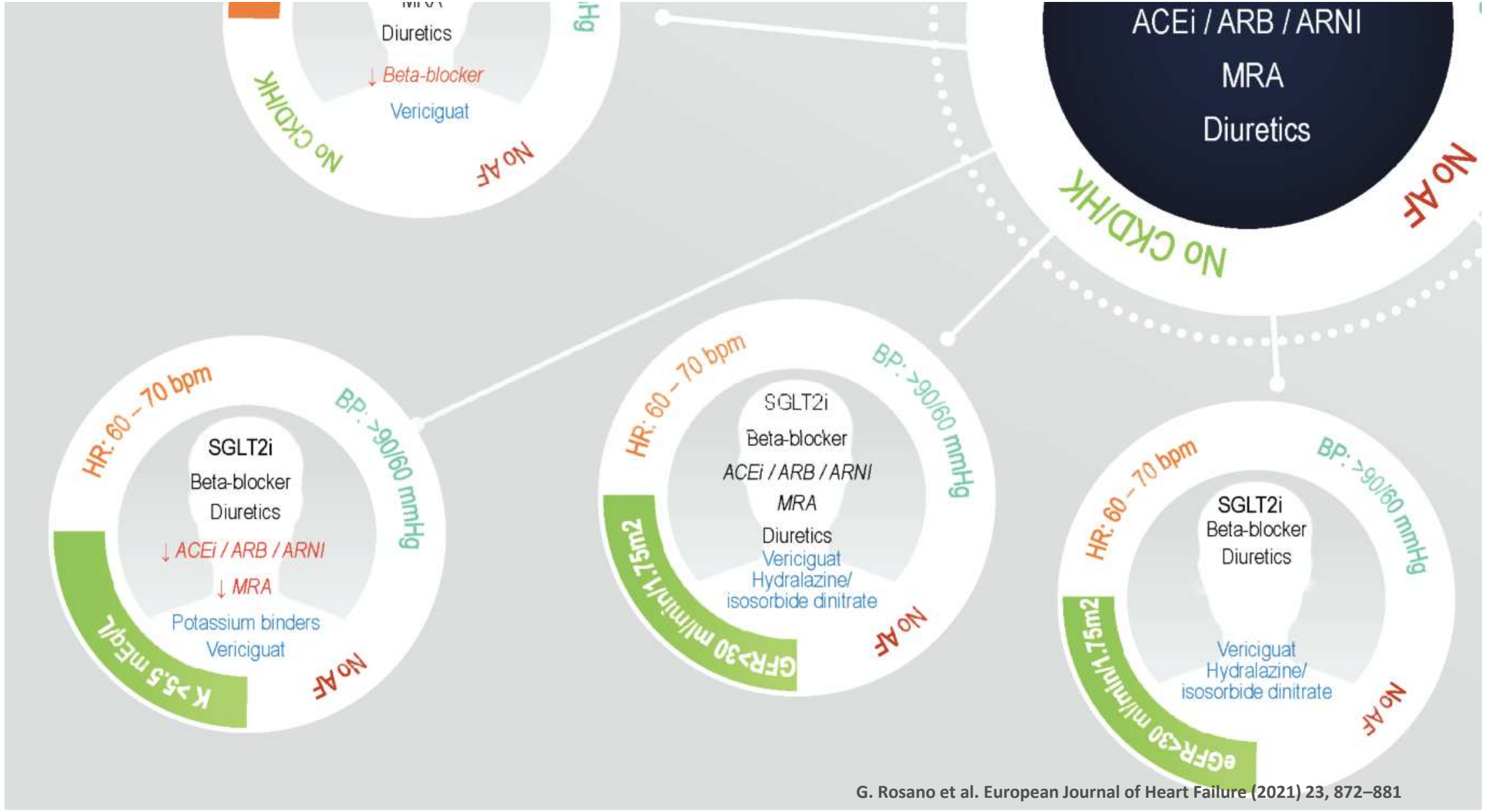
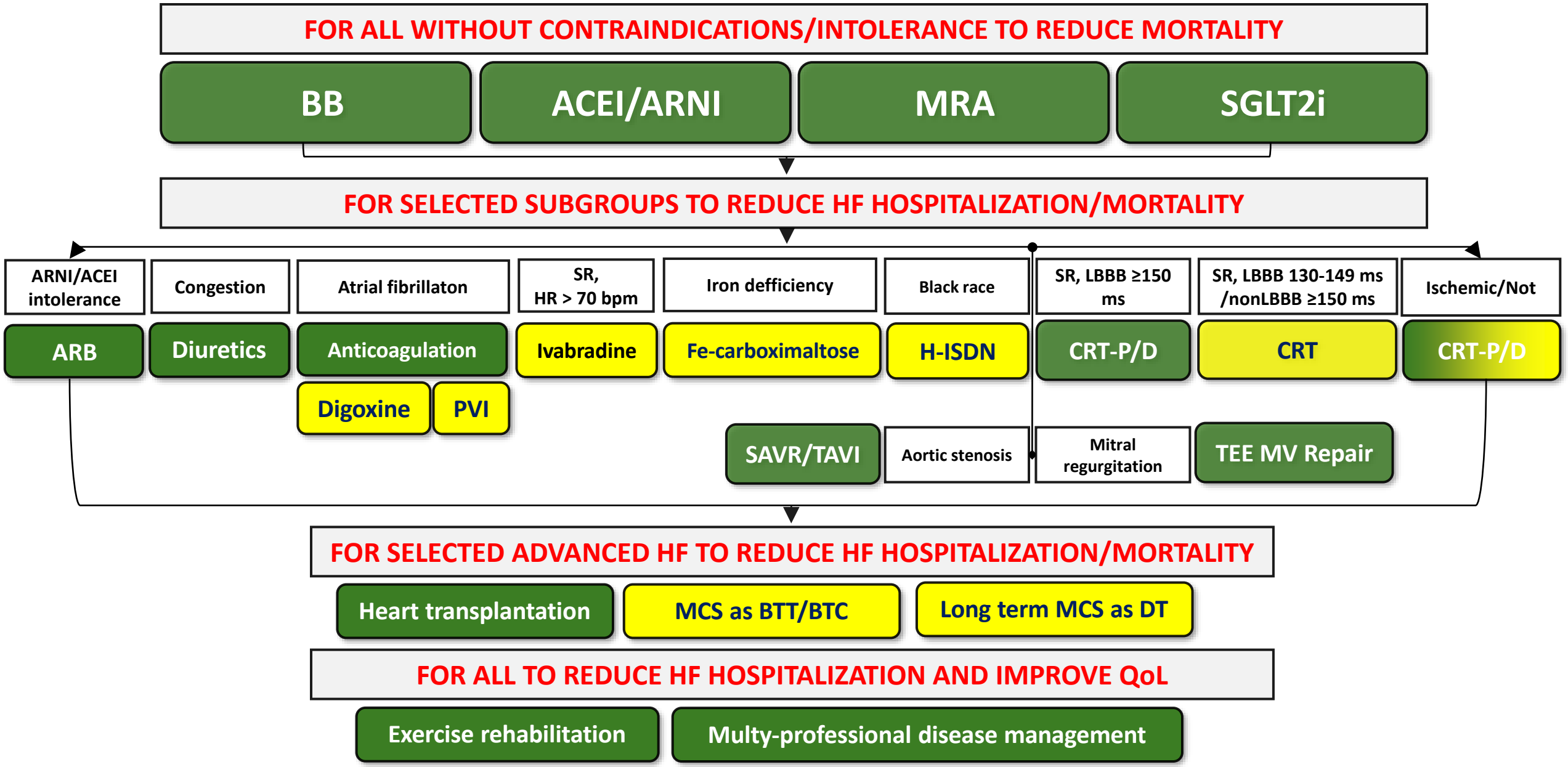


G. Rosano et al. European Journal of Heart Failure (2021) 23, 872–881

HFrEF fenotipinə görə müalicə



Modified from: 2021 ESC Guidelines fof diagnosis and treatment of acute and chronic heart failure. EHJ 2021

LVEF normallaşdıqda müalicəni saxlayaqmı?

Withdrawal of pharmacological treatment for heart failure in patients with recovered dilated cardiomyopathy (TRED-HF): an open-label, pilot, randomised trial

Brian P Halliday, Rebecca Wassall, Amrit S Lota, Zohya Khalique, John Gregson, Simon Newsome, Robert Jackson, Tsveta Rahneva, Rick Wage, Gillian Smith, Lucia Venneri, Upasana Tayal, Dominique Auger, William Midwinter, Nicola Whiffin, Ronak Rajani, Jason N Dungu, Antonis Pantazis, Stuart A Cook, James S Ware, A John Baksi, Dudley J Pennell, Stuart D Rosen, Martin R Cowie, John G F Cleland, Sanjay K Prasad

Daxiletmə meyarları

Diaqnoz DKMP
diaqnostika vaxtı SM-in dilatasiyası və SMAF < 40%

"Bərpa"
SMAF > 50%
Normal SM SDH indeksi NT-pro-BNP < 250 ng/l NYÜA ÜÇ FS I

İlkin son nöqtə — xəstəliyin təkrarlanması əlamətləri

1. SMAF-ın > 10% və 50%-dən aşağı azalması
2. SM SDH-də artım>normal dəyərin 10%-i
3. NT-pro-BNP-də ikiqat artım və > 400 ng/l-dən daha çox
4. ÜÇ-nın aşkar simptomları

Dizayn

Brian P Halliday və başqaları Lancet 11 noyabr 2018-ci ildə onlayn nəşr edilmişdir. Lancet. 2019-cu il 5 yanvar;393(10166):61-73. doi: 10.1016/S0140-6736(18)32484-X. Epub 2018 11 noyabr.

Withdrawal of pharmacological treatment for heart failure in patients with recovered dilated cardiomyopathy (TRED-HF): an open-label, pilot, randomised trial

