2023 ACC India

Isolated Tricuspid Regurgitation

When to Fix?

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Disclosures

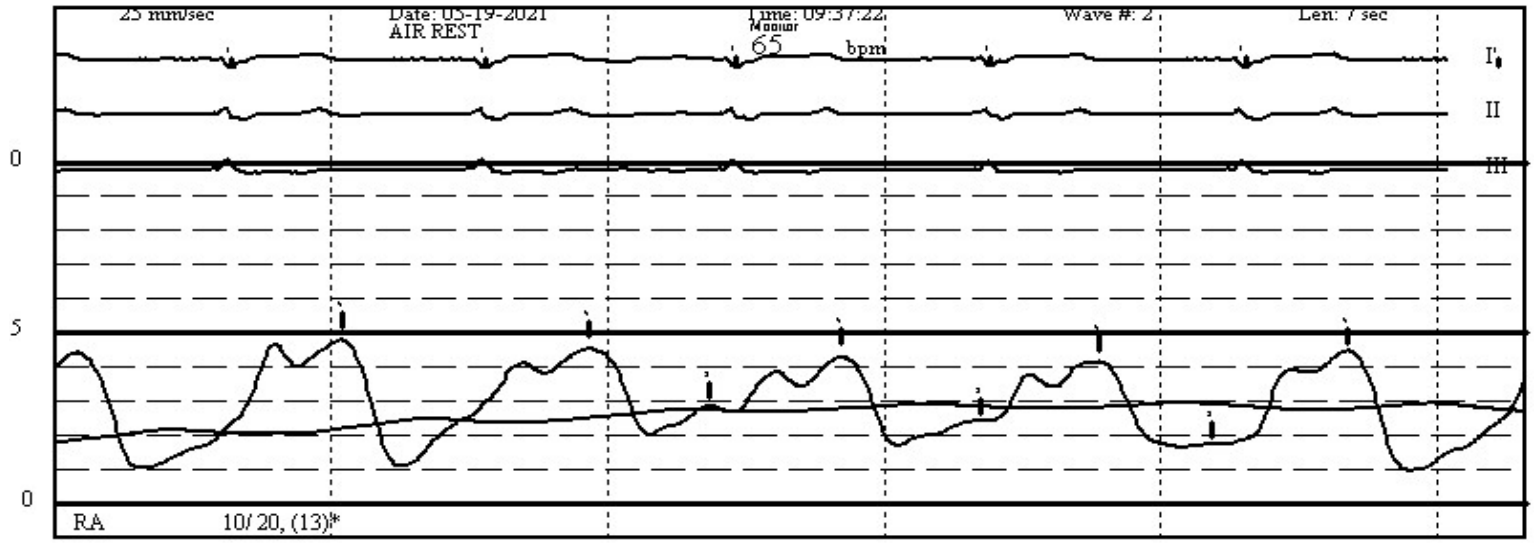
- None

Tricuspid Regurgitation

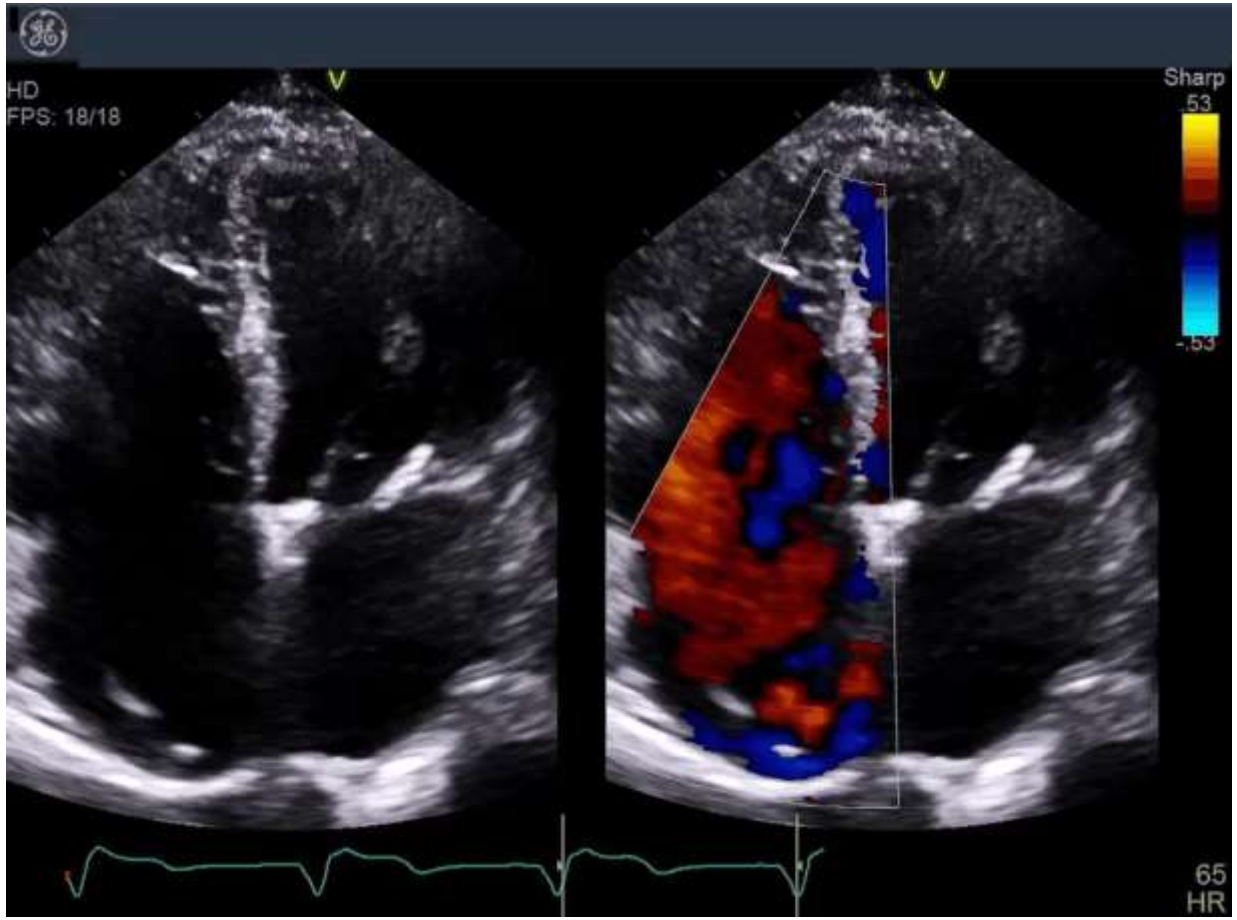
- 73-year-old man
- 2005: Aortic and mitral valve repairs for prolapse
- 2014: NYHA Class 3
  - Persistent AF
  - Dynamic LVOT obstruction with ASH
  - Septal myectomy (HCM), maze
  - Post-operative HF, CHB and NSVT
  - PPM

