TEER della valvola mitrale: indicazioni attuali e prospettive future

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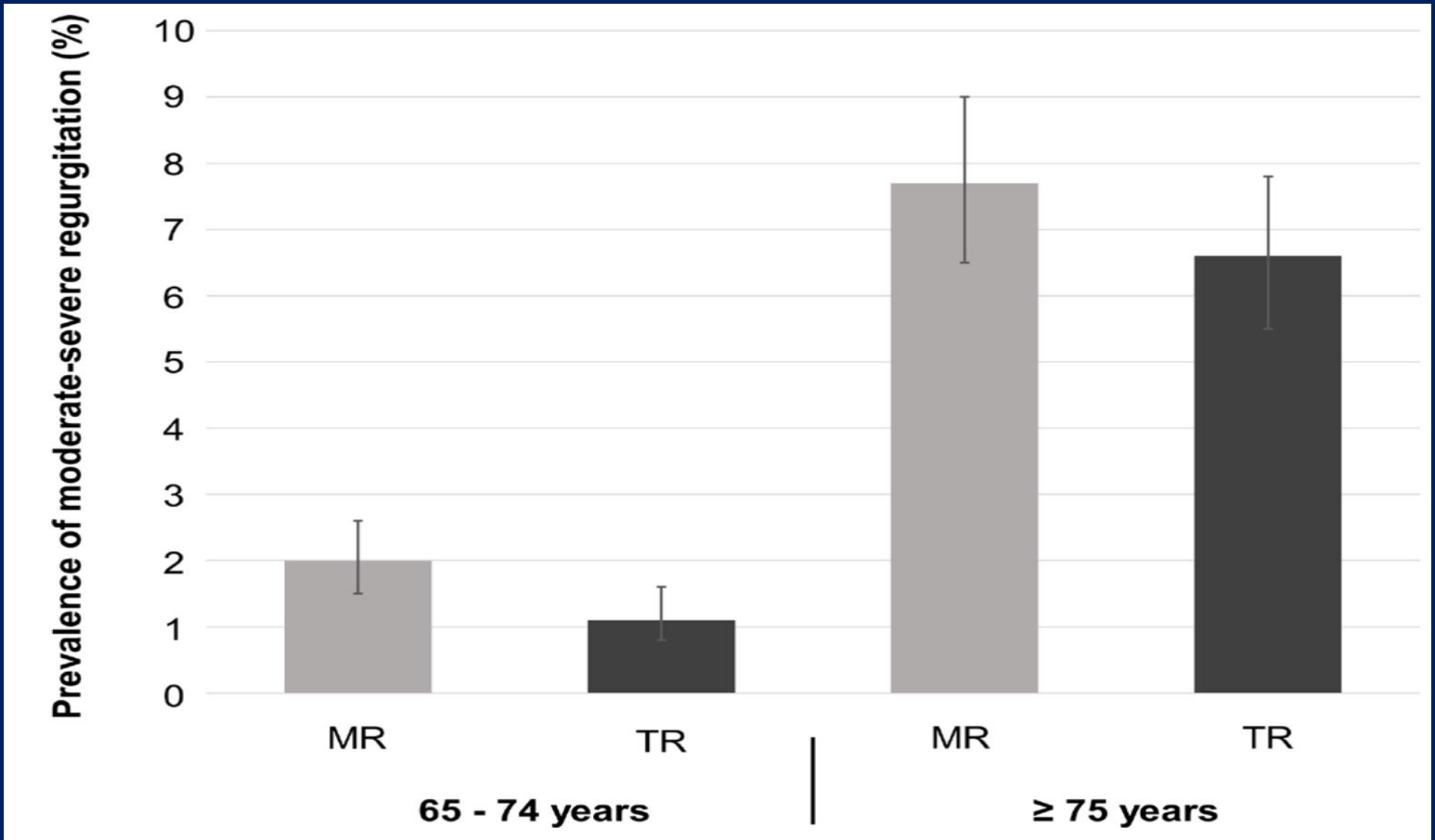
UNIVERSITÀ DEL PIEMONTE ORIENTALE

Insufficienza mitralica: un problema aperto

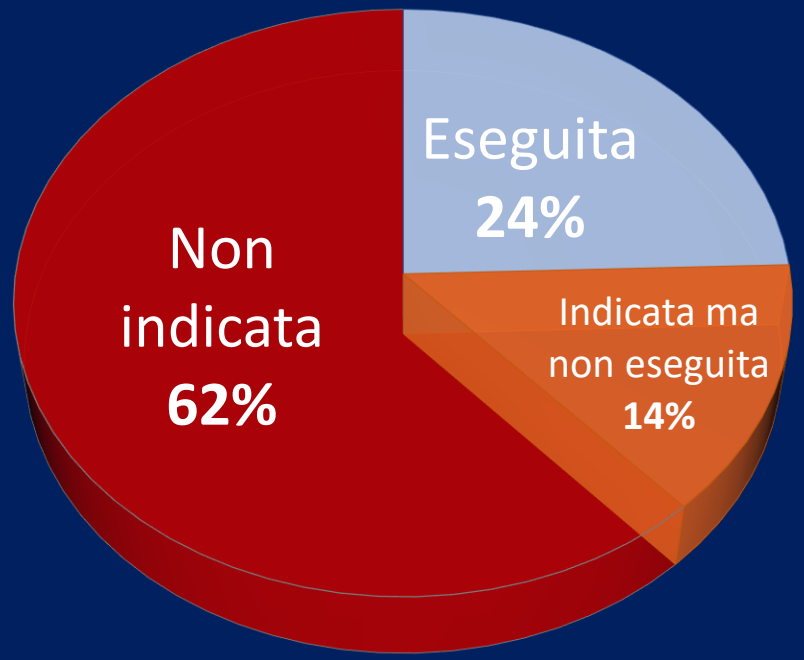


Moderate or greater MR/TR is common, age-dependent and is under-diagnosed.

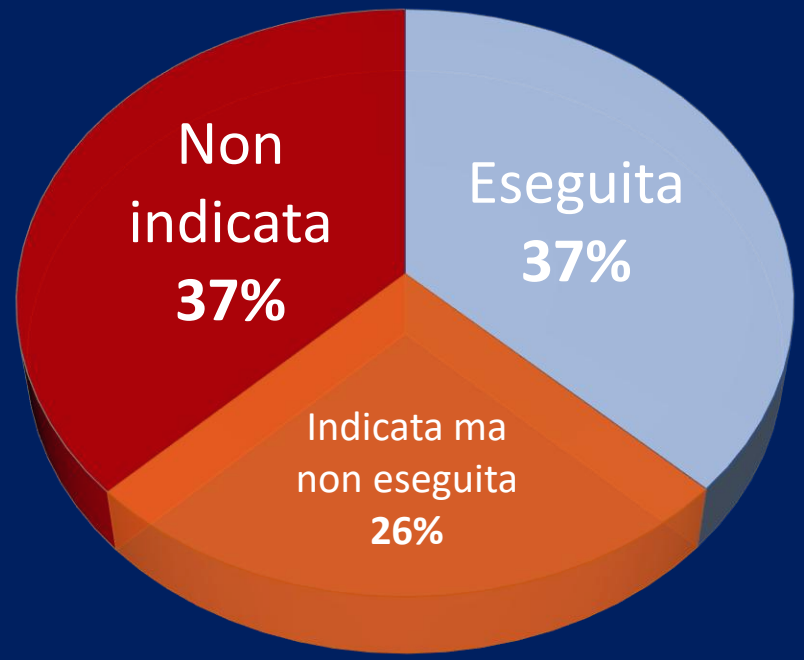
Cahill TJ et al., Heart 2021.

Insufficienza mitralica: un problema aperto - Terapia chirurgica

Funzionale

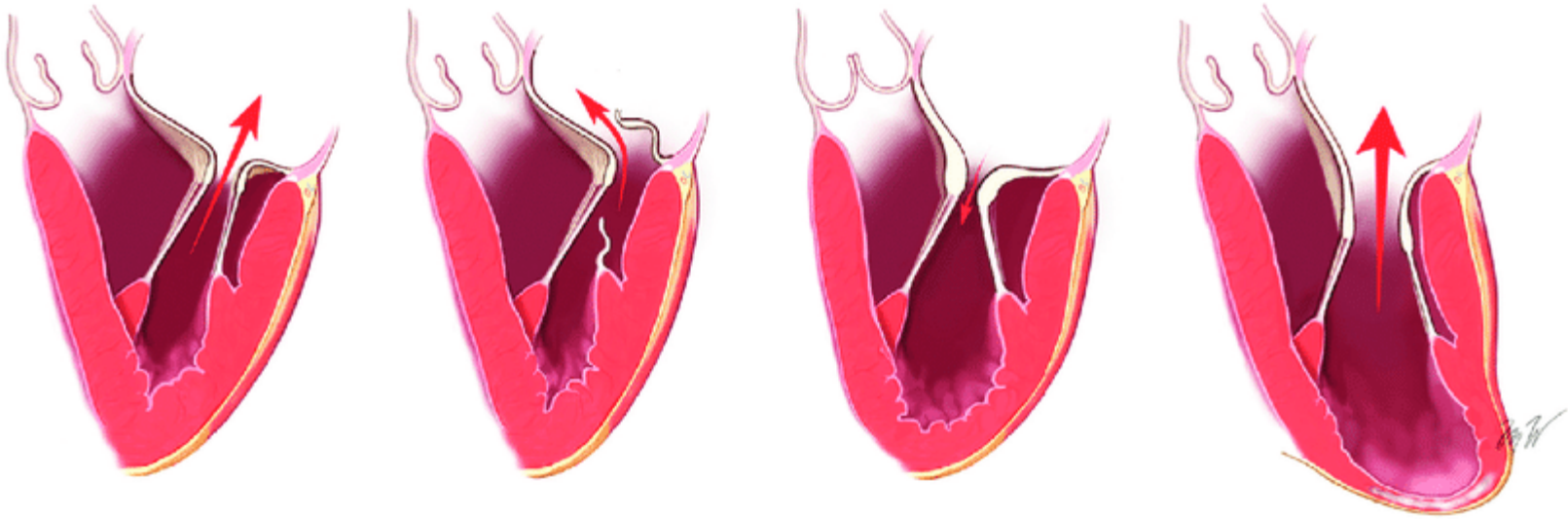


Degenerativa



Bernard et al. Circulation 2019

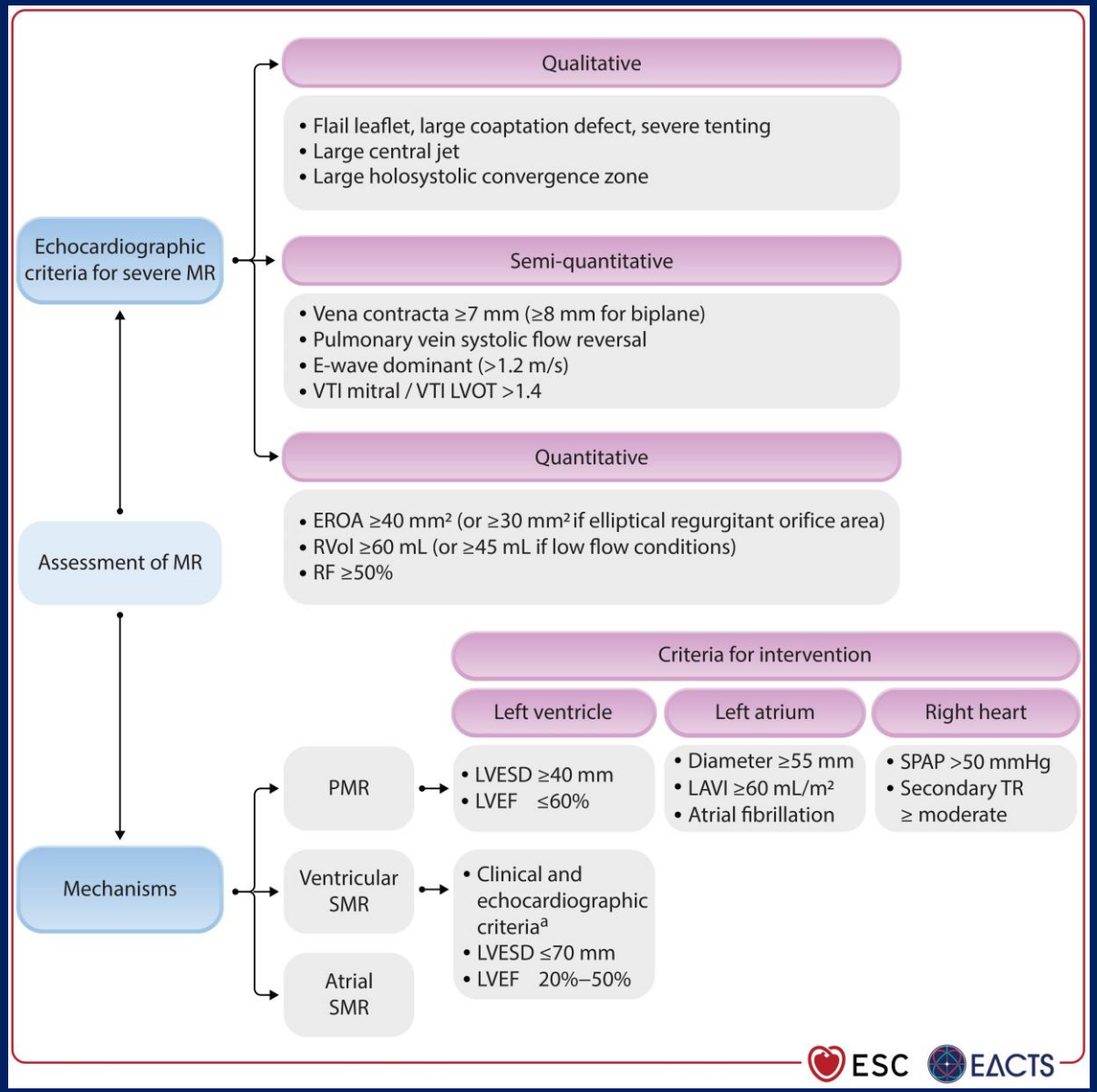
Landscape of Mitral Disease and Therapies



