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

A Coruña Heart Failure Academy

#ACORUÑAHF2025

VALVULAR INTERVENTIONS IN HF. WHERE ARE WE GOING?: How to study feasibility and predict clinical outcomes. Imaging cardiologist's perspective

AMPARO MARTINEZ MONZONIS

Hospital Clínico Universitario de Santiago

SERVIZO GALEGO DE SAÚDE · ÁREA SANITARIA DE SANTIAGO DE COMPOSTELA E BARBANZA · idis FUNDACIÓN GALEGA DE INVESTIGACIÓN SANITARIA IDIS · ciber CV · CARDIOCHUS

SERVIZO GALEGO DE SAÚDE · ÁREA SANITARIA DA CORUÑA E CEE · inibic · SOCIEDADE GALEGA DE CARDIOLOXÍA · UNIVERSIDADE DA CORUÑA · ciber CV · UNIÓN EUROPEA Fondo Europeo de Desarrollo Regional · XUNTA DE GALICIA · galicia

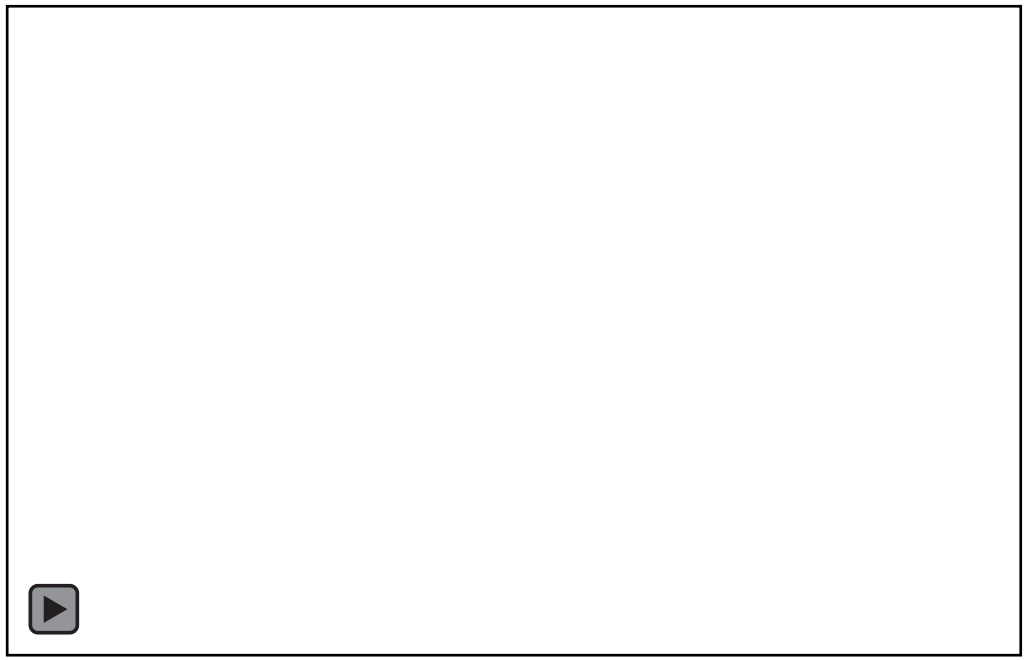
- Conflictos de Interés: Takeda, Rovi, Edwards, GE, Organon

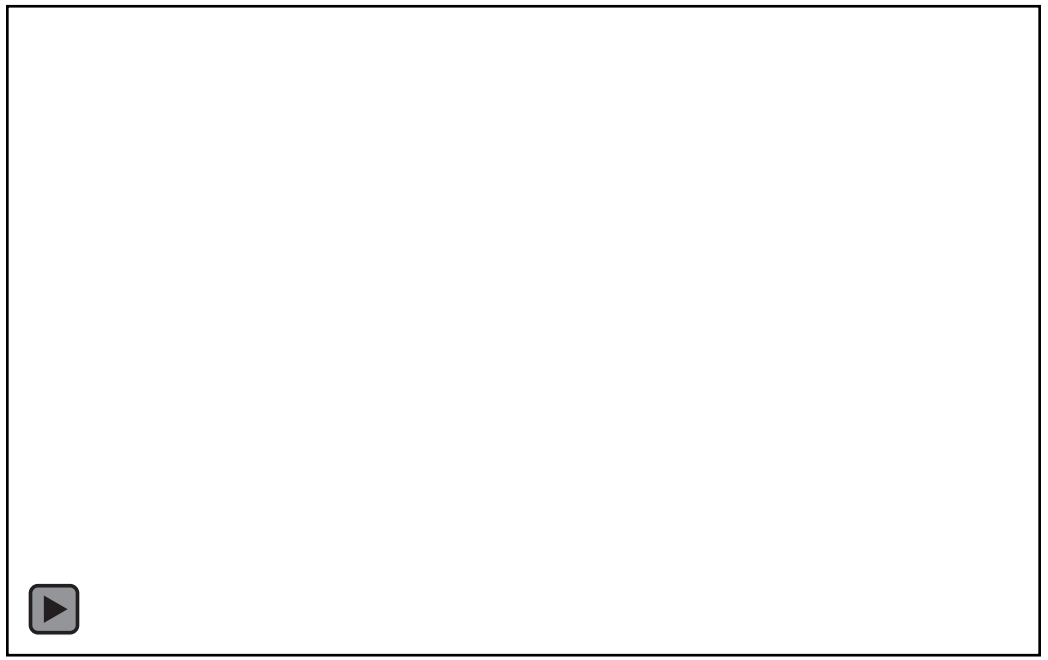
1. Insuficiencia mitral
2. Insuficiencia tricúspide

1. Insuficiencia mitral

2. Insuficiencia tricúspide

INSUFICIENCIA MITRAL FUNCIONAL



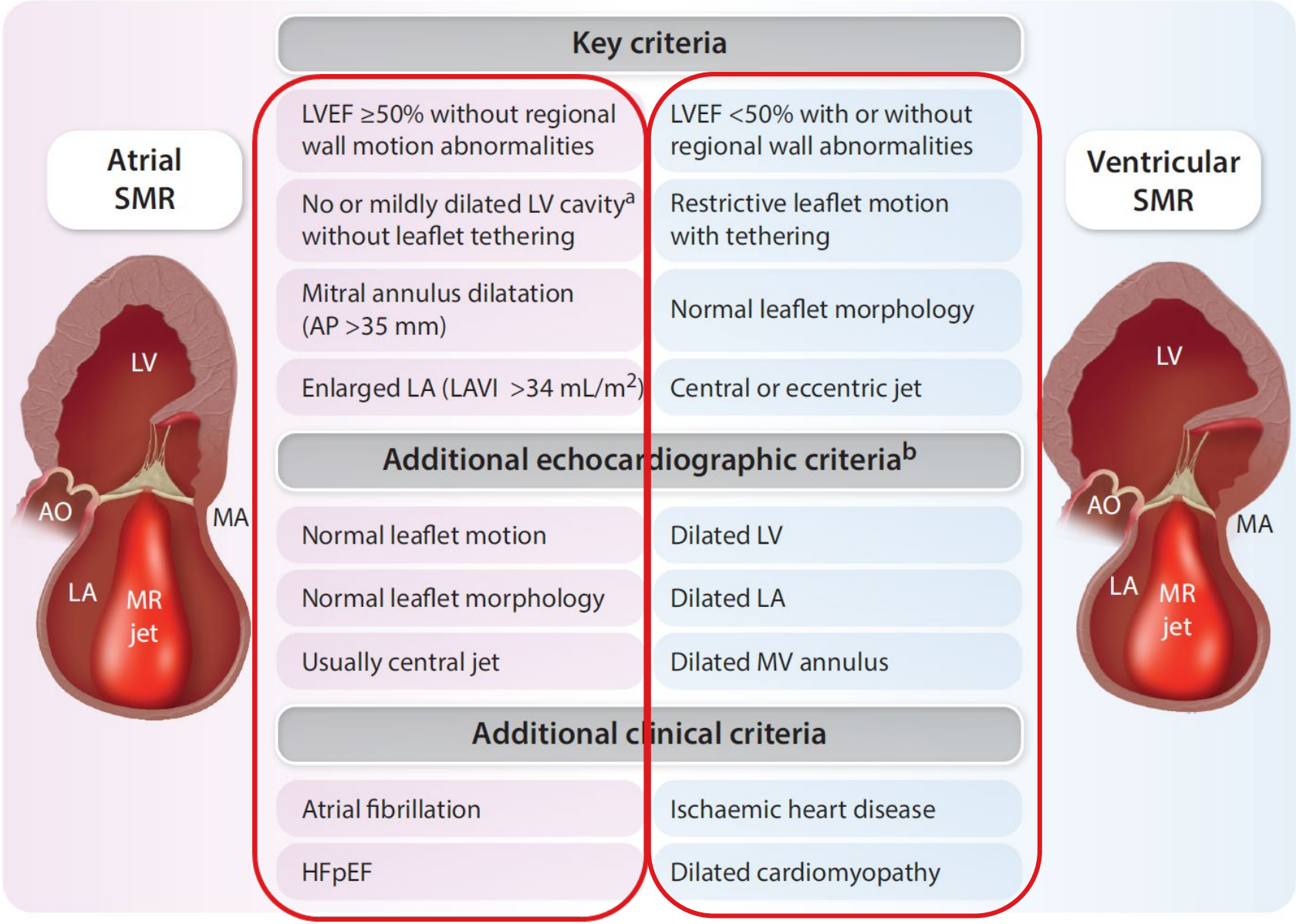


ETIOLOGIA:
- Primaria
- Secundaria:
  - ✓ Atrial
  - ✓ Ventricular

MECANISMO:
- Tipo I
- Tipo II
- Tipo III:
  - ✓ IIIa
  - ✓ IIIb

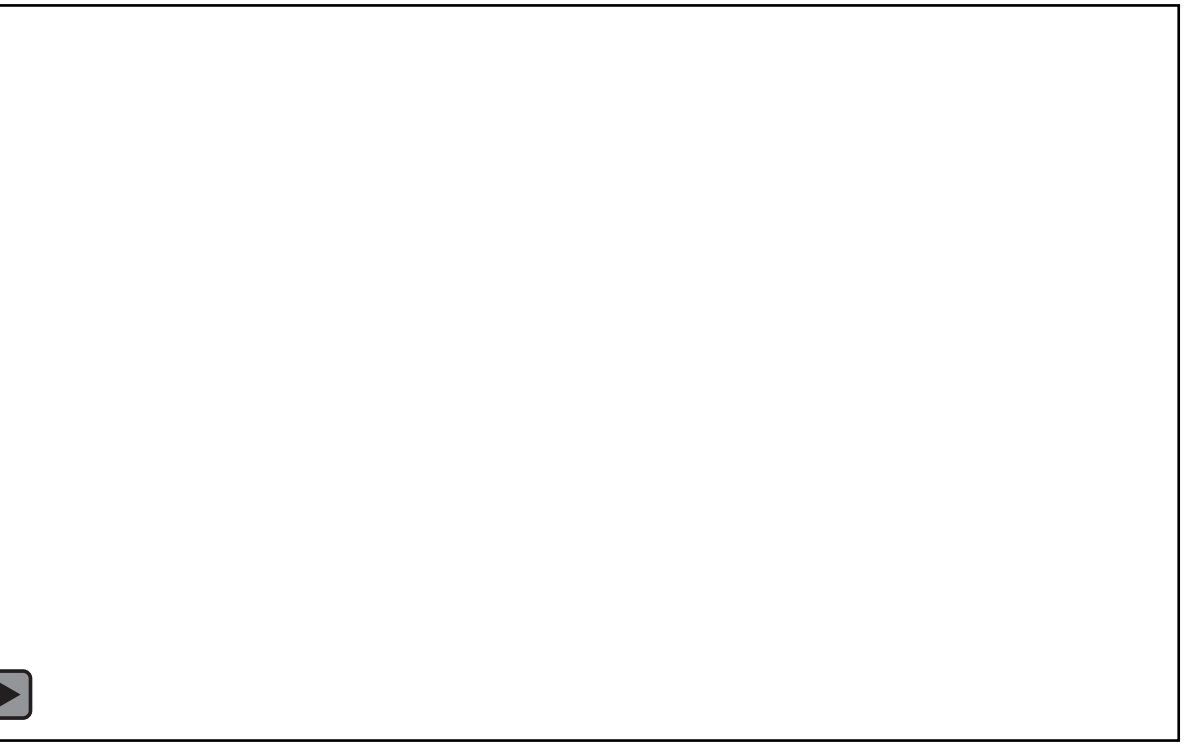
Severidad:
- Grado I
- Grado II
- Grado III
- Grado IV

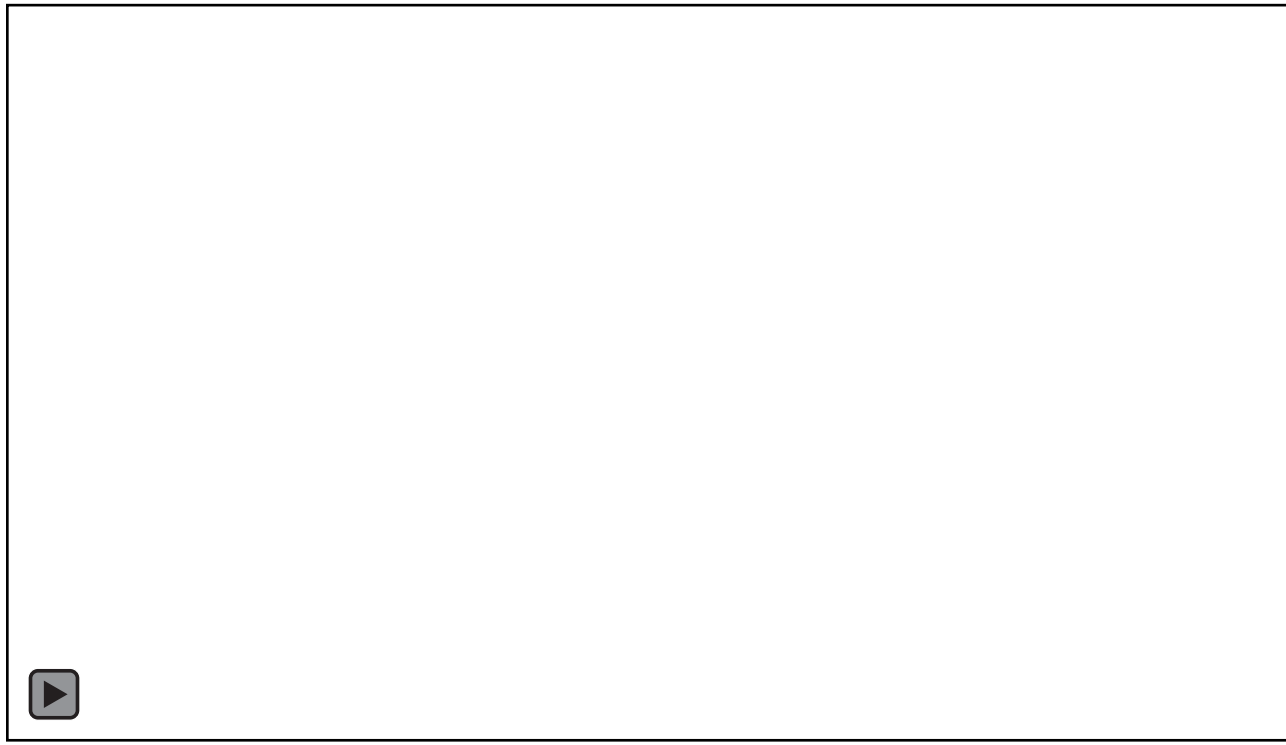
INSUFICIENCIA MITRAL FUNCIONAL

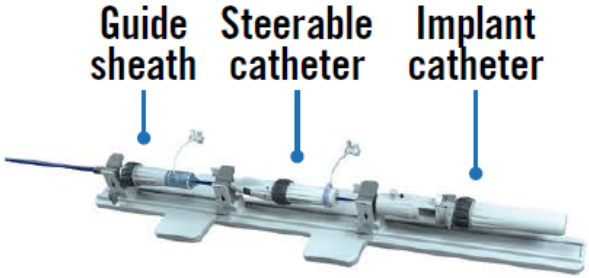


Eur Heart J 2025;00: 1-102

INSUFICIENCIA MITRAL FUNCIONAL





	MitraClip (4th-generation)	PASCAL Precision (2nd-generation)
Delivery catheter		
Available implants		
Device material	Rigid arms of cobalt-chromium alloy	Flexible arms of nitinol
Central spacer	No	Yes
Optional independent grasping	Yes	Yes
Closure mechanism	Active (locking element)	Passive (nitinol shape memory)
Number of working catheters	2	3
Orientation of hooks/friction elements	Longitudinal	Horizontal
Continuous LA pressure	Yes	Yes
Overall system stability	High	Improved with PASCAL Precision

EuroIntervention 2023;18:957-976

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EXPEDITED REVIEWS

Percutaneous Mitral Valve Repair Using the Edge-to-Edge Technique

Six-Month Results of the EVEREST Phase I Clinical

Ted Feldman, MD, FACC, FSCAI,* Hal S. Wasserman, M
Howard C. Herrmann, MD, FACC, FSCAI,‡ Willian
Peter C. Block, MD, FACC, FSCAI,‖ Patrick Whitlow
Fred St. Goar, MD, FACC, FSCAI,# Leonardo Rodrigu
Allan Schwartz, MD, FACC,† Timothy A. Sanborn, MD
Elyse Foster, MD, FACC††
*Evanston, Illinois; New York, New York; Philadelphia, Pennsylv
Cleveland, Ohio; Mt. View and San Francisco, California; and C*

OBJECTIVES This study sought to evaluate the clinical results
repair for mitral regurgitation (MR).

BACKGROUND A surgical technique approximating the middle sc
double orifice with improved leaflet coaptation was
a percutaneous method to create the same type
approach was used to deliver a clip device that gr
double orifice.

METHODS General anesthesia, fluoroscopy, and echocardiog
positioned in the left atrium. The clip is centered
ventricle, and pulled back to grasp the mitral lea
the clip is released.

RESULTS Twenty-seven patients had six-month follow-u
were no procedural complications and four
detachment in three patients, who underwen
post-procedure stroke that resolved at one m
unresolved MR, leaving 18 patients free from
MR to ≤2+ after one month, the reductio

CONCLUSIONS Percutaneous edge-to-edge mitral valve repa
can be achieved in a significant proportion
subsequent surgery had elective mitral val
Cardiol 2005;46:2134–40) © 2005 by th

ORIGINAL RESEARCH

STRUCTURAL

Long-Term Outcomes After Edge-to-Edge Repair of Secondary Mitral Regurgitation

5-Year Results From the EuroSMR Registry

Thomas J. Stocker, MD,[a,b,*] Lukas Stolz, MD,[a,*] Nicole Karam, MD, PhD,[c] Daniel Kalbacher, MD,[d,e] Benedikt Koell, MD,[d,e] Teresa Trenkwalder, MD,[b,f] Erion Xhepa, MD,[b,f] Marianna Adamo, MD,[g] Maximilian Spieker, MD,[h] Patrick Horn, MD,[h] Christian Butter, MD,[i] Ludwig T. Weckbach, MD,[a,b] Julia Novotny, MD,[a,b] Bruno Melica, MD,[j] Christina Giannini, MD,[k] Ralph Stephan von Bardeleben, MD,[l] Roman Pfister, MD,[m] Fabien Praz, MD,[n] Philipp Lurz, MD, PhD,[l] Volker Rudolph, MD,[o] Marco Metra, MD,[g] Jörg Hausleiter, MD,[a,b] the EuroSMR Investigators

ABSTRACT

BACKGROUND Mitral valve transcatheter edge-to-edge repair (M-TEER) reduces secondary mitral regurgitation (MR) in heart failure and impacts survival in selected patients as demonstrated in the COAPT (Cardiovascular Outcomes Assessment of the MitraClip Percutaneous Therapy for Heart Failure Patients with Functional Mitral Regurgitation) trial. However, long-term outcome data after M-TEER under real-world conditions are lacking.

OBJECTIVES This study sought to assess long-term efficacy and survival after M-TEER in a large real-world registry.

METHODS We analyzed patients with significant secondary MR undergoing M-TEER from the EuroSMR (European Registry of Transcatheter Repair for Secondary Mitral Regurgitation) registry. Long-term MR reduction, functional outcomes, survival rate, and predictors for all-cause mortality were assessed.

RESULTS In this study, 1,628 patients undergoing M-TEER (mean age 73.8 years, mean EuroSCORE II [European System for Cardiac Operative Risk Evaluation II] 6.9%, 86.6% NYHA functional class ≥III) with available long-term data were included. Five-year survival was 35.0%. Long-term MR reduction (MR grade ≤2+: baseline 4.1%, discharge 92.2%, 5-year follow-up 85.5%; $P < 0.001$) and functional improvement (NYHA ≤II: baseline 13.4%, 5-year follow-up 60.1%; $P < 0.001$) was observed. The degree of residual MR was associated with 5-year survival (residual MR grade ≤1+: 38.6%; 2+: 30.5%; ≥3+: 22.6%; $P < 0.001$). Independent predictors for 5-year all-cause mortality post-M-TEER included age, renal function, residual MR, NYHA functional class, left ventricular ejection-fraction, and COAPT trial eligibility ($P < 0.01$ for all).