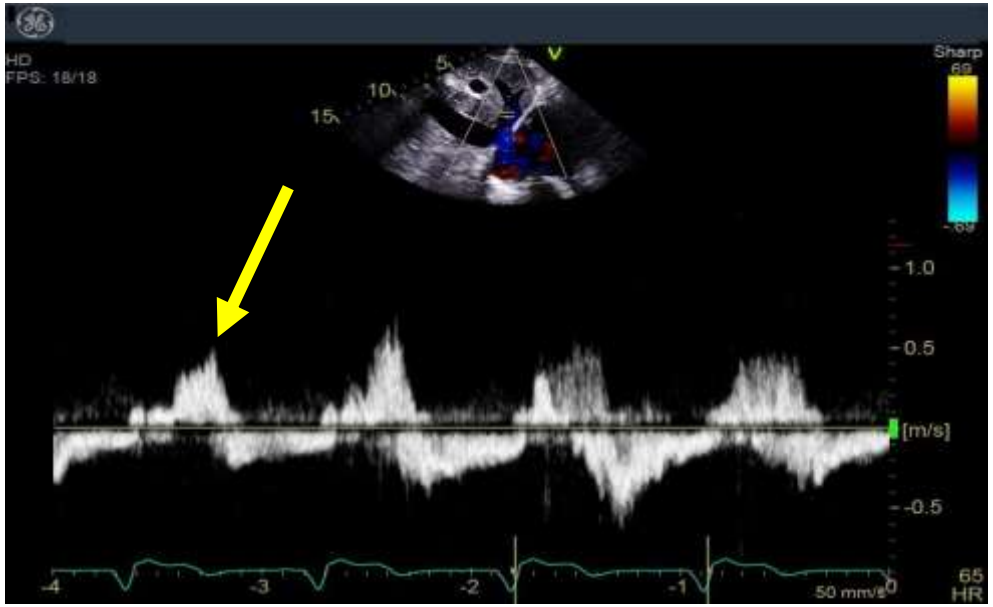
Tricuspid Regurgitation

- **Now 79 years old**
- **2018-2021**
  - **Pacemaker dependent**
  - **Progressive TR, RHF and diuretic requirement**