- I: atrial FMR
  - *TEER, annuloplasty*
- II: Primary/DMR
  - Surgical repair – gold standard
  - Transcatheter repair – TEER in high risk
  - *Transcatheter replacement – high risk/non-clippable or MAC*

- IIIa: Restrictive valve disease (Rheumatic/MAC)
  - Surgical MVR
  - *TMVR*
- IIIb: Secondary/FMR
  - Transcatheter repair – TEER after GDMT
  - *Annuloplasty, Hemi-valves, Leaflet extenders*
  - *TMVR*

Diagnosi ecocardiografica



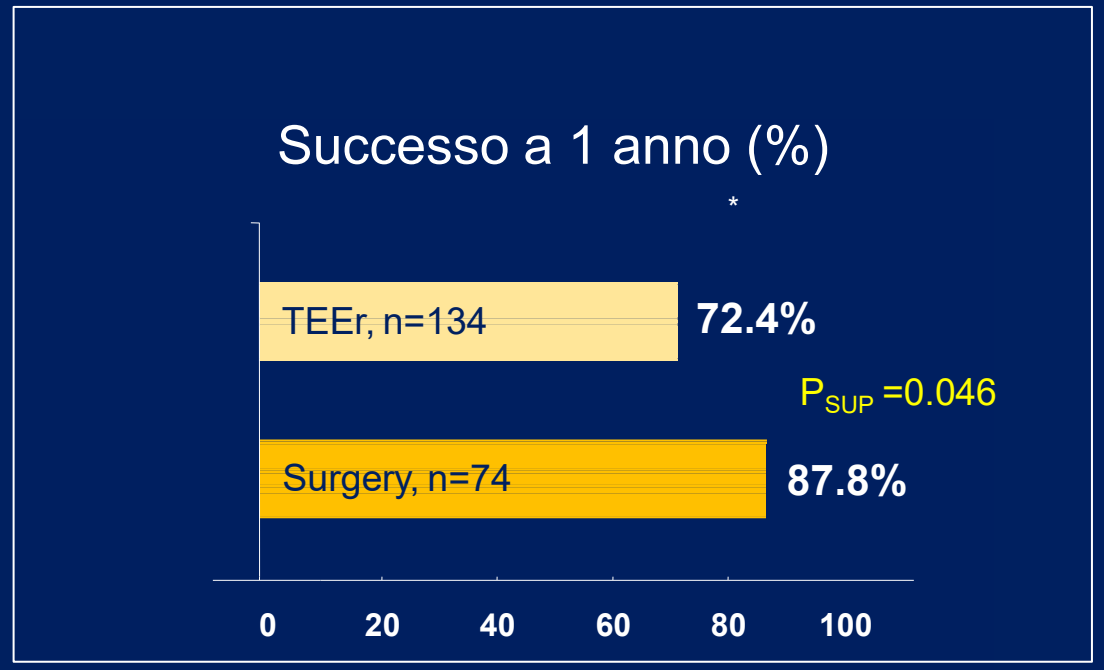
ESC Guidelines 2025

Insufficienza mitralica primitiva/degenrativa Chirurgia vs Percutanea (TEEr)

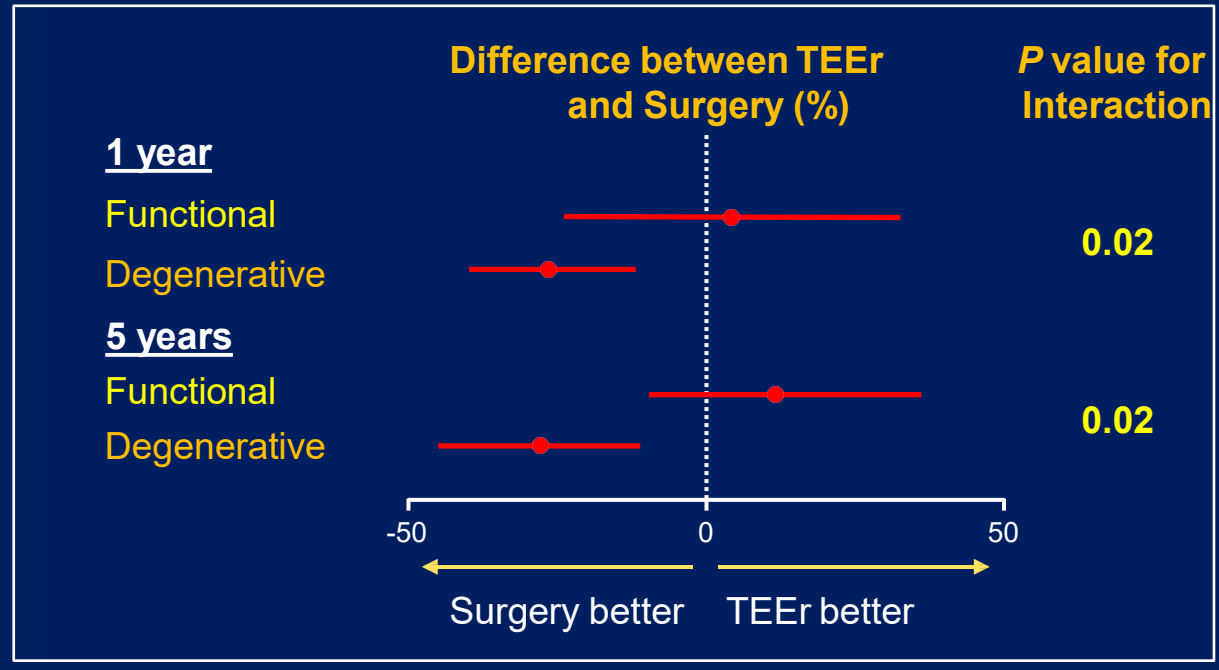
Studio EVEREST II

279 pazienti con IM severa randomizzati 2:1 a TEEr vs Chiurugia

Efficacia



DMR (73%) vs. FMR (27%)

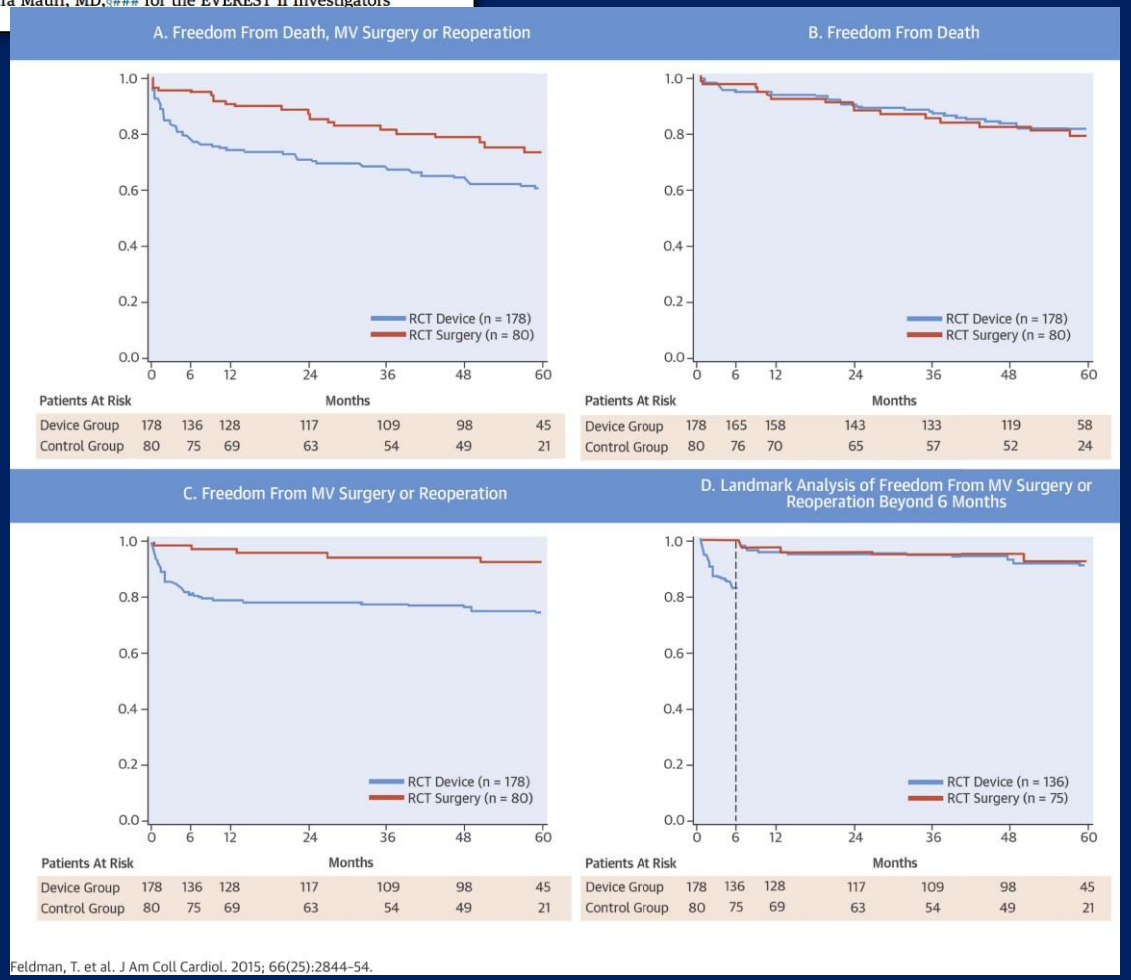


Feldman T et al. NEJM 2011

Randomized Comparison of Percutaneous Repair and Surgery for Mitral Regurgitation