CONCLUSIONS This extensive multicenter registry underscores the long-term efficacy of M-TEER in real-world clinical practice and identifies predictors for long-term survival. These findings contribute valuable insights for optimizing patient selection in routine clinical interventions. (JACC Cardiovasc Interv. 2024;17:2543–2554) © 2024 The Authors. Published by Elsevier on behalf of the American College of Cardiology Foundation. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

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zed Comparison of Percutaneous d Surgery for Mitral Regurgitation

f EVEREST II

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http://dx.doi.org/10.1016/j.jacc.2015.10.018

t, MD,† Sammy Elmariah, MD, MPH,‡§ Steven C. Smart, MD,* Alfredo Trento, MD,‖
Apruzzese, MS,§ Peter Fail, MD,¶ Michael J. Rinaldi, MD,#
ames B. Hermiller, MD,†† David Heimansohn, MD,‡‡ William A. Gray, MD,§§
ack, MD,¶¶ D. Scott Lim, MD,## Gorav Ailawadi, MD,***
cker, MD,††† Frank E. Silvestry, MD,††† Elyse Foster, MD,§§§
¶¶¶ Laura Mauri, MD,§### for the EVEREST II Investigators

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year were infrequent in both

as associated with significant MR
tients with vSMR. This suggests that TEER
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of MitraClip® Devices; NCT03502811)
College of Cardiology Foundation.

Study), treatment of mitral regurgitation (MR)
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spectively ($p = 0.01$).
urgery (27.9% vs. 8.9%;
within the first 6 months.
n groups. Five-year mortality
ely. In multivariable analysis,

uired surgery for residual MR during the
w rates of surgery for MV dysfunction with
tion with both repair techniques. (EVEREST II
;66:2844–54) © 2015 by the American College

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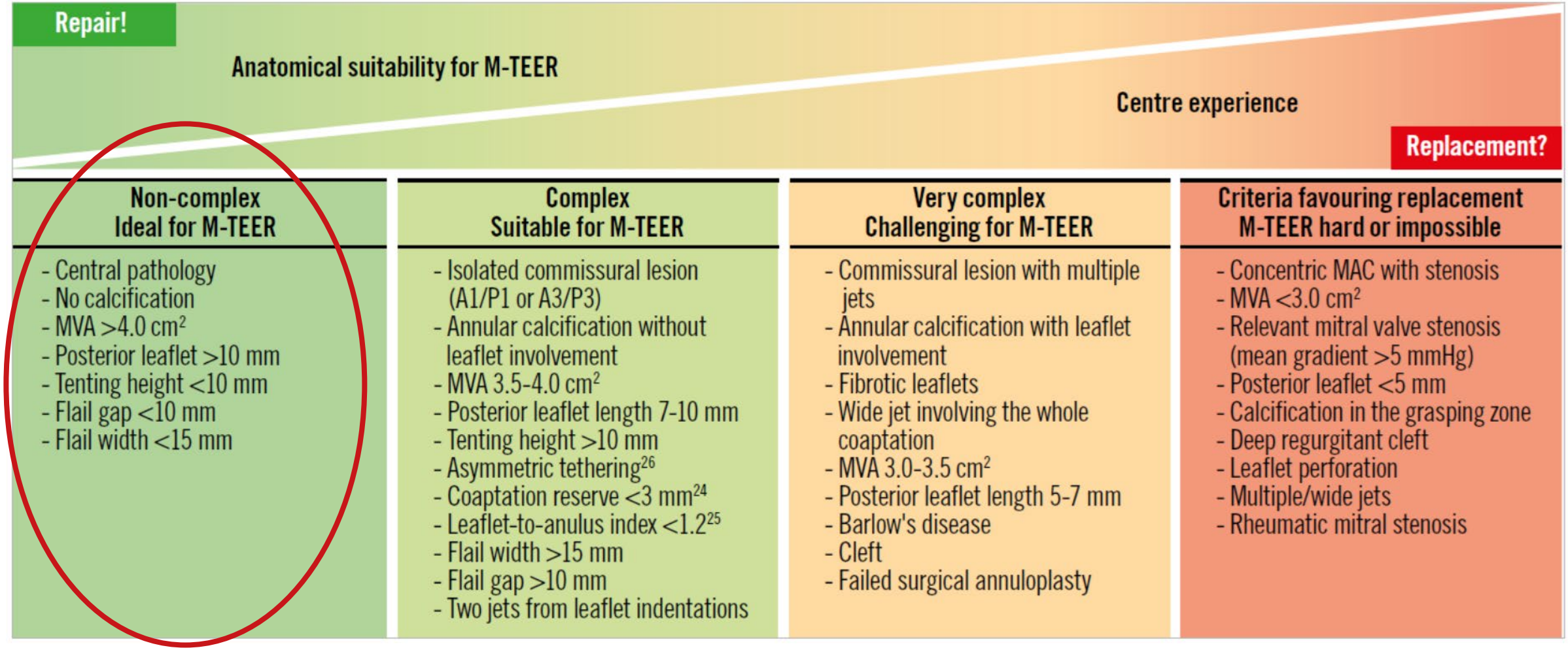
INSUFICIENCIA MITRAL FUNCIONAL: Anatomía



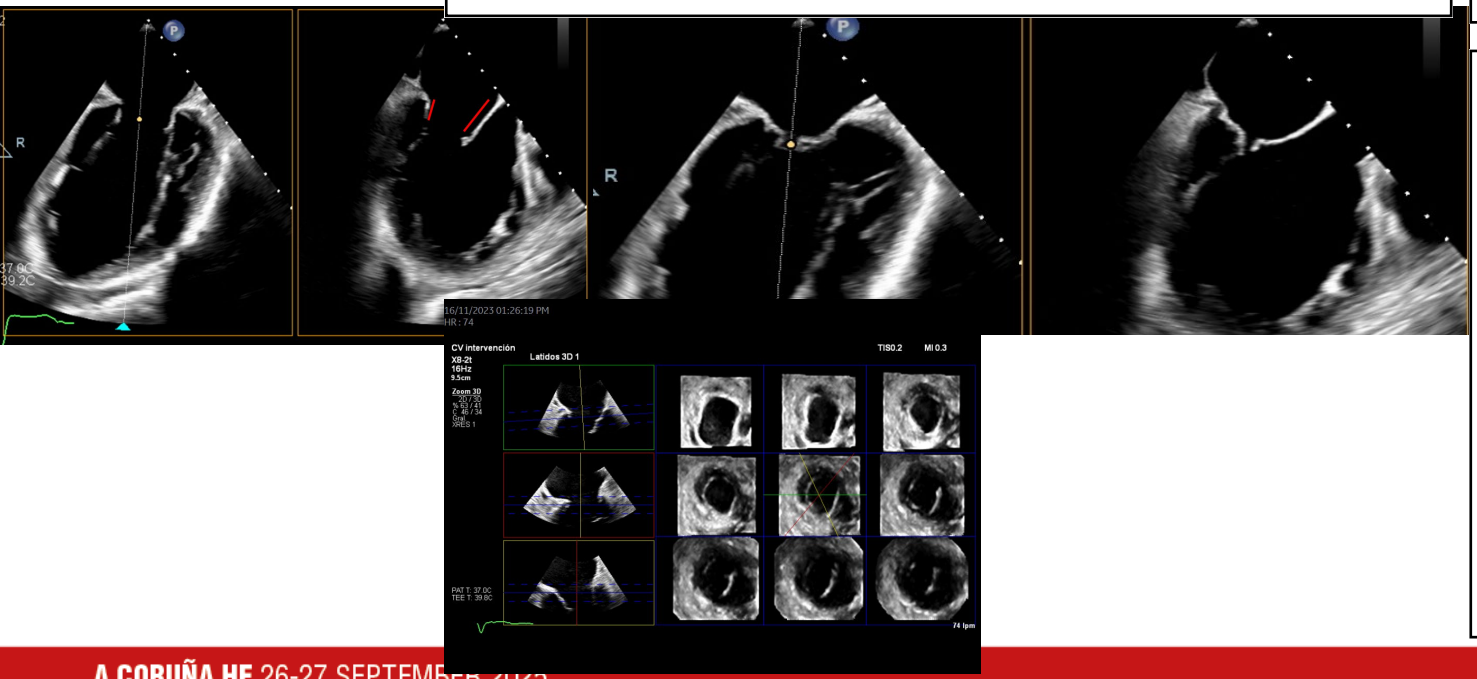
EuroIntervention 2023;18:957-976

INSUFICIENCIA MITRAL FUNCIONAL: Anatomía

Non-complex
Ideal for M-TEER

- Central pathology
- No calcification
- MVA >4.0 cm²
- Posterior leaflet >10 mm
- Tenting height <10 mm
- Flail gap <10 mm
- Flail width <15 mm

EuroIntervention 2023;18:957-976



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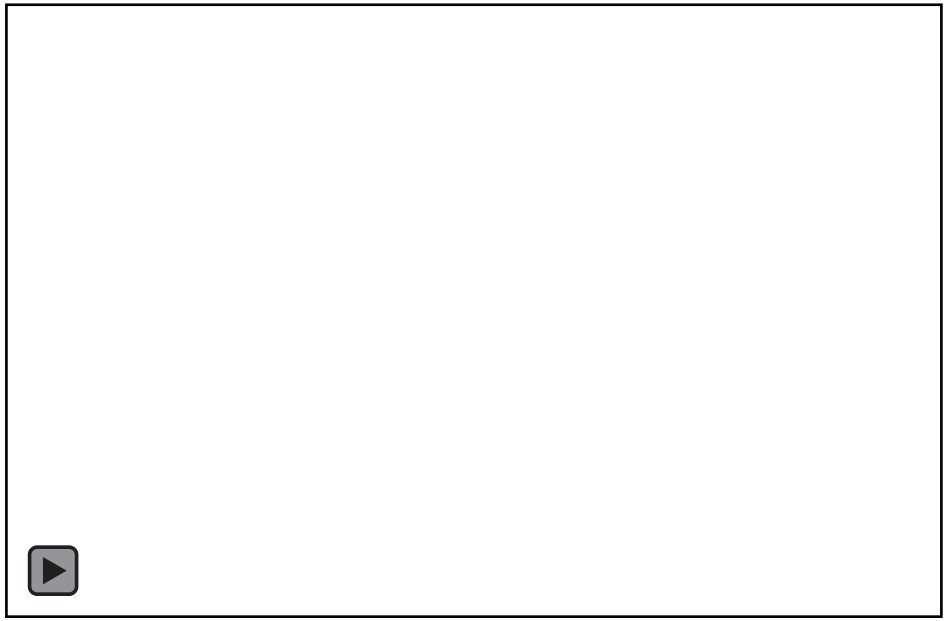

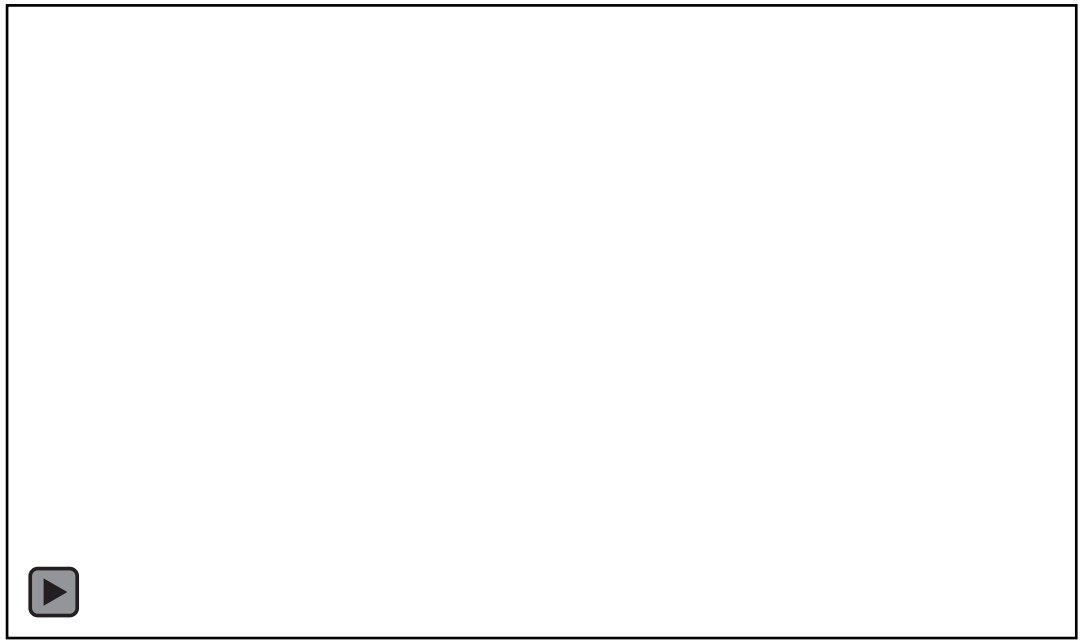

INSUFICIENCIA MITRAL FUNCIONAL: Anatomía

Repair!

Anatomical suitability for M-TEER

Centre experience

Replacement?

Non-complex Ideal for M-TEER	Complex Suitable for M-TEER	Very complex Challenging for M-TEER	Criteria favouring replacement M-TEER hard or impossible
- 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	- 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 - Asymmetric tethering[26] - Coaptation reserve <3 mm[24] - Leaflet-to-anulus index <1.2[25] - Flail width >15 mm - Flail gap >10 mm - Two jets from leaflet indentations	- 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	- 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

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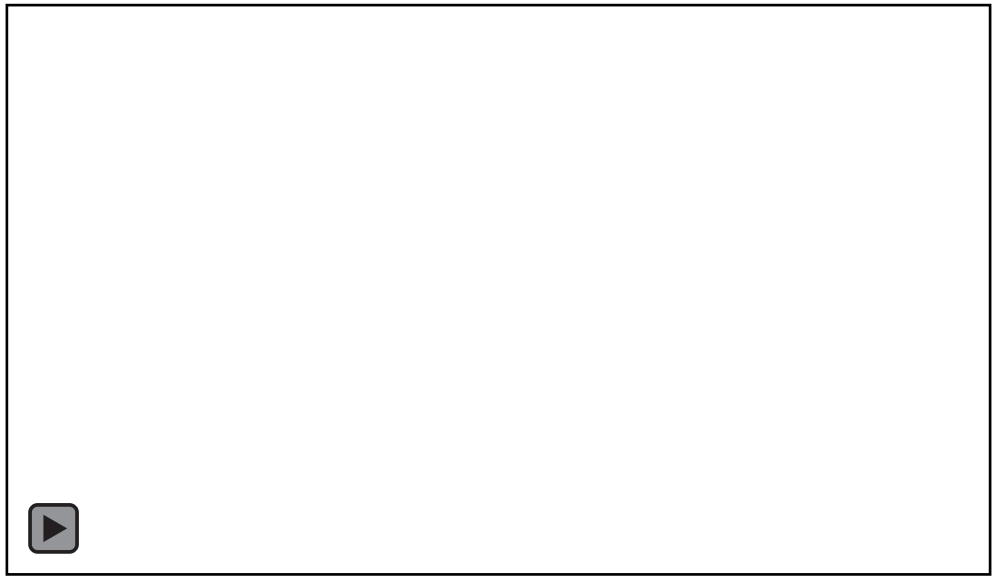