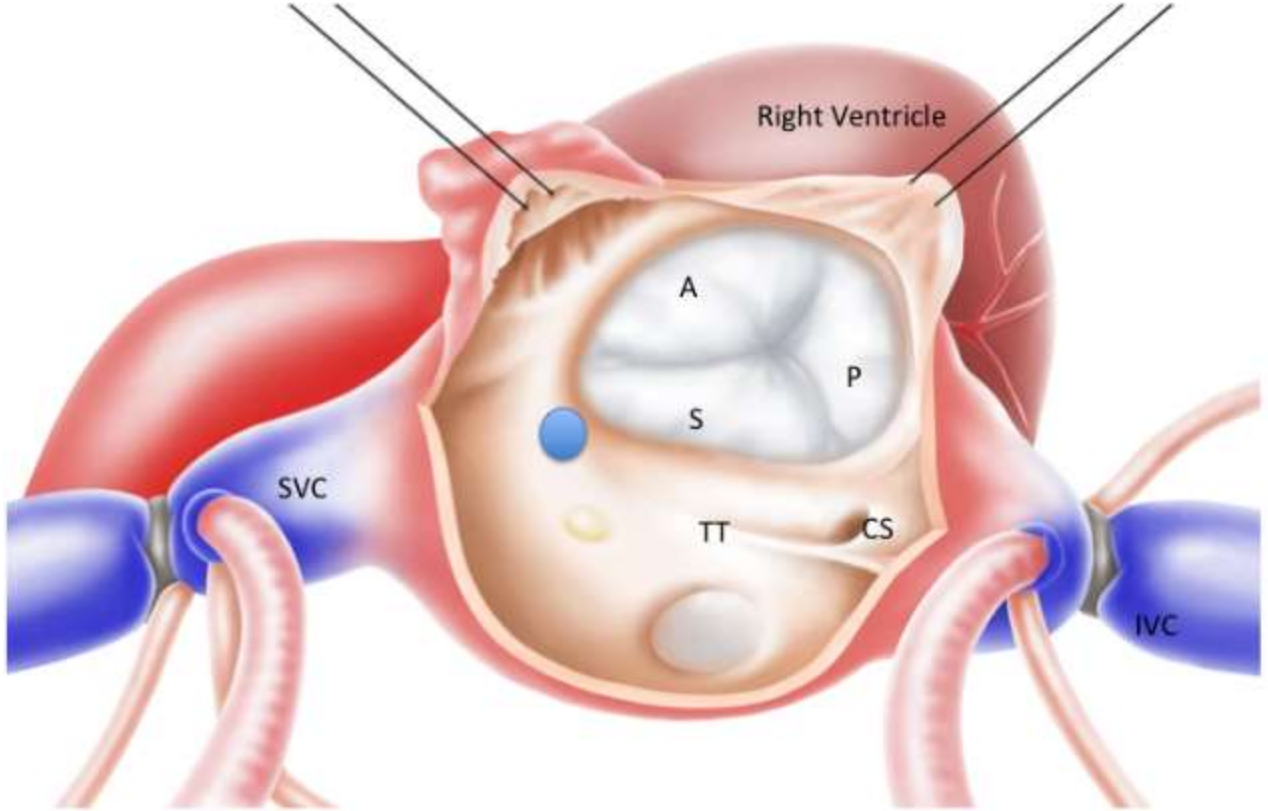


Tricuspid Regurgitation



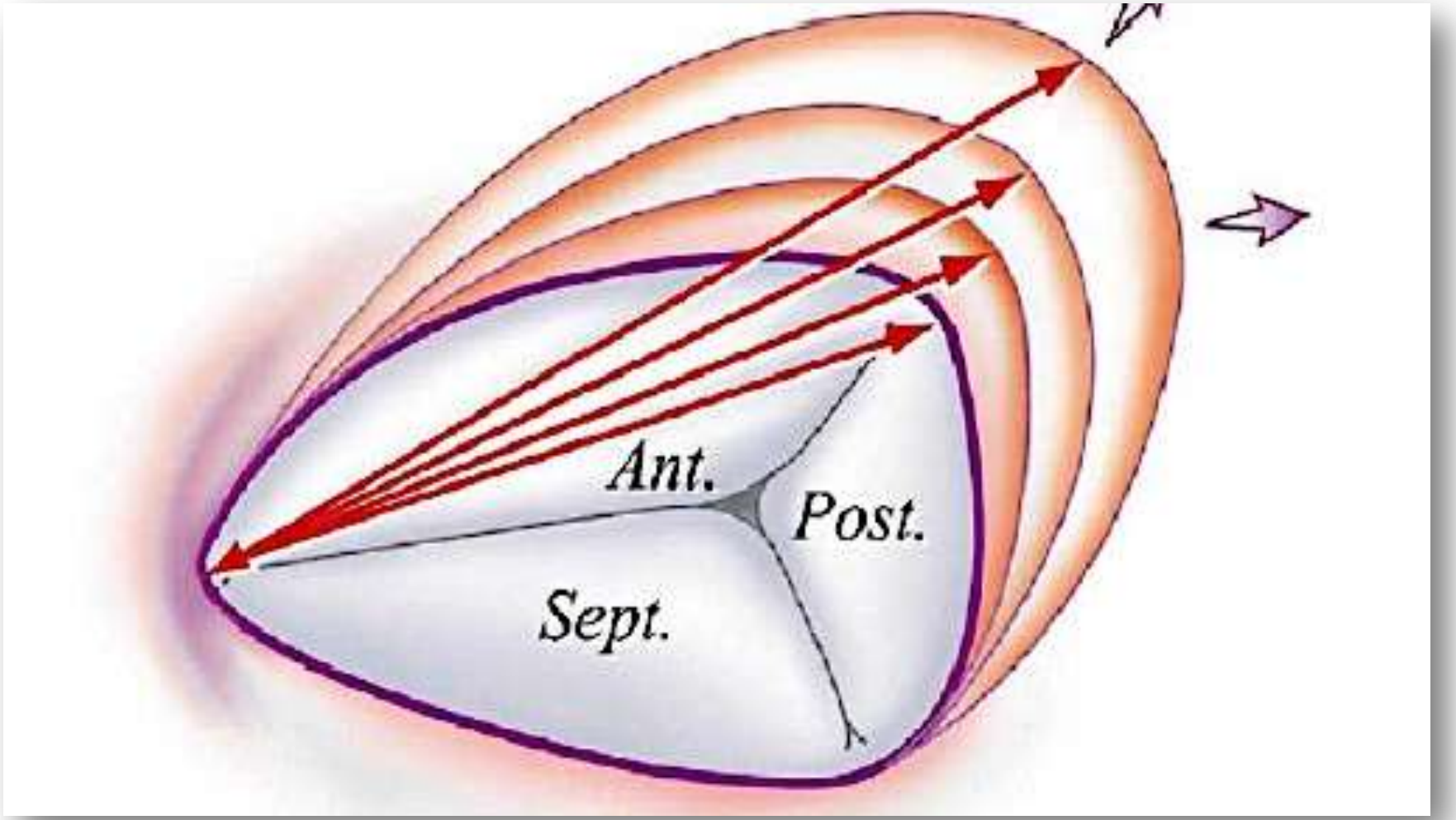


Hepatic Vein



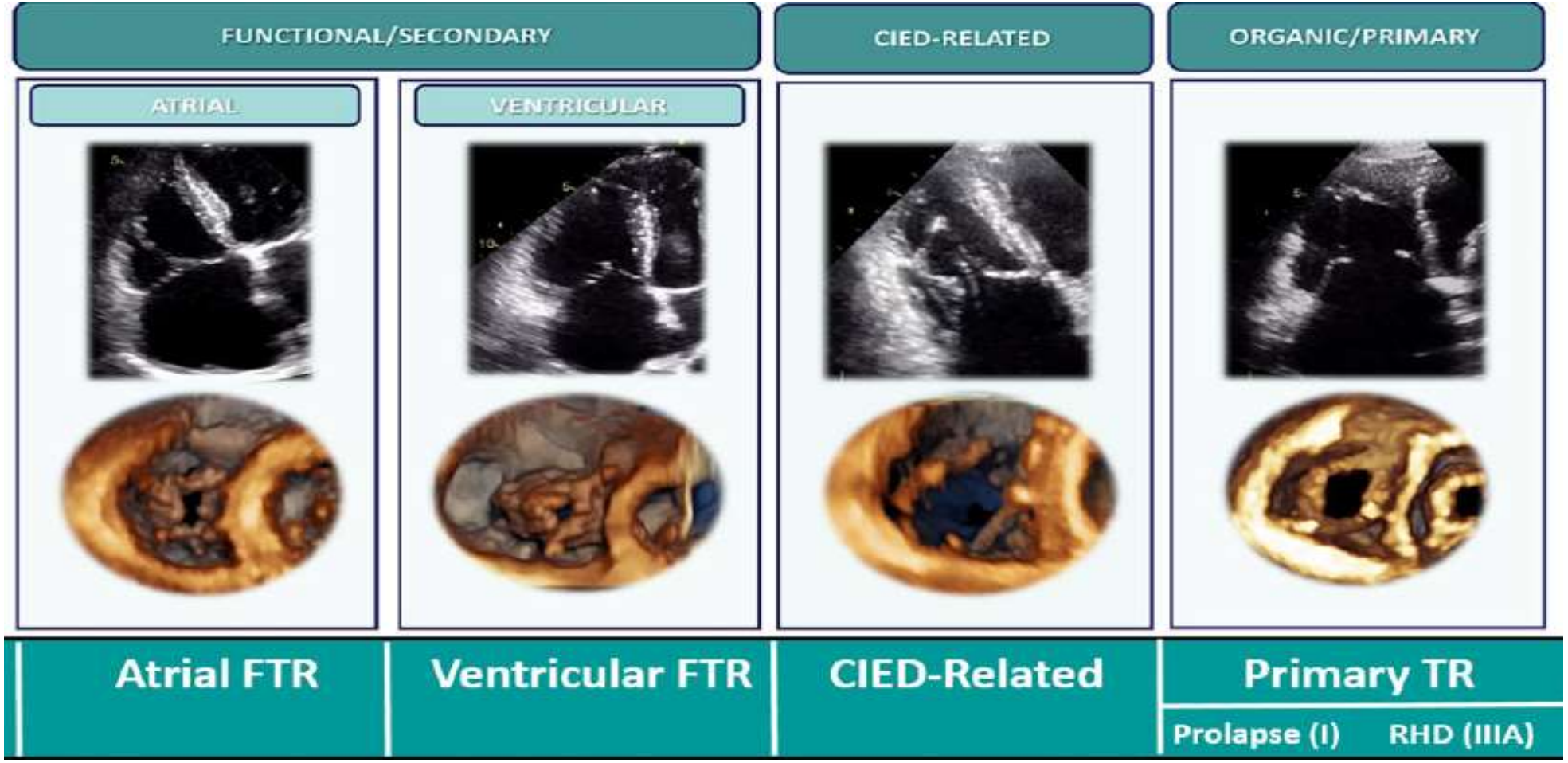
Primary	Secondary
• IE • Iatrogenic (CIED leads, EmBx) • Congenital (Ebstein's) • Other (TVP, carcinoid, XRT)	• RV remodeling (left-sided heart disease, PHTN) • Dilated cardiomyopathy • Atrial functional (AF)