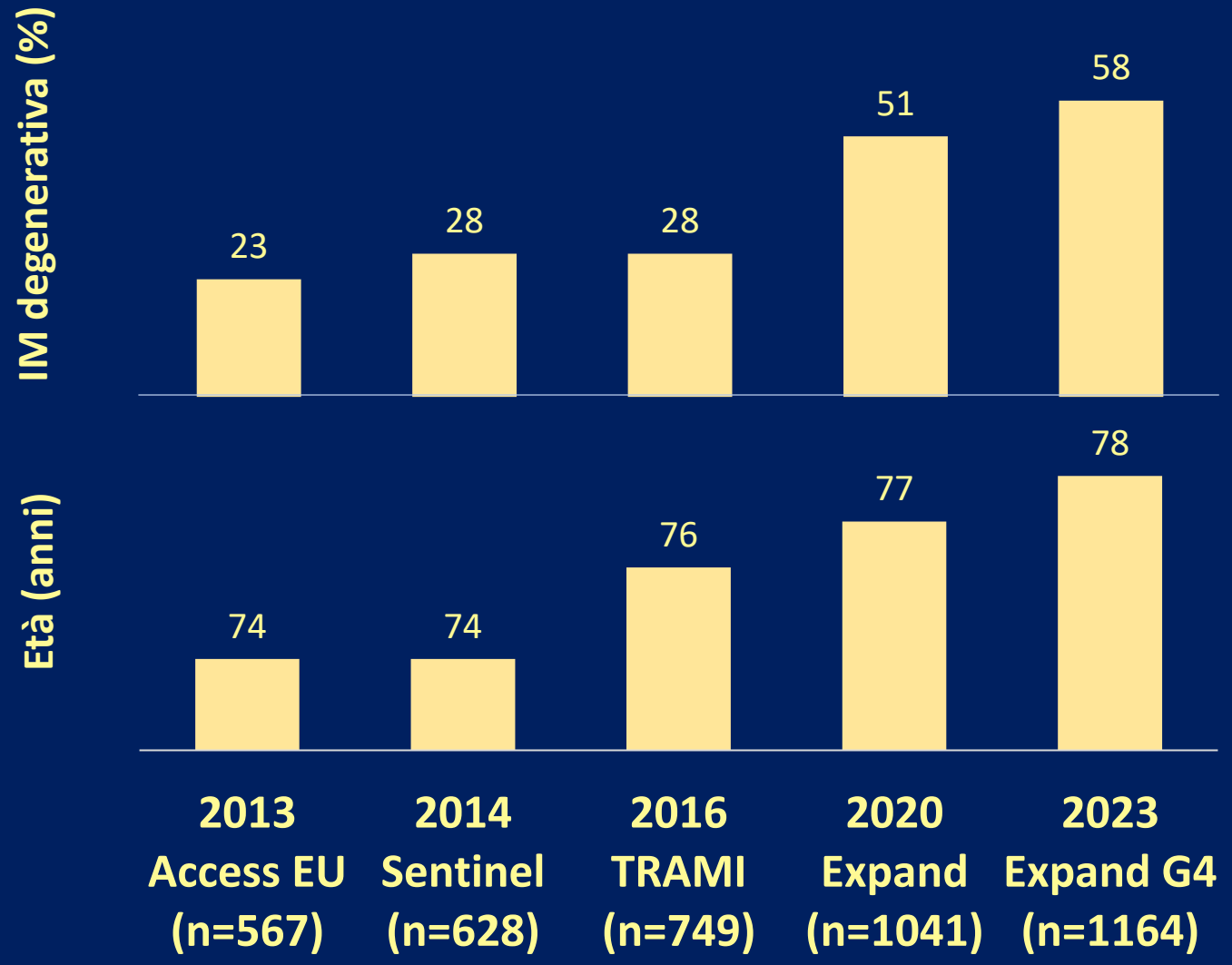
5-Year Results of EVEREST II

Ted Feldman, MD,* Saibal Kar, MD,† Sammy Elmariah, MD, MPH,‡§ Steven C. Smart, MD,* Alfredo Trento, MD,‖ Robert J. Siegel, MD,† Patricia Apruzzese, MS,§ Peter Fail, MD,¶ Michael J. Rinaldi, MD,# Richard W. Smalling, MD, PHD,** James B. Hermiller, MD,†† David Heimansohn, MD,‡‡ William A. Gray, MD,§§ Paul A. Grayburn, MD,‖‖ Michael J. Mack, MD,¶¶ D. Scott Lim, MD,## Gorav Ailawadi, MD,*** Howard C. Herrmann, MD,††† Michael A. Acker, MD,‡‡‡ Frank E. Silvestry, MD,††† Elyse Foster, MD,§§§ Andrew Wang, MD,‖‖‖ Donald D. Glower, MD,¶¶¶ Laura Mauri, MD,§### for the EVEREST II Investigators

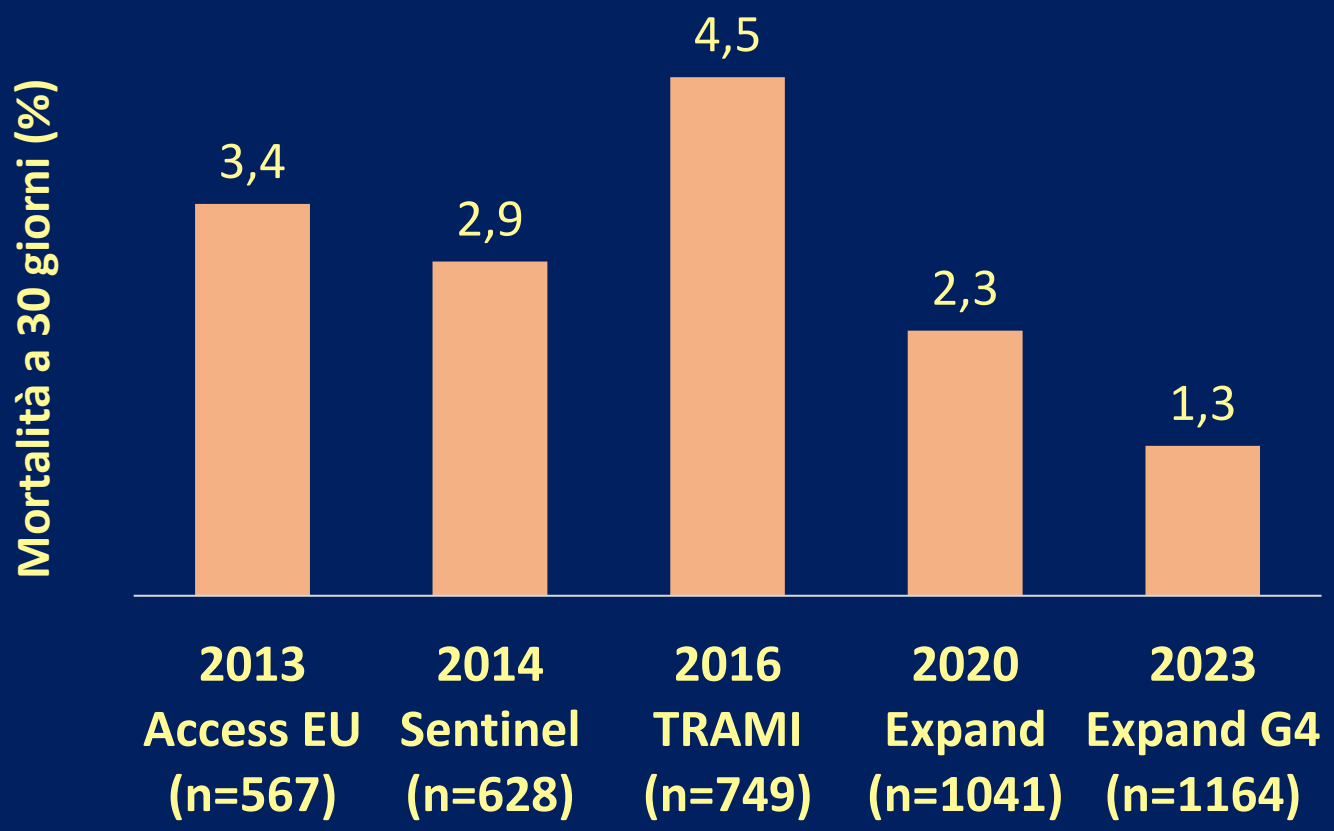


Feldman, T. et al. J Am Coll Cardiol. 2015; 66(25):2844-54.

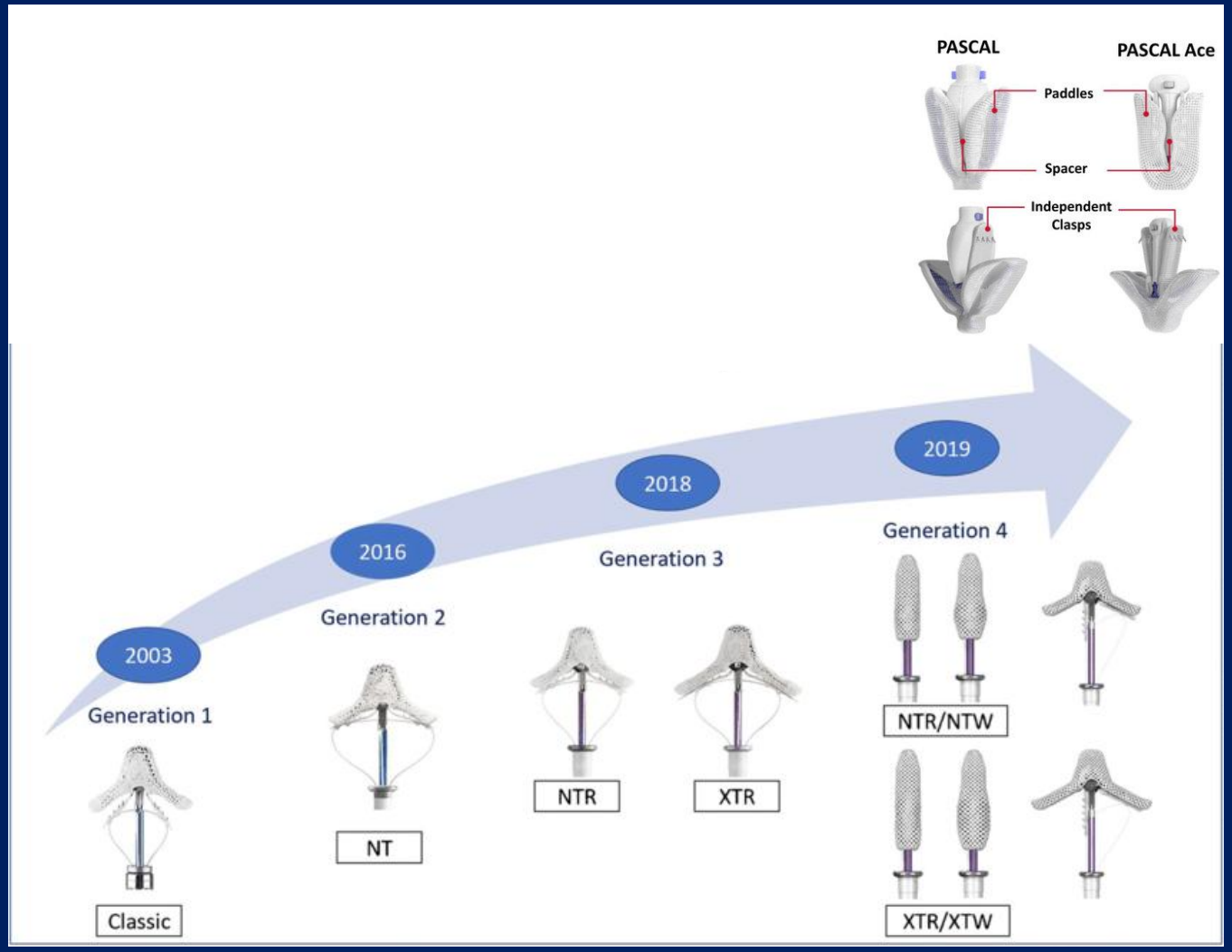
Evoluzione nel tempo delle caratteristiche dei pazienti trattati con TEEr