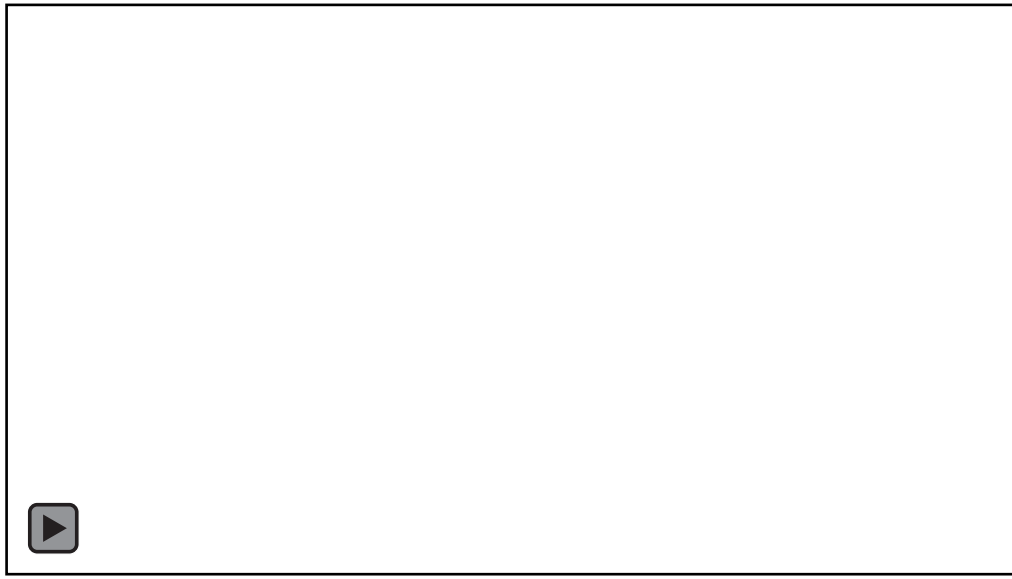

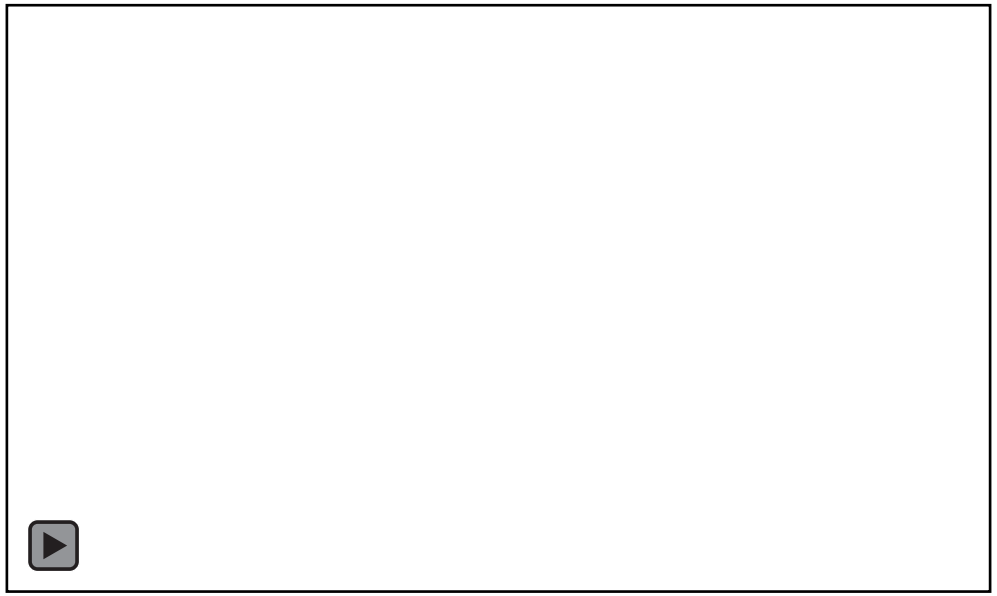

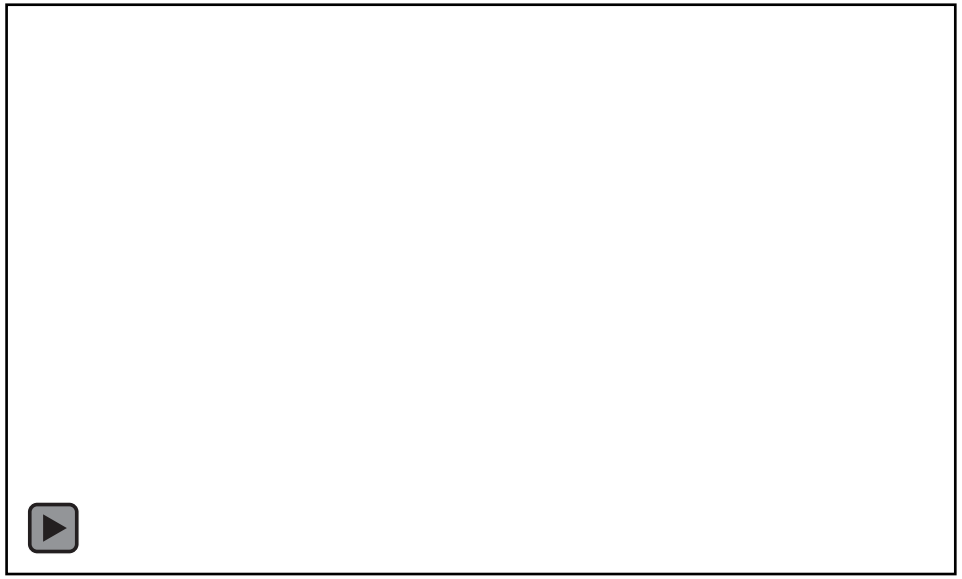

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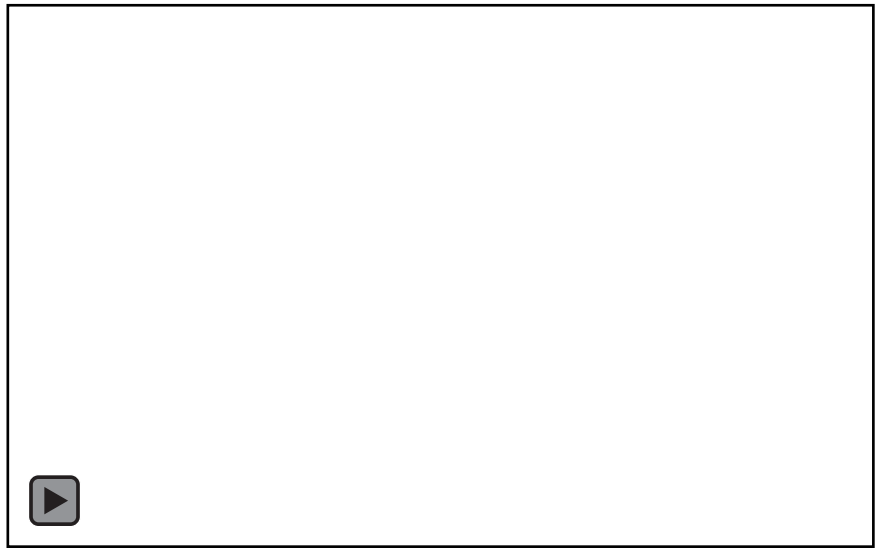
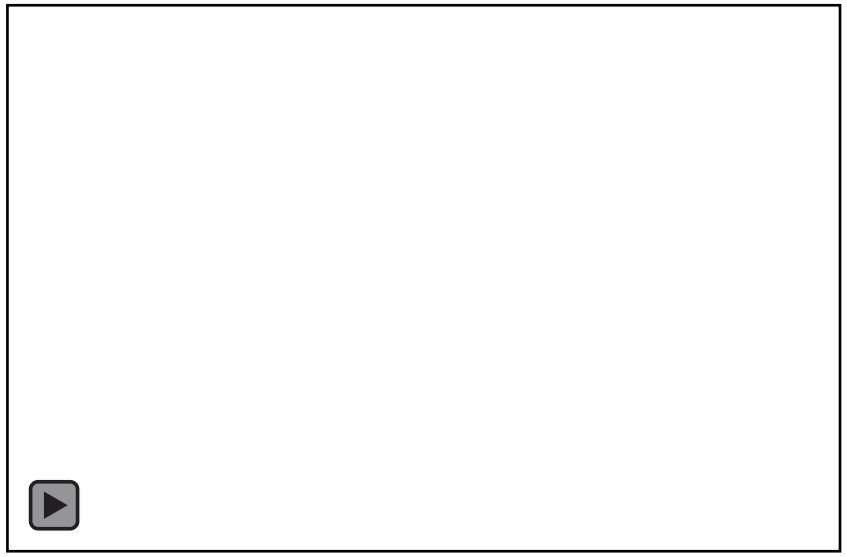
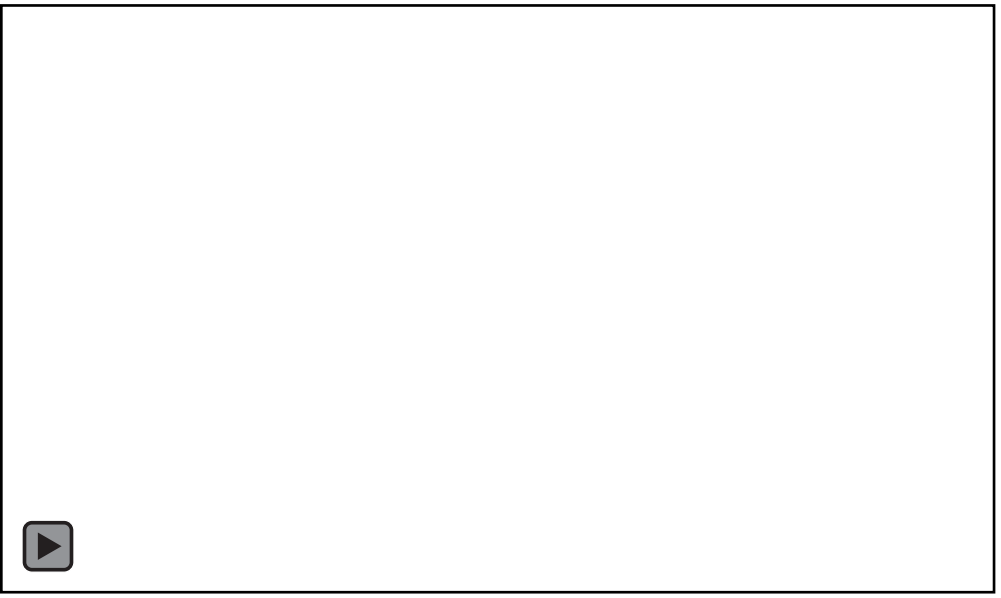
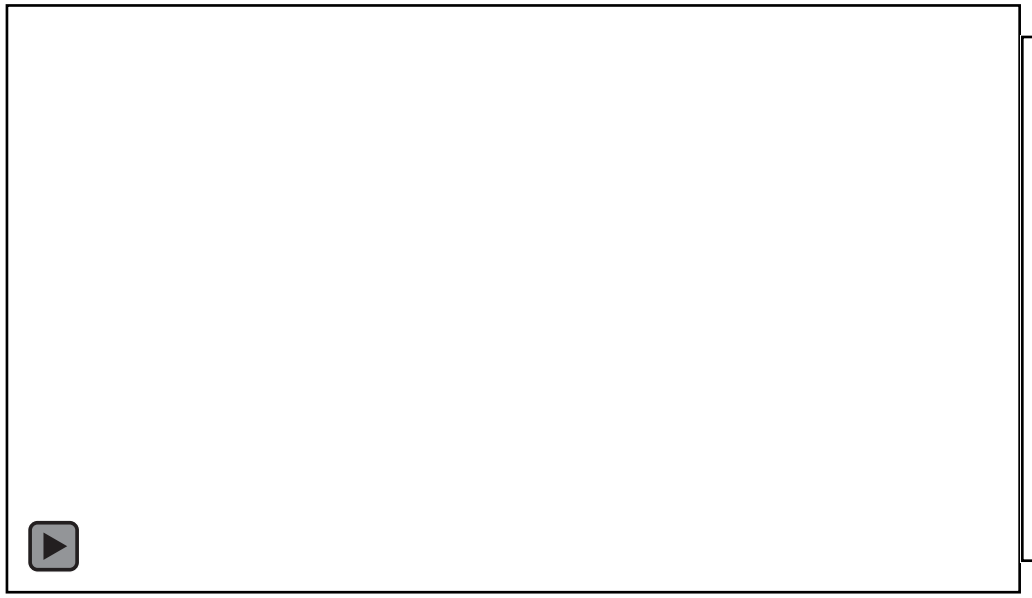
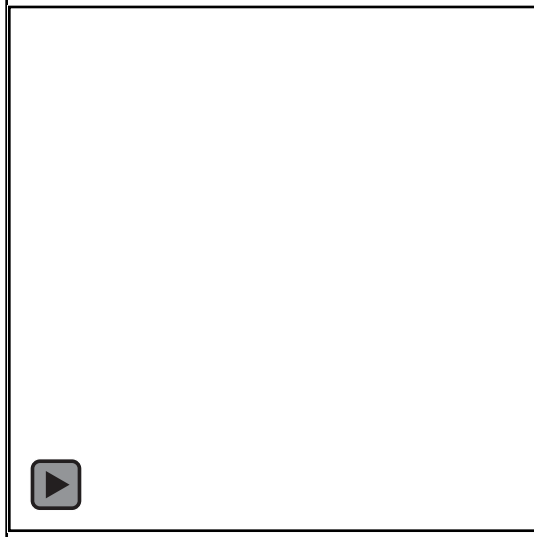


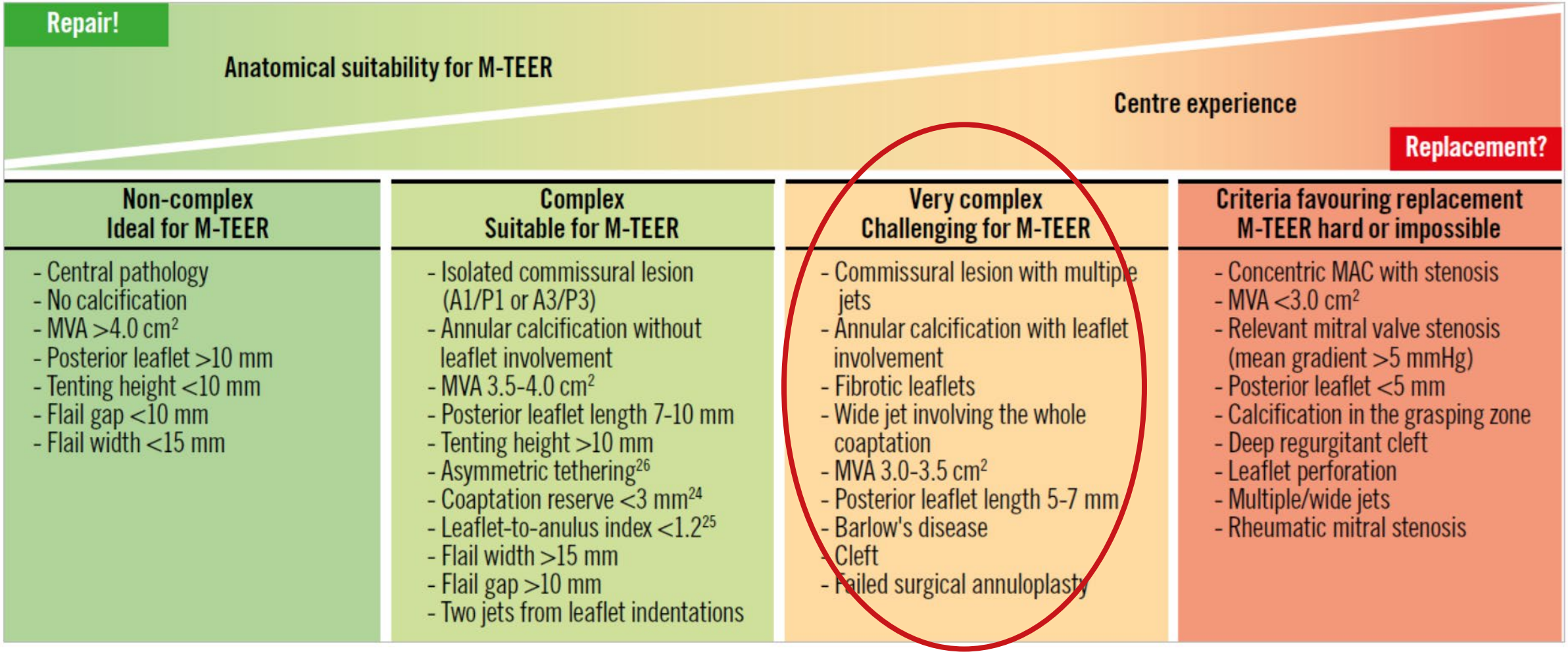








INSUFICIENCIA MITRAL FUNCIONAL: Anatomía



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INSUFICIENCIA MITRAL FUNCIONAL: Anatomía

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

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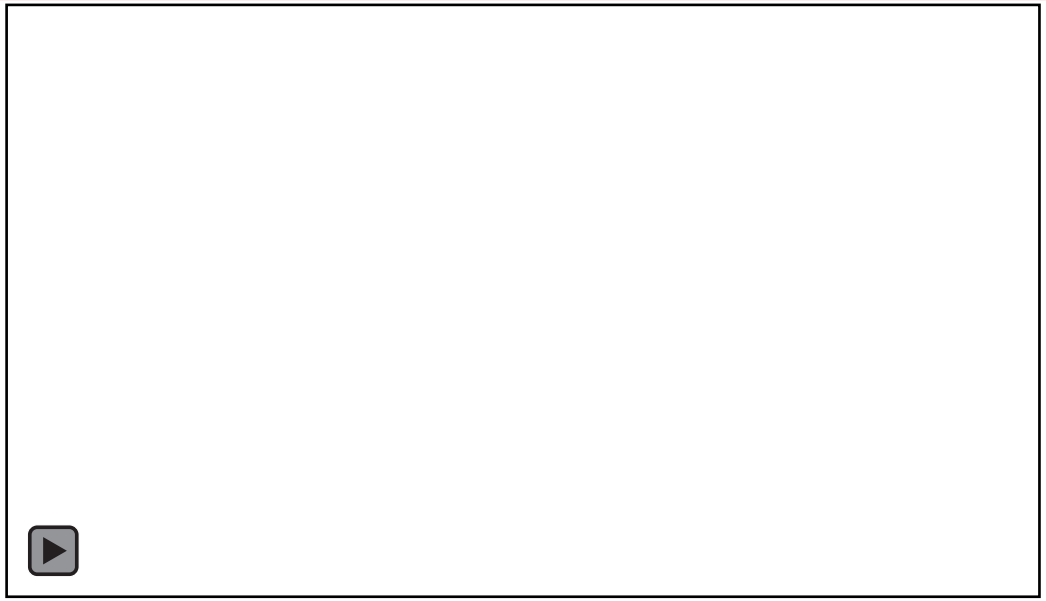
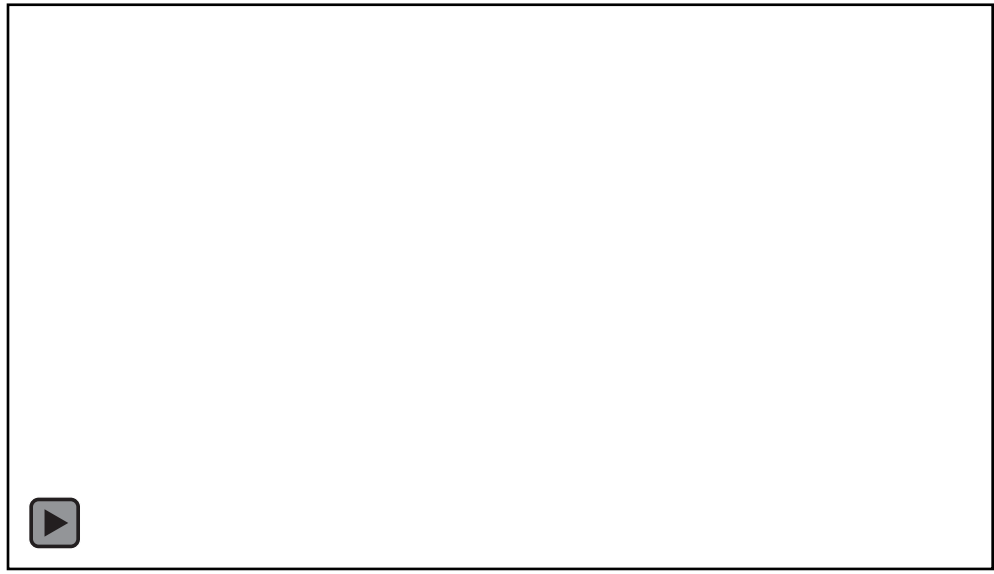
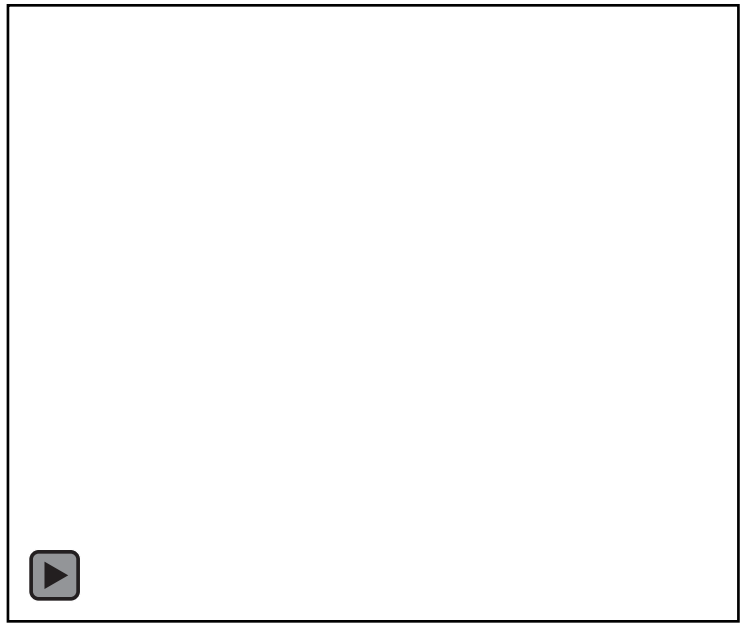
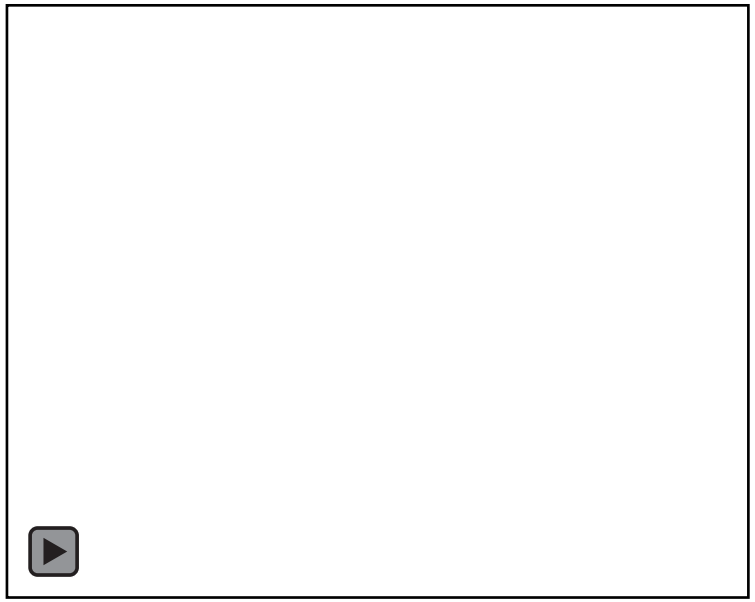
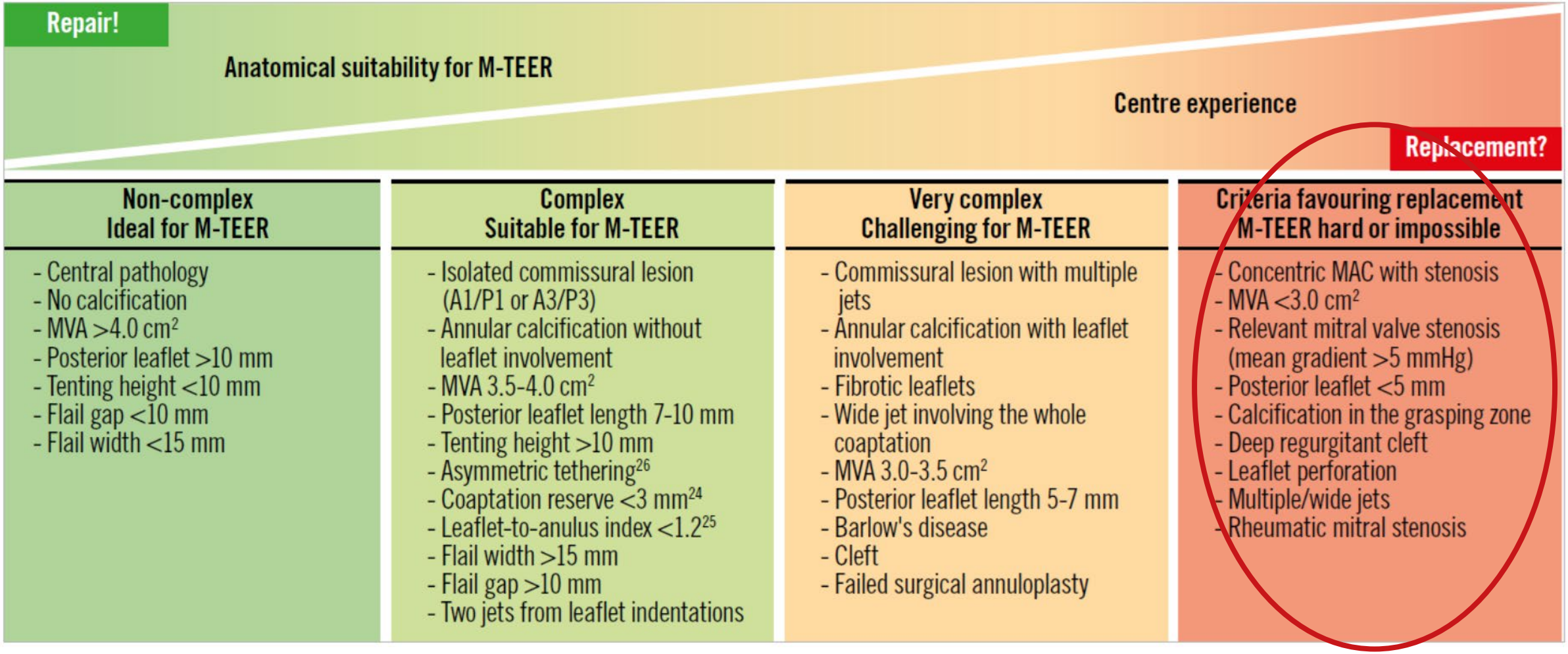








INSUFICIENCIA MITRAL FUNCIONAL: Anatomía



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INSUFICIENCIA MITRAL FUNCIONAL: Anatomía

Criteria favouring replacement M-TEER hard or impossible

- Concentric MAC with stenosis
- MVA <3.0 cm²
- 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