Secondary TR



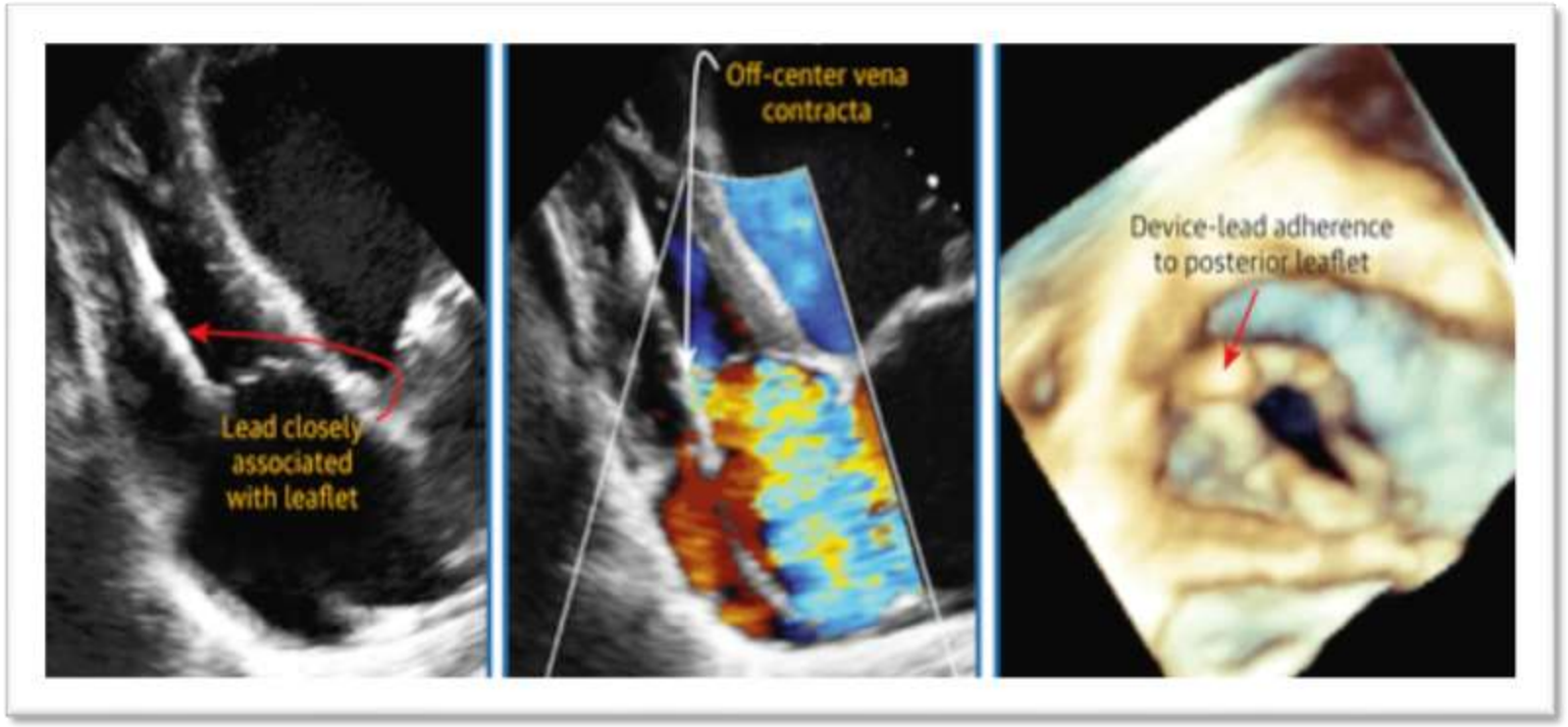
Dreyfus G et al. Ann Thorac Surg; 2005; 79: 127-32