Evoluzione nel Tempo della Mortalità a 30 giorni

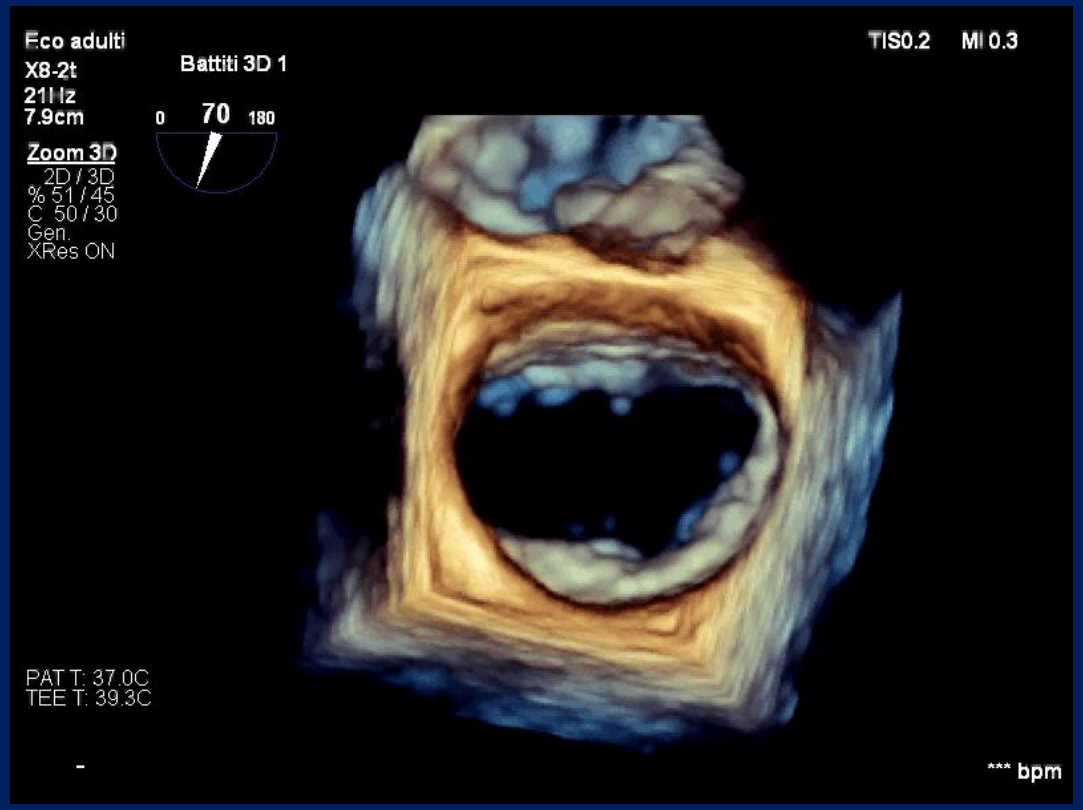


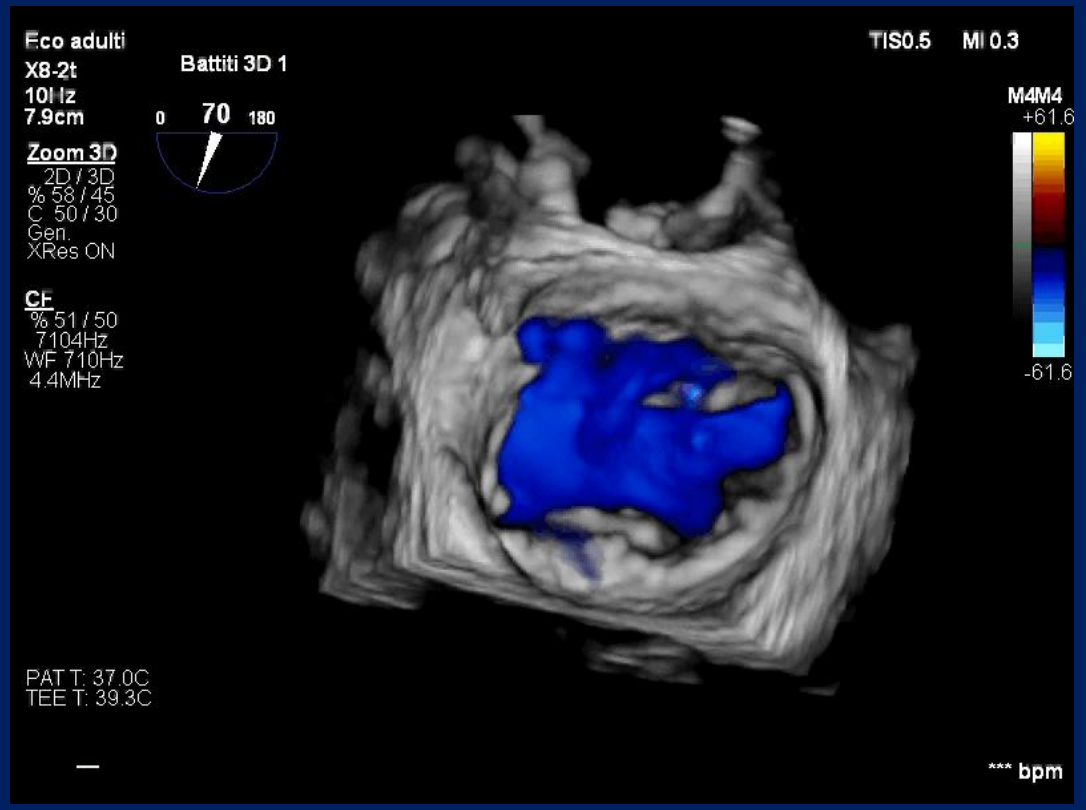
Evoluzione tecnologica TEEr



TEEr in IM Degenerativa - aspetti procedurali

1)Puntura alta 2)Orientare il dispositivo seguendo l’andamento del prolasso/flail 3)cattura indipendente

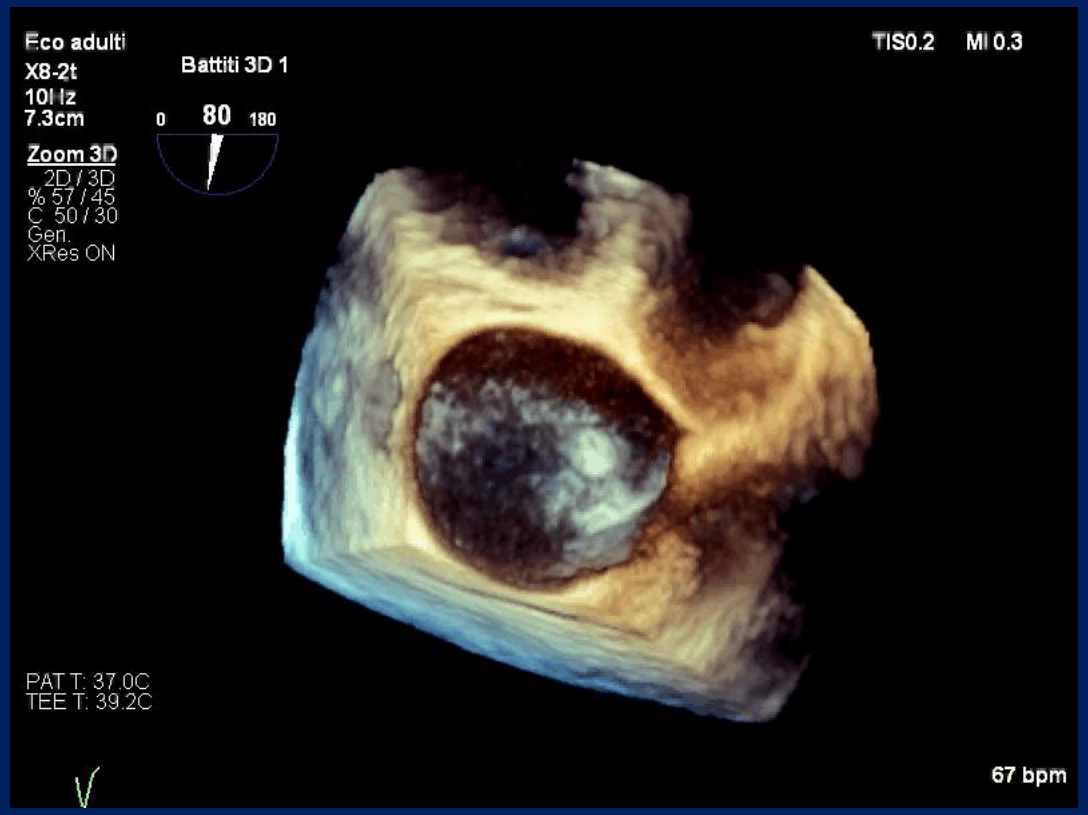


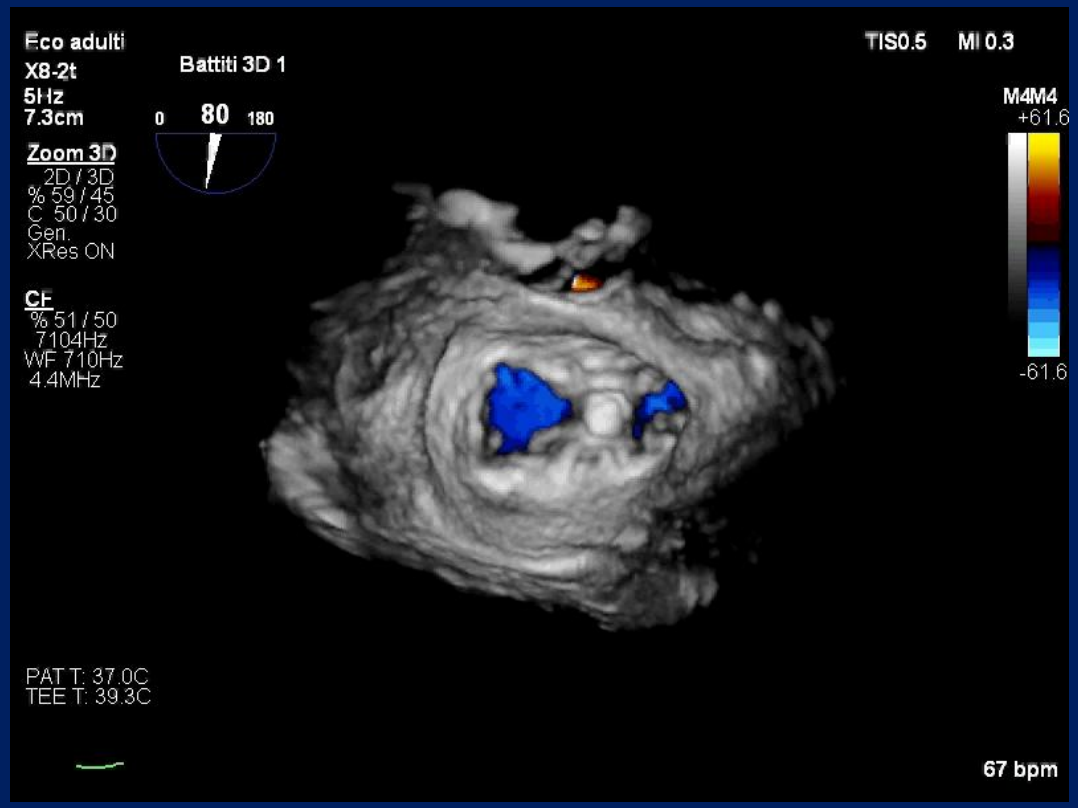


IM da rottura di corda con flail di P2 mediale orientato a ore 1

TEEr in IM Degenerativa - aspetti procedurali

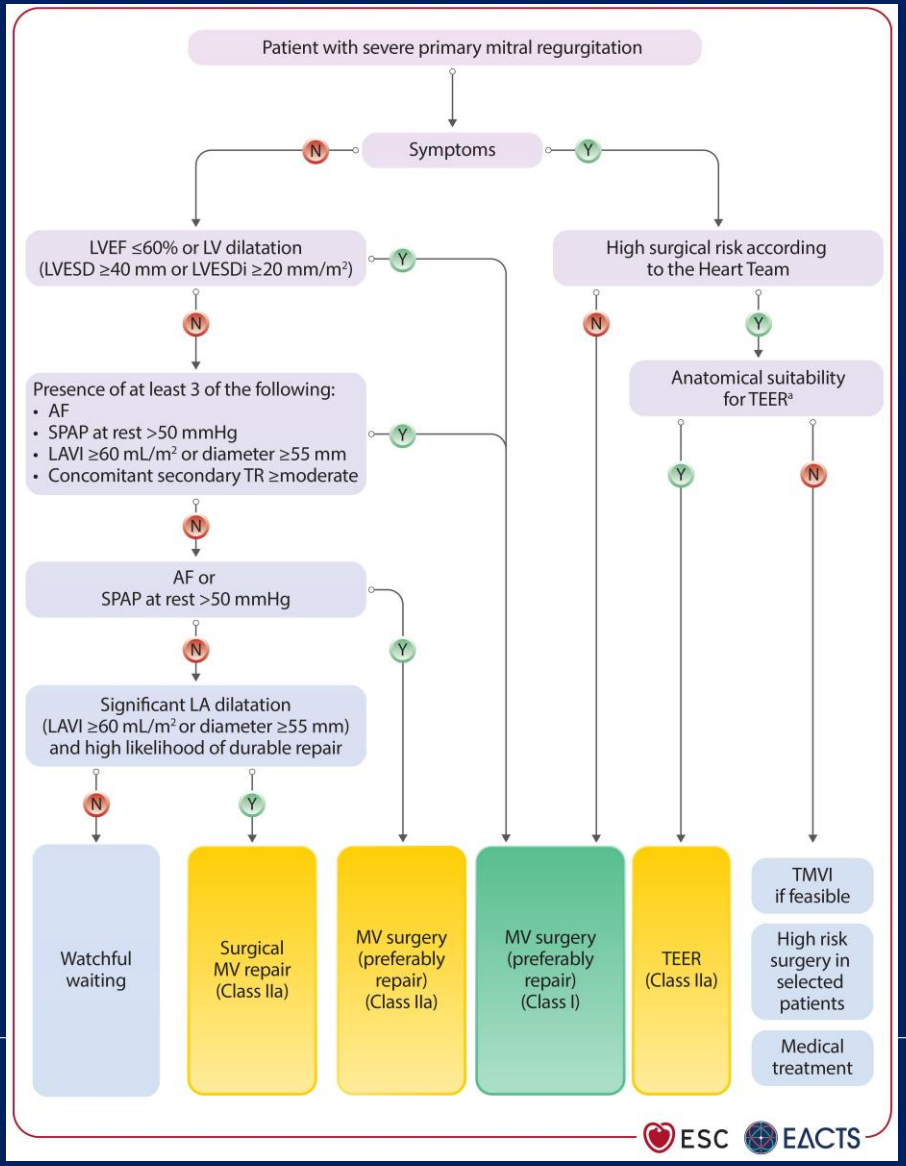
Orientare il dispositivo seguendo l'andamento del prolasso/flail (2)