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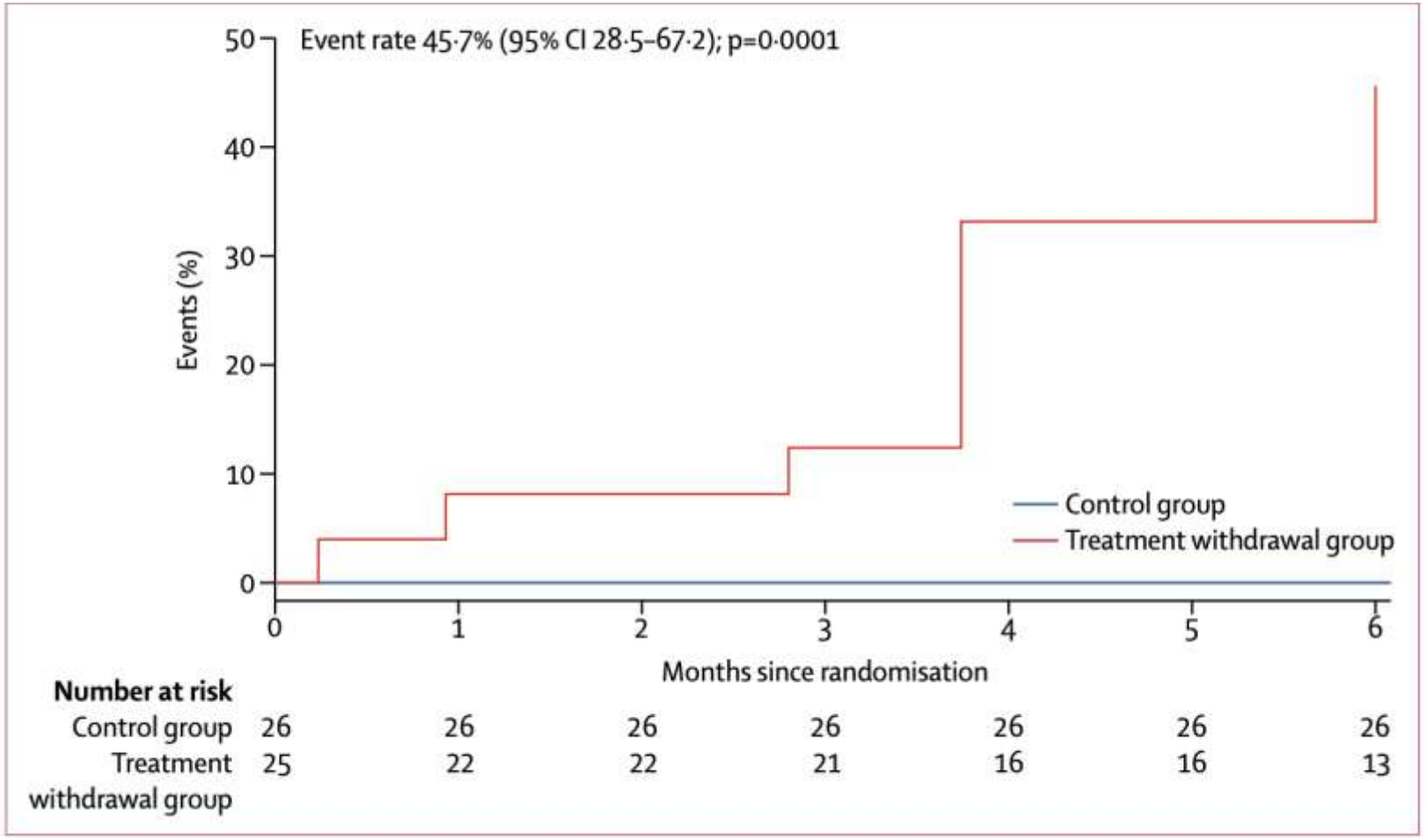


45.7%

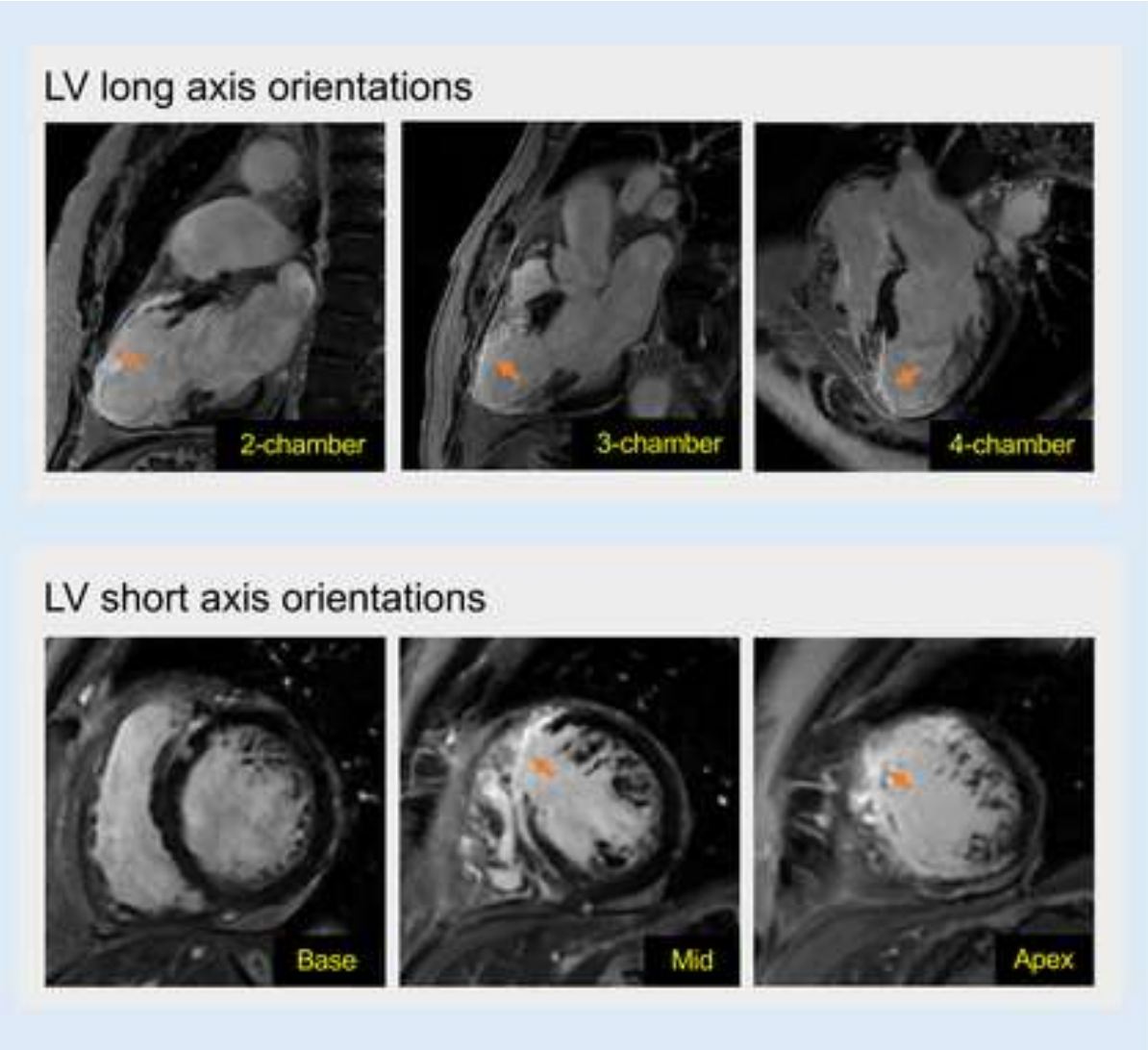
KLİNİK HAL

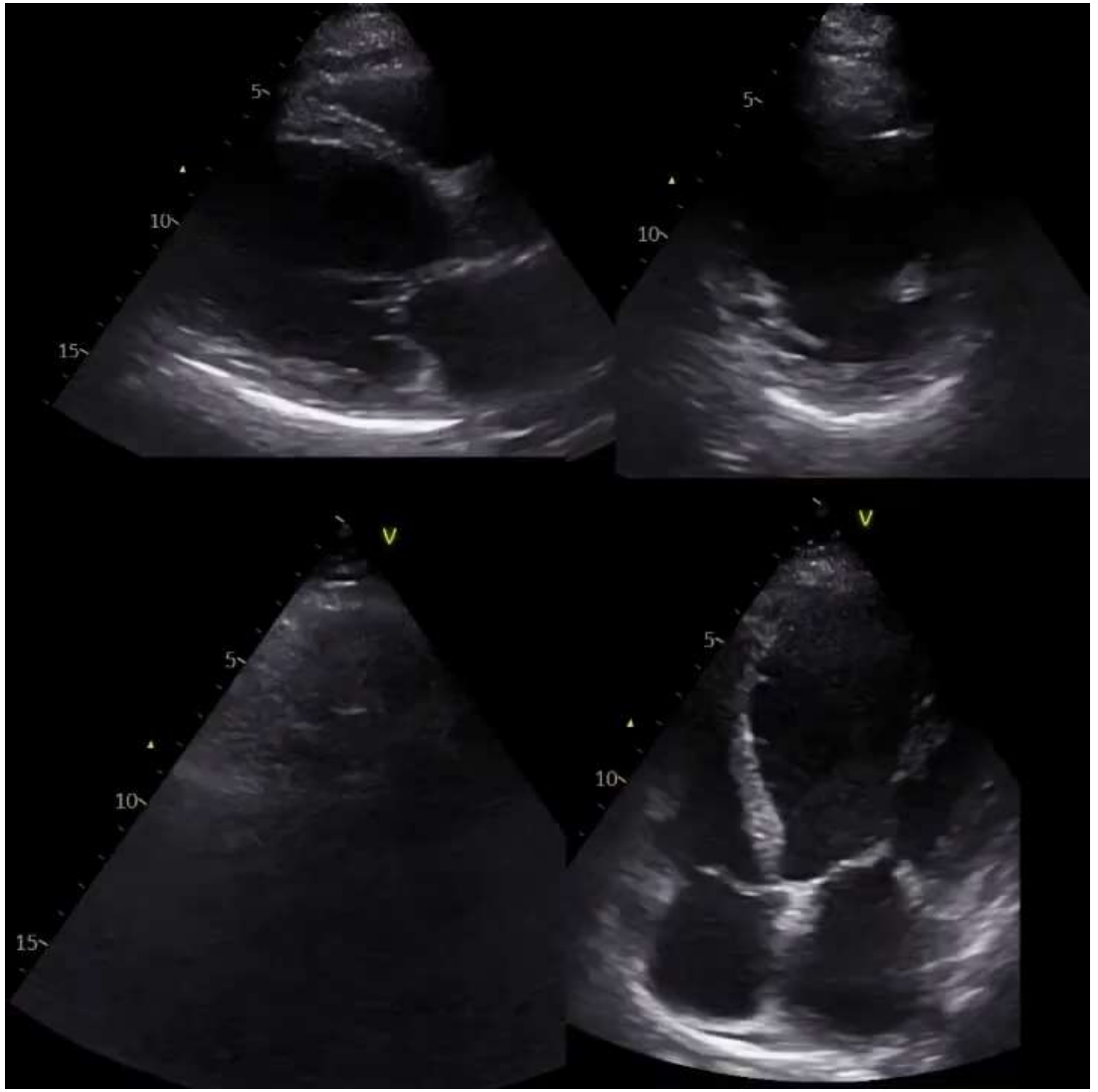
- 50 yaş kişi
- Öncə AKŞx4 (2005)
- Mİ (2005, 2018)
- Angioplastika (RCA safen) (2018)
- İşemik KMP
- EXO: LVEF 20%, SPAP 55mmHg, MÇ-2
- EKQ: QRS<120ms, Sinus ritmi

KLİNİK HAL

- 2 ildir ÜQDÇ şikayətləri var.
- Son 1 ildə 3 dəfə hospitalizasiya
- NYHA III-IV
- Dərmanlar:
  - Sacubitril/valsartan 24/26x2,
  - Spironolakton 100mq,
  - Karvedilol 6.25x2,
  - Furosemid 40mqx2,
  - Digoxin,
  - ASA100,
  - Rosuvastatin 20.

MRT və EXO


LV long axis orientations
2-chamber
3-chamber
4-chamber
LV short axis orientations
Base
Mid
Apex



LAB

- NT-proBNP – 11000 ng/dL
- Kreatin 1.5 mg/dL
- Kalium – 5.1 mmol/L
- Transferrin SAT – 25%
- Vit D – 45 ng/dL
- TSH – 4 mU/L
- AQQ – Ph 7.4

KLİNİK HAL

- 1 il əvvəl ağciyər ödemində baş vurur.
- Çıxışda NYHA IV
- AT 90/60mmHg, PS 70

BU PASIENTƏ DAHA NƏ EDƏK?

KLİNİK HAL

- Dərmanlar:
  - ARNİ 24/26x2,
  - Spironolakton 100mq,
  - Karvedilol 25x2,
  - Furosemid 125mqx2,
  - Digoxin
  - ASA 100
  - Rosuvastatin 20
  - Empagliflozin 10mg
  - İvabradin 5mgx2

KLİNİK HAL

- 6 ay sonra ağciyər ödemində təkrar müraciət.
- Çıxışda NYHA III
- AT 90/60mmHg, PS 65

DAHA NƏ EDƏ BİLƏRİK?

DAHA NƏ EDƏ BİLƏRİK?