Tricuspid Regurgitation



Hahn RT et al. EHJ CV Img 2022; 23:913

CIED Related TR



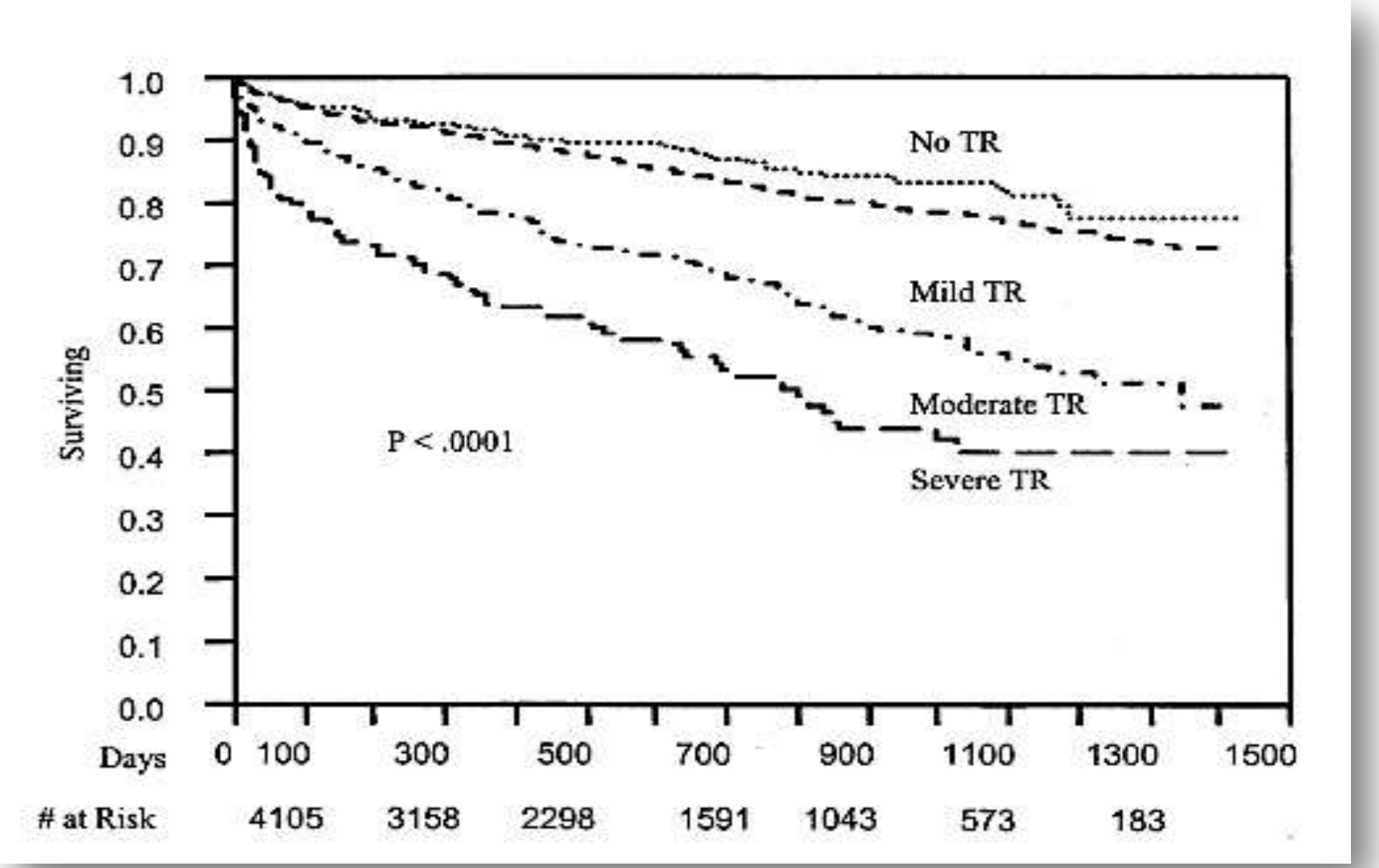
Addeta K et al. JACC Img 2019; 12:622

Grading TR

Parameters	Mild	Moderate	Significant/ moderate-severe	Severe	Massive	Torrential
Vena contracta width	<3 mm	3–6.9 mm	6–6.9 mm	7–13 mm	14–20 mm	≥21 mm
EROA	20 mm^2	20–29 mm^2	30–39 mm^2	40–59 mm^2	60–79 mm^2	≥80 mm^2
Regurgitant volume	<15 mL	15–29 mL	30–44 mL	45–59	60–74	≥75
Regurgitant fraction 3D Echo (MRI)[a]	<25% (30%)[a]	25–44% (30–49%)[a]		≥45% (50%)[a]		
3D vena contracta				75–94 mm^2	95–114 mm^2	≥115 mm^2

From Hahn RT

TR: Prognosis



Nath J et al. J Am Coll Cardiol 2004; 43:405-9.

Surgery for TR

Primary and Secondary TR

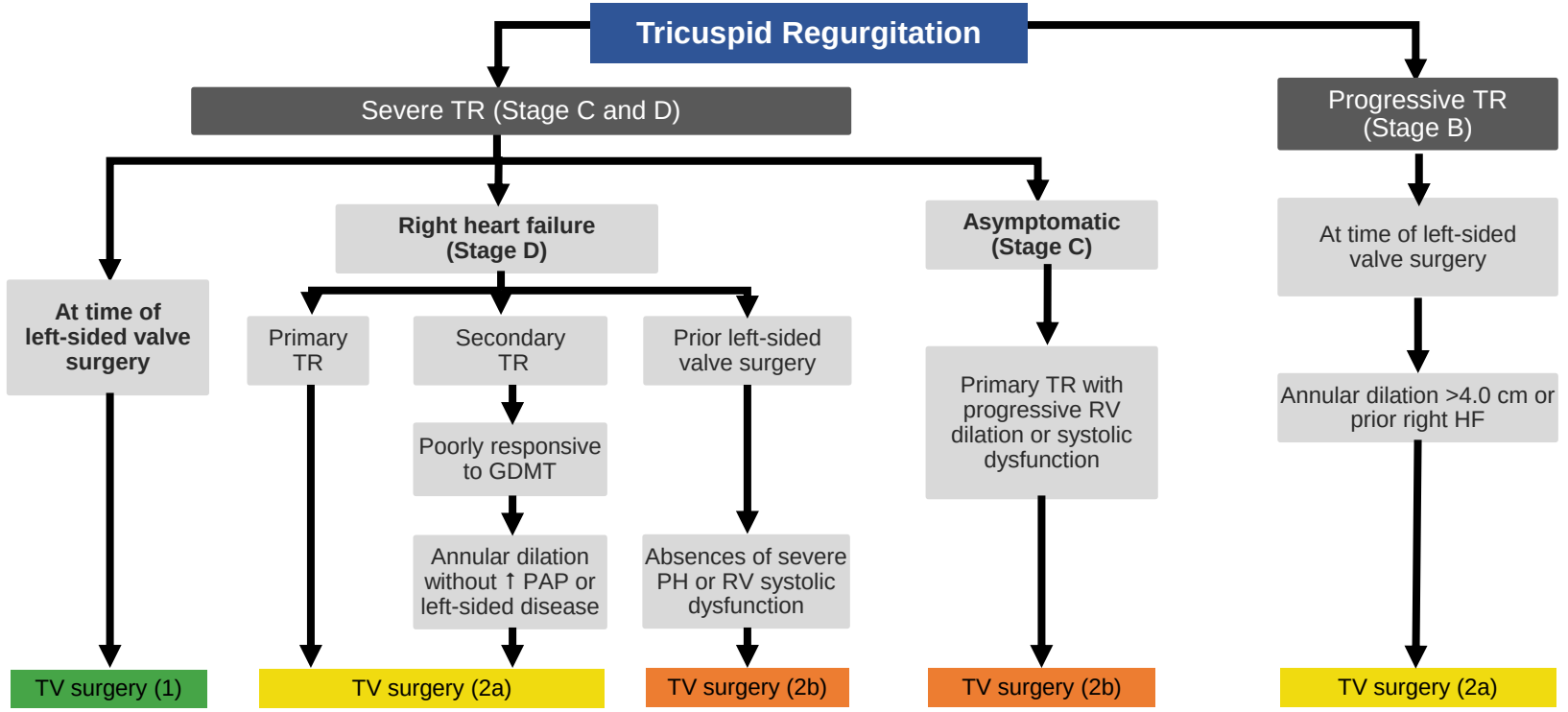
COR	LOE	Recommendation	COR	LOE
1	B-NR	Severe TR undergoing L-sided surgery	1	B,C

Surgery for TR

Secondary TR

COR	LOE	Recommendation	COR	LOE
2a	B-NR	Mild-Moderate TR with TA dilation or RHF undergoing L-sided surgery	2a	B