Impianto di 1 device (Pascal Ace) con minima rotazione in senso orario

Management of patients with severe primary mitral regurgitation

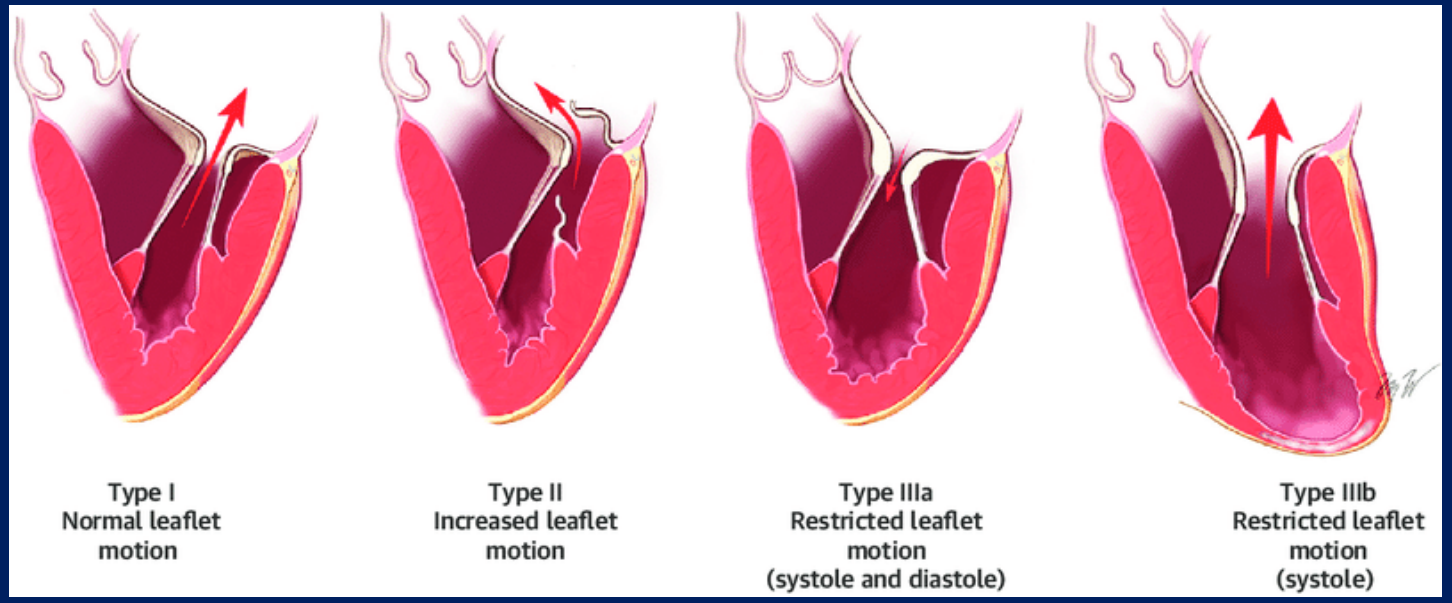


Eur Heart J, ehaf194, https://doi.org/10.1093/eurheartj/ehaf194

Insufficienza Mitralica Secondaria/Funzionale

c/o J Lindenfeld

Insufficienza Mitralica Secondaria/Funzionale



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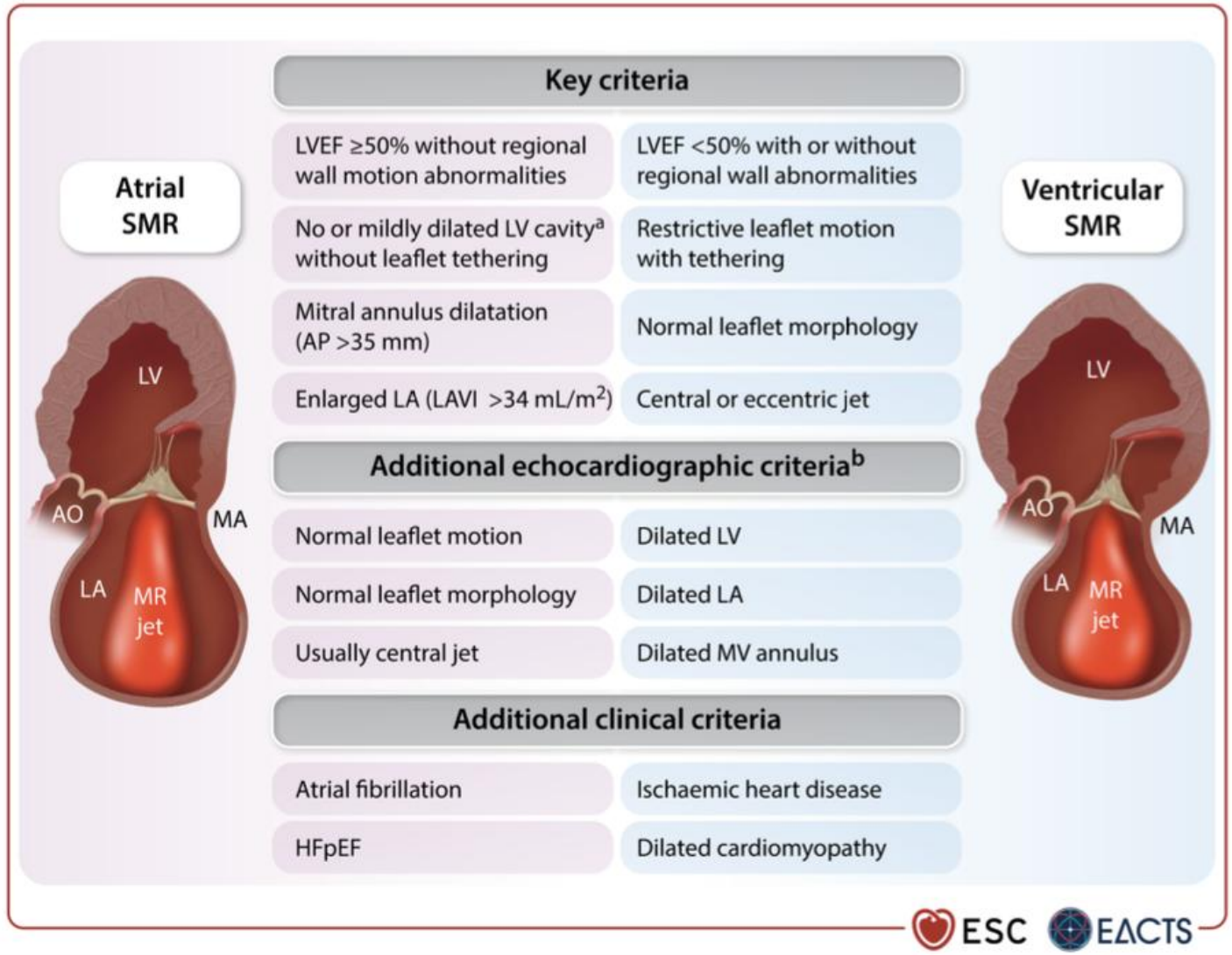
New definition of atrial and ventricular mitral regurgitation



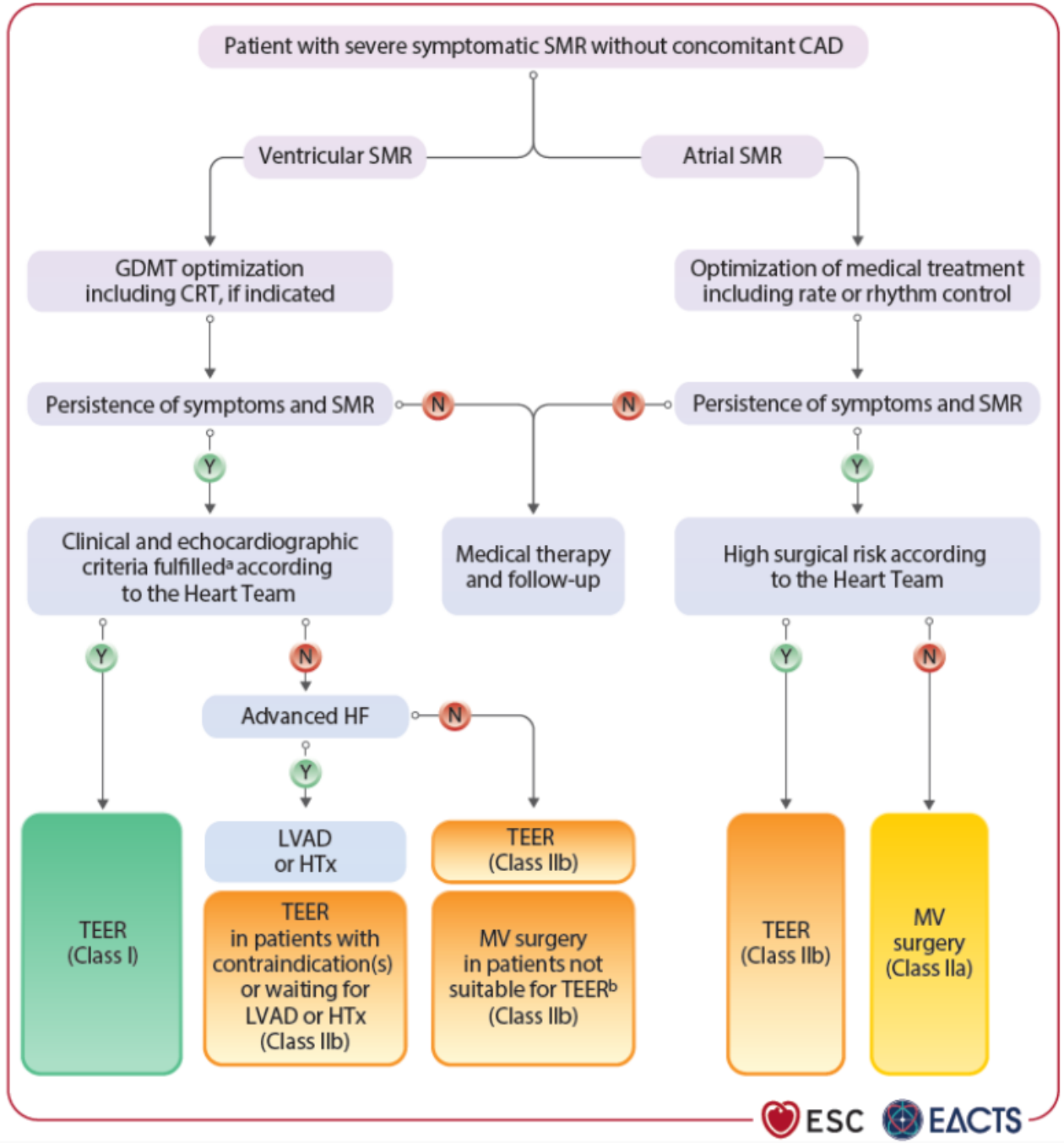
A LV end-diastolic dimension of <56 mm in females and <63 mm in males; indexed LV end-diastolic volume <71 mL/m2 (in women) or <79 mL/m2 (in men).
B Additional echocardiographic criteria for atrial SMR may no longer be fulfilled in advanced stages.