- Revaskulyarizasiya?
- CRT upgrade?
- Yeni dərman?
- LVAD?
- Transplantasiya?
- İnvaziv struktural müdaxilələr?

Ürək çatışmazlığı üçün invaziv struktural müdaxilələr

INTERATRIAL SHUNT DEVICES
AFR (HFPEF, HFREF, PAH)
VWAVE (HFPEF, HFREF)
CORVIA (HFPEF)

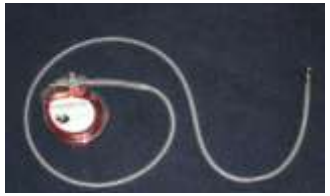
LV RESTORATION DEVICES (HFREF)
(PARACHUTE)

IMPLANTABLE HEMODYNAMIC MONITORING
PAP monitoring devices (CARDIOMEMS, CORDELLA)
LAP monitoring devices (HEARTPOD, VLAP)

STRUCTURAL INTERVENTIONS FOR HEART FAILURE

RENAL DENERVATION (HFREF)
PULMONARY DENERVATION (PAH)

PERCUTANEOUS INTERVENTIONS FOR VALVULAR REGURGITATION



INTERATRİAL SHUNT DEVICES

AFR

HFPEF, HFREF
PAH

V-WAVE

HFPEF, HFREF, PAH

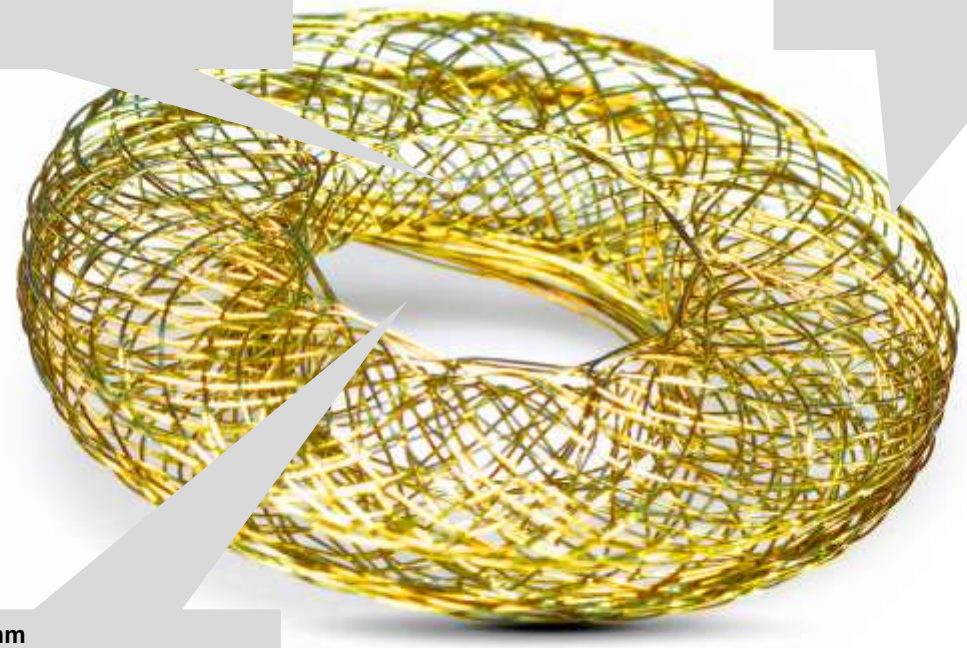
CORVIA

HFPEF

Occlutech Atrial Flow Regulator

Waist height from 2 to10 mm
- Differentiated waist heights allow the selection optimizing the implant to each patient

Flat discs
- Flush alignment to the septum allows fast endothelization and minimizes risk of thrombus formation

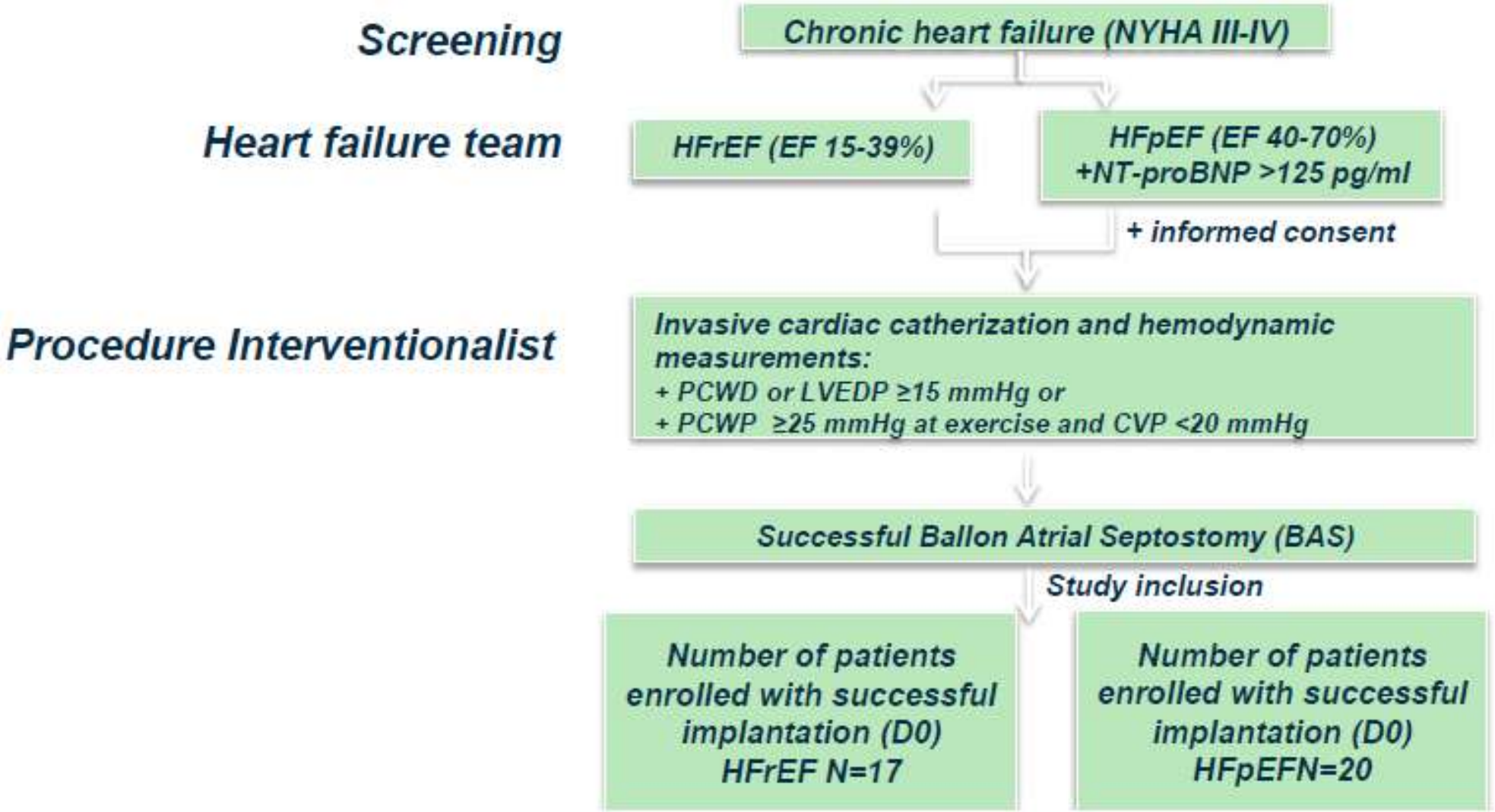


Shunt sizes from 4 to10 mm
- Differentiated shunt sizes allow selection of the optimal shunt for each patient

Screw-less connector
- Used Occlutech's standard delivery system with its unique flexibility

The AFR – PRELIEVE Trial

6 *aylıq nəticələr*



The AFR – PRELIEVE Trial

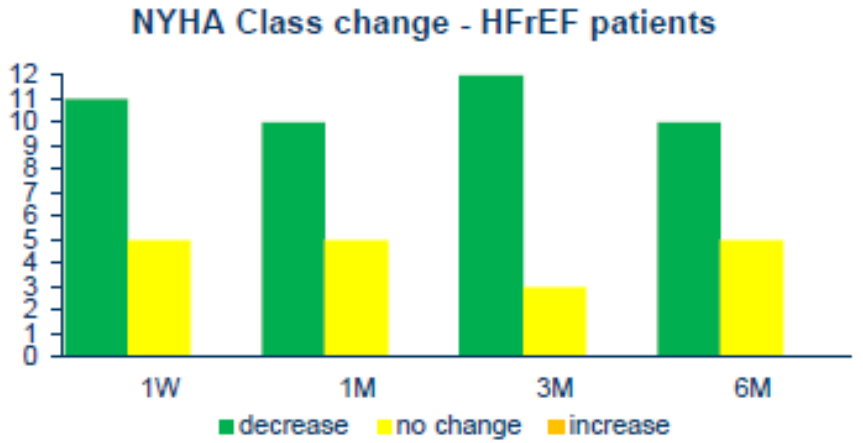
6 *aylıq nəticələr*

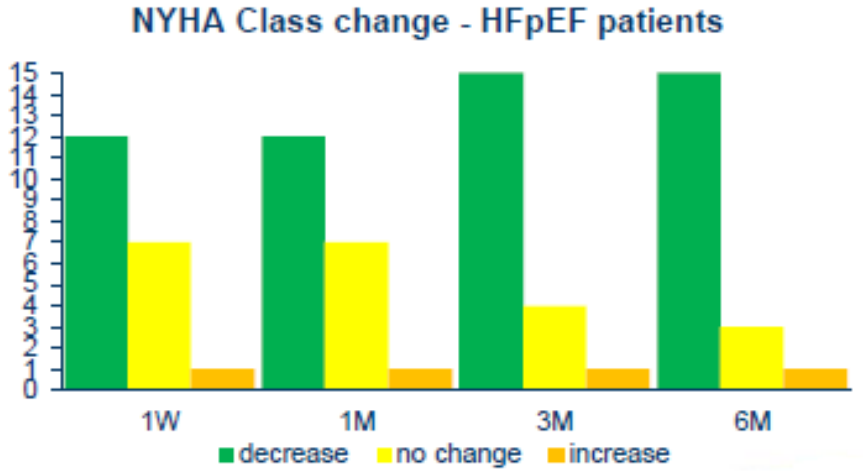
HFrEF (n=17)

	Week 1	Month 1	Month 3	Month 6
	Number (%) of patients			
Improvement	11 (69%)	10 (67%)	12 (80%)	10 (67%)
No change	5 (31%)	5 (33%)	3 (20%)	5 (33%)
Deterioration	0	0	0	0

HFpEF (n=20)

	Week 1	Month 1	Month 3	Month 6
	Number (%) of patients			
Improvement	12 (60%)	12 (60%)	15 (75%)	15 (79%)
No change	7 (35%)	7 (35%)	4 (20%)	3 (16%)
Deterioration	1 (5%)	1 (5%)	1 (5%)	1 (5%)