Management of Tricuspid Regurgitation

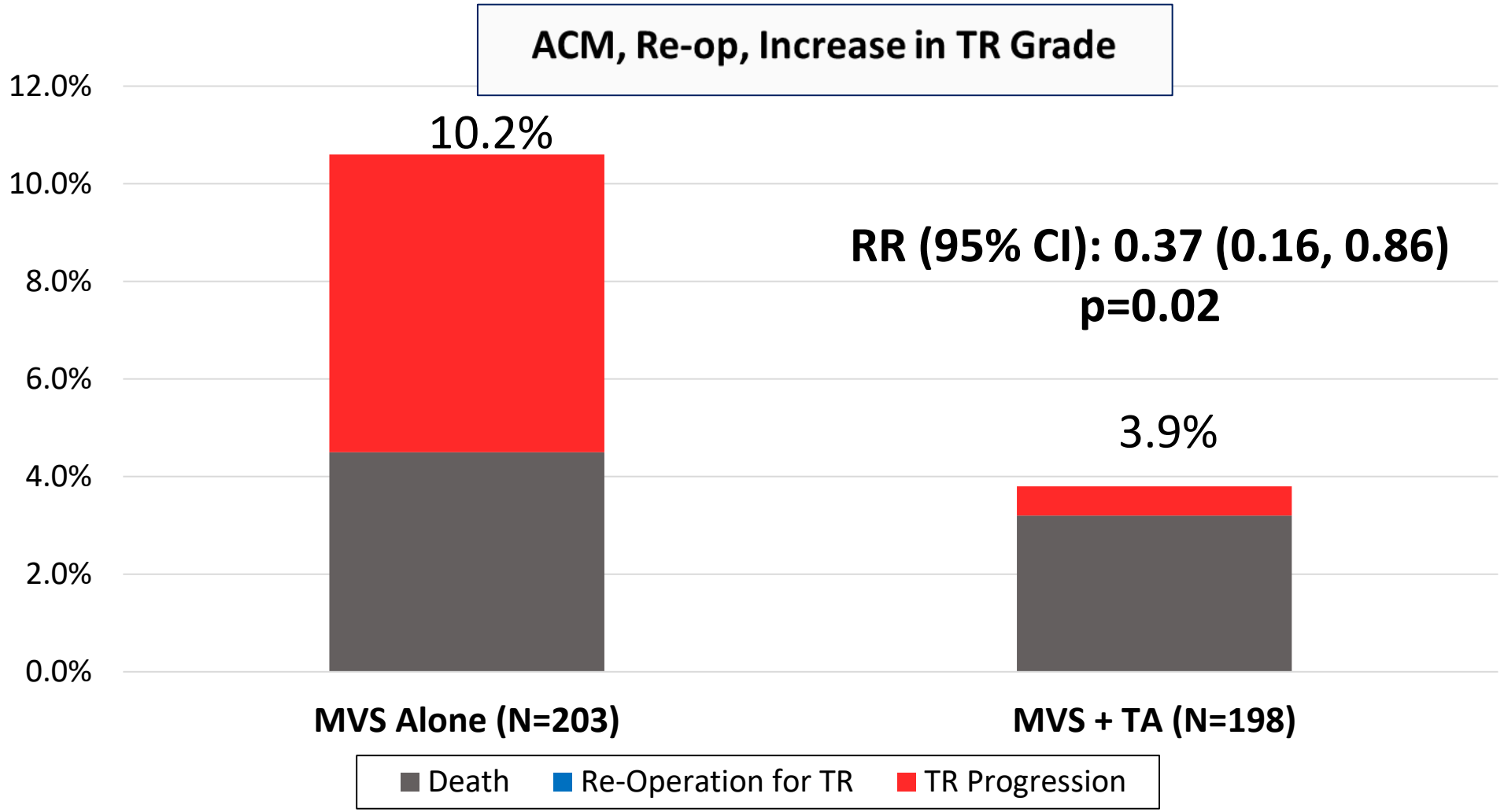


Abbreviations: GDMT indicates guideline-directed management and therapy; HF, heart failure; PAP, pulmonary artery pressure; PH, pulmonary hypertension; RV, right ventricular; TR, tricuspid regurgitation; and TV, tricuspid valve.

American Heart Association.

Otto, CM et al. 2020 ACC/AHA. Guideline for the Management of Patients With Valvular Heart Disease *Circulation.*