Clinical and echocardiographic criteria predicting outcome improvement in patients with severe ventricular secondary mitral regurgitation undergoing mitral transcatheter edge-to-edge repair

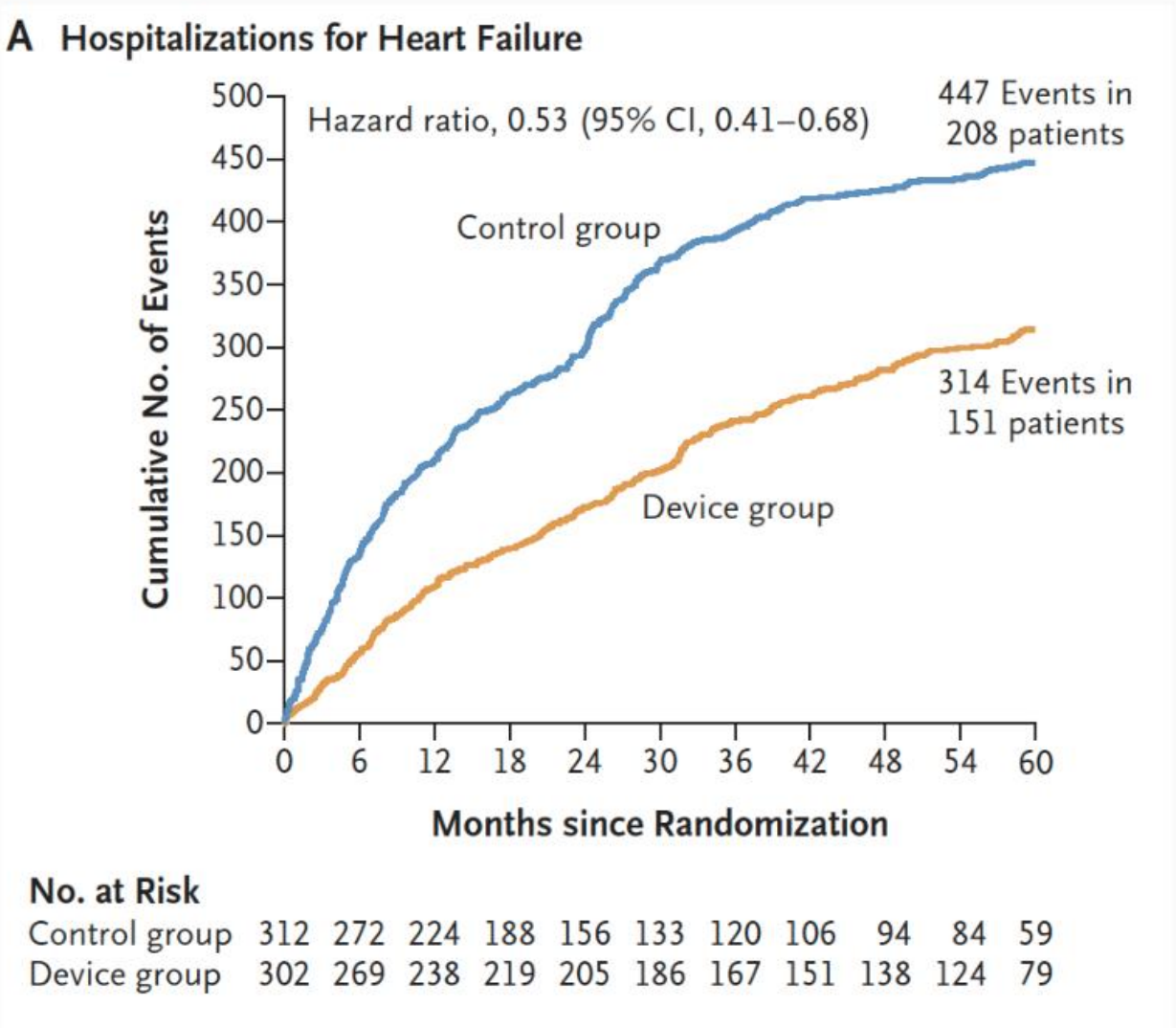
Anatomy deemed suitable for M-TEER
NYHA class ≥II
LVEF 20%–50%
LVESD ≤70 mm
At least one HF hospitalization within the previous year or increased natriuretic peptide levels (BNP ≥300 pg/mL or NT-proBNP ≥1000 pg/mL)
SPAP ≤70 mmHg
No severe RV dysfunction
No Stage D or advanced HF
No CAD requiring revascularization
No severe AV and/or TV disease
No hypertrophic, restrictive, or infiltrative cardiomyopathies

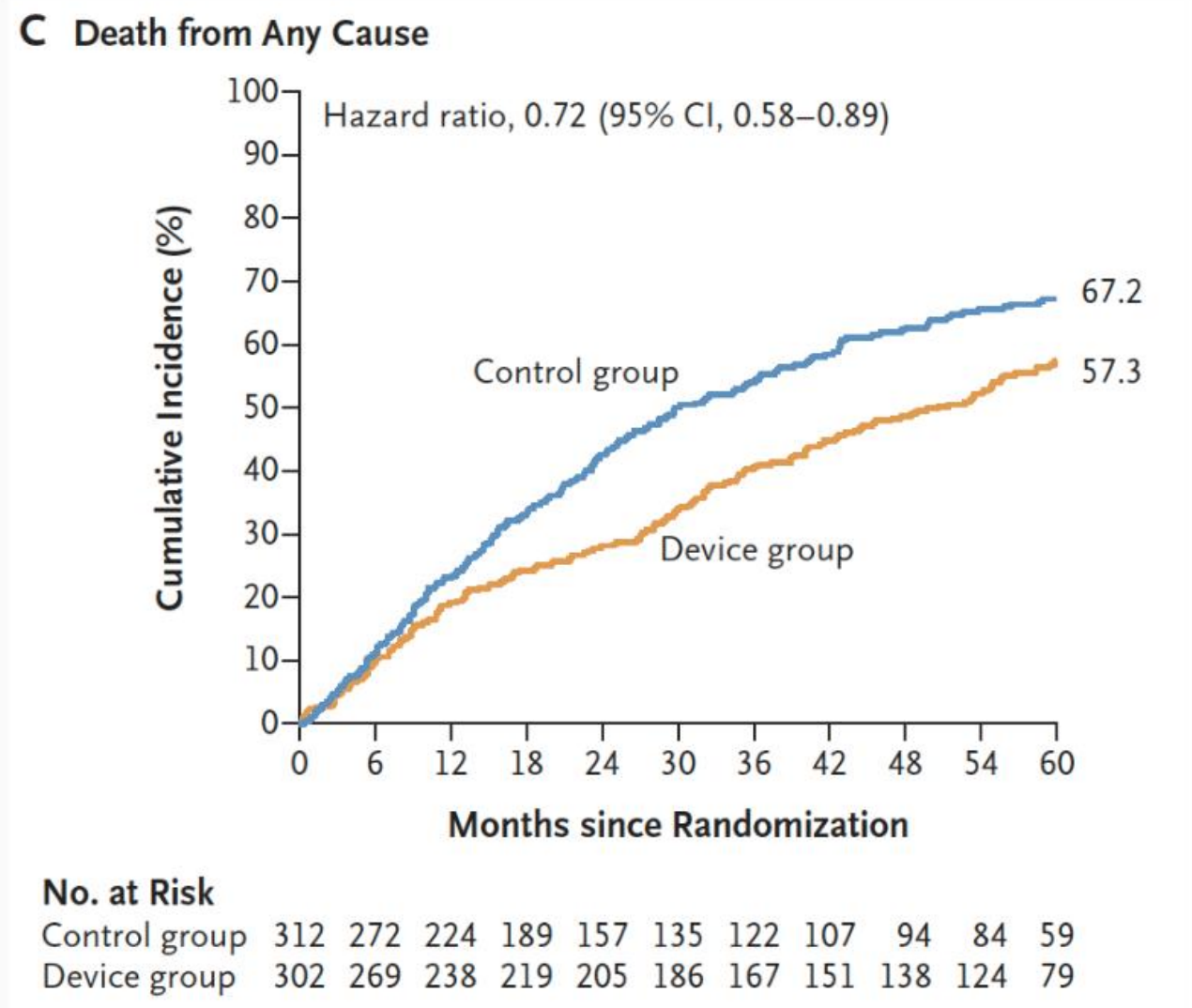
New flow-chart:

Treatment of severe secondary mitral regurgitation without concomitant coronary artery disease



COAPT trial - 5 years

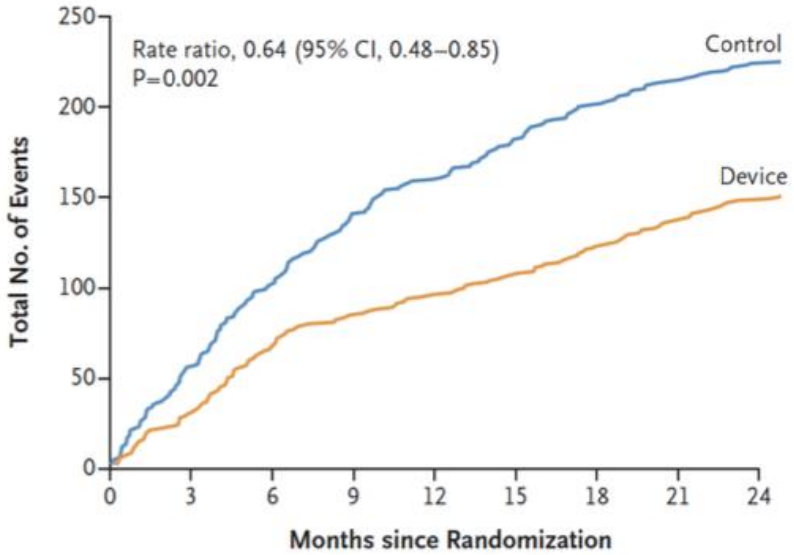




Stone et al NEM 2023

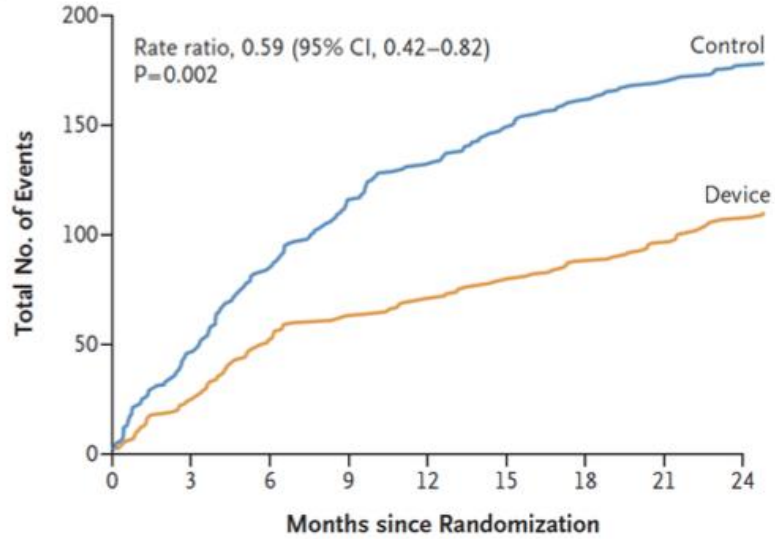
RESHAPE-HF2 trial

A Composite of Hospitalization for Heart Failure or Death from Cardiovascular Causes