74% xəstələrdə NYHA sinfində yaxşılaşma

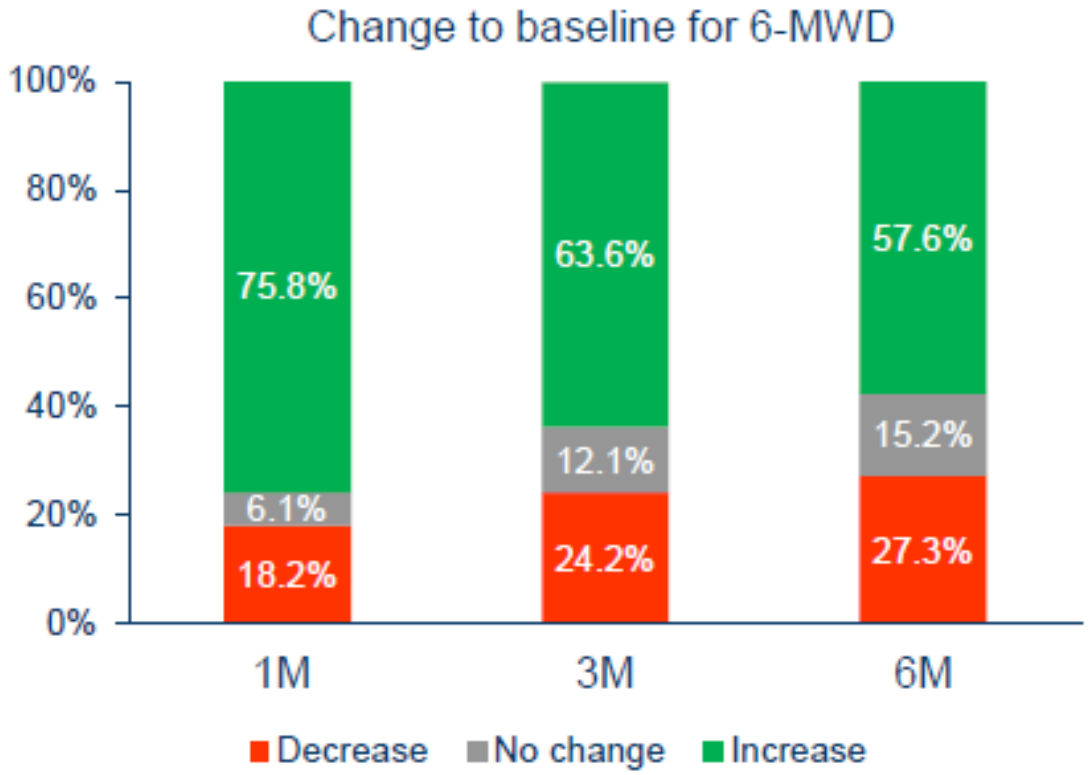
NYHA sinfi hər iki qrupda yaxşılaşıb

The AFR – PRELIEVE Trial

6 *aylıq nəticələr*

Change from baseline in 6MWD	Month 1 (N=33)	Month 3 (N=32)	Month 6 (N=32)
	Number (%) of patients		
Decrease	6 (18.2)	8 (24.2)	9 (27.3)
No change	2 (6.1)	4 (12.1)	5 (15.2)
Increase	25 (75.8)	21 (63.6)	19 (57.6)

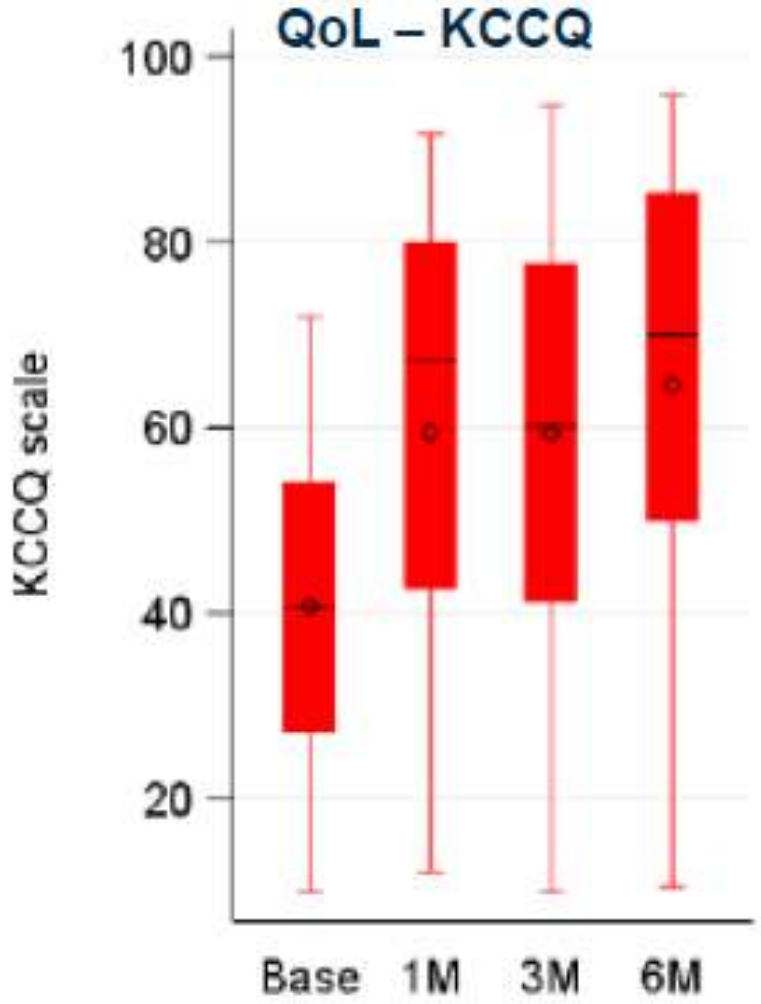
Decrease	≤ -20 m
No change	range: -19.90 to +9.90 m
Increase	≥ +10 m



6 dəqiqəlik yerimə testi yaxşılaşmışdır.

The AFR – PRELIEVE Trial

6 *aylıq nəticələr*



QoL – KCCQ Summary Score	Mean (SD)	Absolute change from BL Mean (SD)
Baseline	40.7 (16.0)	
1 Month	59.5 (23.2)	18.2 (22.0)*
3 Months	59.3 (24.1)	18.3 (25.4)*
6 Months	64.5 (23.8)	23.4 (23.5)*

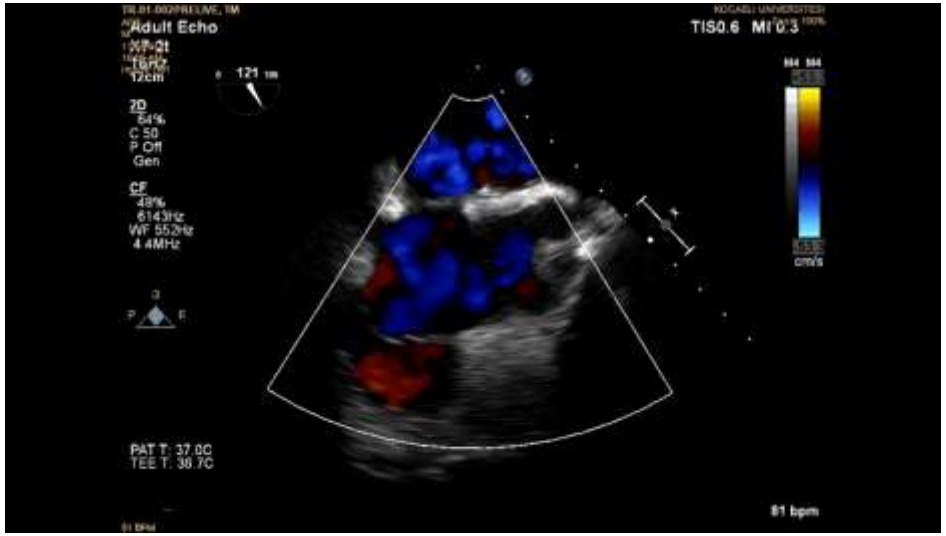
Statistical Tests have been applied to the parameters for absolute change (to BL).
Index "" indicates p-value <0.05 by one-sample t-Test*

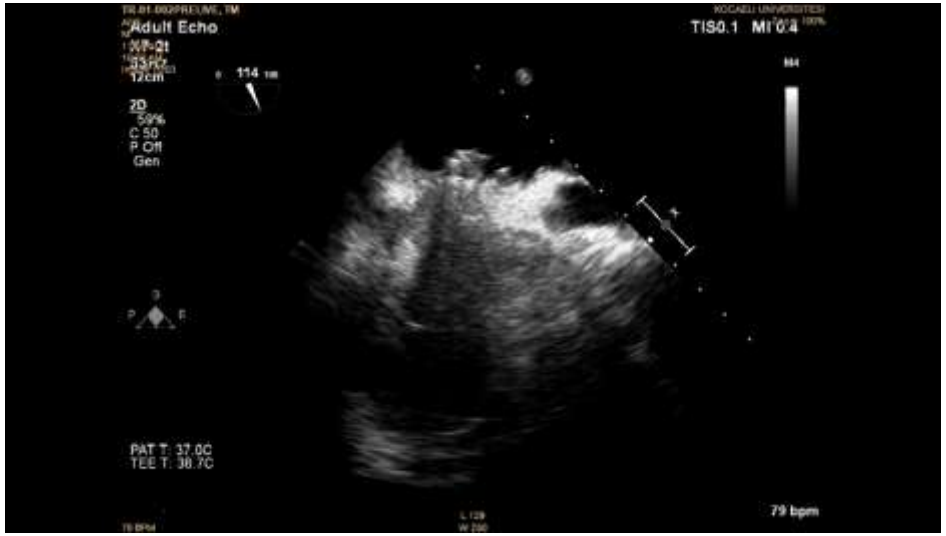
Həyat keyfiyyətində yaxşılaşma

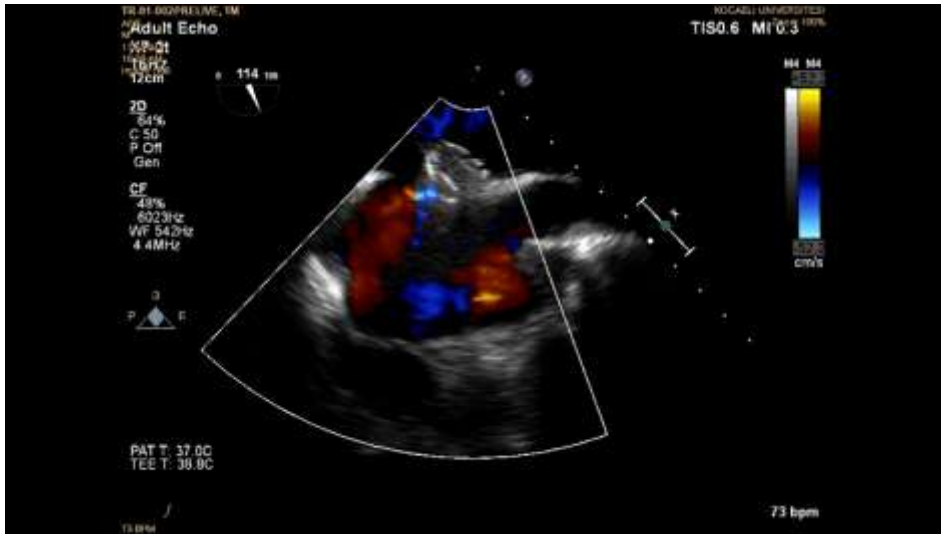
The AFR – PRELIEVE Trial
6 *aylıq nəticələr*

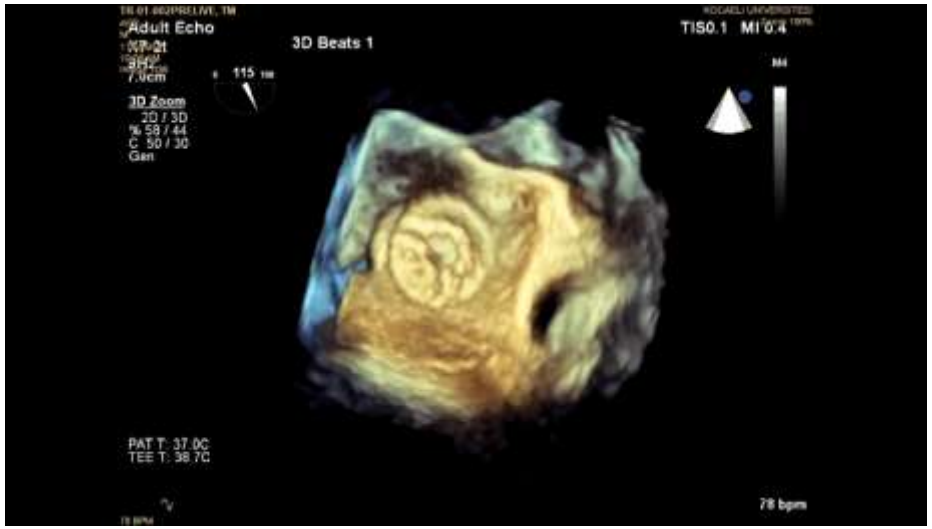
- Bütün AFR implantə edilmiş 36 xəstədə 6 ay boyunca açıqlıq əldə edildi.
- Cihaz implantasiyası yüksək risklə müşahidə edilmədi
- AFR cihazı ÜQDÇ simptomlarını azalda və həyat keyfiyyətini yaxşılaşdıra bilər.