TVA at Time of MVS

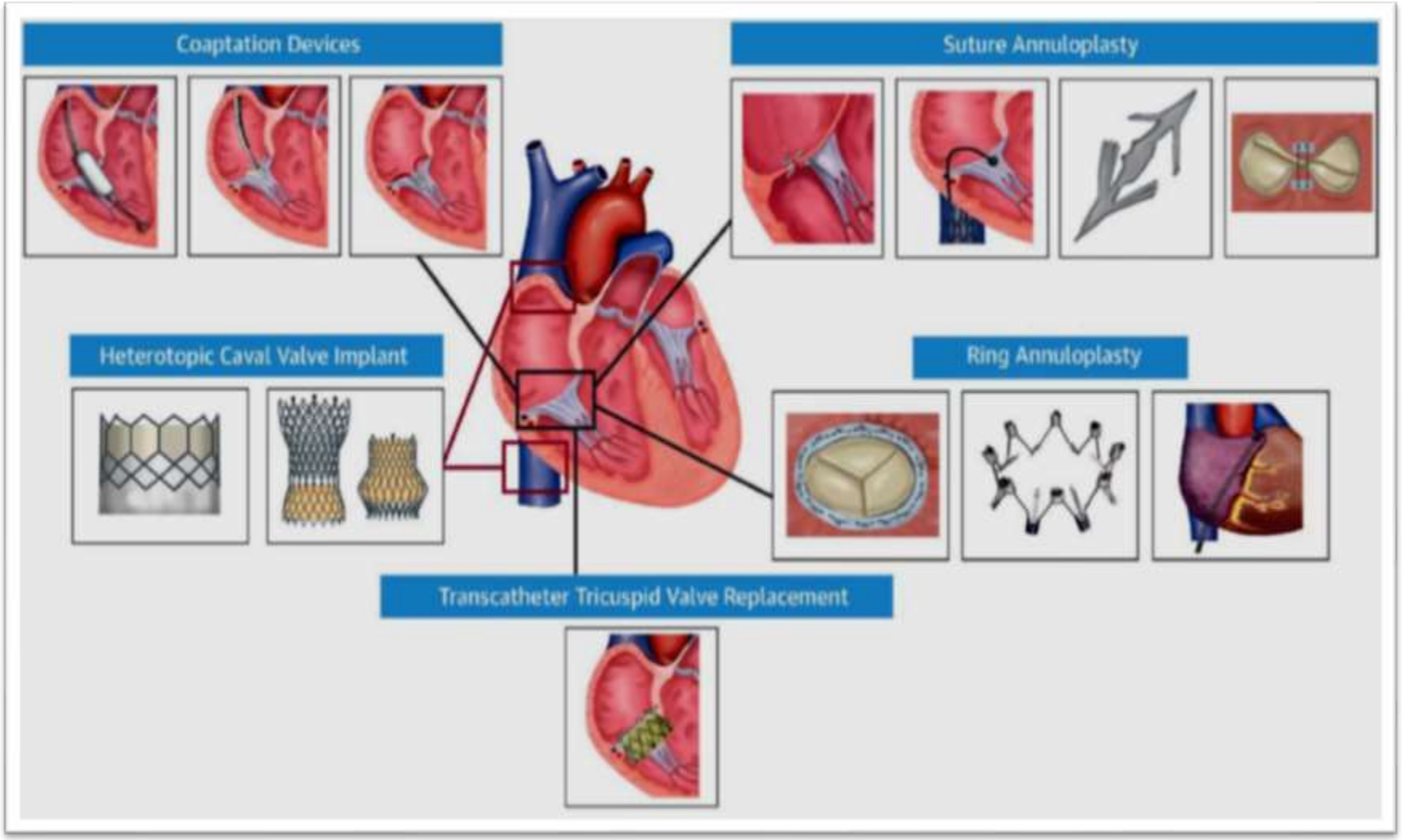


Transcatheter Treatment for Secondary TR

COR	LOE	Recommendation	COR	LOE
		Symptomatic severe TR, inoperable, Comprehensive Center	2b	C

In the US, there are no FDA approved catheter based (repair or replacement) devices for the treatment of TR. There is growing anticipation that approval for TEER may be forthcoming in 2023

Transcatheter Therapies



Asmarats et al. JACC 2018

TTVRepair Outcomes:Meta-Analysis

CENTRAL ILLUSTRATION: Outcomes Following Isolated Transcatheter Tricuspid Valve Repair

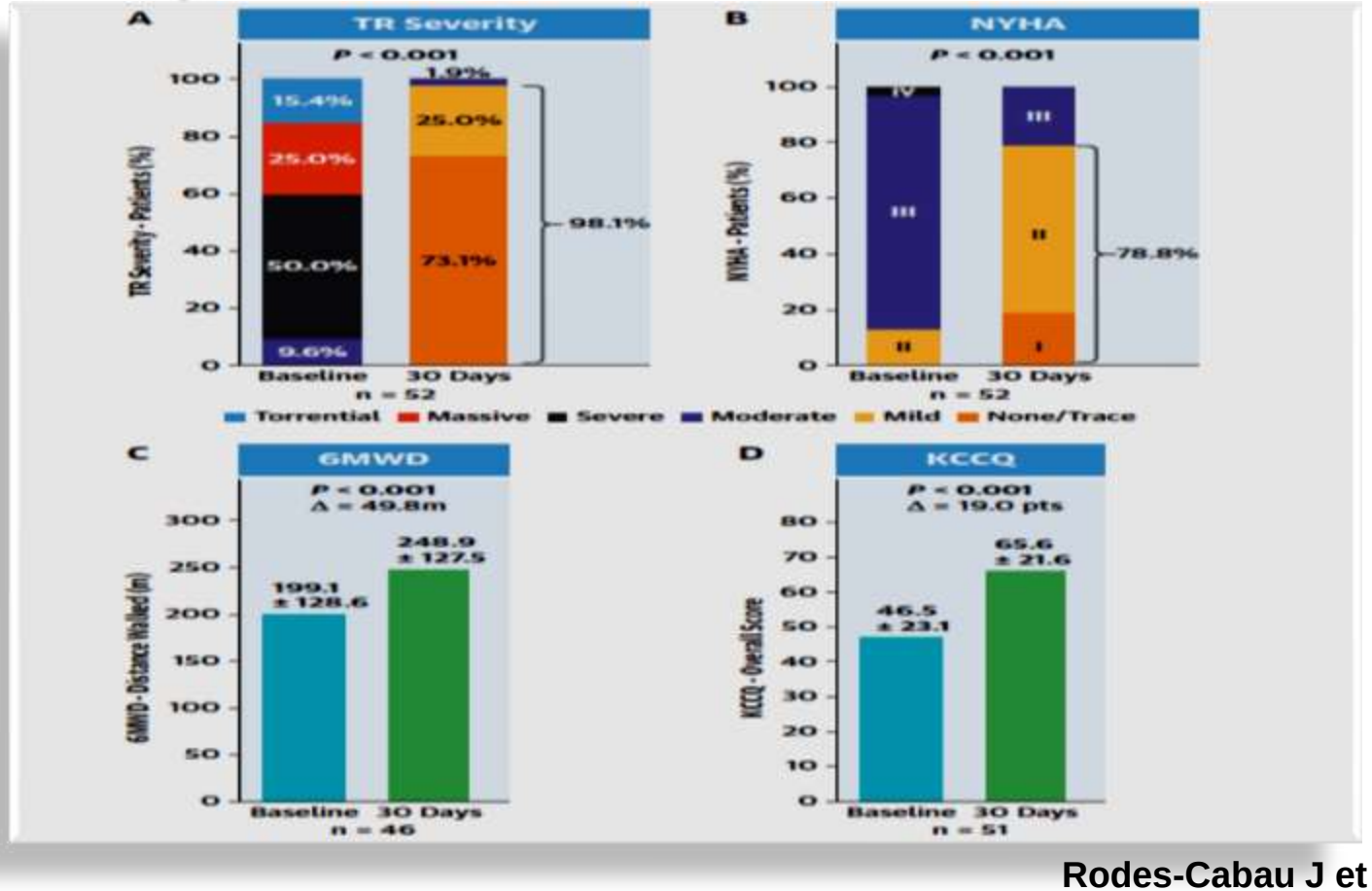
Transcatheter Tricuspid Valve Repair Among 771 Patients with 212 Days of Follow-up (versus baseline assessment)

Isolated Transcatheter Tricuspid Valve Repair

- ↓ New York Heart Association functional class III-IV frequency
  - Risk ratio: 0.23 (95% CI 0.13 to 0.40)
- ↑ 6-minute walking distance
  - Mean difference: +50 m (95% CI: + 34 to +66 m)
- ↓ TR severe or greater frequency
  - Risk ratio: 0.29 (95% CI: 0.20 to 0.42)