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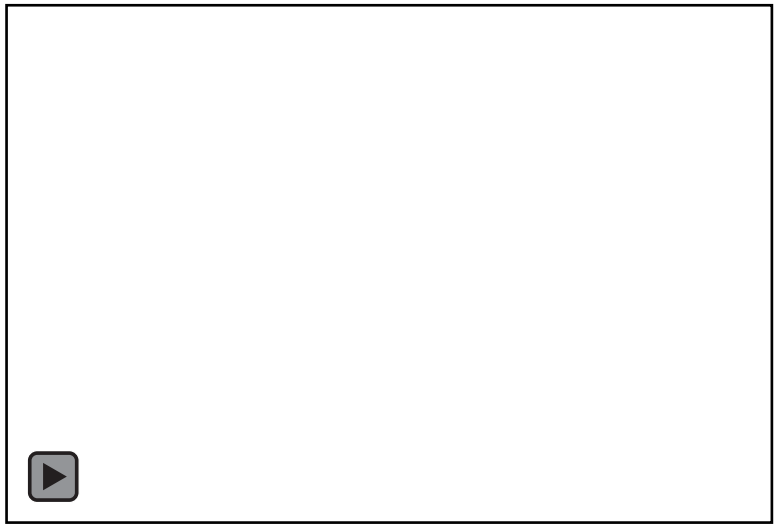
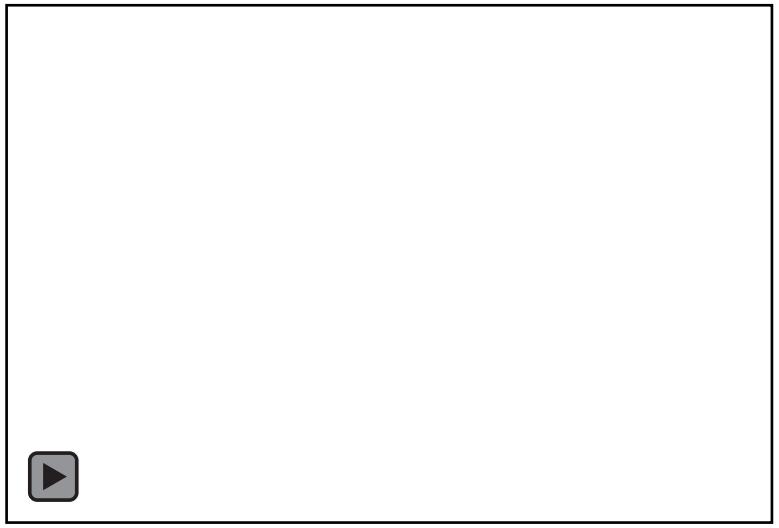
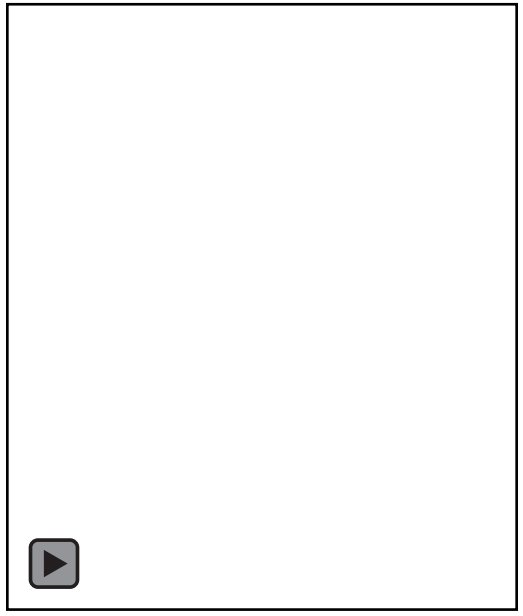
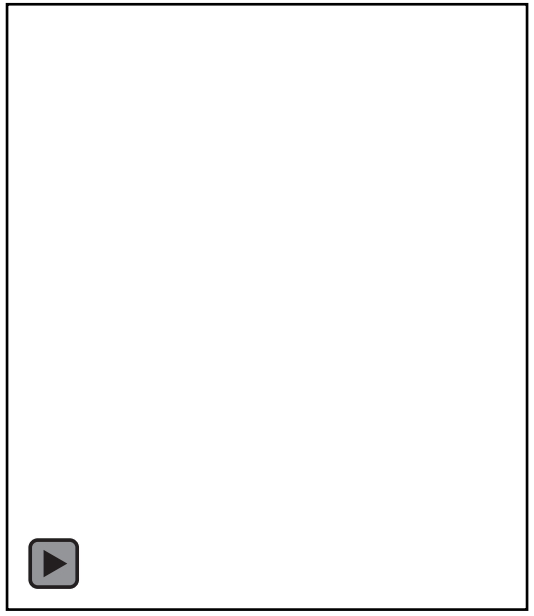






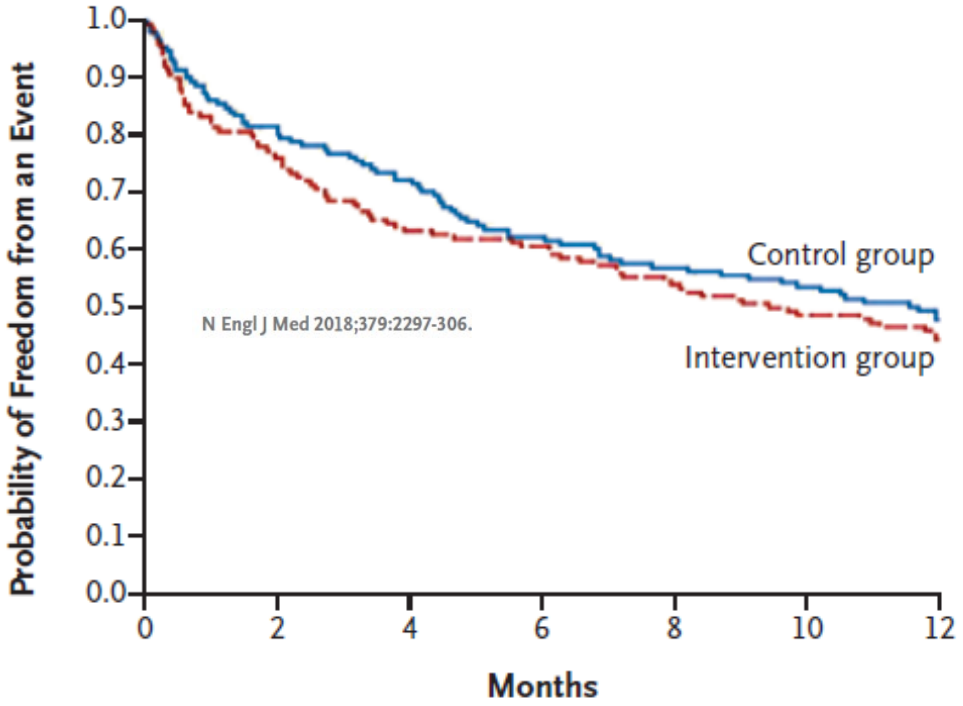


INSUFICIENCIA MITRAL FUNCIONAL: más allá de la anatomía

- n= 452. IMI secundaria ORE > 20 mm^2, Volumen regurgitante >30 ml, FEVI 15-40%. Sintomáticos
- End point primario de eficacia: Muerte de cualquier causa u hospitalización por IC a 12 meses

Percutaneous Repair or Medical Treatment for Secondary Mitral Regurgitation

MITRA-FR Investigators[3]



No. at Risk

Control group	152	123	109	94	86	80	73
Intervention group	151	114	95	91	81	73	67

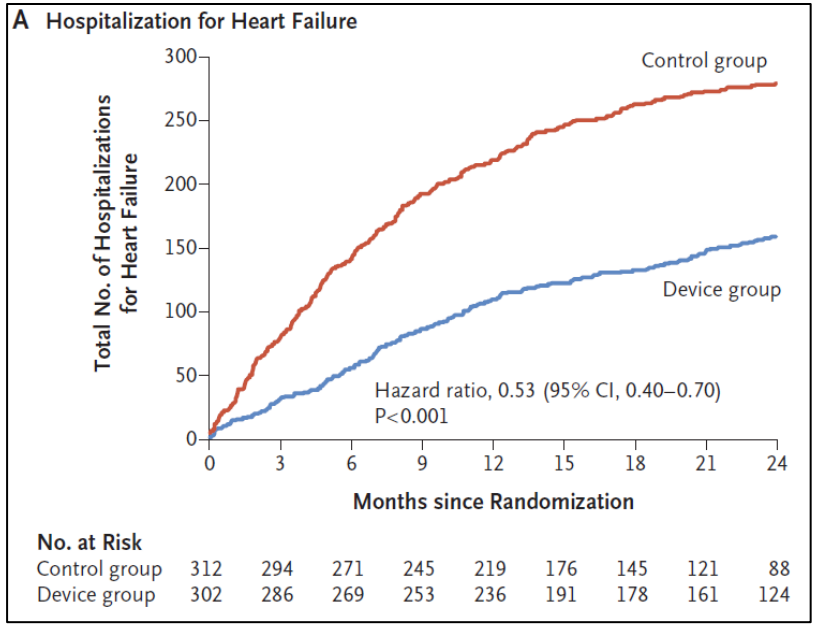
N Engl J Med 2018; 379:2297-306

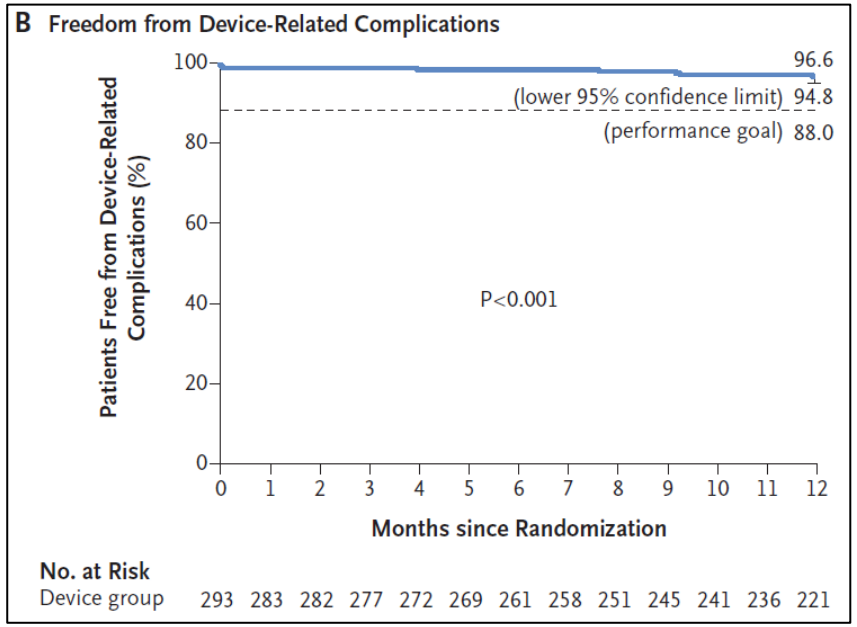
INSUFICIENCIA MITRAL FUNCIONAL: más allá de la anatomía

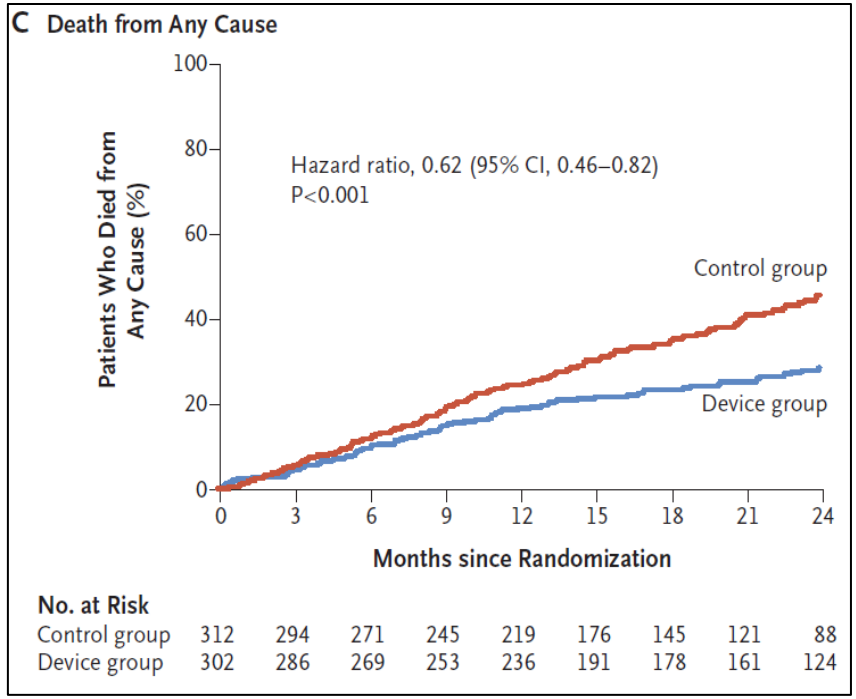
- n= 614. FEVI 20-50%; IMI III-IV secundaria, sintomáticos
- End point primario: Hospitalización por IC 24 meses
- End point seguridad: No complicaciones dispositivo a 12 meses

Transcatheter Mitral-Valve Repair in Patients with Heart Failure

COAPT Investigators







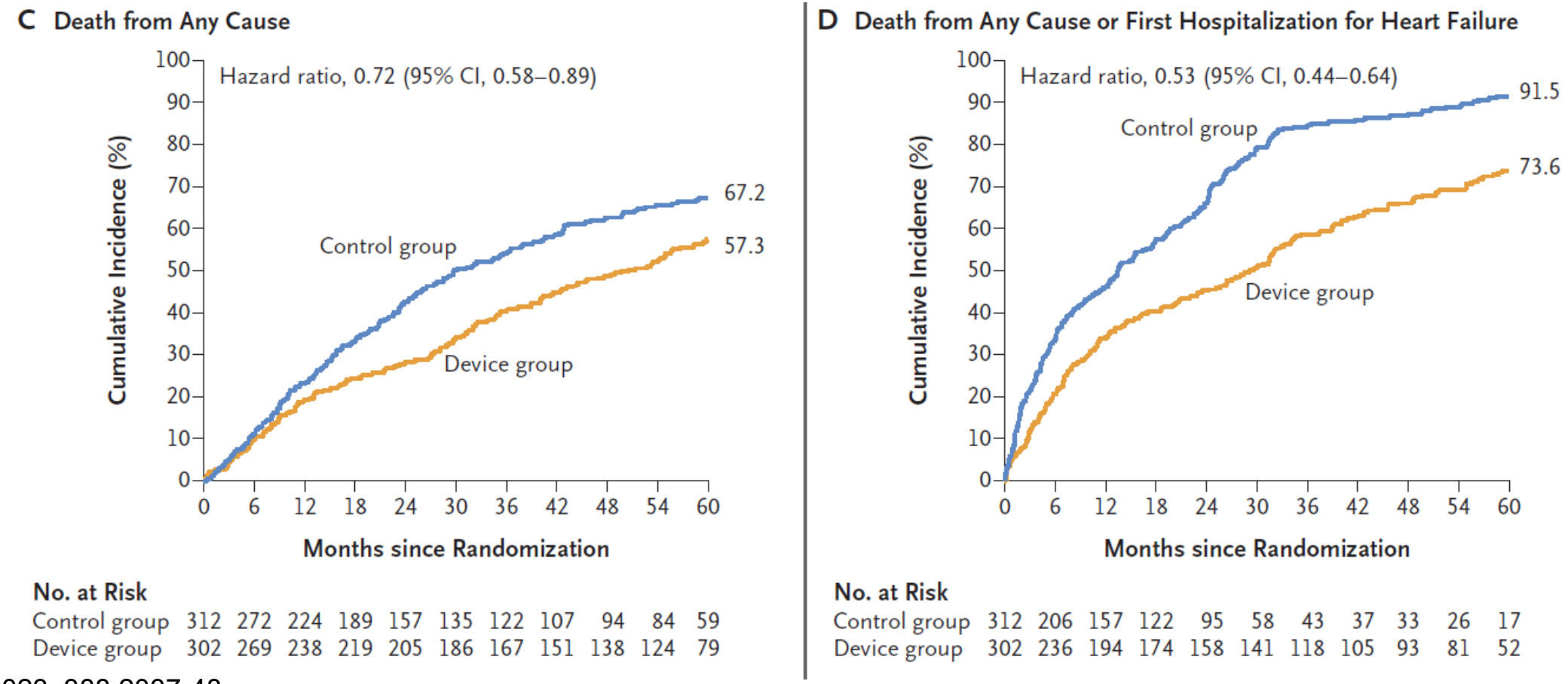
N Engl J Med 2018; 379:2307-18

INSUFICIENCIA MITRAL FUNCIONAL: más allá de la anatomía

- n= 614. FEVI 20-50%; IMI III-IV
- Tasa anualizada de hospitalizaciones por IC a 5 años, mortalidad de todas las causas, riesgo muerte u hospitalización por IC, y seguridad a 5 años

Five-Year Follow-up after Transcatheter Repair of Secondary Mitral Regurgitation

the COAPT Investigators



N Engl J Med 2023; 388:2037-48

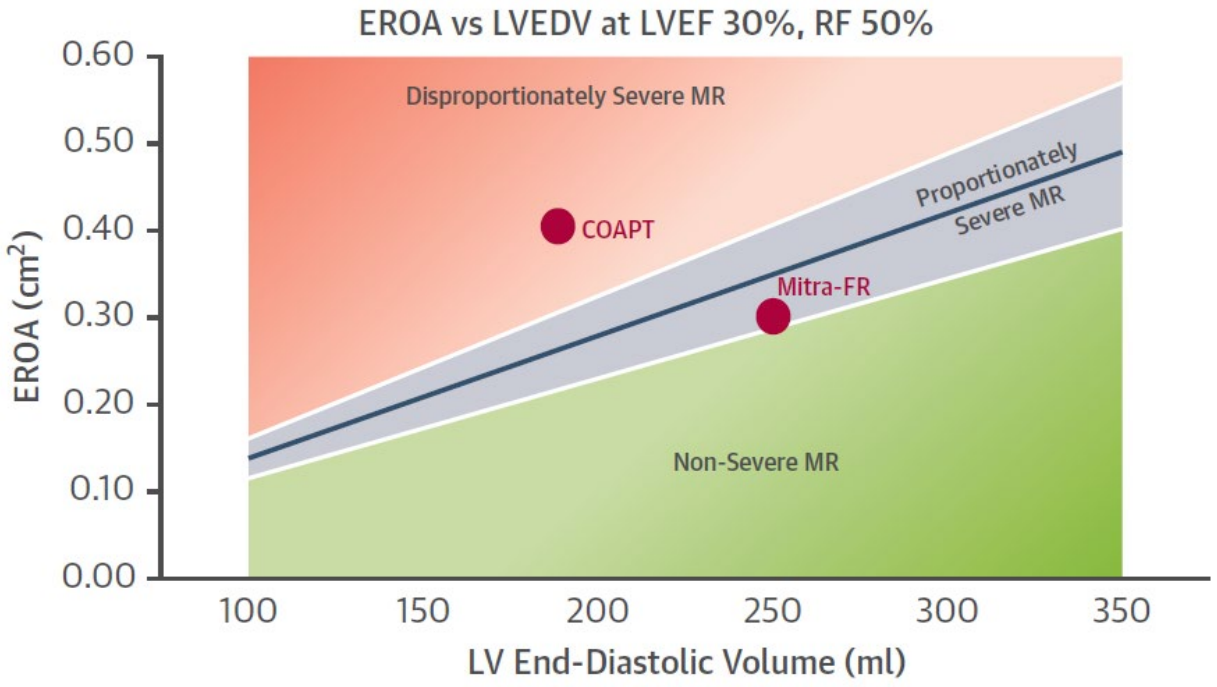
MITRA-FR vs. COAPT: lessons from two trials with diametrically opposed results

	MITRA-FR	COAPT
Baseline clinical characteristics		
Age, year	70 ± 10	72 ± 11
NYHA class, %		
I	0	0.2
II	32.9	39.0
III	58.5	52.5
IV	8.6	8.3
Surgical risk		
STS score ≥8%		42.7%
EuroSCORE II, median and IQR	6.2 (3.5–11.0)	
Baseline echocardiographic characteristics		
MR severity, %		
Moderate (EROA 20-29 mm^2)	52	14
Moderate-to-severe (EROA 30-39 mm^2)	32	46
Severe (EROA ≥ 40 mm^2)	16	41
EROA, mm^2	31 ± 10	41 ± 15
LV end-diastolic volume index, mL/m^2	135 ± 35	101 ± 34
LV ejection fraction, %	33 ± 7	31 ± 9

Eur Heart J Cardiovas Imag 2019;2:620-624

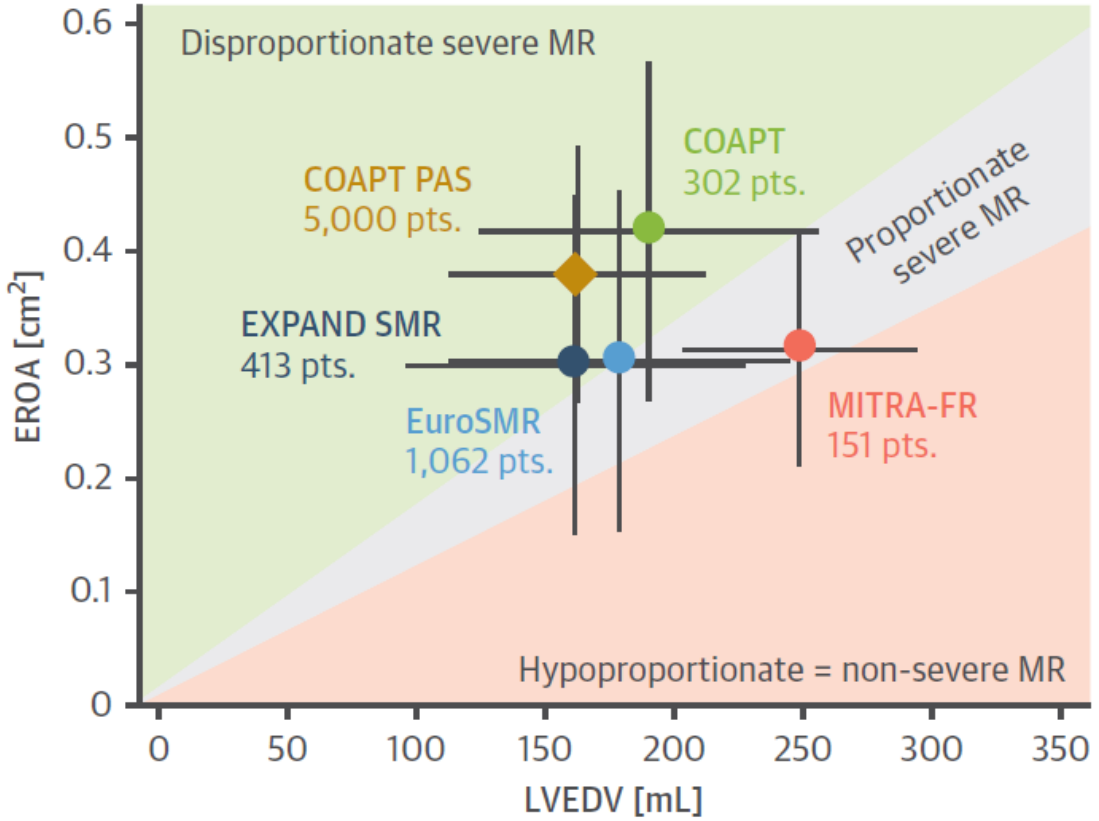
INSUFICIENCIA MITRAL FUNCIONAL: más allá de la anatomía