AFR İMPLANTASİYASI





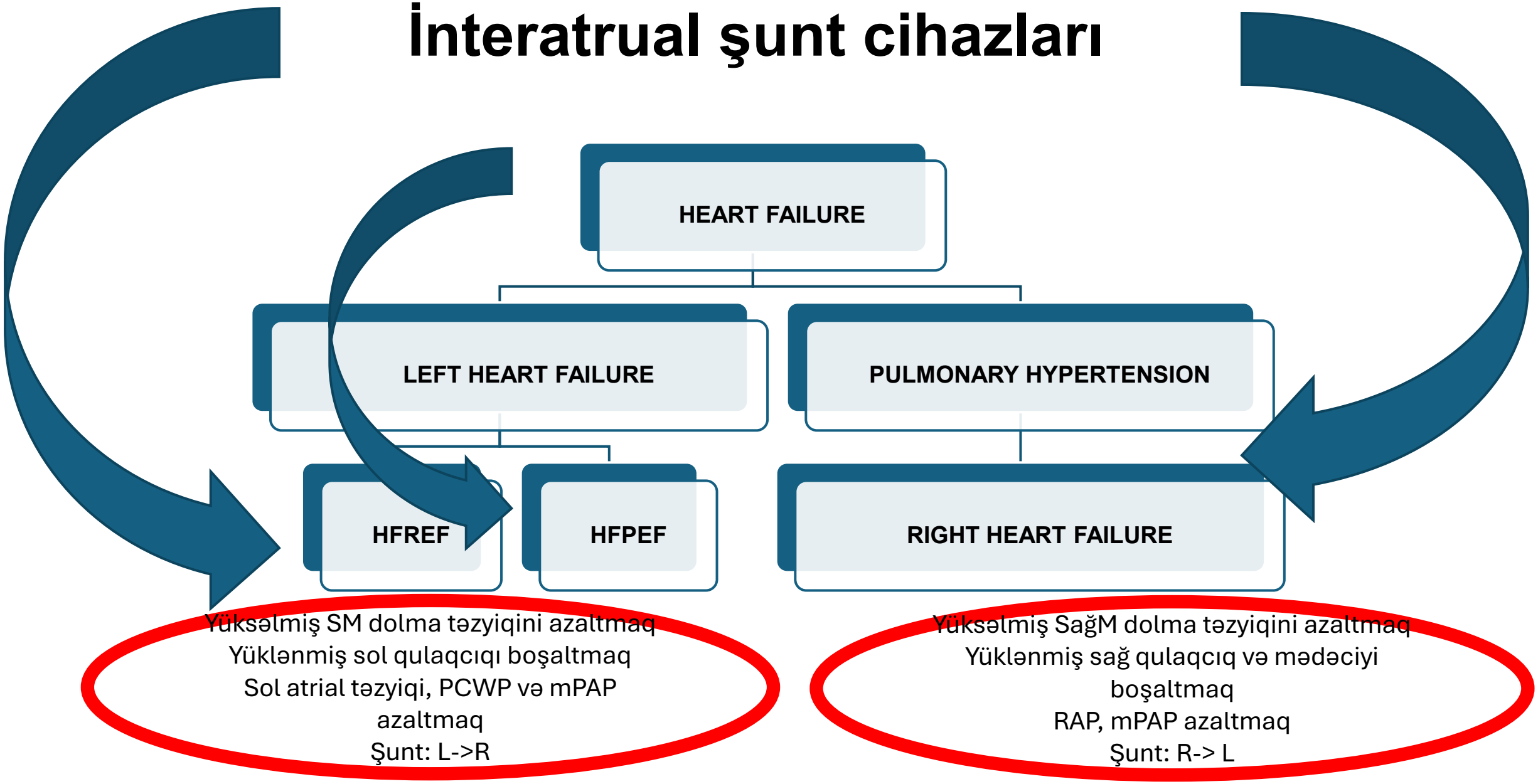




KLİNİK HAL

- Ürək çatışmazlığı simptomları azaldı!
- Təqibdə ağciyər ödemi izlənmədi!!!
- Yaxşı klinik status!
- AFR sonrası hospitalizasiya olmadı
- 6 dəq yürüş məsafəti artdı!!!

İnteratrual şunt cihazları

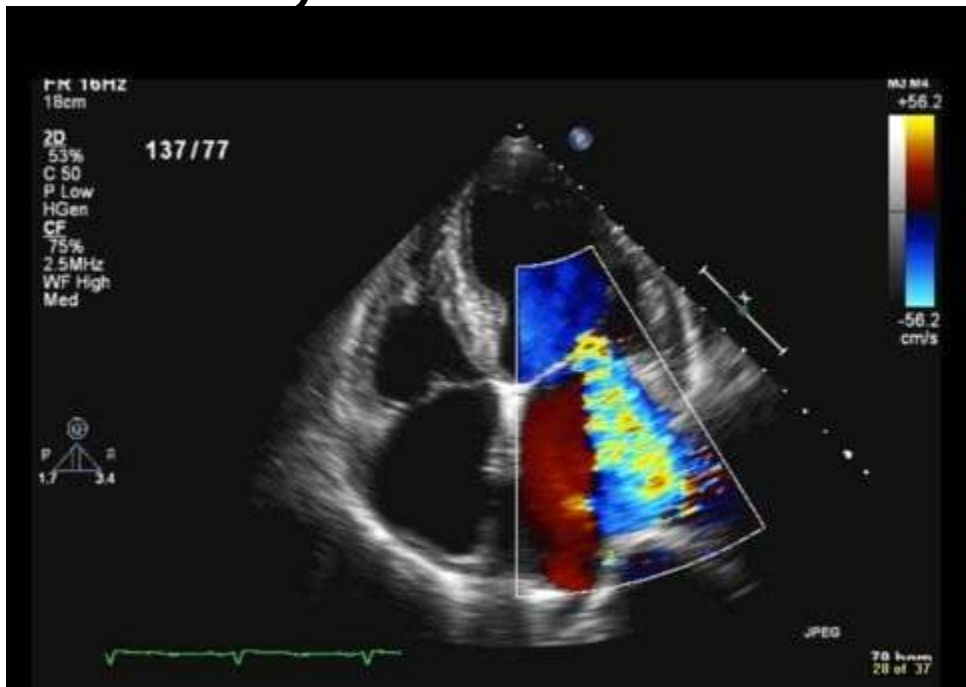


KLİNİK HAL 2

- Xəstə kişi 72 yaş
- DM+, HT+,
- Keçirilmiş Mİ, ÜQDÇ (NYHA 3)
- 2006 də AKŞ+AVR olunub (MVR də tövsiyyə edilmişdi)
- 2009 Cx angioplastika
- İCD qəbul etmir.

Instrumental müayinə və laboratoriya

- EXO: EF-35% (apex diskinetik, inferior anevrizmatik), SPAP-55mmHg, MÇ 4, LA 50mm
- EKQ: Qulaqcıq səyriməsi, QRS<120ms, PS 65
- LAB: Kreatin 2.8 mg/dL

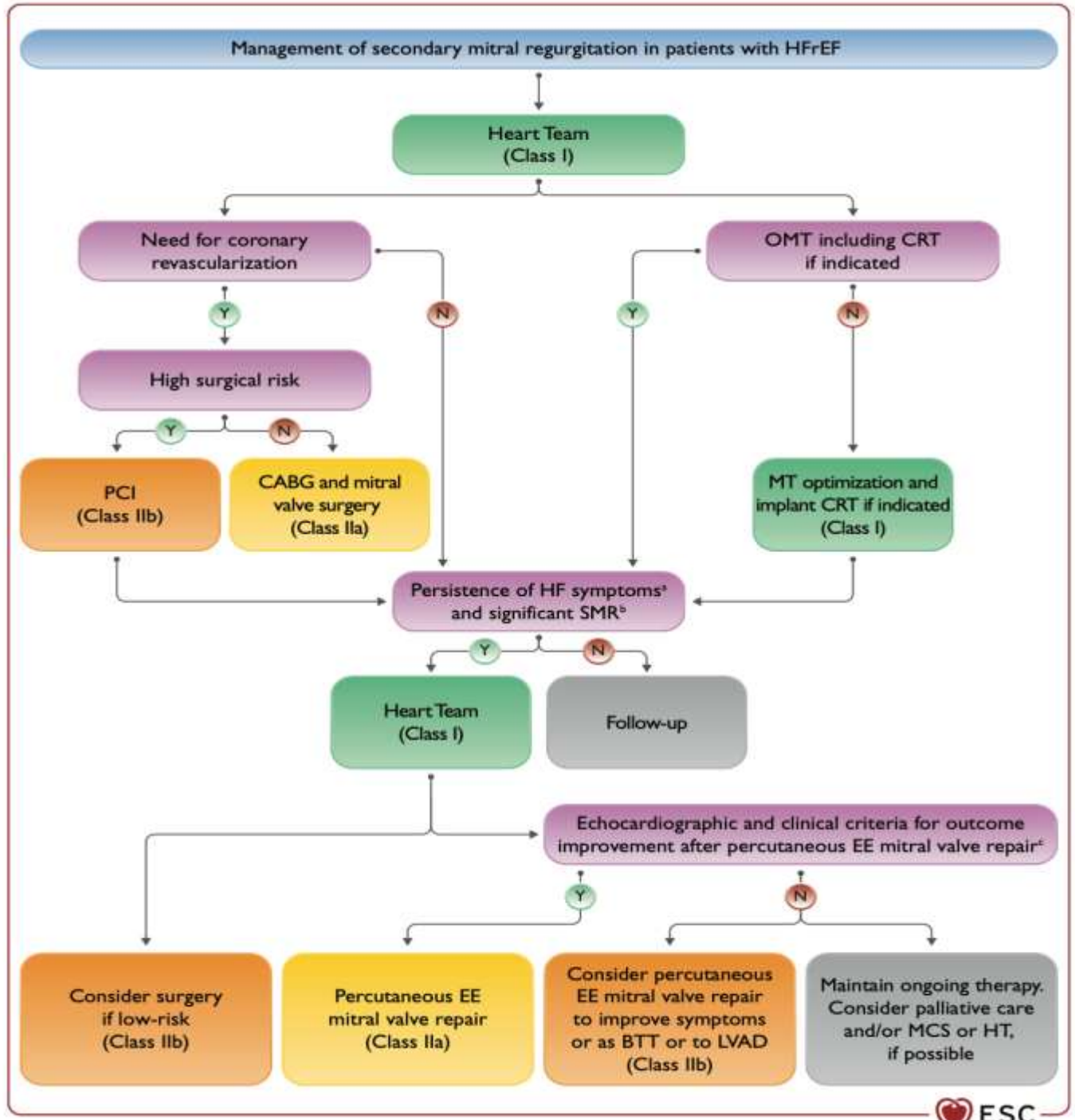


KLİNİK HAL 2

- 2014 4 dəfə ÜQDÇ bağlı hospitalizasiya
- Dərmanlar:
  - Varfarin 5mg
  - Perindopril 2.5mg
  - Veroşpiron 25mg
  - Furosemod 125mgx2
  - Metoprolol 100mgx2
  - Digoxin 0.25
  - Atorvastatin 40mg

DAHA NƏ EDƏ BİLƏRİK?