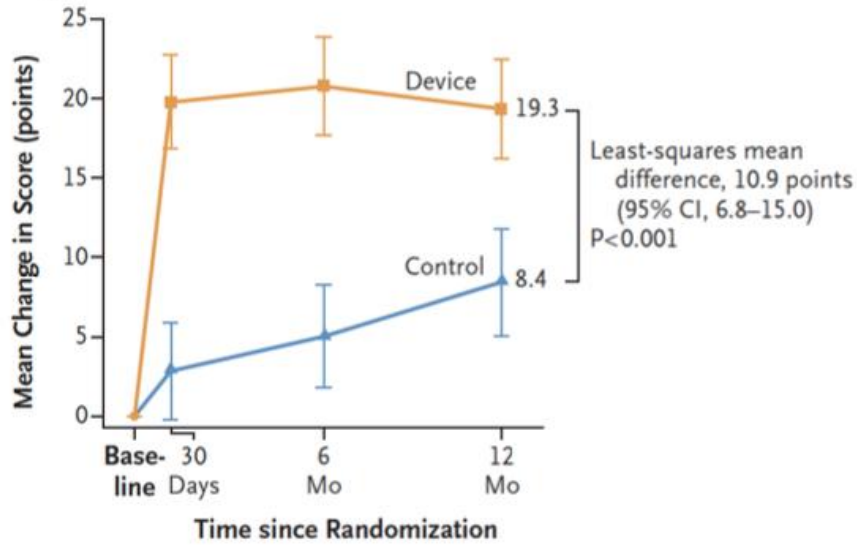
No. at Risk									
Control	255	240	223	204	189	179	165	155	146
Device	250	241	222	207	197	191	179	170	163

B Hospitalization for Heart Failure



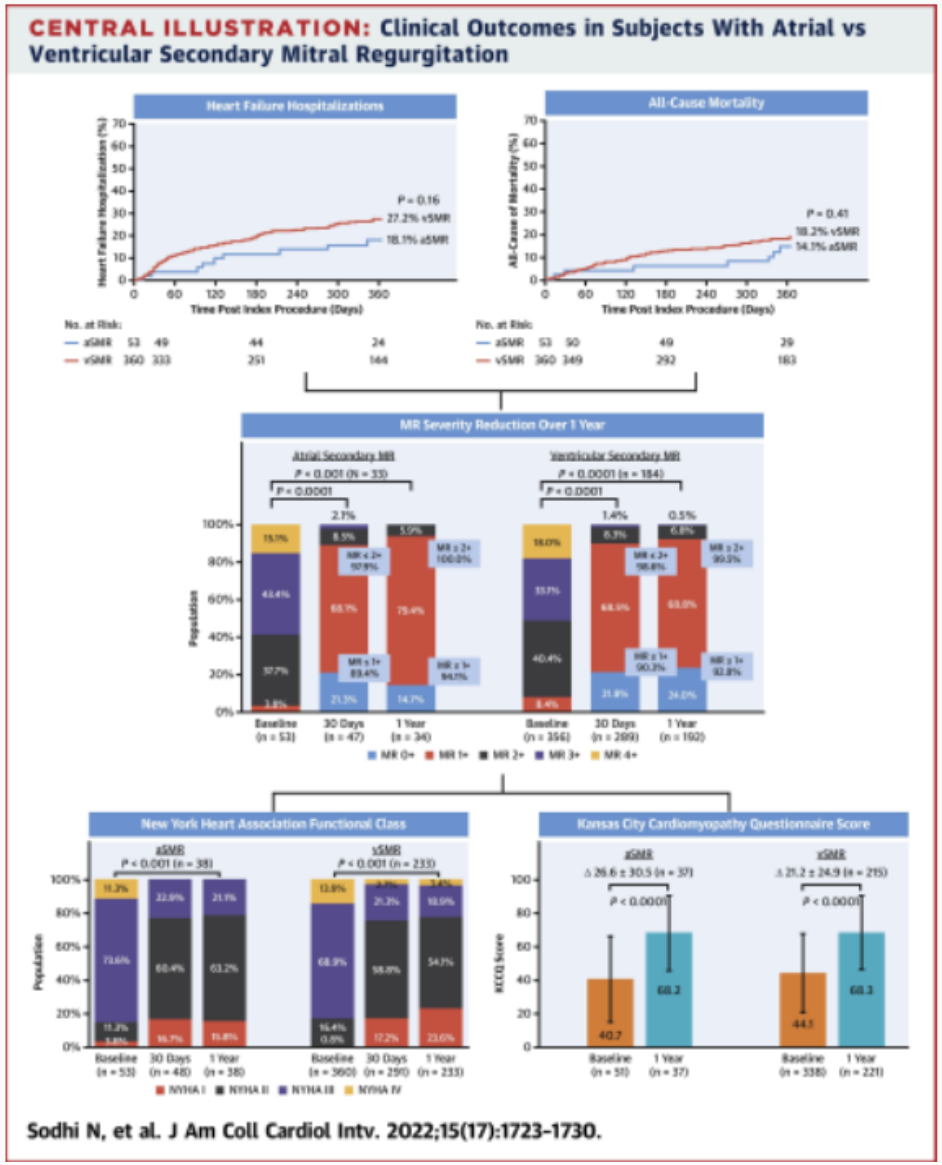
No. at Risk									
Control	255	240	223	204	189	179	165	155	146
Device	250	241	222	207	197	191	179	170	163