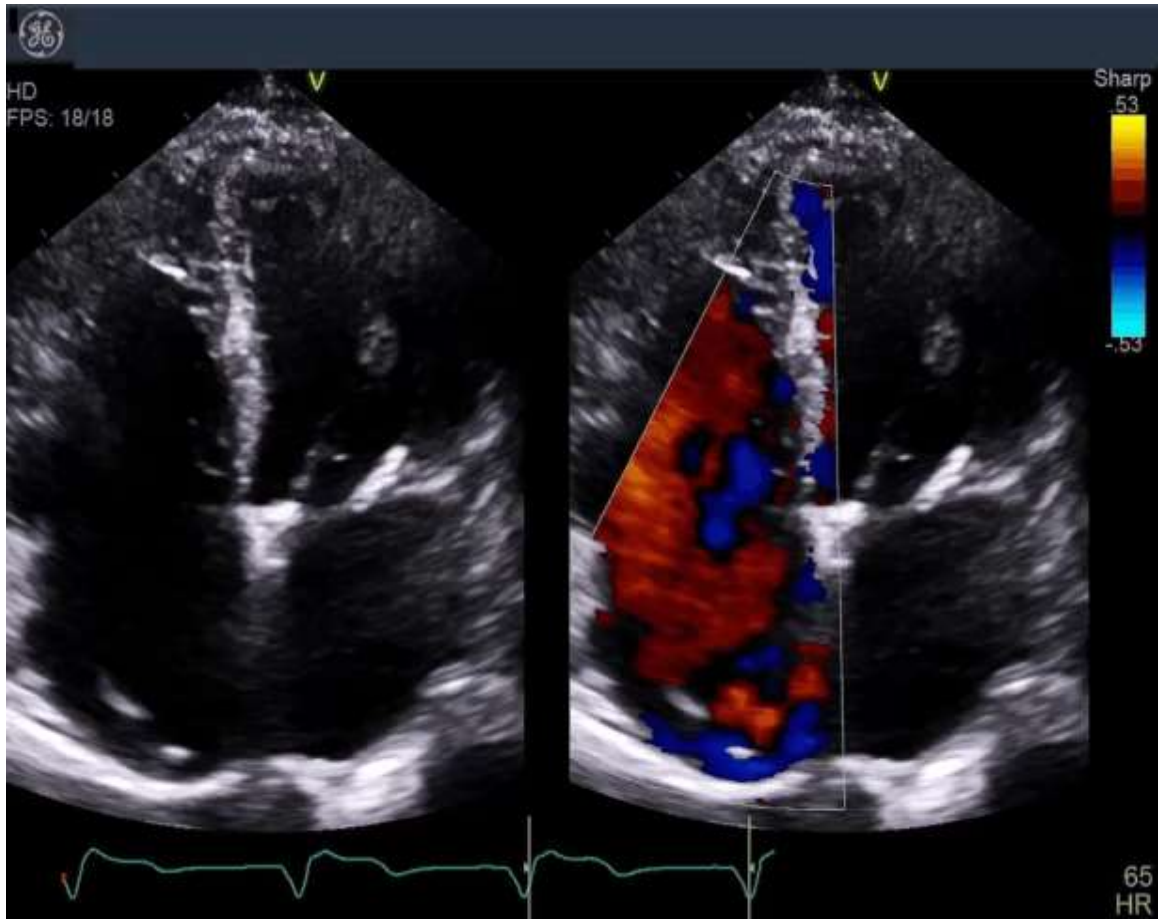
Bocchino, P.P. et al. J Am Coll Cardiol Intv. 2021;14(20):2285-2295.

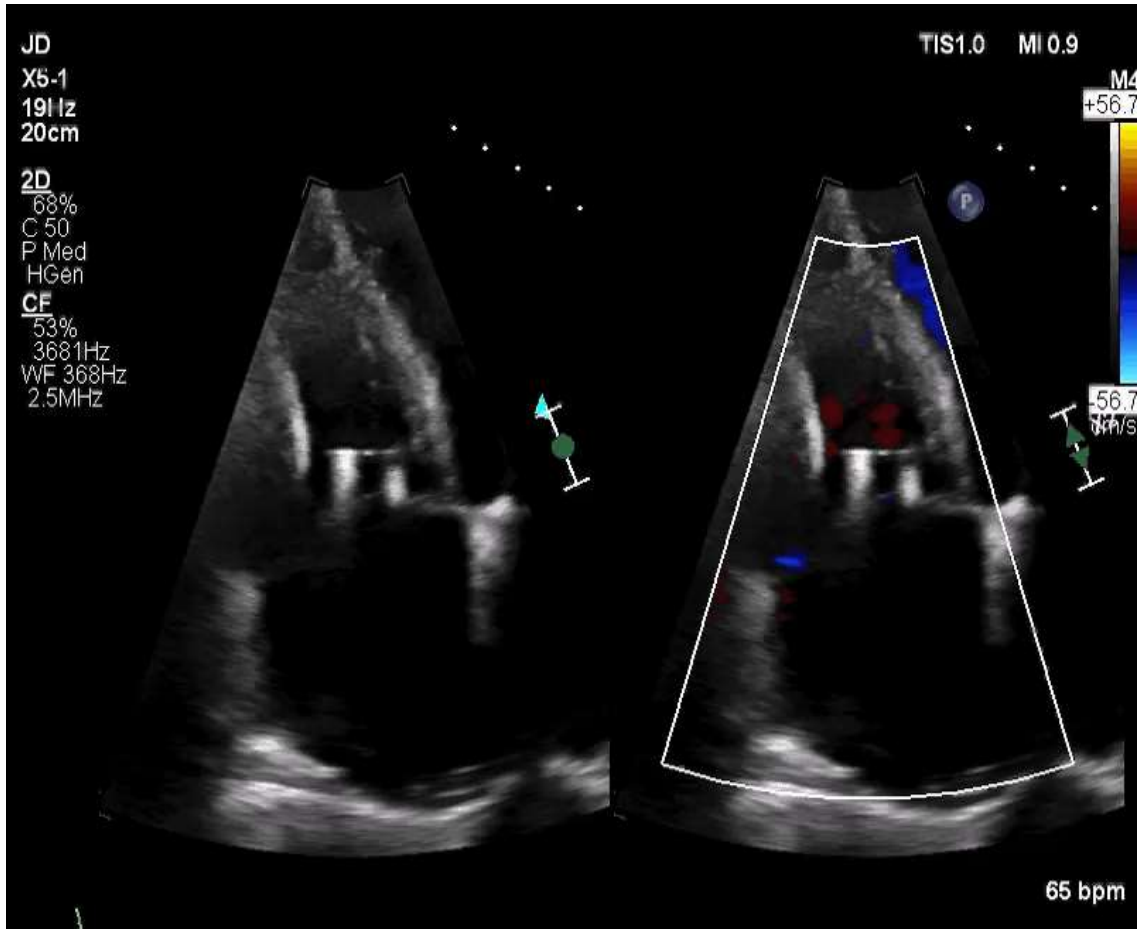
Transcatheter TVR



Rodes-Cabau J et al. Lancet 2016
Kodali S et al. JACC Intv 2022

Tricuspid Regurgitation





TV clip repair

Summary

- **Look for TR among patients with CIEDs and/or AF**
- **Assess RV function longitudinally**
- **Consider intervention earlier in the natural history**
- **Interventional and surgical landscapes are changing**