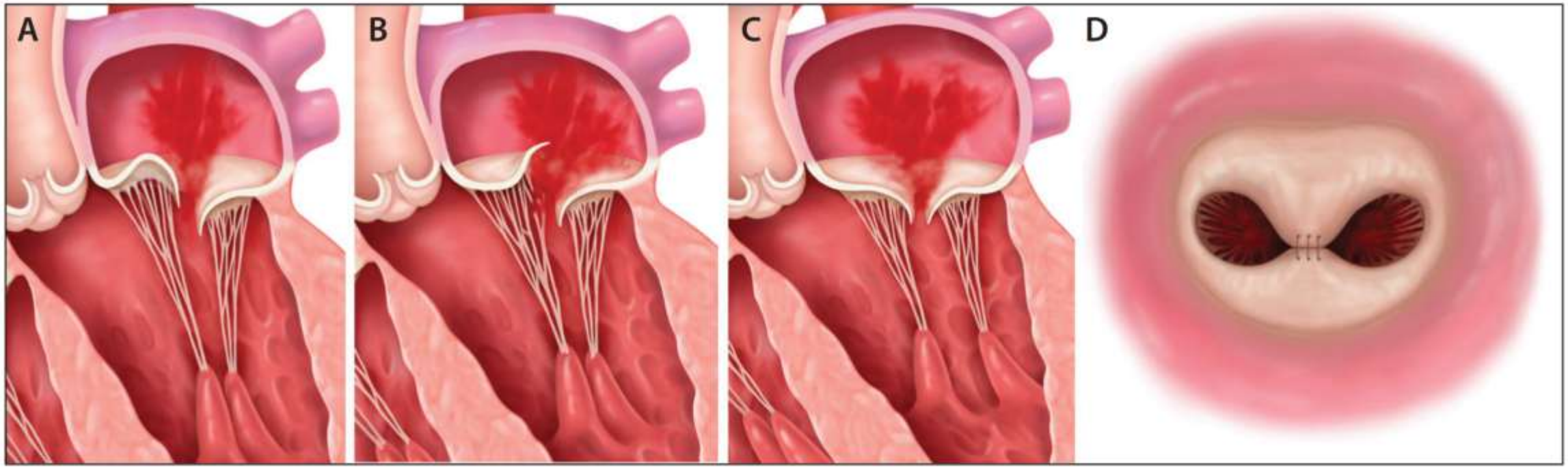
- Revaskulyarizasiya?
- AV düyün ablasiyası və CRT?
- Yeni dərman?
- LVAD?
- Transplantasiya?
- Hemodializ?
- İnvaziv struktural müdaxilələr?


Management of secondary mitral regurgitation in patients with HFrEF
Heart Team (Class I)
Need for coronary revascularization
OMT including CRT if indicated
Y
N
Y
N
High surgical risk
Y
N
PCI (Class IIb)
CABG and mitral valve surgery (Class IIa)
MT optimization and implant CRT if indicated (Class I)
Persistence of HF symptoms[a] and significant SMR[b]
Y
N
Heart Team (Class I)
Follow-up
Echocardiographic and clinical criteria for outcome improvement after percutaneous EE mitral valve repair[c]
Y
N
Consider surgery if low-risk (Class IIb)
Percutaneous EE mitral valve repair (Class IIa)
Consider percutaneous EE mitral valve repair to improve symptoms or as BTT or to LVAD (Class IIb)
Maintain ongoing therapy. Consider palliative care and/or MCS or HT, if possible
ESC

MitraClip tarixi

"I was inspired by a rare congenital defect I observed, a double orifice mitral valve that still functioned sufficiently. This gave me confidence that an edge-to-edge repair could be a solution for diseased valves. What I found was that the technique was surprisingly simple and extremely effective."

– Ottavio Alfieri, MD



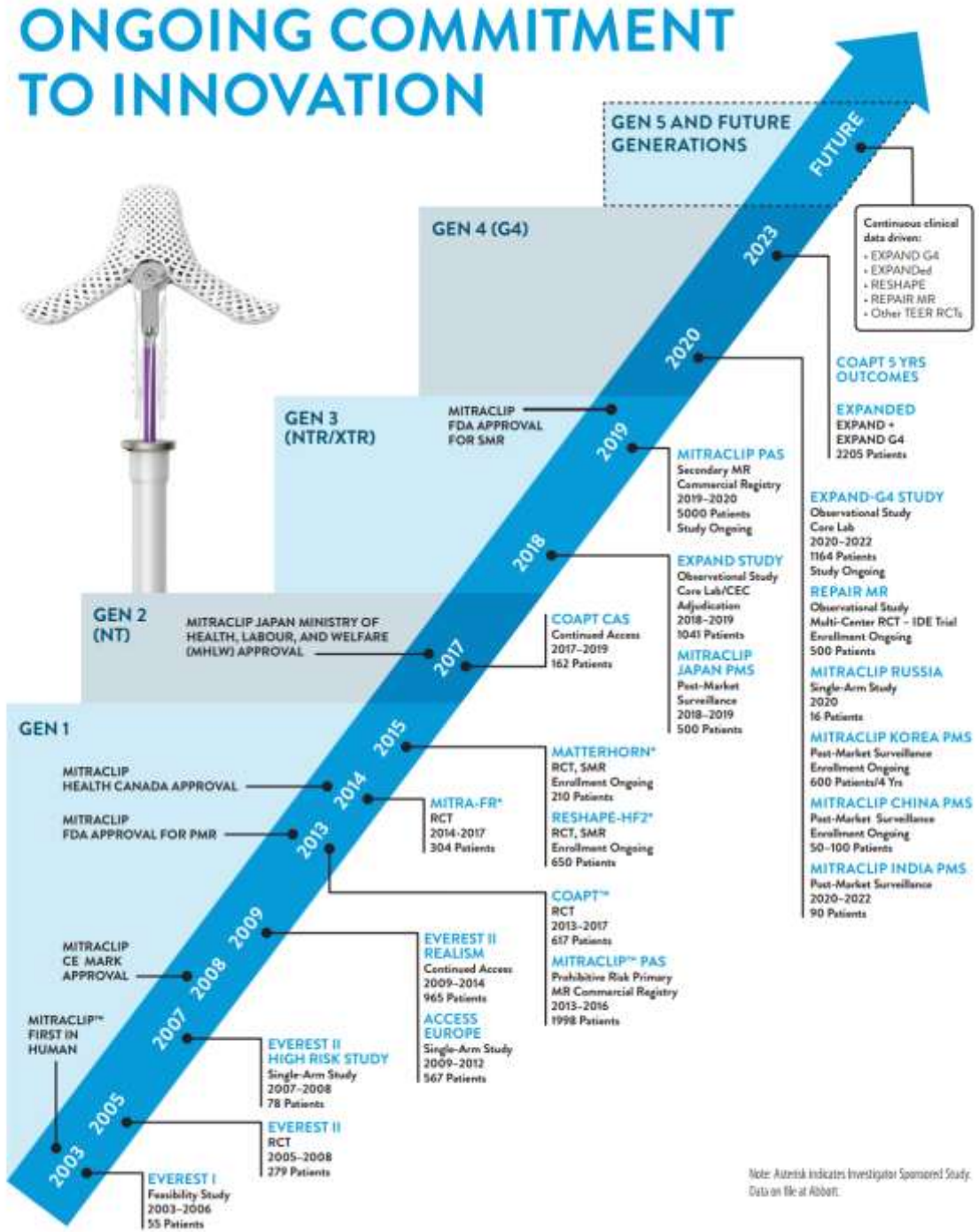
MitraClip tarixi

"When we first proposed the concept of catheter-based mitral valve repair 25 years ago, we were cautiously optimistic that it would have significant clinical value. After we performed the initial clinical TEER case in 2003 and witnessed the remarkable reduction in mitral regurgitation, our confidence grew, but we had no idea that it would be such an extraordinary game changer."

–Frederick St. Goar, MD

Figure 1. Evolution of MitraClip™ implant from initial suture delivery concept (A), flexible nitinol loop implant (uncovered) (B), nitinol loop implant with covered arms and grippers (C), to covered clip with rigid stable arms (D).

MitraClip tarixi



Contemporary, real-world outcomes of 5000 patients with secondary mitral regurgitation treated with MitraClip™: Results from the COAPT Post Approval Study

Kashish Goel, M.D.

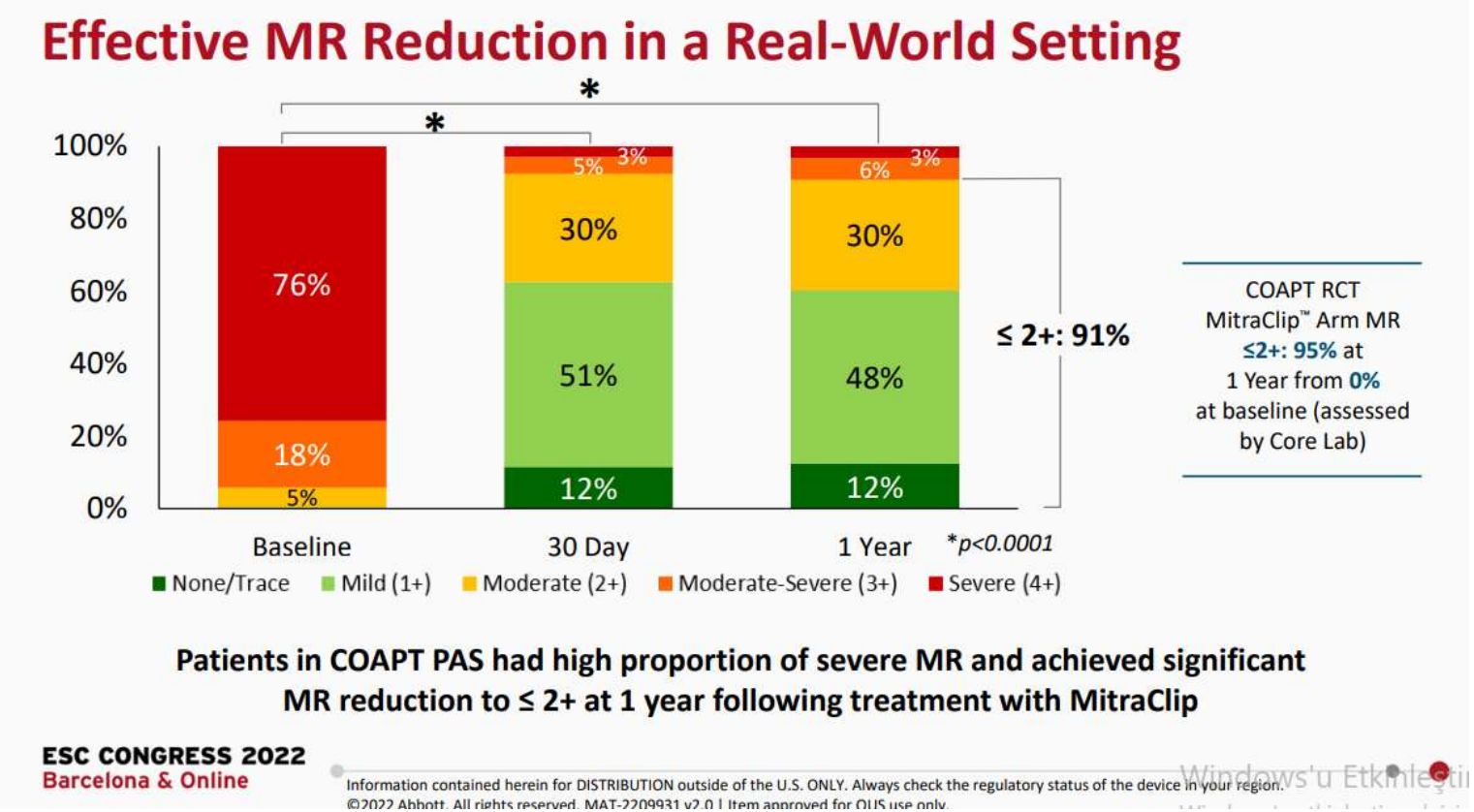
On behalf of Raj Makkar, Hursh Naik, Satya Atmakuri, Paul Mahoney, Andrew Morse, Pradeep Yadav, Wayne Batchelor, Jason Rogers, Brian Whisenant, Michael Rinaldi, James Hermiller, JoAnn Lindenfeld, Brian Lindman, Colin Barker and the COAPT PAS investigators