FIGURE 2 Relationship Between EROA and LVEDV Illustrating Domains That Define Disproportionately Severe, Proportionately Severe, and Nonsevere Functional Mitral Regurgitation



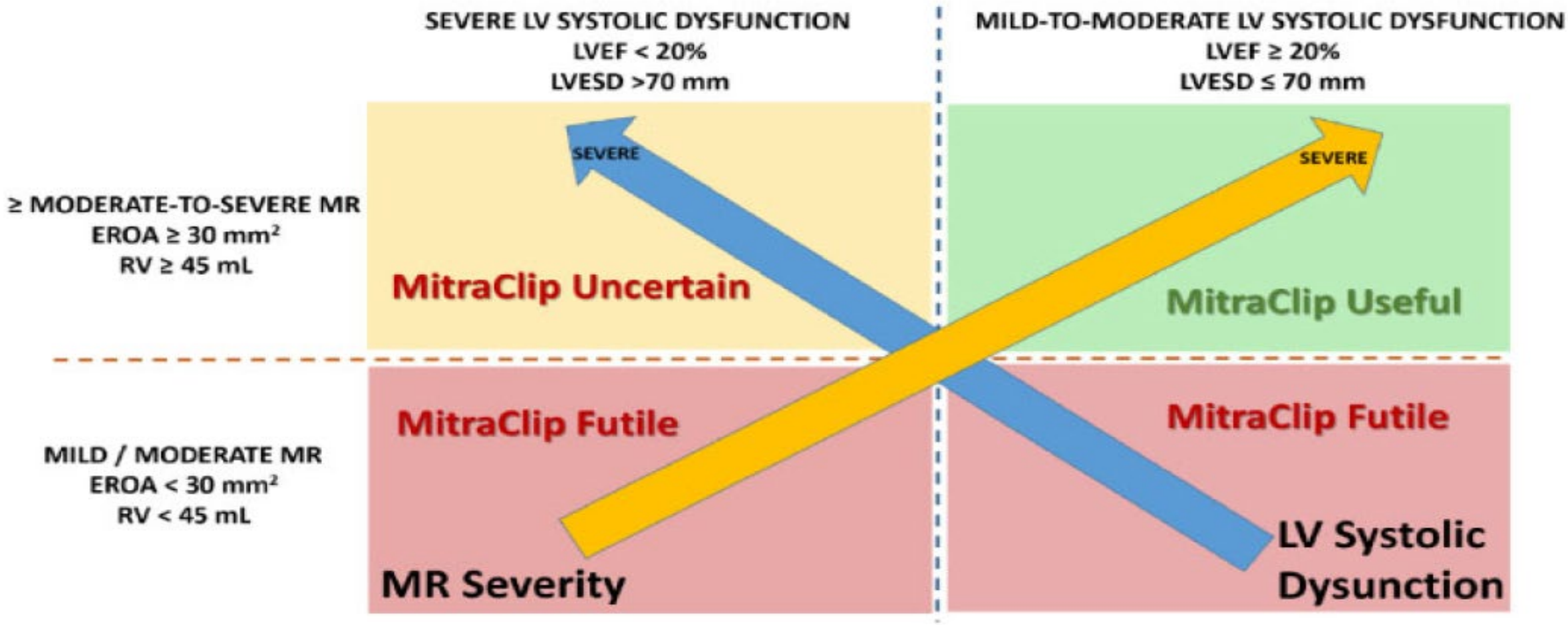
J Am Coll Cardiol Imag 2019;12:353-62

FIGURE 2 MR Proportionality in Different Trials and Registries



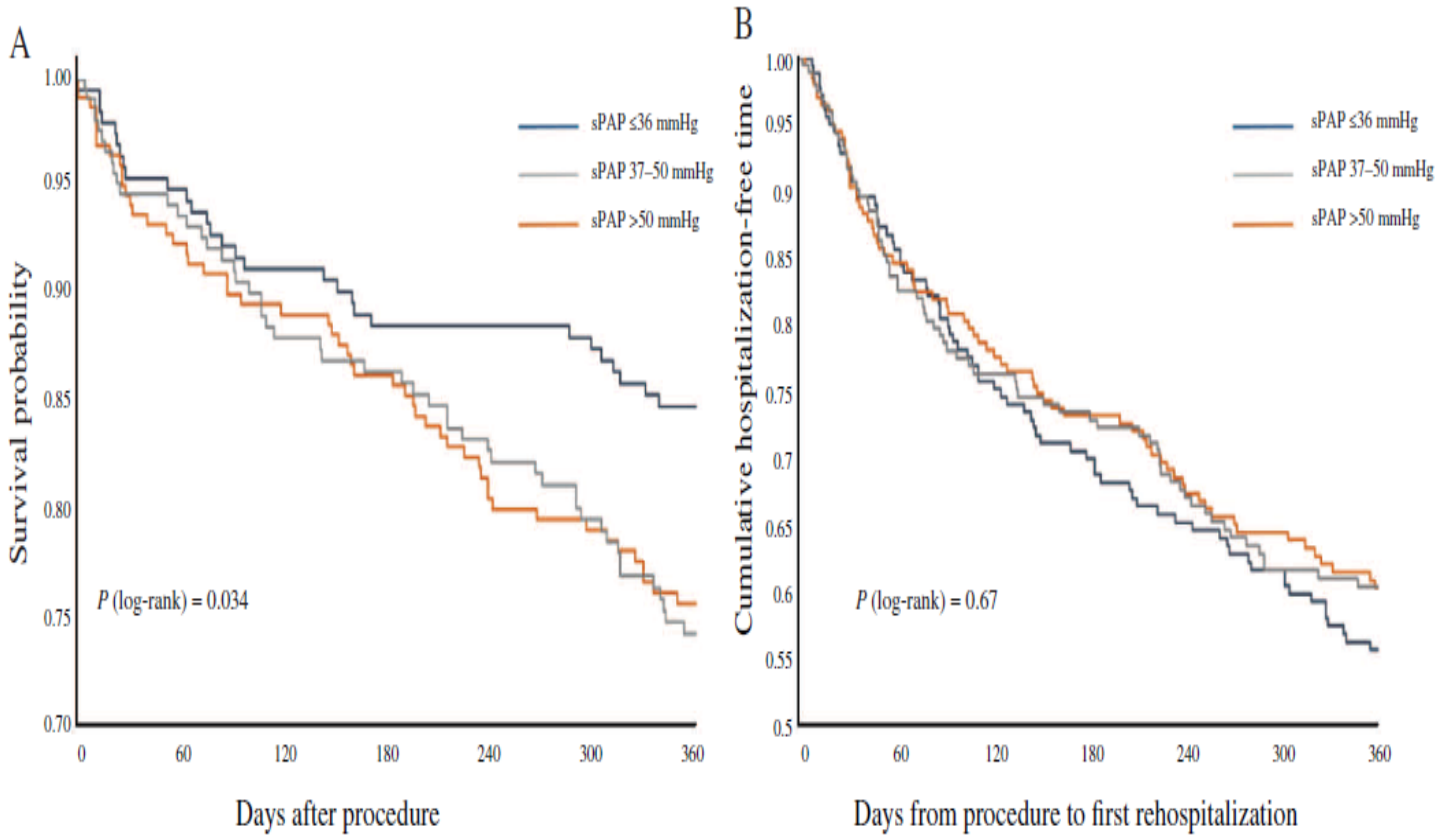
J Am Coll Cardiol Imag 2024;17:659-6682

MITRA-FR vs. COAPT: lessons from two trials with diametrically opposed results



Eur Heart J Cardiovas Imag 2019;2:620-624

INSUFICIENCIA MITRAL FUNCIONAL: más allá de la anatomía



Eur J Heart Fail 2018;20:585-594

INSUFICIENCIA MITRAL FUNCIONAL

Secondary mitral regurgitation		
Percutaneous edge-to-edge mitral valve repair should be considered in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, who are symptomatic[c] despite OMT and who fulfil criteria[d] for achieving a reduction in HF hospitalizations.[612]	IIa	B
In patients with HF, severe secondary mitral regurgitation and CAD who need revascularization, CABG and mitral valve surgery should be considered.	IIa	C
Percutaneous edge-to-edge mitral valve repair may be considered to improve symptoms in carefully selected patients with secondary mitral regurgitation, not eligible for surgery and not needing coronary revascularization, highly symptomatic despite OMT and who do not fulfil criteria for reducing HF hospitalization.[617]	IIb	C

Eur Heart J 2021;42:3599-3726

Severe ventricular secondary mitral regurgitation without concomitant coronary artery disease		
TEER is recommended to reduce HF hospitalizations and improve quality of life in haemodynamically stable, symptomatic patients with impaired LVEF (<50%) and persistent severe ventricular SMR, despite optimized GDMT and CRT (if indicated), fulfilling specific clinical and echocardiographic criteria.[c] [583,584,606,608,643]	I	A
TEER may be considered for symptom improvement in selected symptomatic patients with severe ventricular SMR not fulfilling the specific clinical and echocardiographic criteria,[c] after careful evaluation of LVAD or HTx.[203,608–610]	IIb	B

Eur Heart J 2025;00: 1-102

Table 7 Clinical and echocardiographic criteria predicting outcome improvement in patients with severe ventricular secondary mitral regurgitation undergoing mitral transcatheter edge-to-edge repair

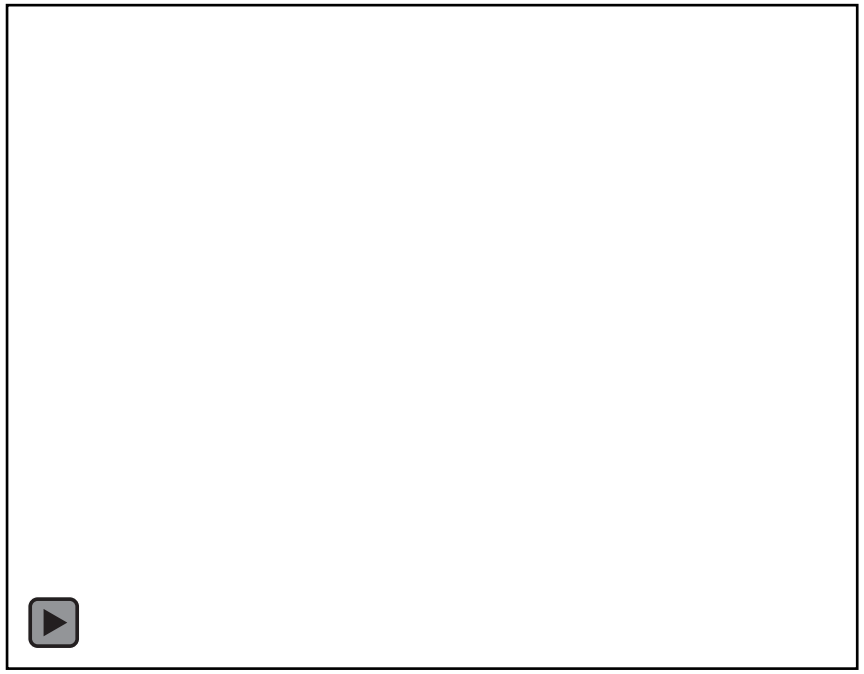
Anatomy deemed suitable for M-TEER
NYHA class ≥II
LVEF 20%–50%
LVESD ≤70 mm
At least one HF hospitalization within the previous year or increased natriuretic peptide levels (BNP ≥300 pg/mL or NT-proBNP ≥1000 pg/mL)
SPAP ≤70 mmHg
No severe RV dysfunction
No Stage D or advanced HF
No CAD requiring revascularization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

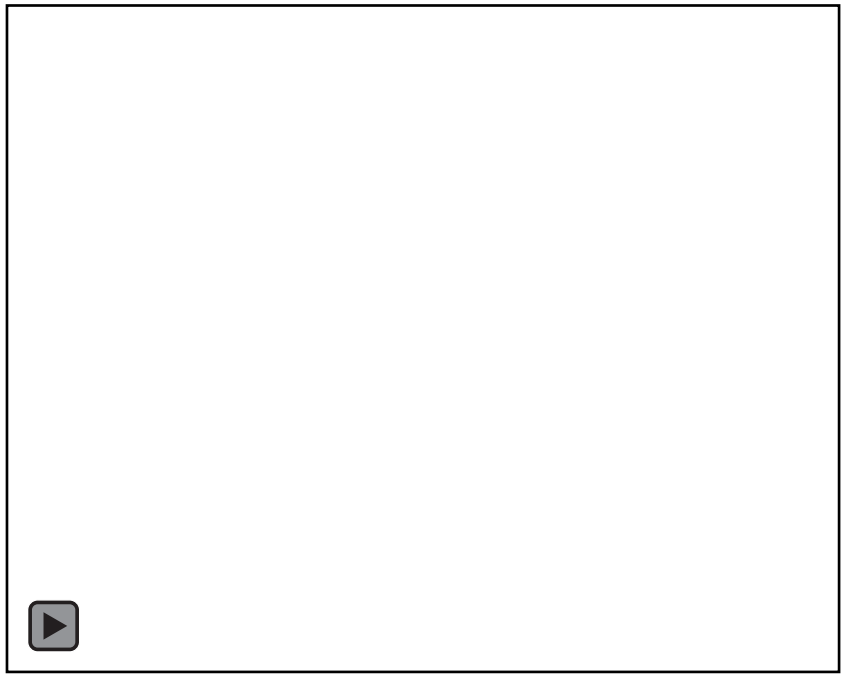
Eur Heart J 2025;00: 1-102

1. Insuficiencia mitral

2. Insuficiencia tricúspide

INSUFICIENCIA TRICÚSPIDE FUNCIONAL



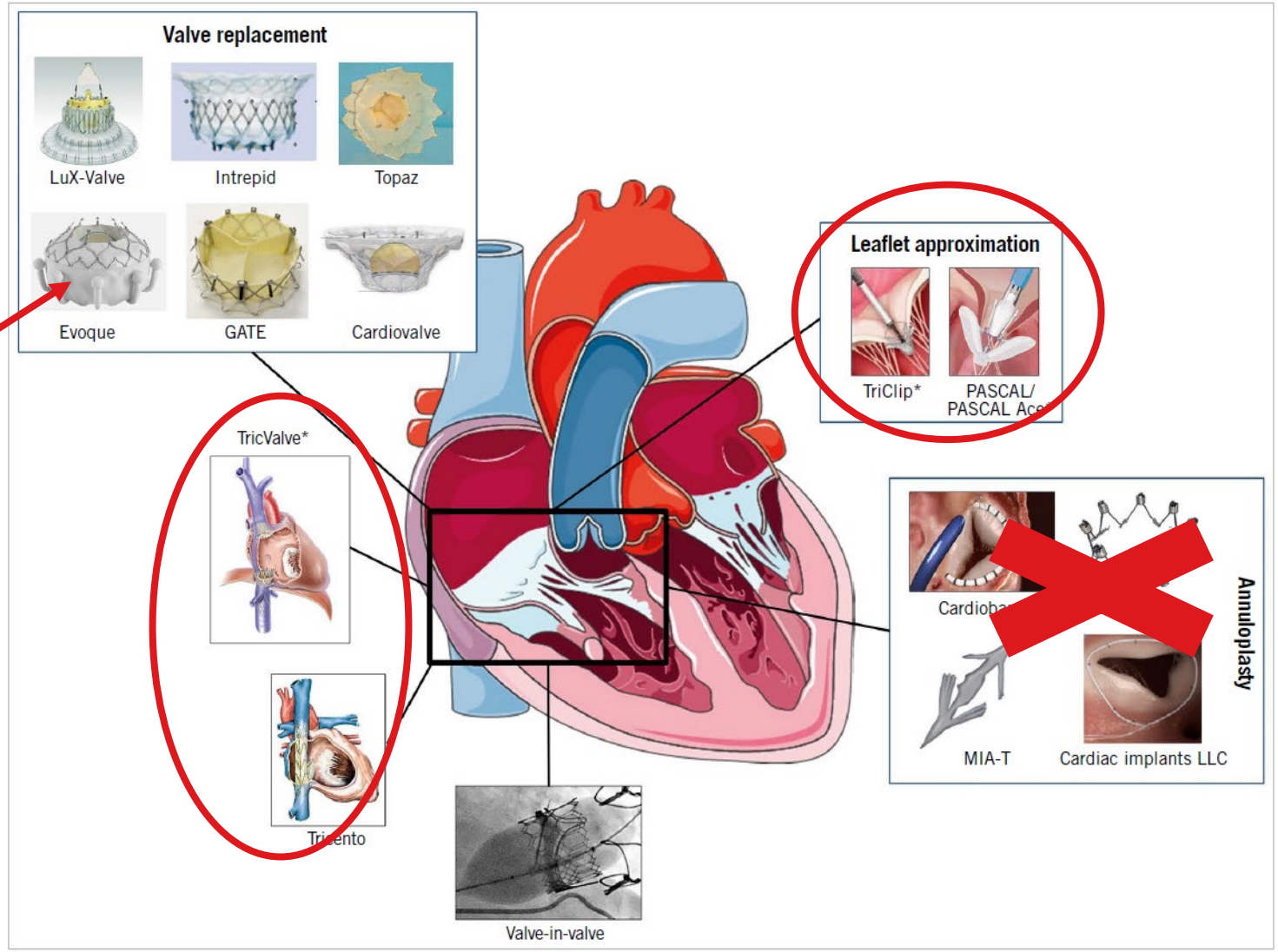


ETIOLOGIA:
- Primaria
- Rel CIED
- Secundaria:
  - ✓ Atrial
  - ✓ Ventricular

MECANISMO:
- Tipo I
- Tipo II
- Tipo III:
  - ✓ IIIa
  - ✓ IIIb

Severidad:
- Grado I
- Grado II
- Grado III
- Grado IV

INSUFICIENCIA TRICÚSPIDE FUNCIONAL



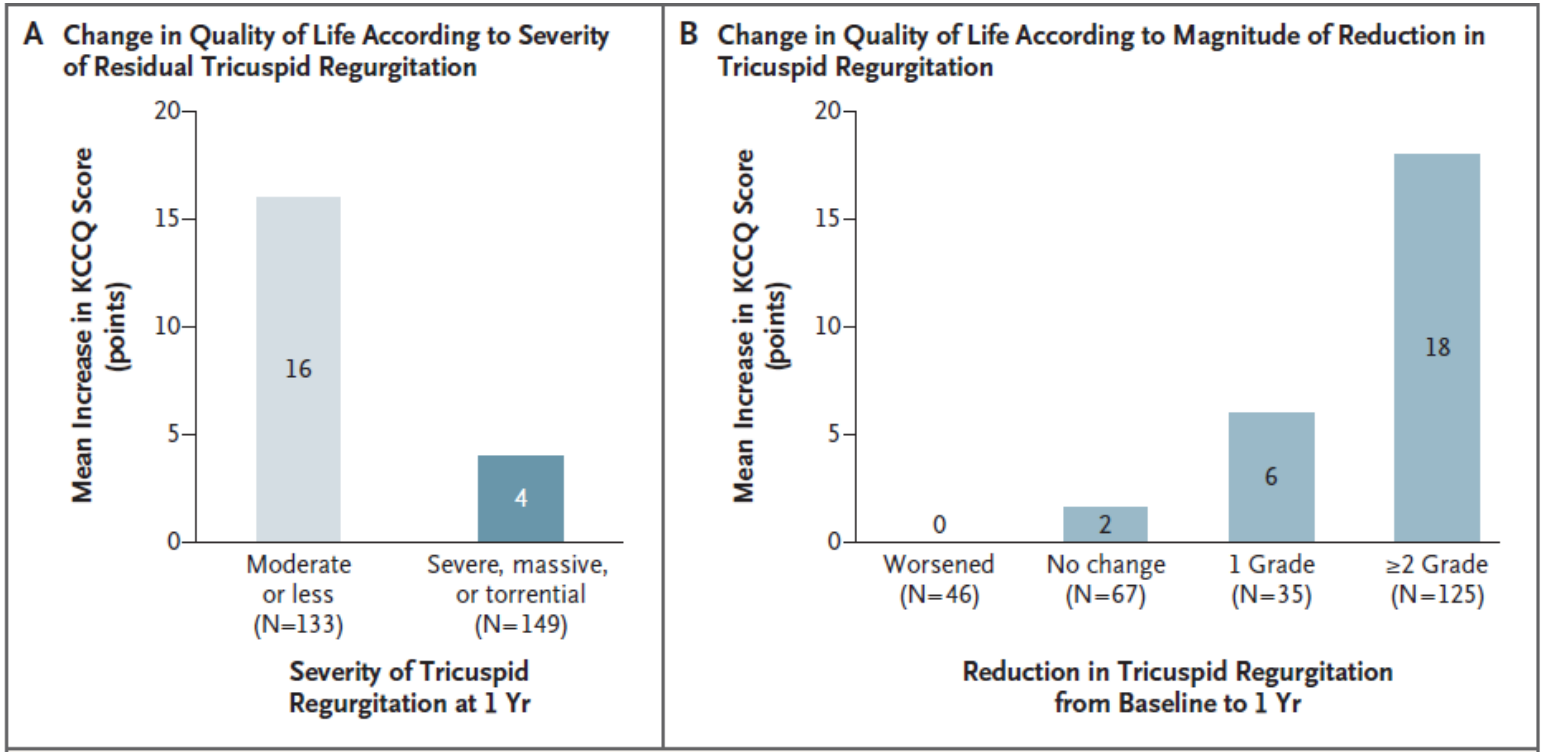
EuroIntervention 2021;17:791-808

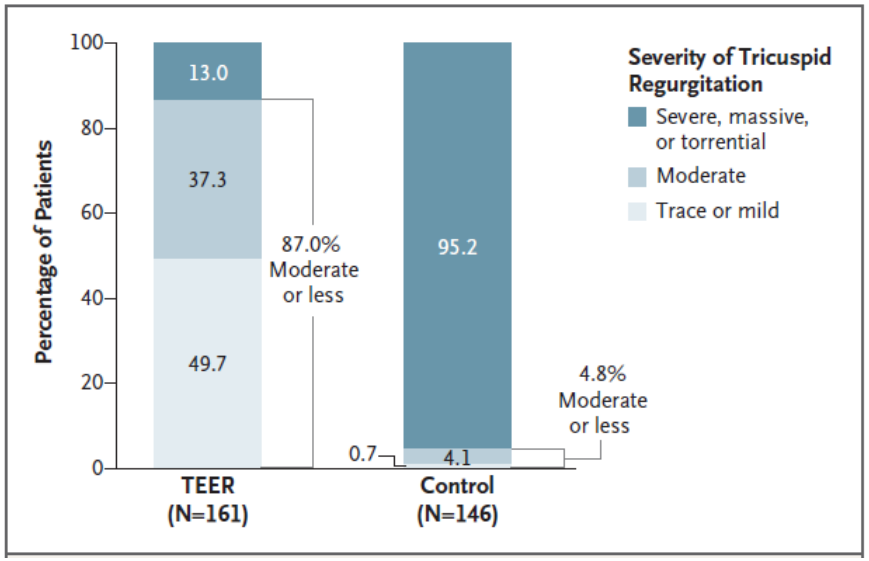
INSUFICIENCIA TRICÚSPIDE FUNCIONAL

Transcatheter Repair for Patients with Tricuspid Regurgitation

TRILUMINATE Pivotal Investigators

- n= 350
- End point primario: Muerte de cualquier causa o cirugía tricuspídea, hospitalización por IC y mejora en KCCQ score