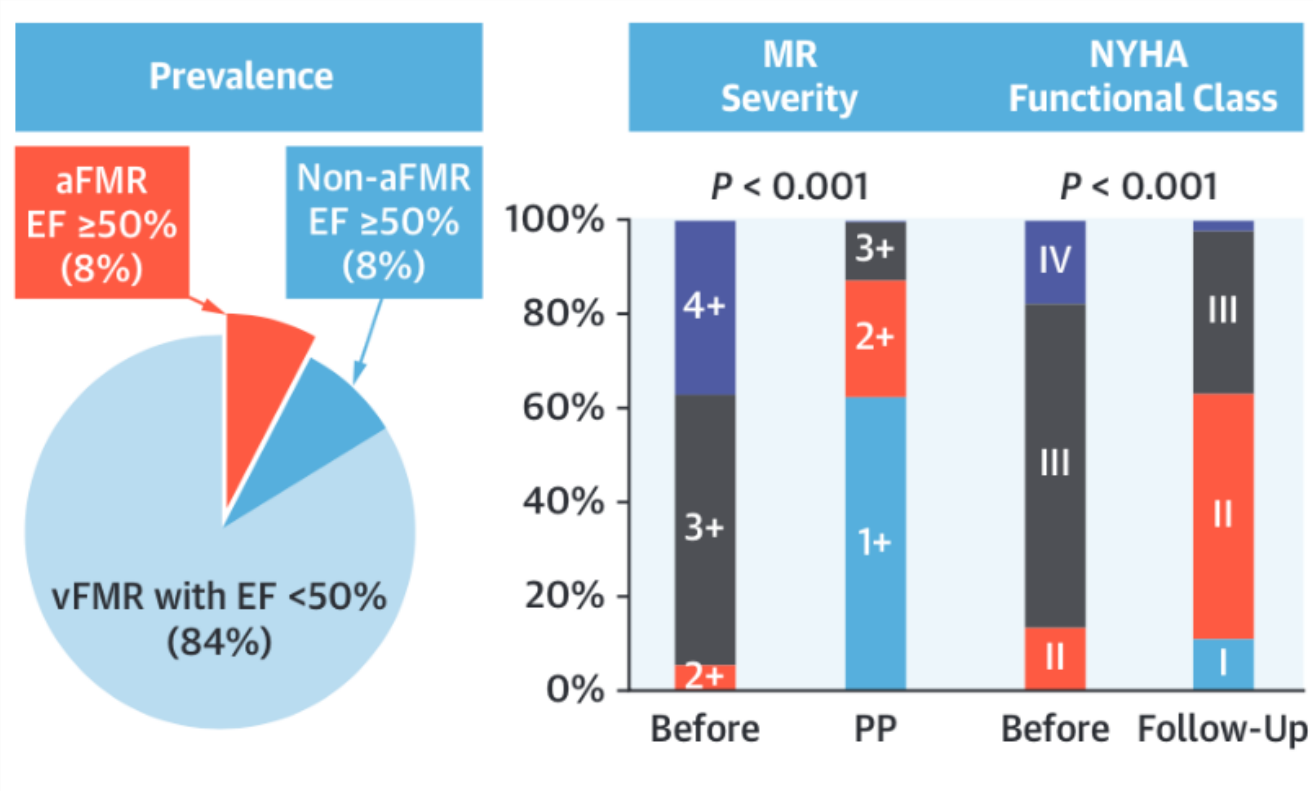
C KCCQ-OS Score



Anker S. et al. N Engl J Med. 2024 Nov 14;391(19):1799-1809

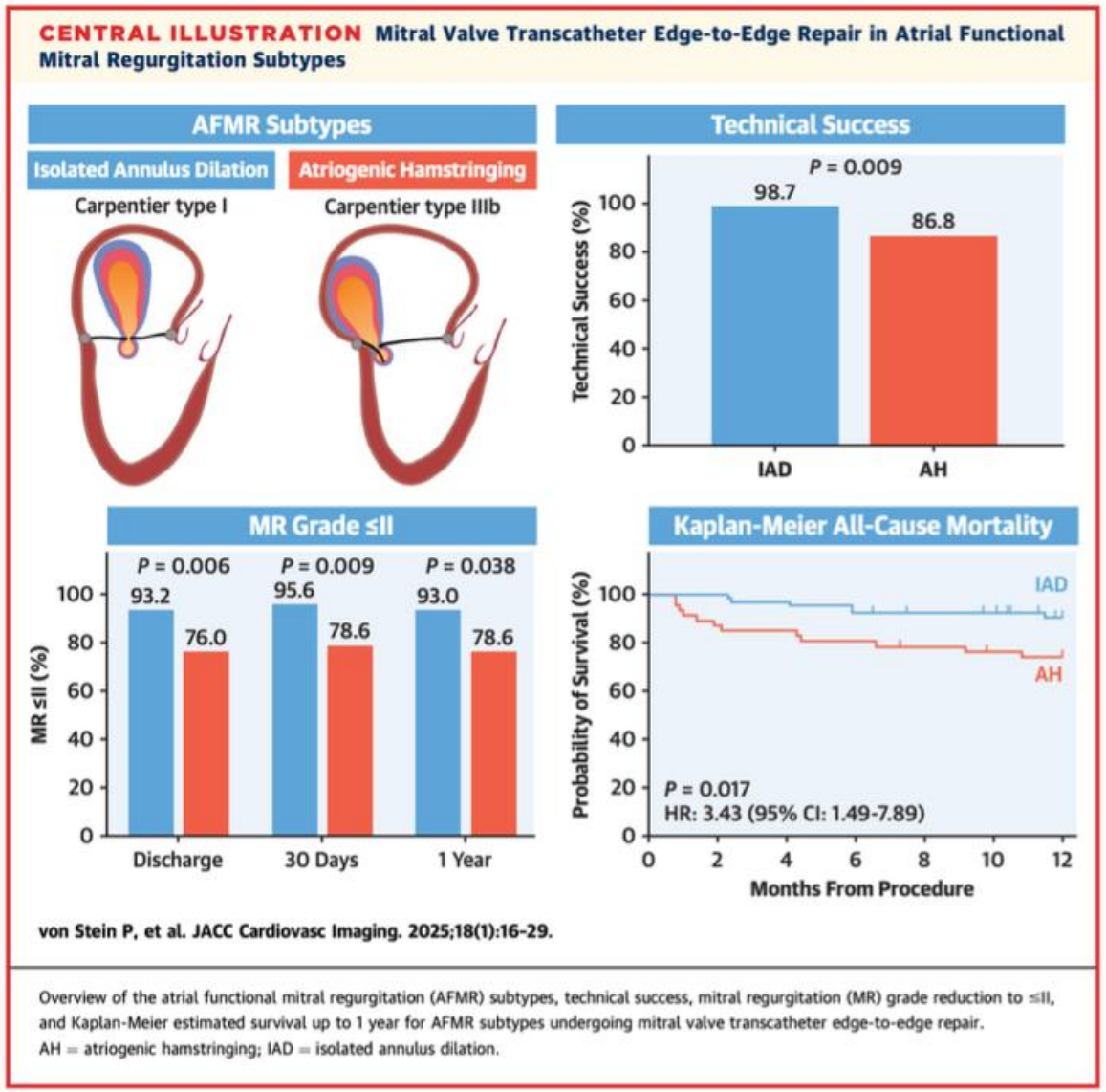
M-TEER for Atrial SMR: registries



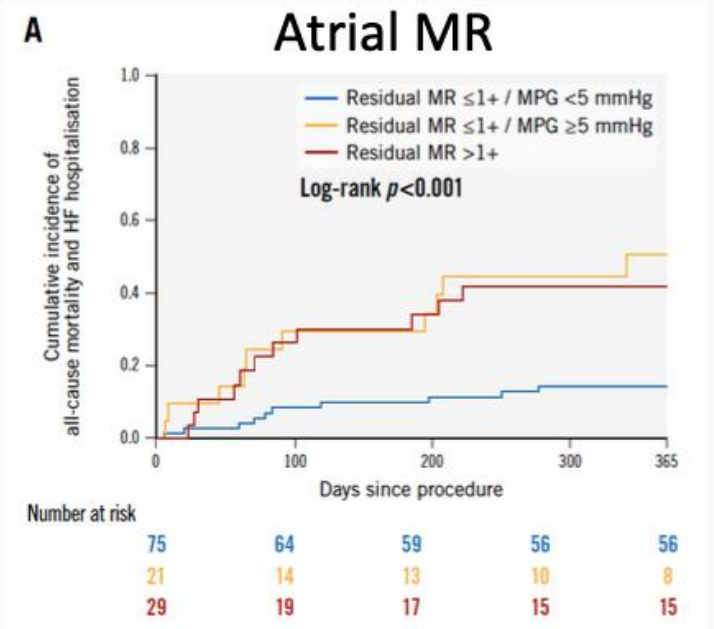


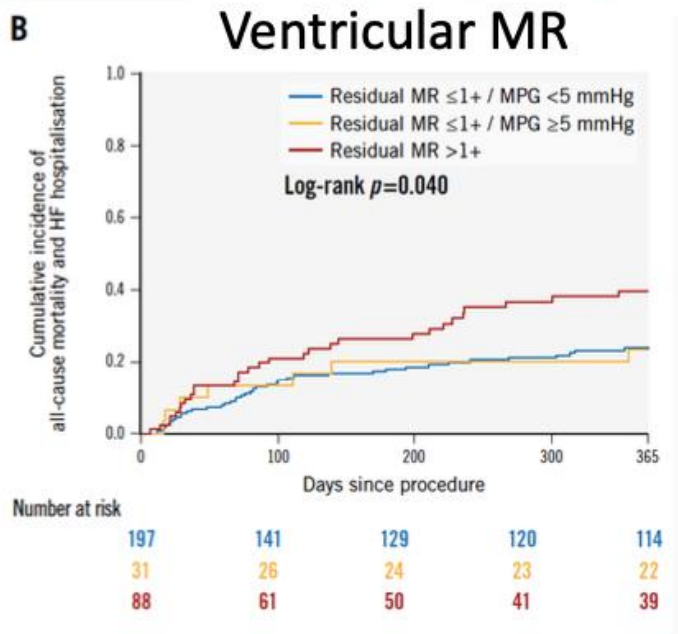
Doldi et al. JACC Cardiovasc Imaging. 2022;15(11):1843-1851

M-TEER for Atrial SMR: registries



Overview of the atrial functional mitral regurgitation (AFMR) subtypes, technical success, mitral regurgitation (MR) grade reduction to ≤II, and Kaplan-Meier estimated survival up to 1 year for AFMR subtypes undergoing mitral valve transcatheter edge-to-edge repair.
AH = atriogenic hamstringing; IAD = isolated annulus dilation.





Tanaka et al. EuroIntervention. 2024 Feb 19;20(4):e250-e260.

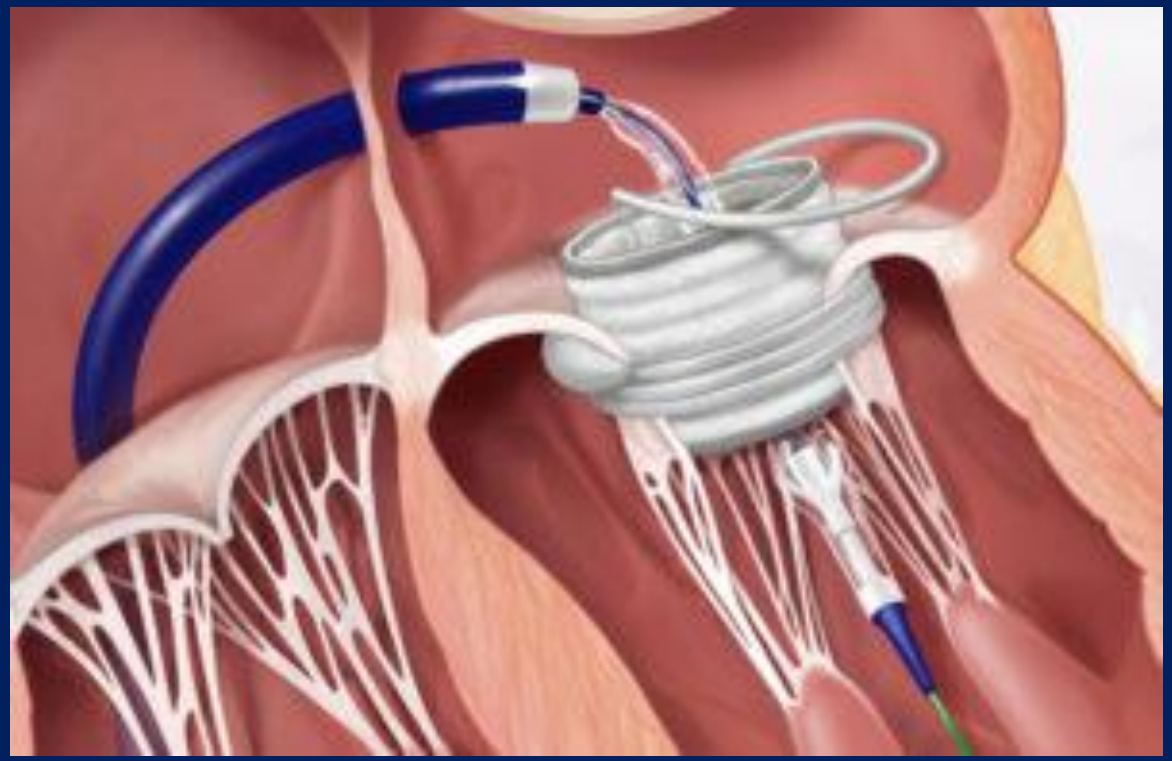
Recommendations on indications for intervention in severe atrial secondary mitral regurgitation

NEW

Recommendations	Class	Level
MV surgery, surgical AF ablation, if indicated, and LAAO should be considered in symptomatic patients with severe atrial SMR under optimal medical therapy.	IIa	B
TEER may be considered in symptomatic patients with severe atrial SMR not eligible for surgery after optimization of medical therapy including rhythm control, when appropriate.	IIb	B

Next step

Sapien M3 TMVR system



Conclusioni

Identificare il meccanismo dell'insufficienza mitralica è alla base della scelta del trattamento più adeguato.

La scelta tra terapia medica, chirurgia e TEER si fonda su caratteristiche cliniche e anantomiche.

IM primitiva > chirurgia

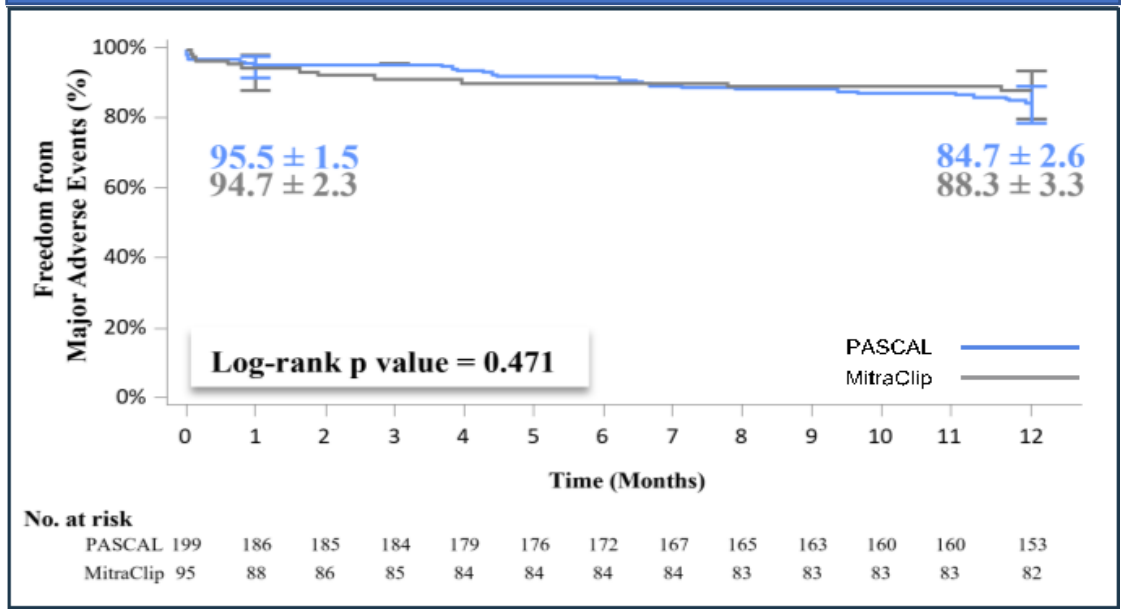
IM secondaria atriale > chirurgia/TEER

IM secondaria ventricolare > TEER/chirurgia se CABG necessario

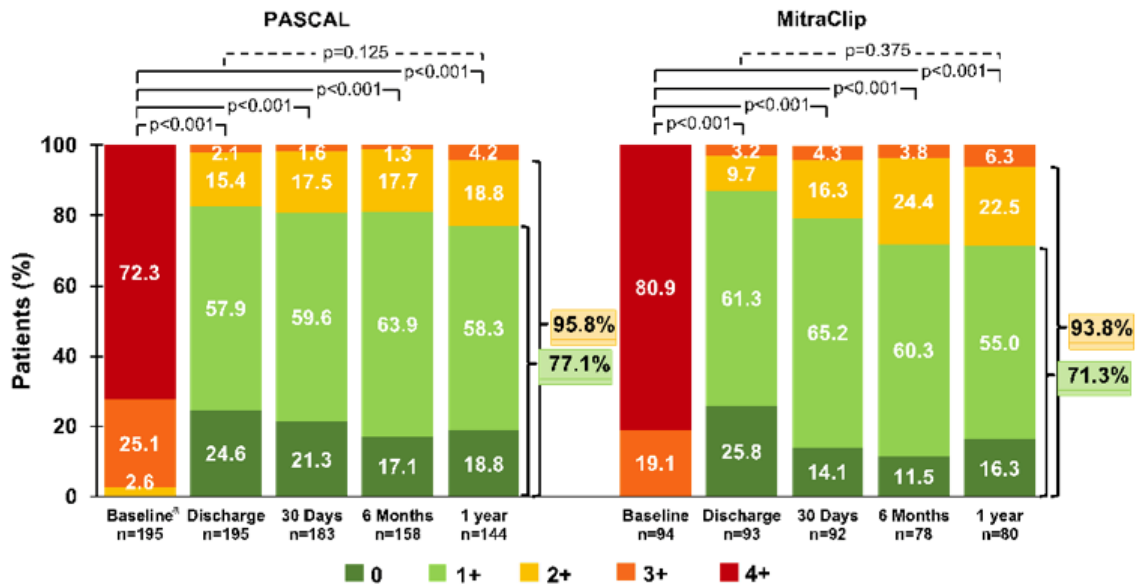
IM con LV < 20% > TEER in casi selezionati

Thank you for the attention

Libertà da Eventi Avversi Maggiori
(morte CV, infarto, ictus, dialisi, sanguinamento, reintervento)



Riduzione dell'Insufficienza Mitralica



Partire dal meccanismo: PMR vs SMR ventricolare vs SMR atriale; la scelta terapeutica dipende da anatomia e quadro clinico.
SMR ventricolare: dopo GDMT/CRT, TEER riduce ricoveri e migliora QoL se rispettati criteri eco-clinici; chirurgia se CABG concomitante o casi selezionati.
SMR atriale: gestione di FA/HFpEF e rimodellamento atriale; chirurgia con annuloplastica + ablazione ± LAAO nei candidabili; TEER nei non operabili (attenzione a gradiente/area).
PMR: riparazione chirurgica rimane lo standard nei candidabili; TEER per alto rischio con anatomia favorevole. La tecnologia transcatetere è maturata ma non replica tutti i gesti chirurgici. Selezione e tecnica guidate da imaging e Heart Team; criteri operativi (es. LVEF 20–50%, LVESD ≤70 mm, SPAP ≤70 mmHg) aiutano a prevedere il beneficio.