August 28, 2022

COAPT Post Approval Study is sponsored by Abbott. The views or opinions presented here do not represent those of the American College of Cardiology, The Society of Thoracic Surgeons, or the STS/ACC TVT Registry. Statistical analyses were performed by Abbott under the supervision of the authors.

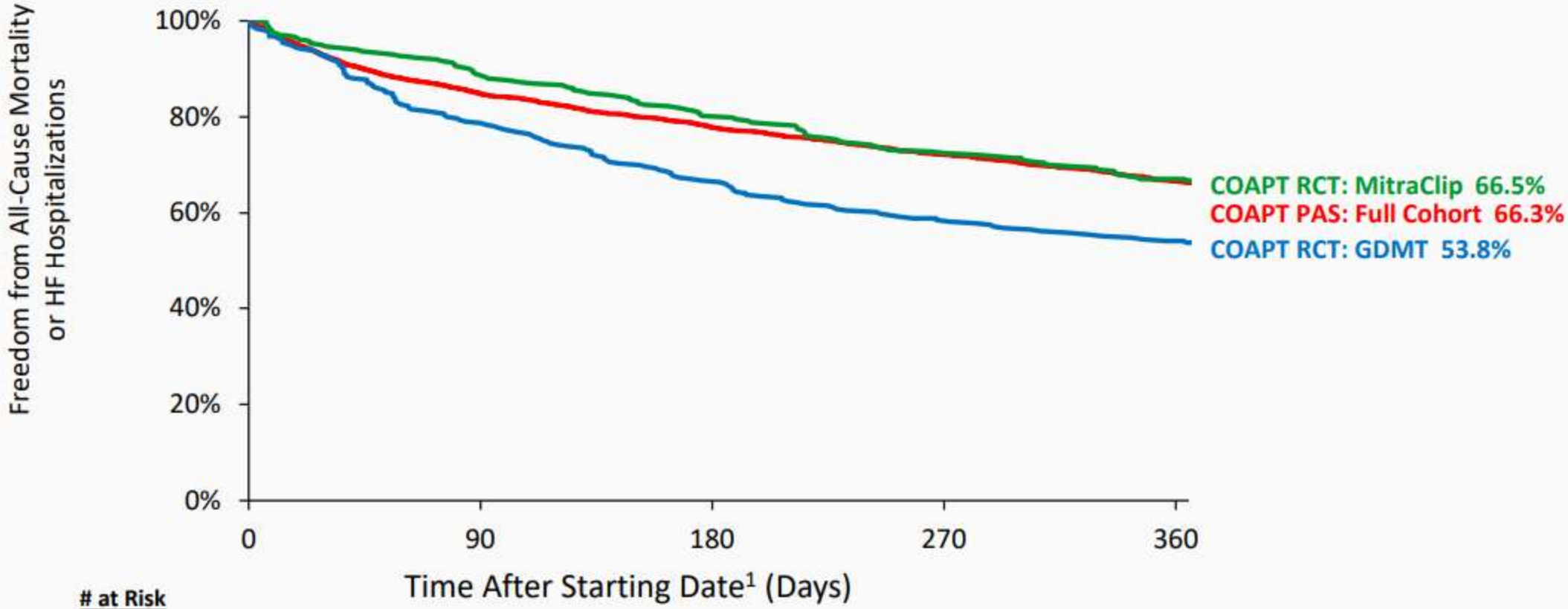
COAPT PAS

- Mart 2019 – Sentyabr 2020
- 406 mərkəz
- 5000 yaxın xəstədə MitraClip in ikincili MÇ də effektivliyi



- Başda orta ciddi və ciddi MÇ 94% halda izləndi. Prosedur sonra 1 ay və 1 il sonrası bu nisbət 8-9% dir.

Freedom from All-Cause Mortality or HF Hospitalizations



# at Risk					
COAPT RCT: MitraClip	302	265	238	216	196
COAPT PAS	5000	3217	2923	2700	1834
COAPT RCT: GDMT	312	245	206	176	156

Cərrahi və perkutan qrup nəticələri

Variable	SMVR ($n = 106$)	PMVR ($n = 99$)	*P*-value
Procedure			
Procedure time, min	150 [118–240]	90 [60–136]	**<0.01**
MI to Procedure, days	12 [5–19]	19 [10–40]	**<0.01**
MR >2 at discharge	9 (8)	8 (8)	0.80
Major complications	36 (34)	6 (6)	**<0.01**
Outcomes			
Procedure success	98 (92)	92 (93)	0.53
In-hospital mortality	17 (16)	6 (6)	**0.03**
Mortality at 3 months	21 (20)	10 (10)	0.13
Rehospitalization at 3 months	6 (6)	13 (13)	0.14
1-year mortality	32 (31)	16 (17)	**0.04**

Nəticə

- Kəskin Mİ sonrası MÇ-yə müdaxilə konservativ müalicədən üstündür.

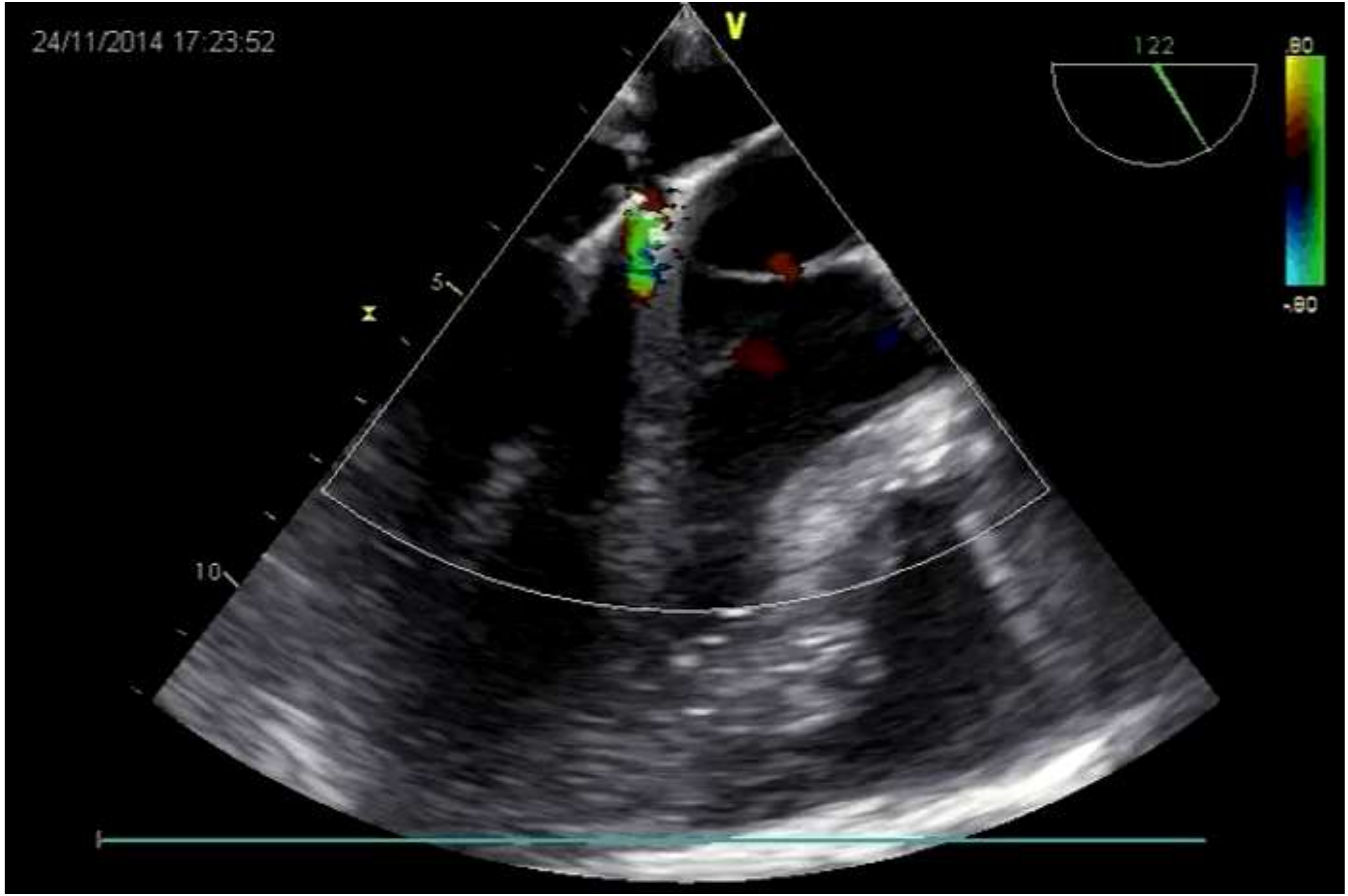
- MitraClip nəticələri cərrahi nəticələrdən geri qalmır.