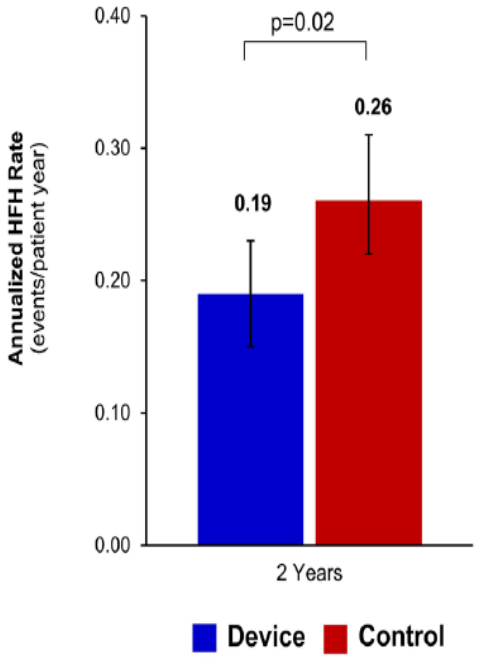


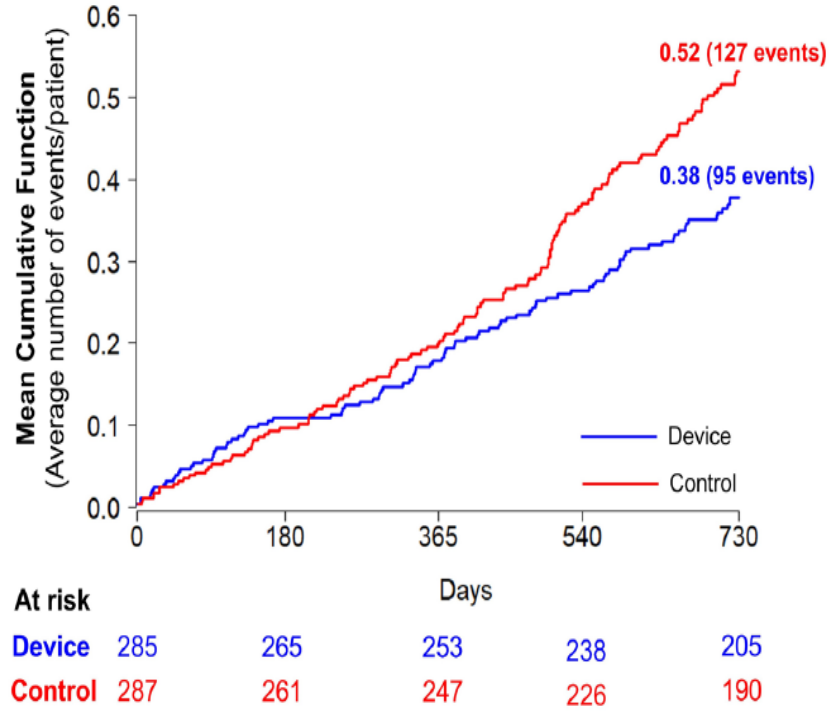
N Engl J Med 2023;388:1833-42

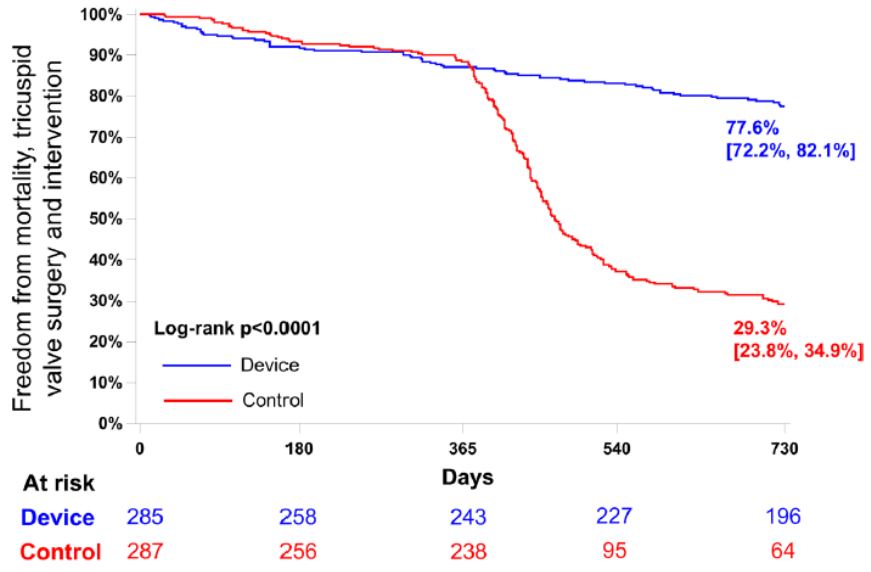
INSUFICIENCIA TRICÚSPIDE FUNCIONAL

- n= 572 (crossover 142 pacientes)
- End point primario: Recurrencia de hospitalización por IC, mortalidad de cualquier causa y necesidad e intervención quirúrgica o percutánea de la tricúspide

Two-Year Outcomes of Transcatheter Edge-to-Edge Repair for Severe Tricuspid Regurgitation: The TRILUMINATE Pivotal Randomized Controlled Trial







Component	Device N=285	Control N=287	p-value
Composite of mortality/TVS/TVI	**22.4% (62)**	**70.7% (185)**	**<0.0001**
All-cause mortality	17.9% (49)	17.1% (45)	
TVS	2.3% (6)	4.3% (11)	
TVI	3.8% (10)	61.5% (142)	

Circulation 2025;151:1630-1638

INSUFICIENCIA TRICÚSPIDE FUNCIONAL

- n= 572 (crossover 142 pacientes)
- End point primario: Cambios en NYHA, en valoración del paciente y eventos CV mayores a 12m

Transcatheter Edge-to-Edge Repair for Severe Isolated Tricuspid Regurgitation

The Tri.Fr Randomized Clinical Trial

Table 2. Primary and Secondary End Points

End point	T-TEER + OMT (n = 152)	OMT alone (n = 148)	Absolute difference (95% CI)	Effect estimate (95% CI)	*P* value
Primary					
Clinical Composite Score, No. (%)[a]					
Improved	109 (74.1)	58 (40.6)			
Unchanged	8 (5.44)	17 (11.9)	−0.34 (−0.44 to −0.23)[b]	0.67 (0.61 to 0.72)[c]	<.001
Worse	30 (20.4)	68 (47.6)	−0.27 (−0.38 to −0.17)[b]		
Missing, No.	5	5			
Secondary (listed in hierarchical order)					
TR grade at 1 y, No. (%)					
<2+	104 (78.3)	14 (11.0)			
3+	20 (15.0)	45 (35.4)			
4+	5 (3.76)	49 (38.6)		0.73 (0.68 to 0.78)[c]	<.001
5+	4 (3.01)	19 (15.0)			
Absolute change in KCCQ score from baseline to 1 y, mean (SD), points[d]	15.9 (30.1)	0.40 (25.7)	14.5 (27.2)		<.001
PGA at 1 y, No. (%)[e]					
Improved	100 (74.6)	51 (39.5)			
Unchanged	19 (14.2)	36 (27.9)	0.21 (0.12 to 0.31)[b]	0.68 (0.63 to 0.74)[c]	<.001
Worse	15 (11.2)	42 (32.6)	0.35 (0.24 to 0.46)[b]		
Hierarchical composite end point of time to death or tricuspid valve surgery, or heart failure hospitalizations, and improvement of ≥15 points in KCCQ score at 1 y[f]				2.06 (1.38 to 3.08)[g]	<.001
Won per end point of time to death, No.	1192	709			
Won per end point of time to tricuspid valve surgery, No.	149	133			
Won per end point of heart failure hospitalization, No.	2680	1787			
Won per end point of KCCQ improvement at 1 y, No.	5264	1875			
Pair of patients tied, No.	8707				
Kaplan-Meier estimate of percentage of patients free from MACEs through 1 y[h]	84.4	80.1		0.78 (0.45 to 1.36)[i]	.38
Kaplan-Meier estimate of percentage of patients free from cardiovascular death at 1 y	96.6	94.2		0.60 (0.20 to 1.84)[i]	.37

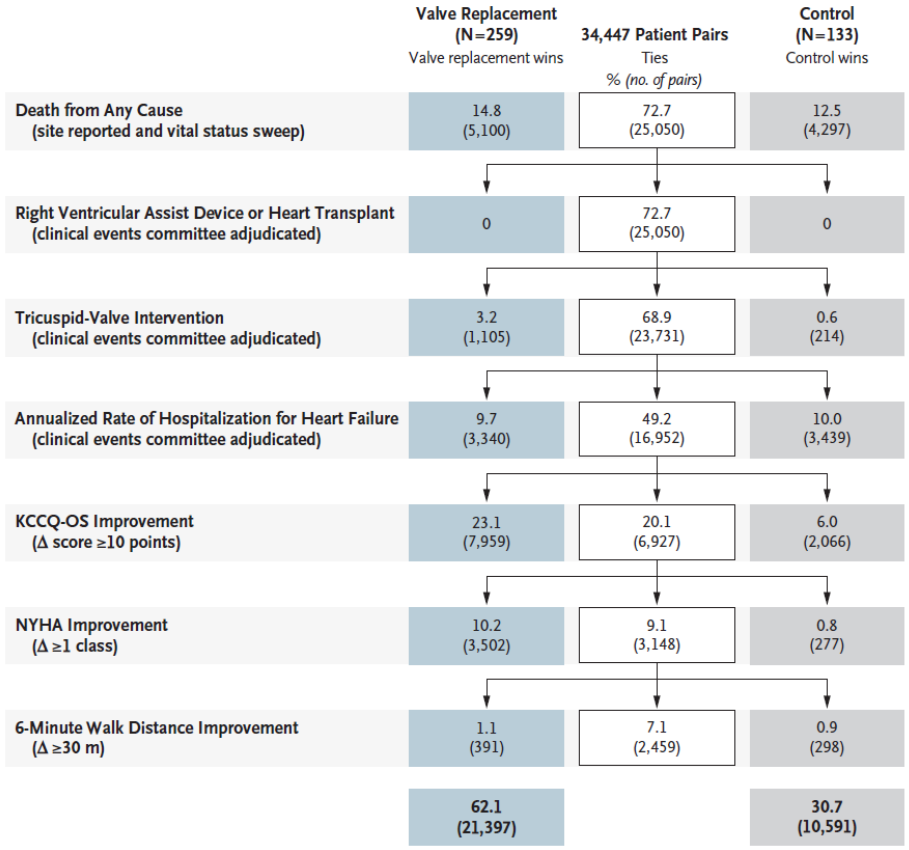
JAMA 2025;333:124-132

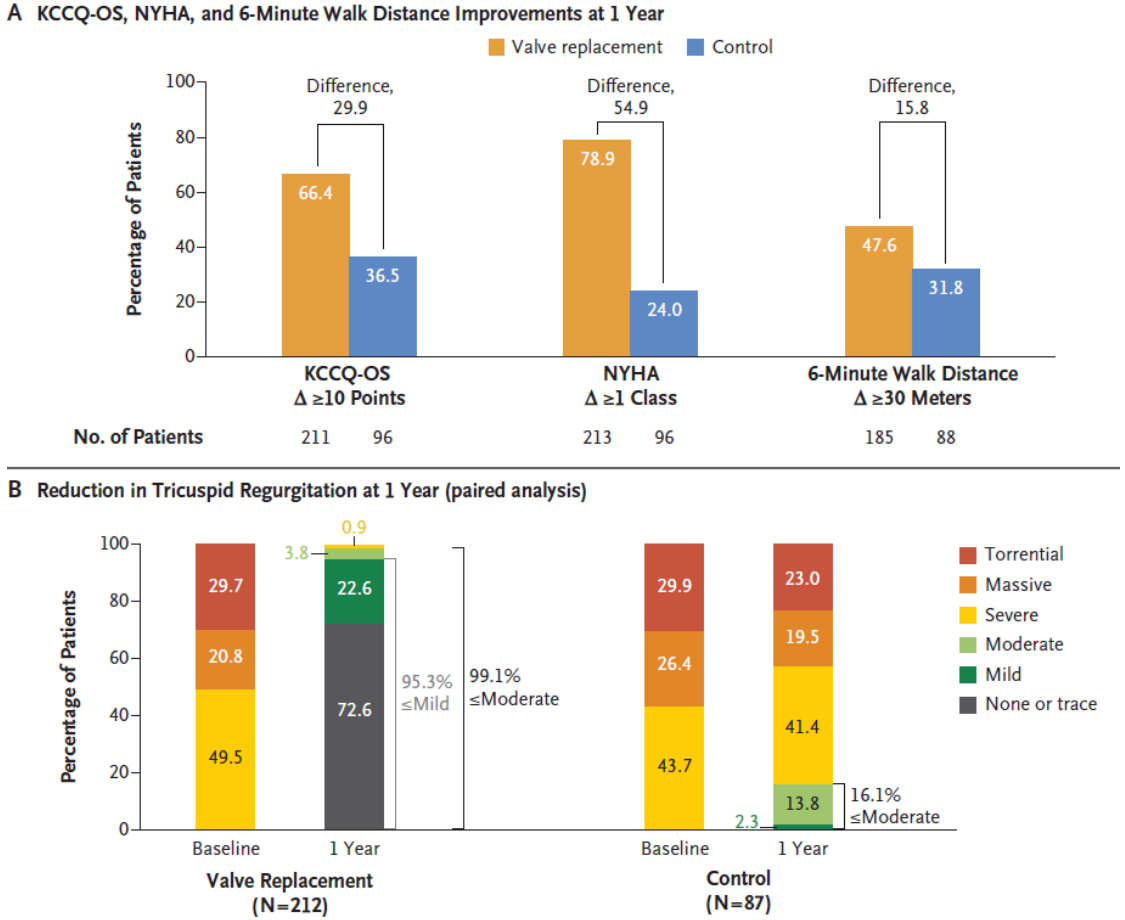
INSUFICIENCIA TRICÚSPIDE FUNCIONAL

- n= 400
- End point primario: Muerte de cualquier causa, implante de asistencia derecha o transplante, intervencionismo tir, Hospitalización por IC y mejora en KCCQ-OS

Transcatheter Valve Replacement in Severe Tricuspid Regurgitation

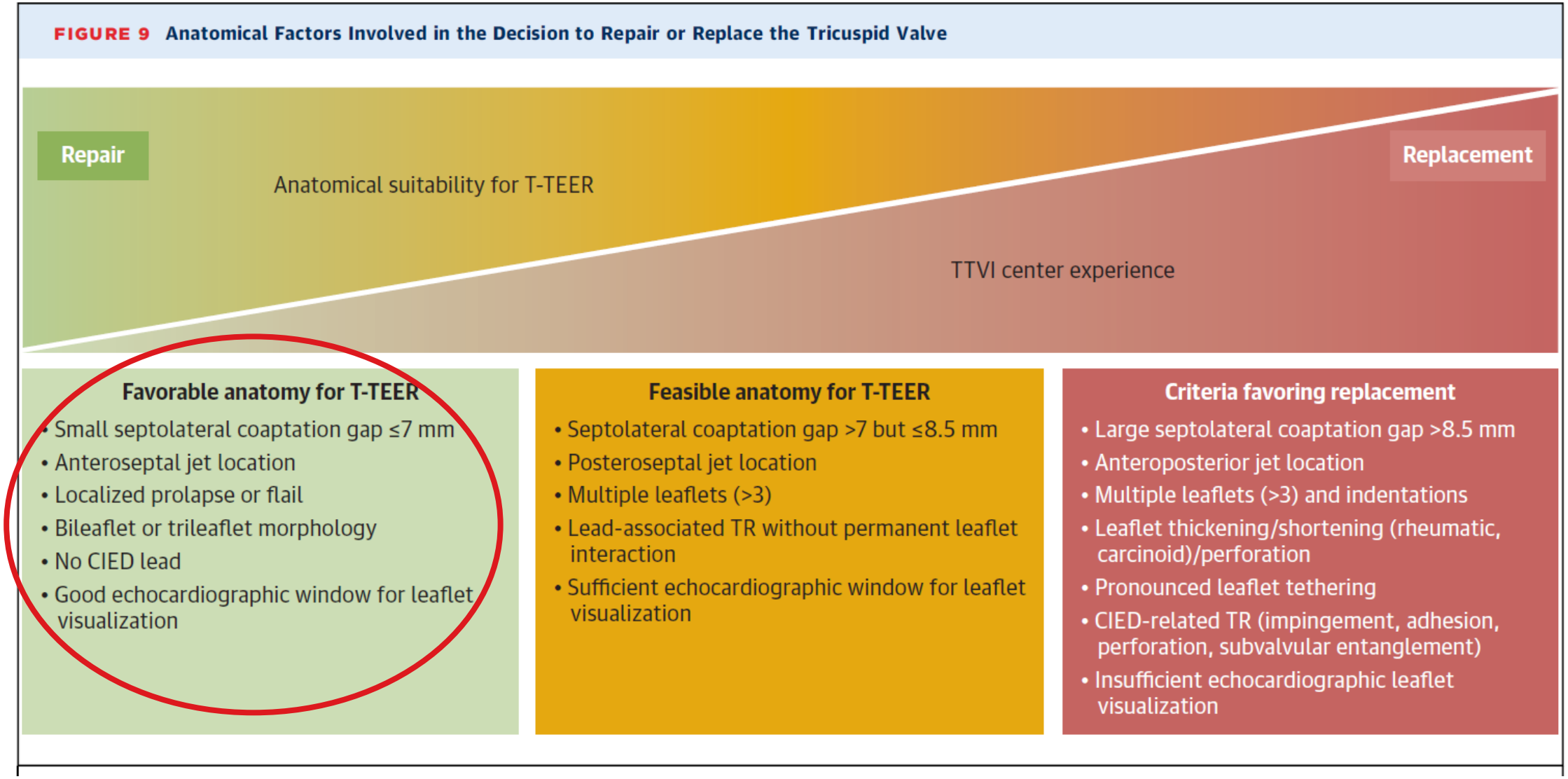
TRISCEND II Trial Investigators





N Engl J Med 2025;392:115-26

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía



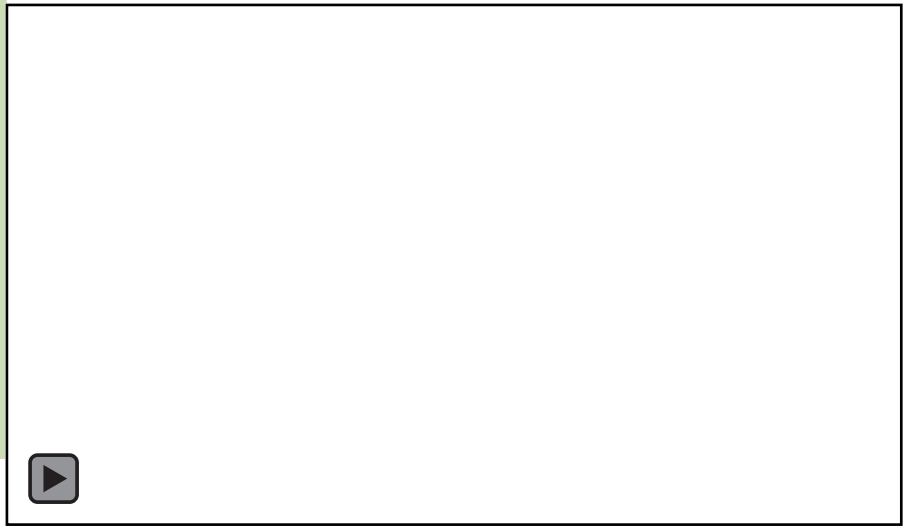
J Am Coll Cardiol 2025;85:265-291

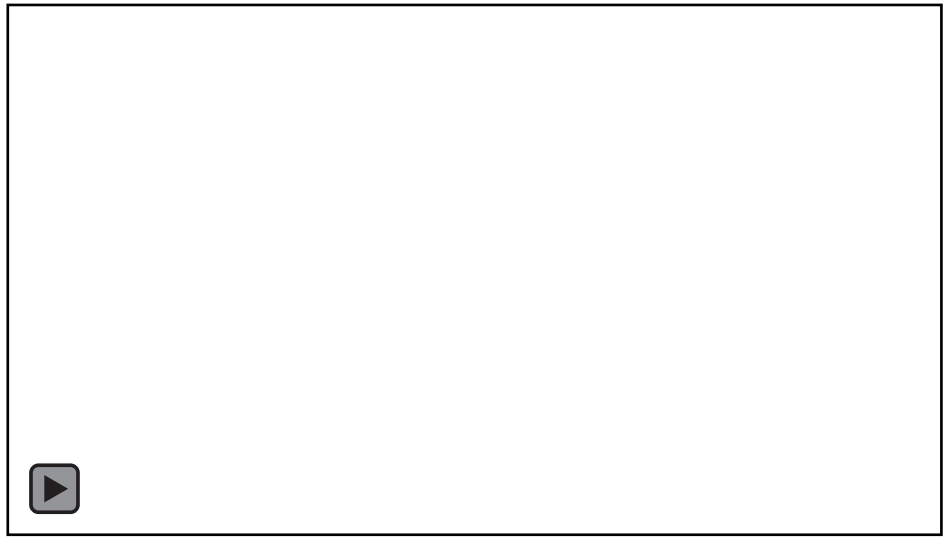
INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía