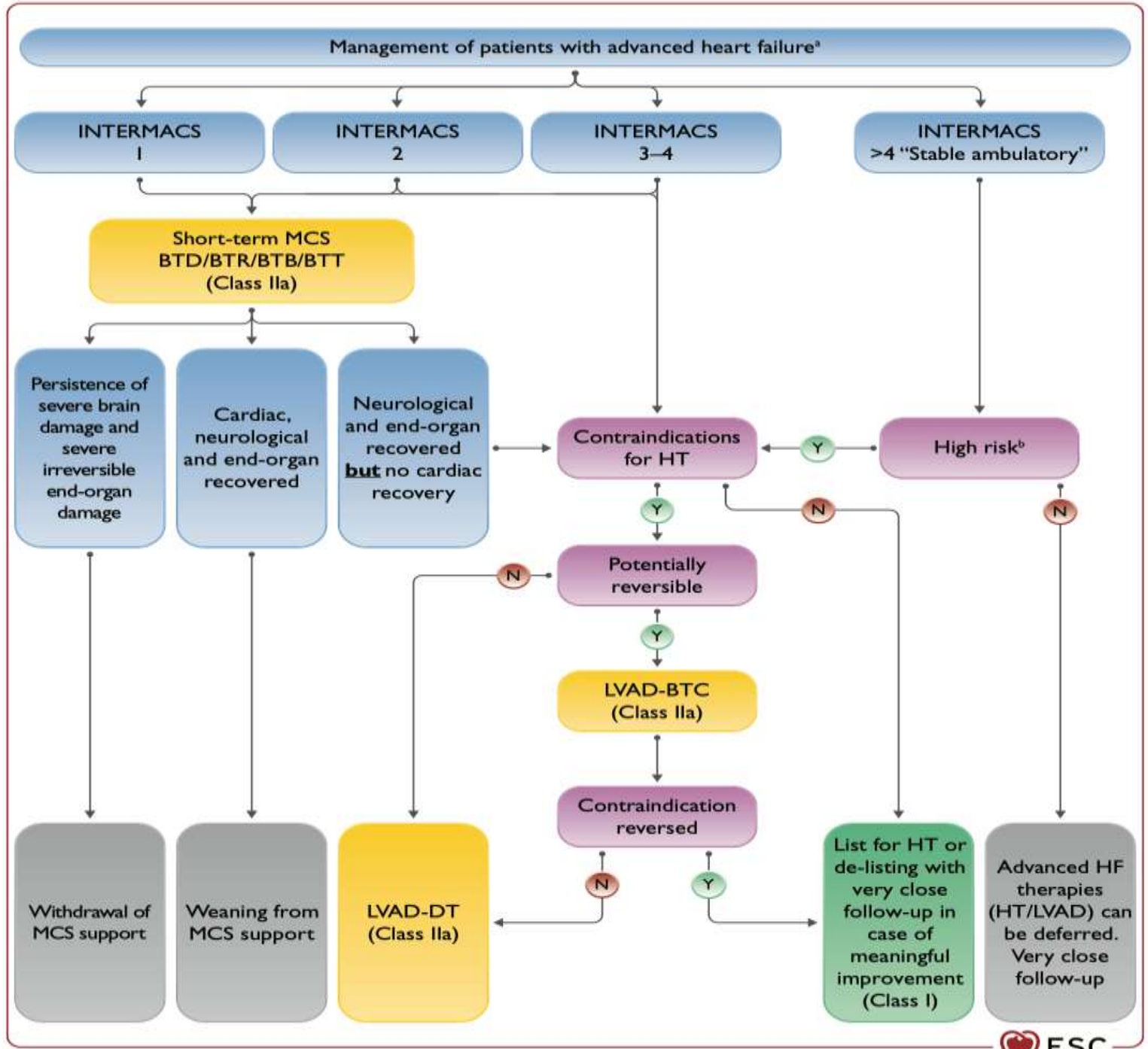
Patients with concomitant coronary artery or other cardiac disease requiring treatment		
Valve surgery is recommended in patients undergoing CABG or other cardiac surgery.[329,330,333]	I	B
In symptomatic patients, who are judged not appropriate for surgery by the Heart Team on the basis of their individual characteristics,[d] PCI (and/or TAVI) possibly followed by TEER (in case of persisting severe SMR) should be considered.	IIa	C

2021 ESC GUIDELINE

Patients without concomitant coronary artery or other cardiac disease requiring treatment		
TEER should be considered in selected symptomatic patients, not eligible for surgery and fulfilling criteria suggesting an increased chance of responding to the treatment.[337,338,356,357] e	IIa	B

2021 ESC GUIDELINE


24/11/2014 17:23:52
V
122
80
-80
5
10


Management of patients with advanced heart failure[a]
INTERMACS 1
INTERMACS 2
INTERMACS 3–4
INTERMACS >4 "Stable ambulatory"
Short-term MCS BTD/BTR/BTB/BTT (Class IIa)
Persistence of severe brain damage and severe irreversible end-organ damage
Cardiac, neurological and end-organ recovered
Neurological and end-organ recovered **but** no cardiac recovery
Contraindications for HT
Y
High risk[b]
Y
N
N
Potentially reversible
N
Y
LVAD-BTC (Class IIa)
Contraindication reversed
N
Y
Withdrawal of MCS support
Weaning from MCS support
LVAD-DT (Class IIa)
List for HT or de-listing with very close follow-up in case of meaningful improvement (Class I)
Advanced HF therapies (HT/LVAD) can be deferred. Very close follow-up
ESC

Take home message

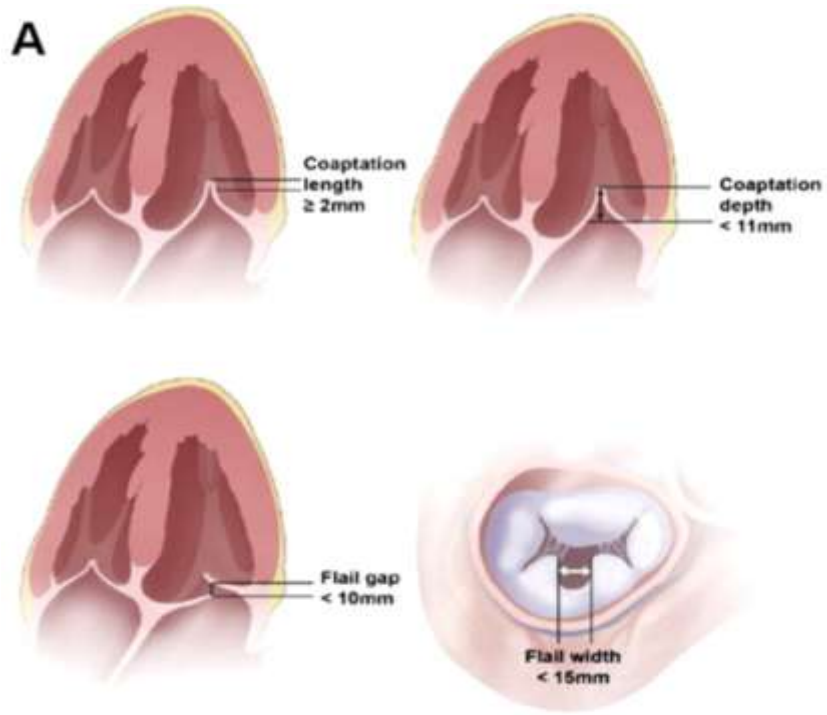
- Dərman müalicəsi tükəndikdə invaziv müdaxilələr hər zaman ağılda tutulmalıdır.
- Transplantasiya olunana qədər zaman qazandırır.
- Simptomları azaldır, həyat keyfiyyətini yaxşılaşdırır.


תודה
Dankie
Gracias
Спасибо
شكراً
Merci
Takk
Köszönjük
Terima kasih
Grazie
Dziękujemy
Dėkojame
Ďakujeme
Vielen Dank
Paldies
Kiitos
Täname teid
谢谢
Təşəkkür edirəm
Tak
感謝您
Obrigado
Teşekkür Ederiz
감사합니다
Σας ευχαριστούμε
ขอบคุณ
Bedankt
Děkujeme vám
ありがとうございます
Tack

ASSESSMENT OF ANATOMICAL COMPLEXITY-M-TEER

Non-complex
Ideal for M-TEER

- Central pathology
- No calcification
- MVA >4.0 cm^2
- Posterior leaflet >10 mm
- Tenting height <10 mm
- Flail gap <10 mm
- Flail width <15 mm



Repair!

Anatomical suitability for M-TEER

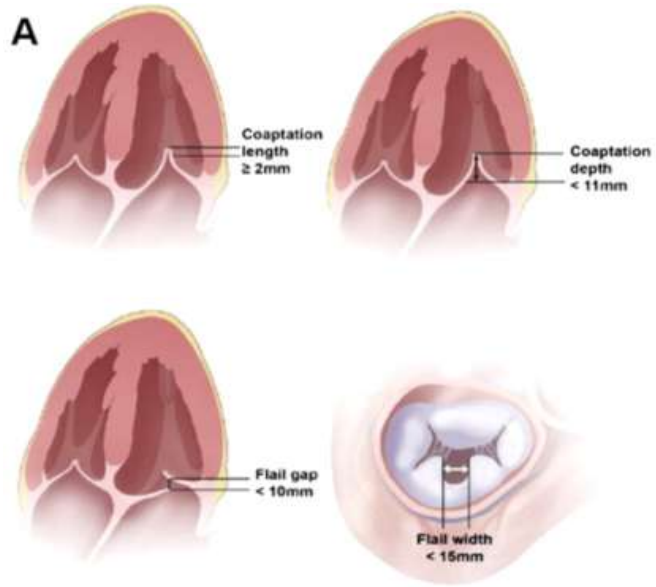
Centre experience

Replacement?

ASSESSMENT OF ANATOMICAL COMPLEXITY-M-TEER

Complex
Suitable for M-TEER

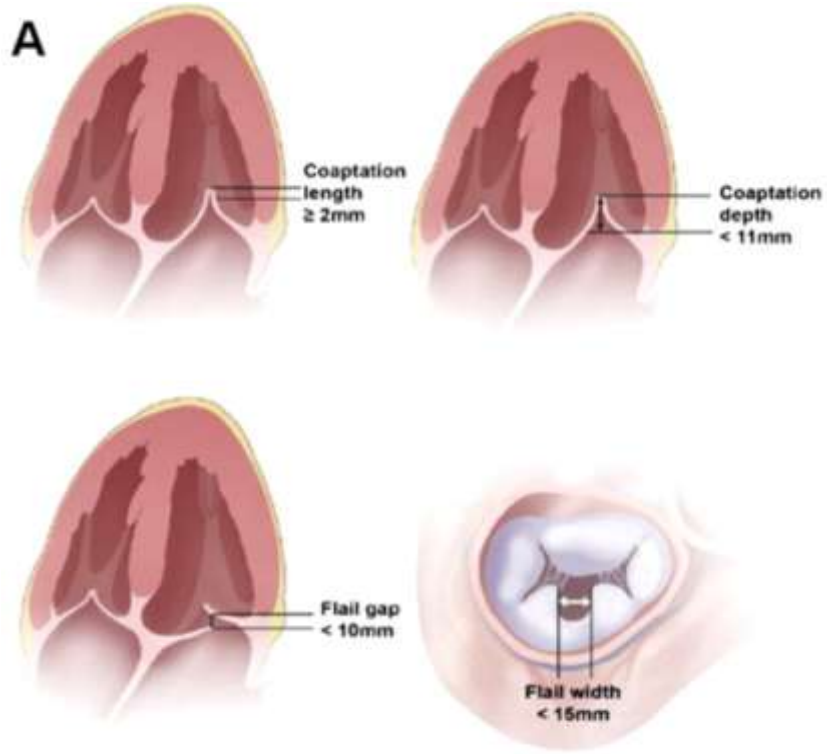
- Isolated commissural lesion (A1/P1 or A3/P3)
- Annular calcification without leaflet involvement
- MVA 3.5–4.0 cm^2
- Posterior leaflet length 7–10 mm
- Tenting height >10 mm
- Flail width >15 mm
- Flail gap >10 mm
- Two jets from leaflet indentations



ASSESSMENT OF ANATOMICAL COMPLEXITY-M-TEER

Very complex
Challenging for M-TEER

- Commissural lesion with multiple jets
- Annular calcification with leaflet involvement
- Fibrotic leaflets
- Wide jet involving the whole coaptation
- MVA 3.0-3.5 cm^2
- Posterior leaflet length 5-7 mm
- Barlow's disease
- Cleft
- Failed surgical annuloplasty



ASSESSMENT OF ANATOMICAL COMPLEXITY-M-TEER

Criteria favouring replacement M-TEER hard or impossible

- Concentric MAC with stenosis
- MVA <3.0 cm^2
- Relevant mitral valve stenosis (mean gradient >5 mmHg)
- Posterior leaflet <5 mm
- Calcification in the grasping zone
- Deep regurgitant cleft
- Leaflet perforation
- Multiple/wide jets
- Rheumatic mitral stenosis