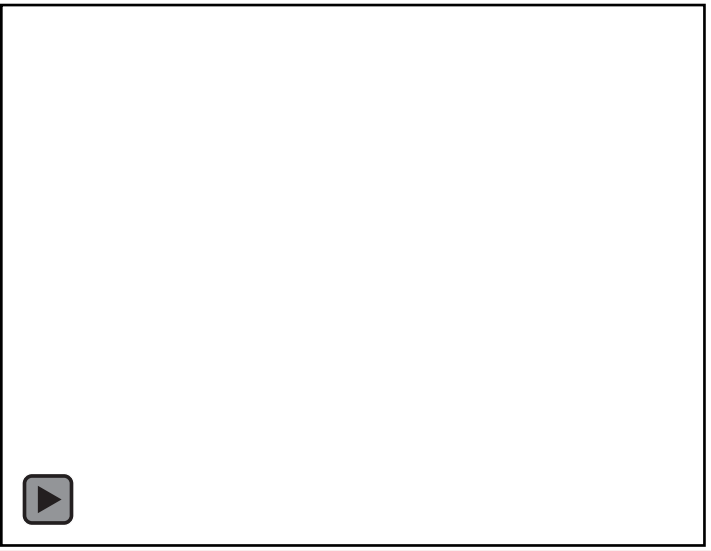
Favorable anatomy for T-TEER

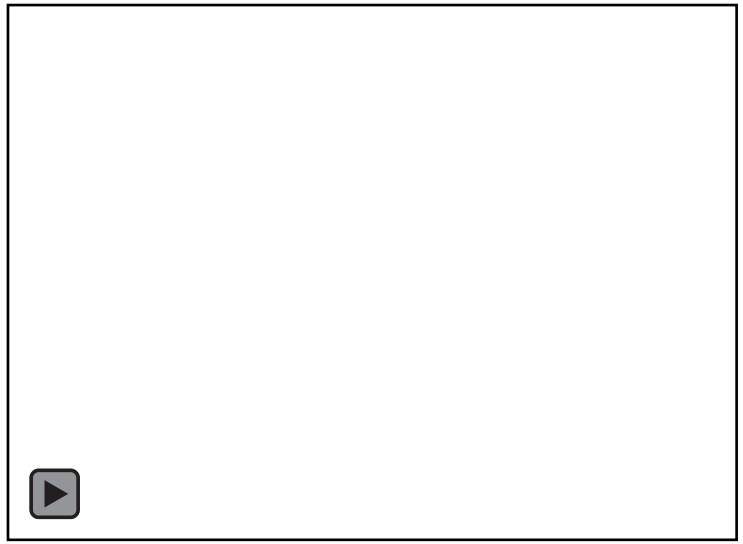
- Small septolateral coaptation gap ≤7 mm
- Anteroseptal jet location
- Localized prolapse or flail
- Bileaflet or trileaflet morphology
- No CIED lead
- Good echocardiographic window for leaflet visualization

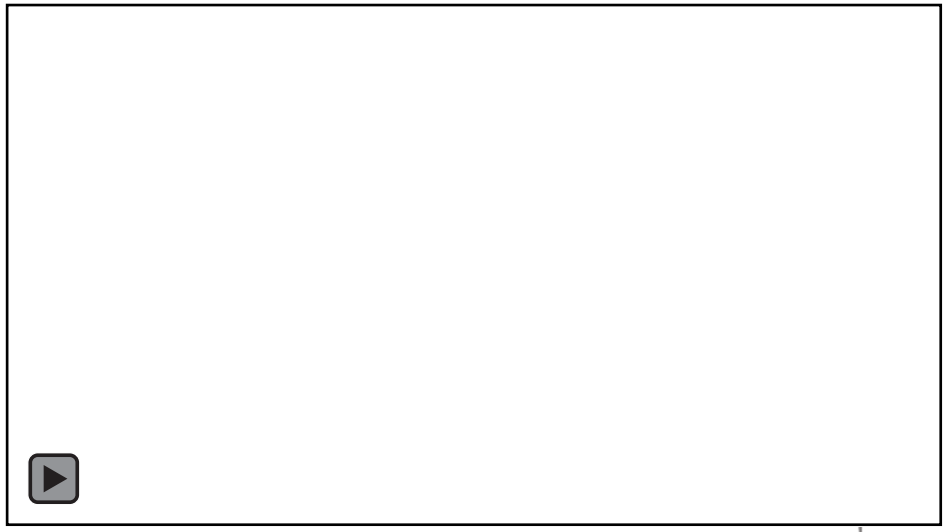
J Am Coll Cardiol 2025;85:265-291



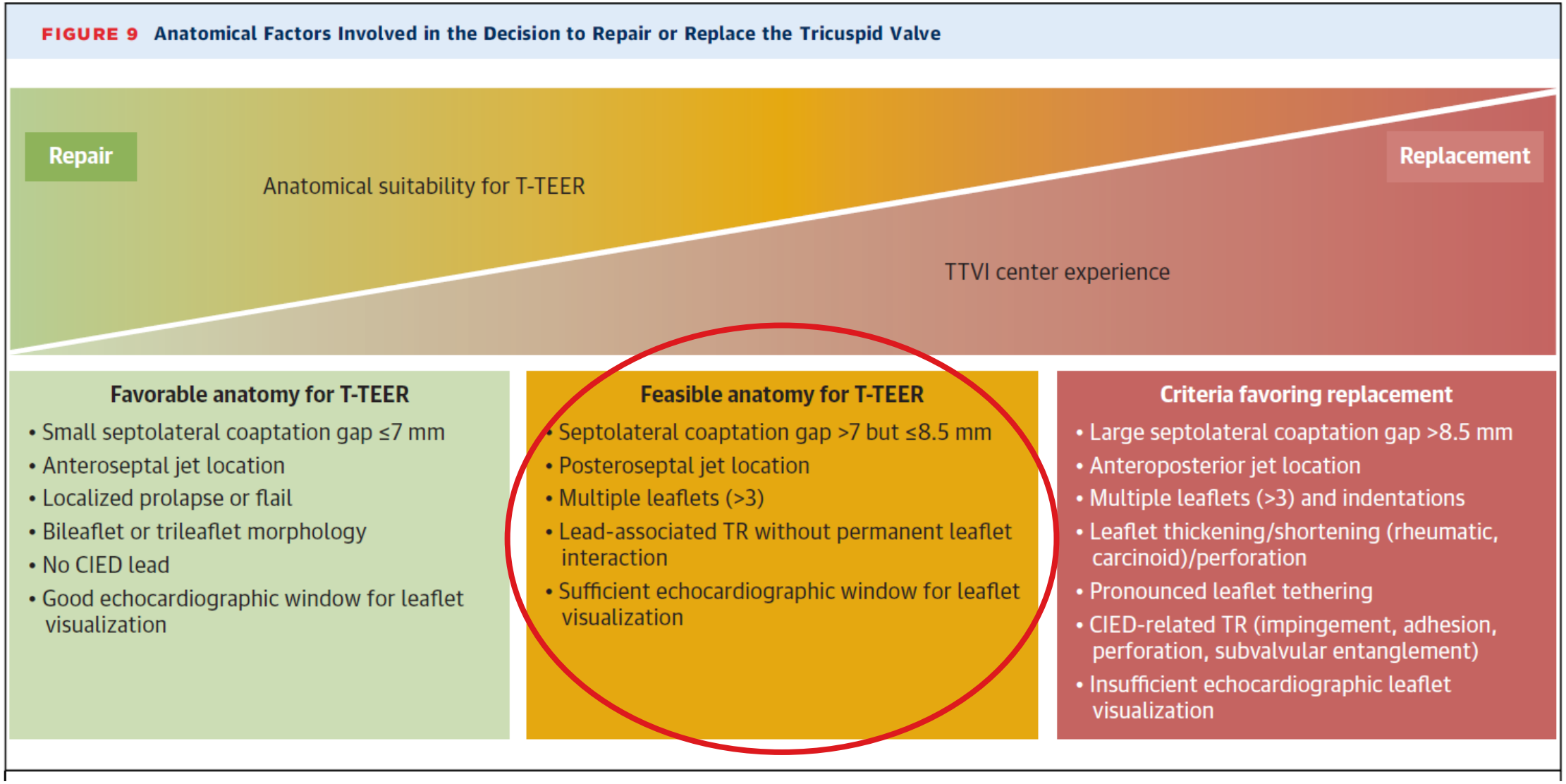








INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía

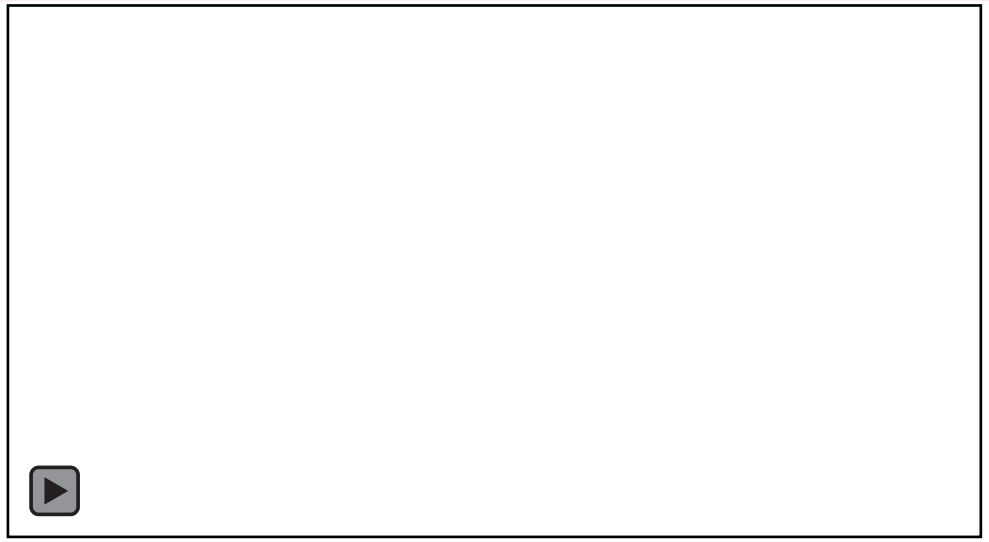


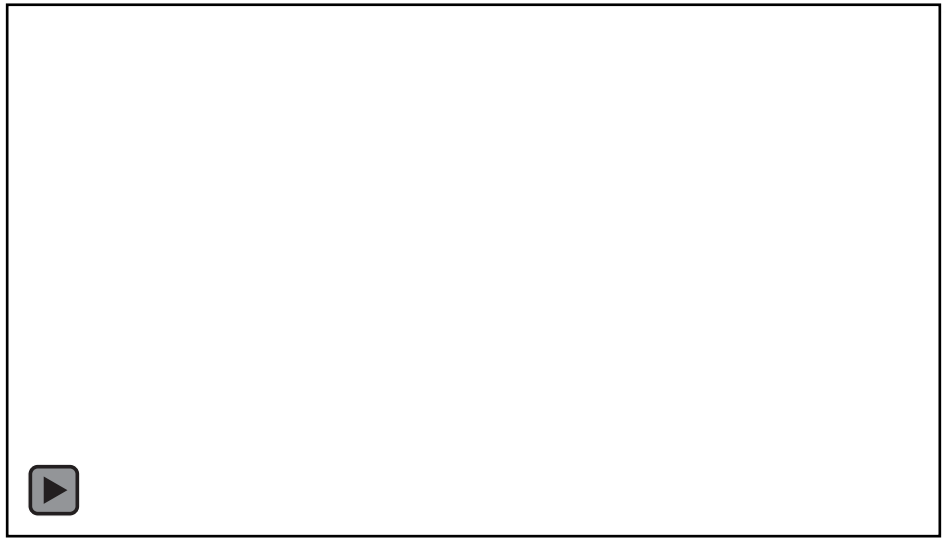
J Am Coll Cardiol 2025;85:265-291

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía

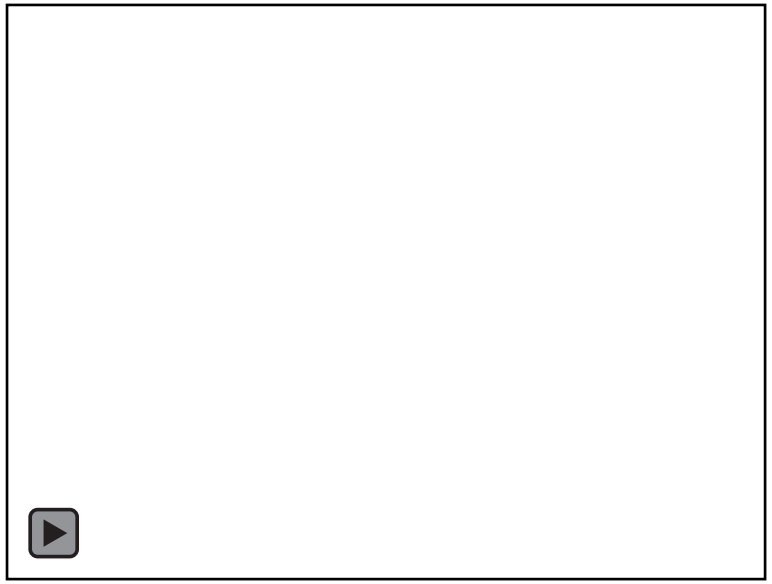
Feasible anatomy for T-TEER

- Septolateral coaptation gap >7 but ≤8.5 mm
- Posteroseptal jet location
- Multiple leaflets (>3)
- Lead-associated TR without permanent leaflet interaction
- Sufficient echocardiographic window for leaflet visualization

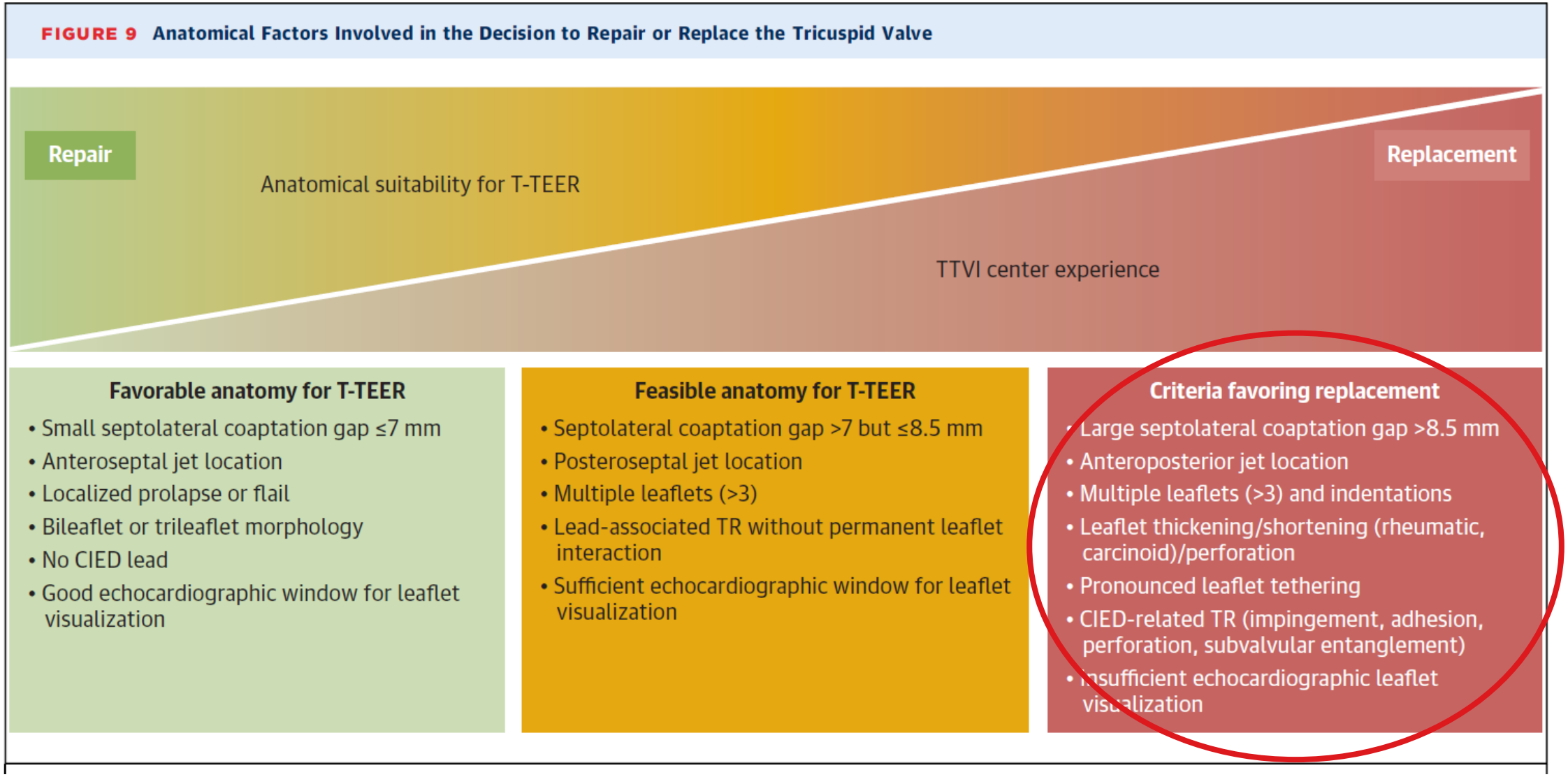




J Am Coll Cardiol 2025;85:265-291



INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía



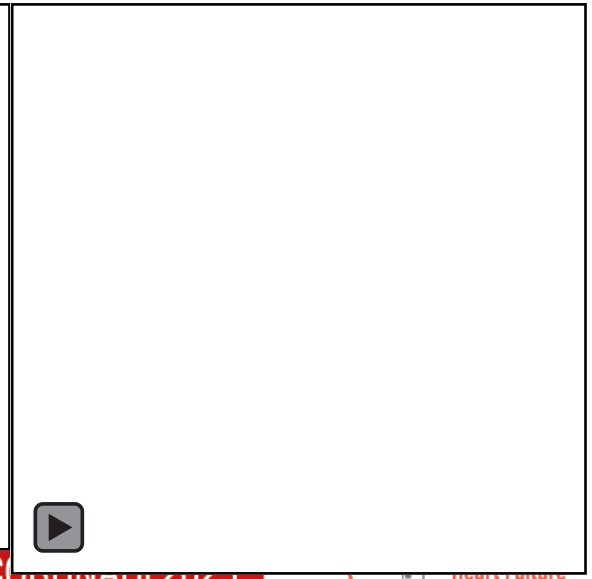
J Am Coll Cardiol 2025;85:265-291

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía

Criteria favoring replacement

- Large septolateral coaptation gap >8.5 mm
- Anteroposterior jet location
- Multiple leaflets (>3) and indentations
- Leaflet thickening/shortening (rheumatic, carcinoid)/perforation
- Pronounced leaflet tethering
- CIED-related TR (impingement, adhesion, perforation, subvalvular entanglement)
- Insufficient echocardiographic leaflet visualization

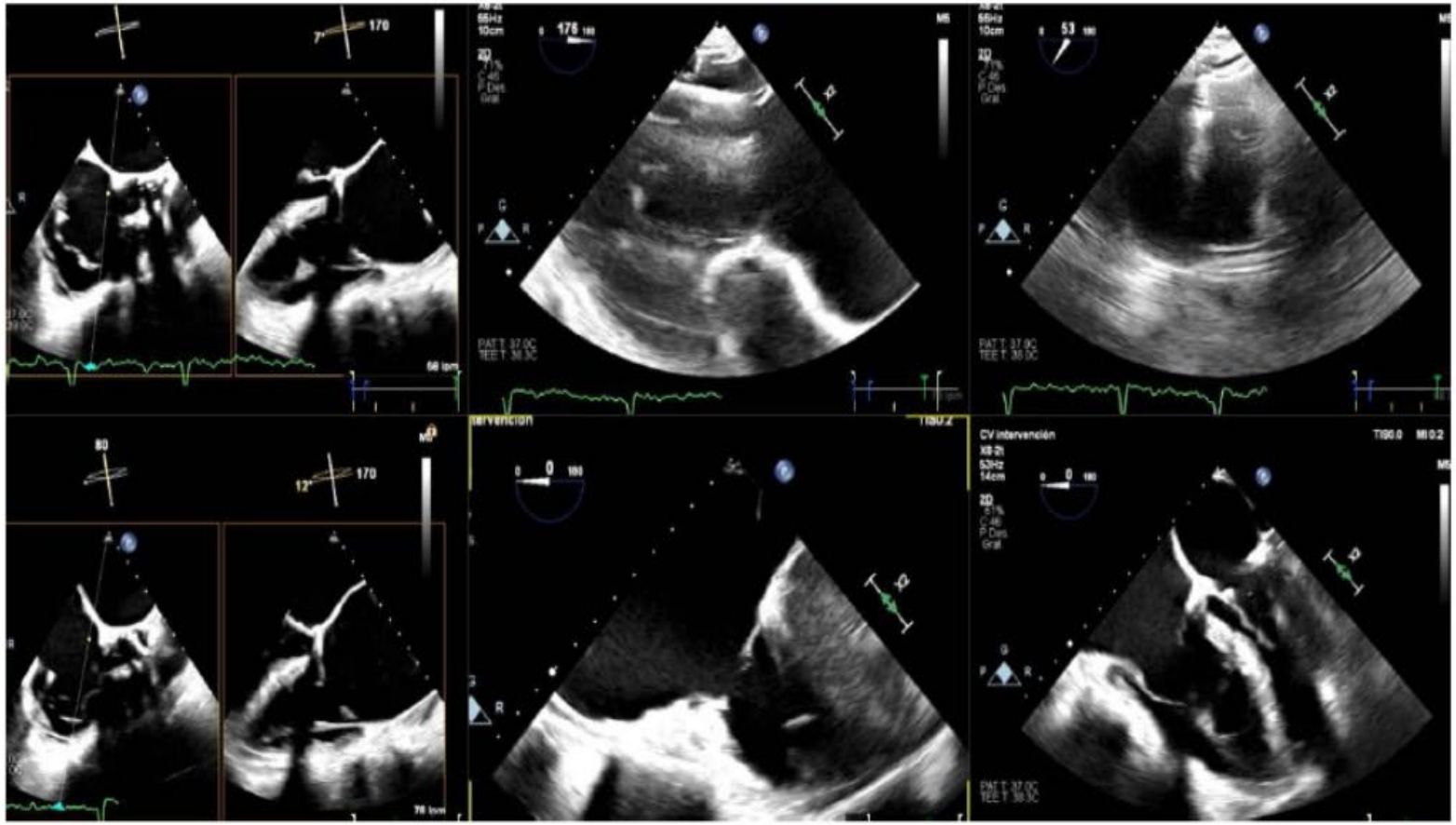
J Am Coll Cardiol 2025;85:265-291



INSUFICIENCIA TRICÚSPIDE FUNCIONAL: Anatomía

Echo - Procedural Imaging

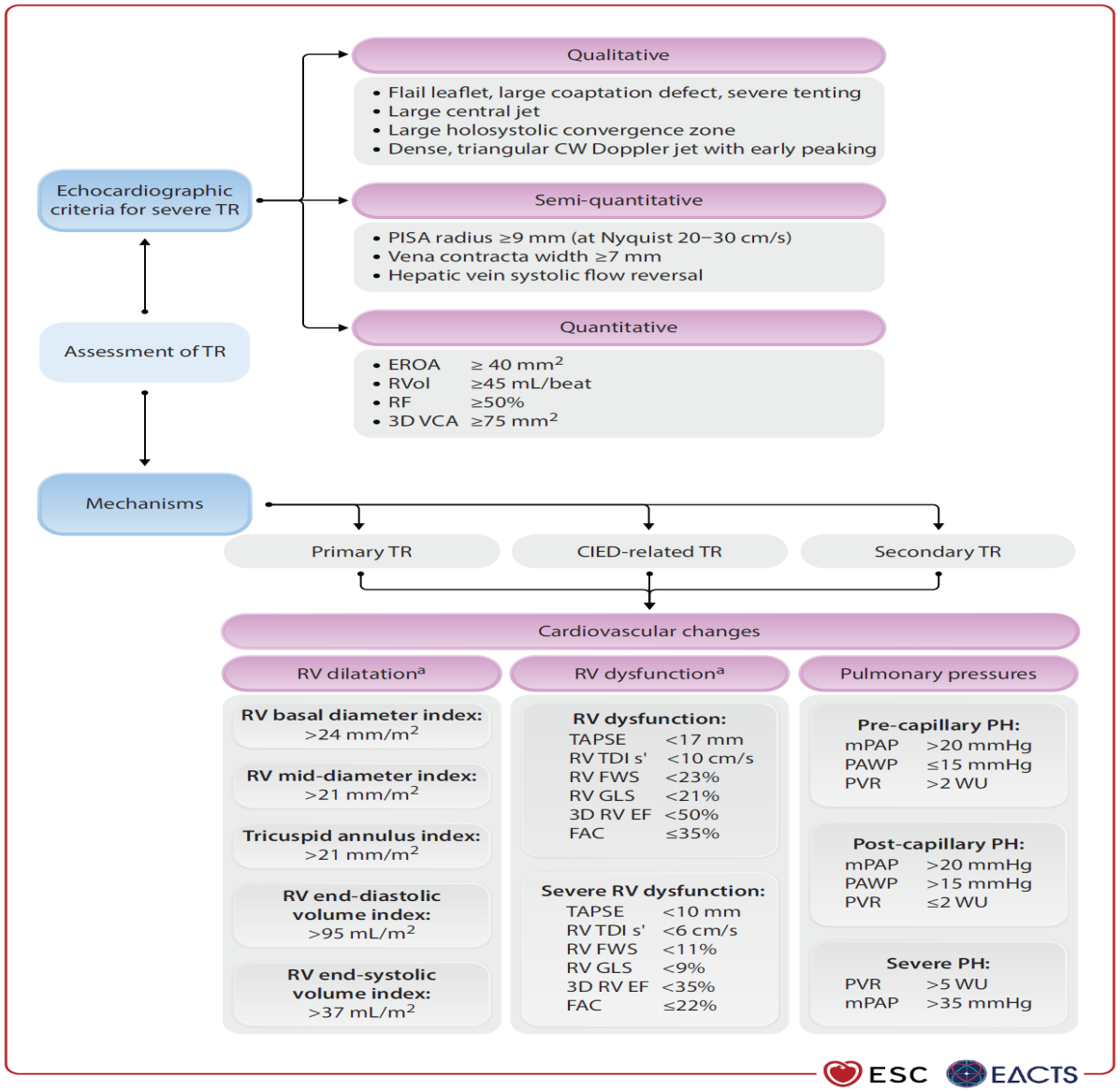
Echo Procedural Imaging Windows



3D RAW Data Provided?			Yes
TEE Window	**2D**	**3D**	**All leaflets visualized?**
ME	☑	☐	☑ Yes ☐ No
Notes			
DE	☑	☐	☑ Yes ☐ No
Notes			
TG	☑	☐	☑ Yes ☐ No
Notes	Some shadowing		
Deep TG	☐	☐	☐ Yes ☐ No
Notes			

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: más allá de la anatomía

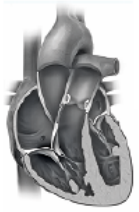
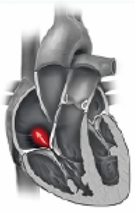
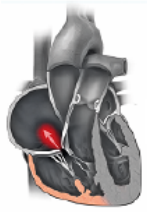
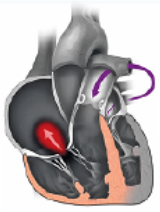
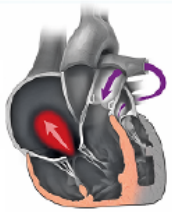
Recommendations	Class[a]	Level[b]
Careful evaluation of TR aetiology, stage of the disease (i.e. degree of TR severity, RV and LV dysfunction, and PH), patient operative risk, and likelihood of recovery by a multidisciplinary Heart Team is recommended in patients with severe TR prior to intervention.[691,742]	I	C



Eur Heart J 2025;00: 1-102

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: más allá de la anatomía

- ✓ Ausencia de Síntomas
- ✓ VD bien
- ✓ Sin HTP
- ✓ Sin repercusión sistémica

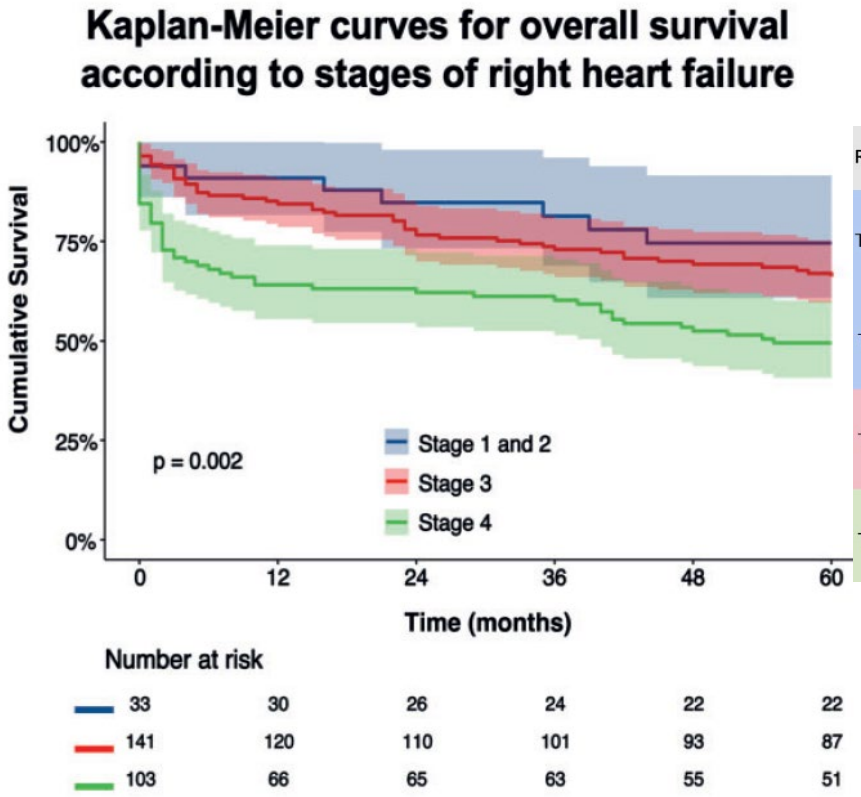
	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
					
Symptoms	None	None*	None-vague*	Current or previous episodes of RHF	Overt RHF and/or end-organ damage due to chronic RV volume overload#
TR grade	Less than moderate	>Moderate	Severe	Severe	Torrential
Annular remodelling	Normal	Normal or mildly remodelled	Present	Moderate-severe	Severe
Leaflet coaptation	Normal	Mildly abnormal	Abnormal	Coaptation gap	Large coaptation gap
Tethering	None	None or mildly abnormal (<8 mm)	Abnormal (usually <8 mm)	Significantly abnormal with varying degree of tethering	Significantly abnormal (usually >8 mm)
RV function and remodelling	Normal	Normal function Absent or mild remodelling	Mild RV dysfunction and/or remodelling	>Moderate dysfunction and remodelling	Severe RV dysfunction and remodelling
Medical	No treatment but regular clinical and echo follow-up in patients with high likelihood of developing TR progression such as those in Table 1	None or low-dose diuretics	Diuretics	Moderate to high-dose diuretics and/or requirement for IV diuretics	Multiple admissions for RHF. Frequent need for IV diuretics and/or high-dose combination diuretics

- ✓ Síntomas refractarios
- ✓ VD dilatado ++ y disfuncionante
- ✓ HTP severa fija
- ✓ Repercusión sistémica irreversible

Eurointervention 2021;17:791-808

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: más allá de la anatomía

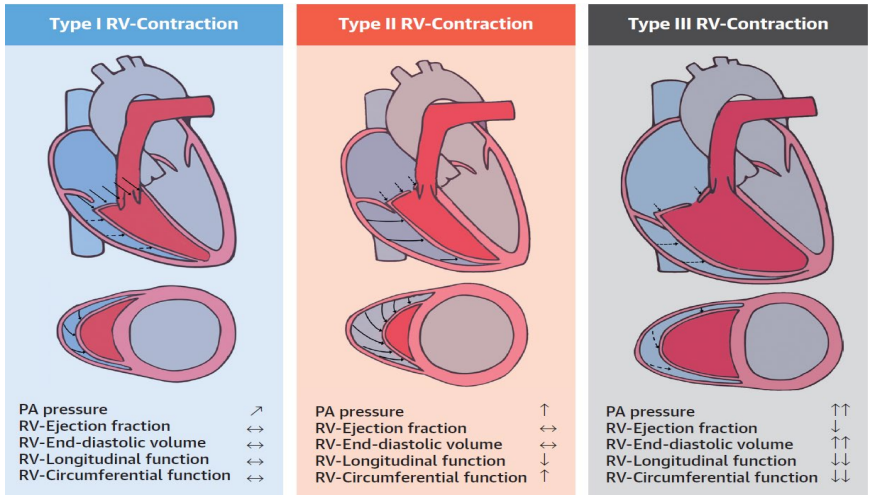
ESTADIO EVOLUTIVO VENTRÍCULO DERECHO



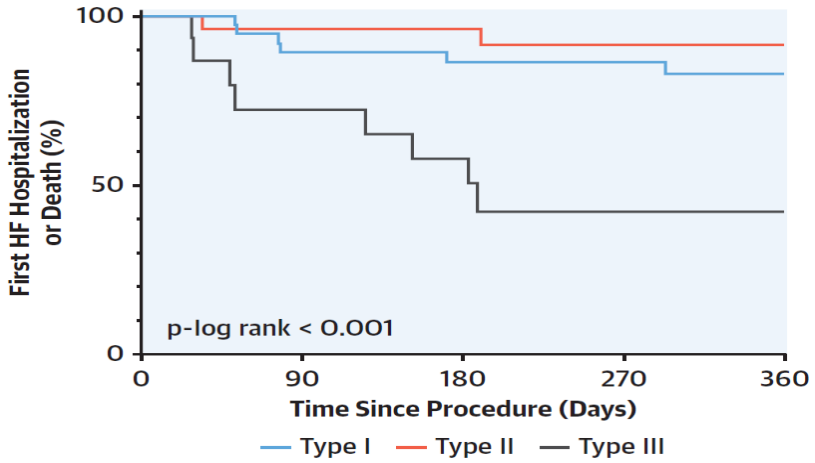
RV-function	NYHA-class	Diuretics	Oedema
TAPSE ⩾ 17	I	-	-
TAPSE < 17	I	-	-
TAPSE < 17	II - III	+	-
TAPSE < 17	IV	+	+

Leiden

Eur J Cardiothorac Surg 2022;217:ezac290



n= 79 patients (CMR) TTVR

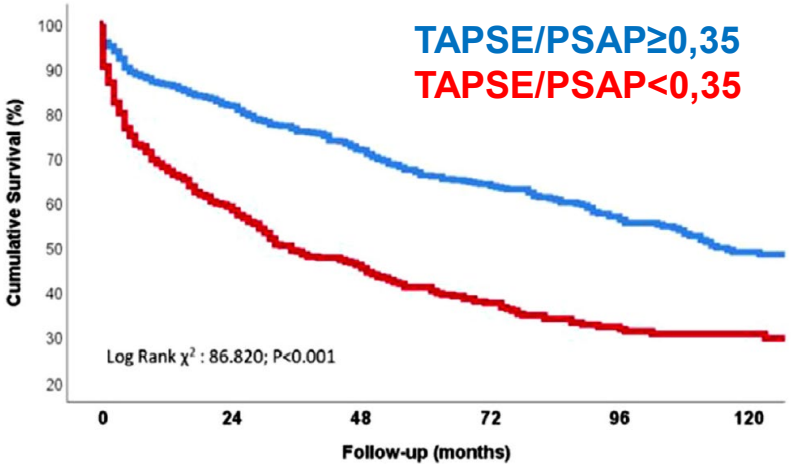


J Am Coll Cardiol Intv 2021;14:1551-61

INSUFICIENCIA TRICÚSPIDE FUNCIONAL: más allá de la anatomía

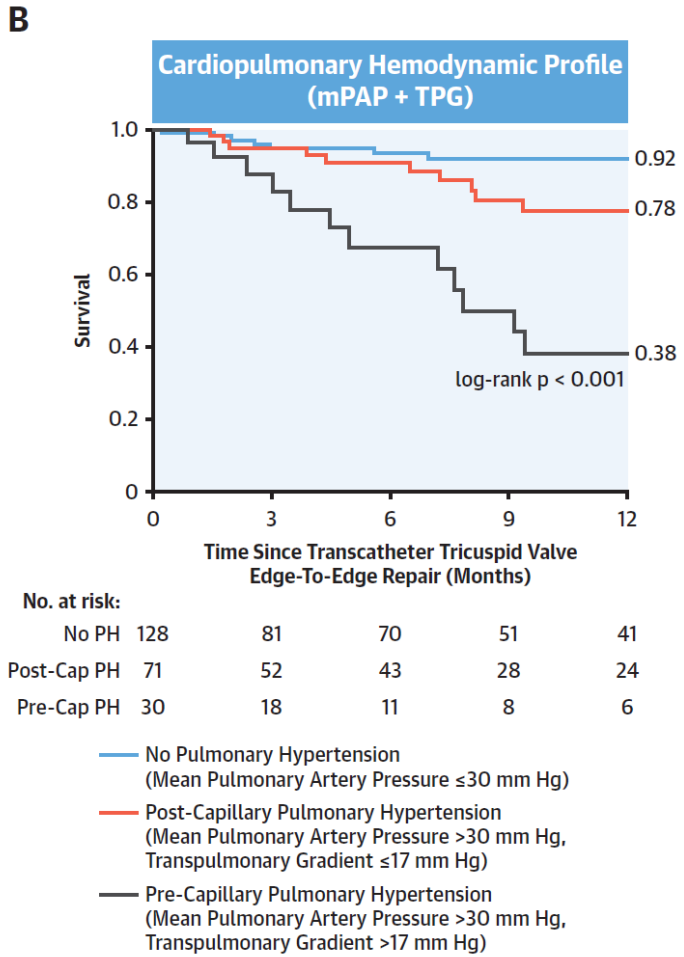
HIPERTENSION PULMONAR

n= 1149 patients IT funcional<moderada



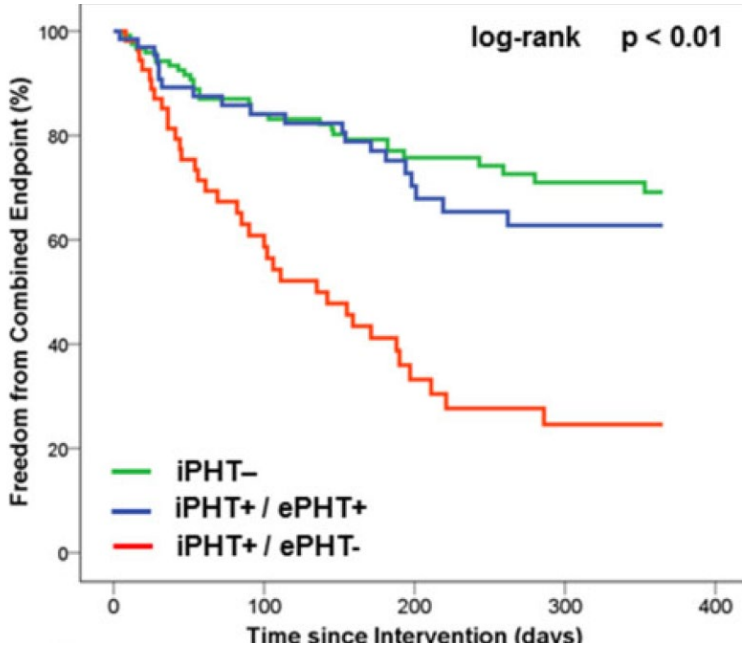
Am J Cardiol 2021;148:138-145

n= 236 patients, TTVR



J Am Coll Cardiol Intv 2021;14:29-38

n= 243 patients, TTVR



Eur Heart J 2020;41:2785-2795

INSUFICIENCIA TRICÚSPIDE FUNCIONAL

12.3.4 Tricuspid regurgitation

Tricuspid regurgitation (TR) can be caused by or be a consequence of RV dysfunction and HF. The management of HF with TR includes MT (i.e. diuretics, neurohormonal antagonists). Transcatheter therapy and surgery may be considered in selected cases.[592] A multidisciplinary Heart Team, including HF specialists, should be considered for assessment and treatment planning.

Tricuspid valve surgery is recommended in patients with severe TR requiring left-sided cardiac surgery. It should be also considered in patients with moderate TR and tricuspid annulus dilatation requiring left-sided cardiac surgery and in symptomatic patients with isolated severe TR.[592] However, surgery in isolated TR is burdened by high in-hospital mortality (8.8%) although the advanced stage of HF may have influenced these data.[624] Transcatheter techniques have recently emerged as potential treatment options of TR. Preliminary results show improvement in TR severity and symptoms with low complication rates.[625] Further prospective studies are needed to show the prognostic impact of these treatments in HF patients.

Patients with severe tricuspid regurgitation without left-sided valvular heart disease requiring surgery

Transcatheter TV treatment should be considered to improve quality of life and RV remodelling in high-risk patients with symptomatic severe TR despite optimal medical therapy in the absence of severe RV dysfunction or pre-capillary PH.[713,733,735,738,748–751]	IIa	A

Eur Heart J 2025;00: 1-102

Eur Heart J 2021;42:35993726

TAKE HOME MESAJES: MITRAL

1. Anatomía con aumento complejidad paralelo a la experiencia
2. Insuficiencia desproporcionada (LVSD ≤ 70mm, ORE ≥ 30 mm^2 y Volumen regurgitante ≥ 45mL)
3. FEVI >20%
4. PSP ≤ 70 mmHg
5. VD no disfuncionante
6. Buena ventana

TAKE HOME MESAJES: TRICÚSPIDE

1. TEER si anatomía adecuada aumentando complejidad al aumentar experiencia
2. Prótesis percutánea si GAP importante y características anatómicas adecuadas (tamaño de anillo, profundidad VD y ángulo de implante adecuados)
3. Cable de MP no lesivo, ideal localizado en comisura
4. VD ligera-moderadamente dilatado con disfunción no severa
5. No HAP precapilar
6. Buena ventana


GRACIAS

GRACIAS