

MODULE 2: ProEducar Fellows Course@EuroPCR. TAVI Basics: "What should I know to become a good TAVI doctor?"

# PATIENT SELECTION FOR TAVR – HEART TEAM

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# History of TAVI in the World and in LATAM

2000: First human implant  
(RV to PA conduit) Paris



2000

**First CoreValve Implantation**  
Laborde, Grube (12° pt. in History)



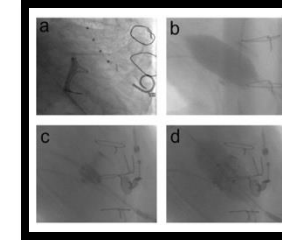
2004

**Brazilian  
Inovare**



2008

**1st Mitral ViV  
Bioprosthetic valve**

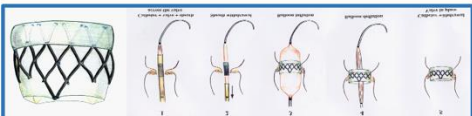


2009

2002

**Alain Cribier**

2002: First human TAVI implant



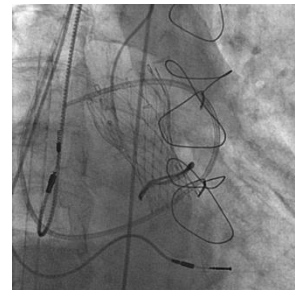
2004

**1st TAVI in LATAM in  
Venezuela,  
CoreValve (3<sup>rd</sup> and  
4<sup>th</sup> in the World)**



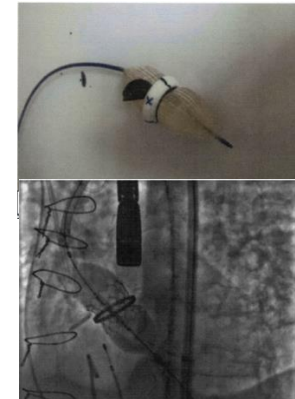
2007

**1st Aortic ViV  
Bioprosthetic valve**

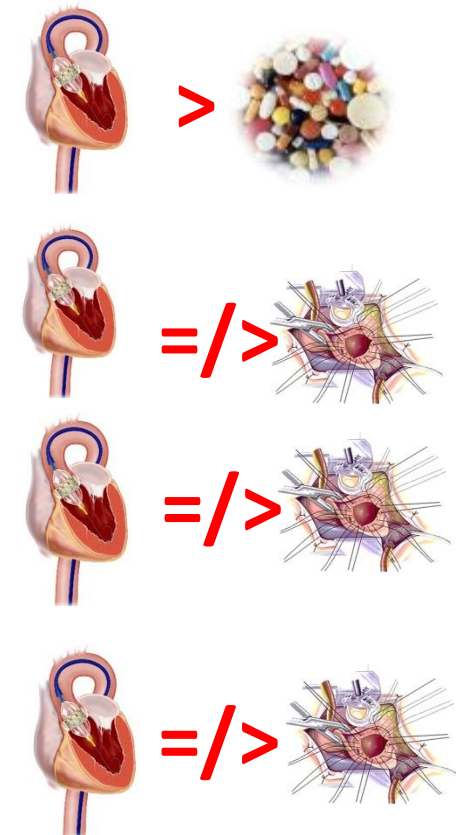
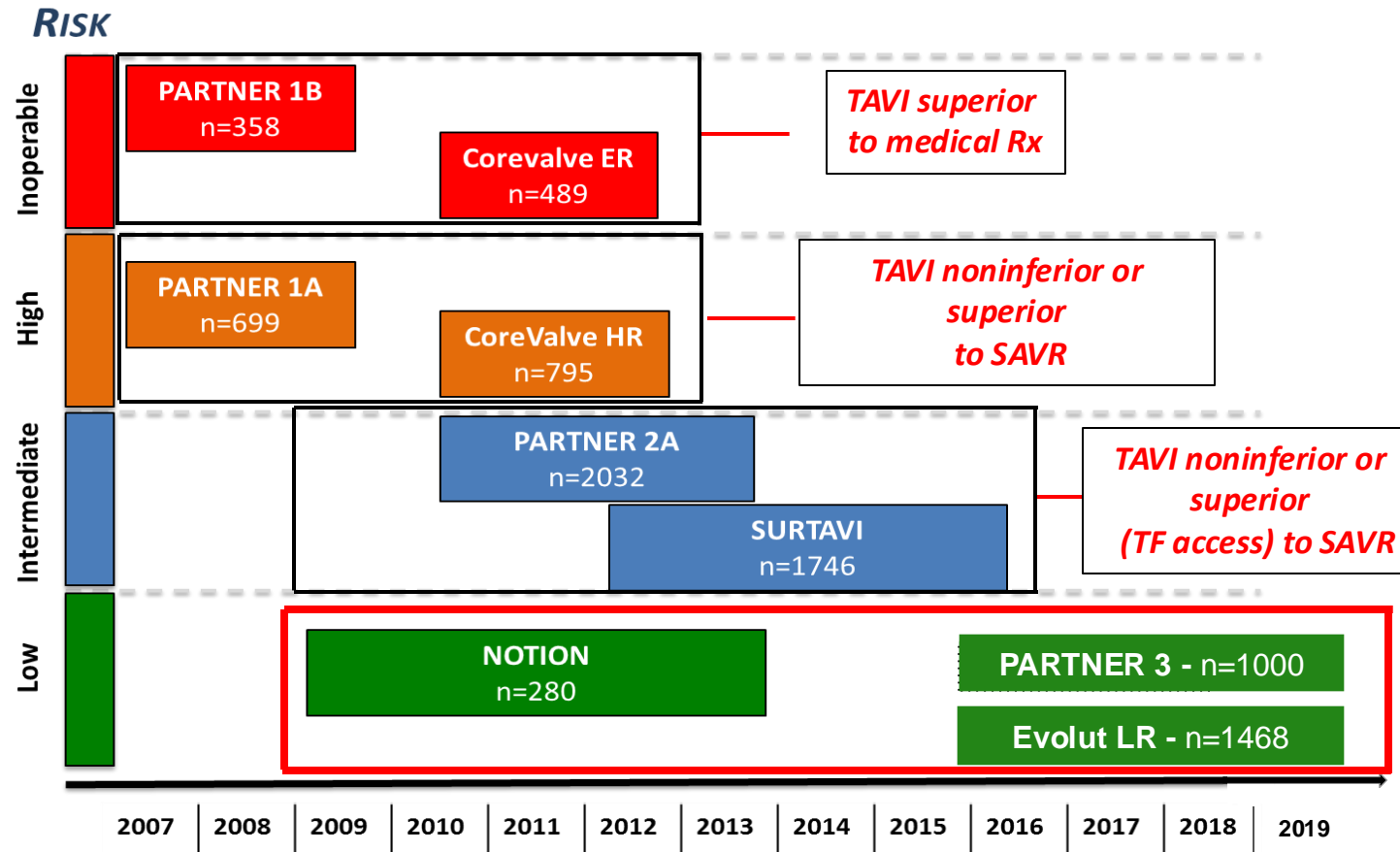


2021

**1st Aortic ViV  
Mechanical valve**

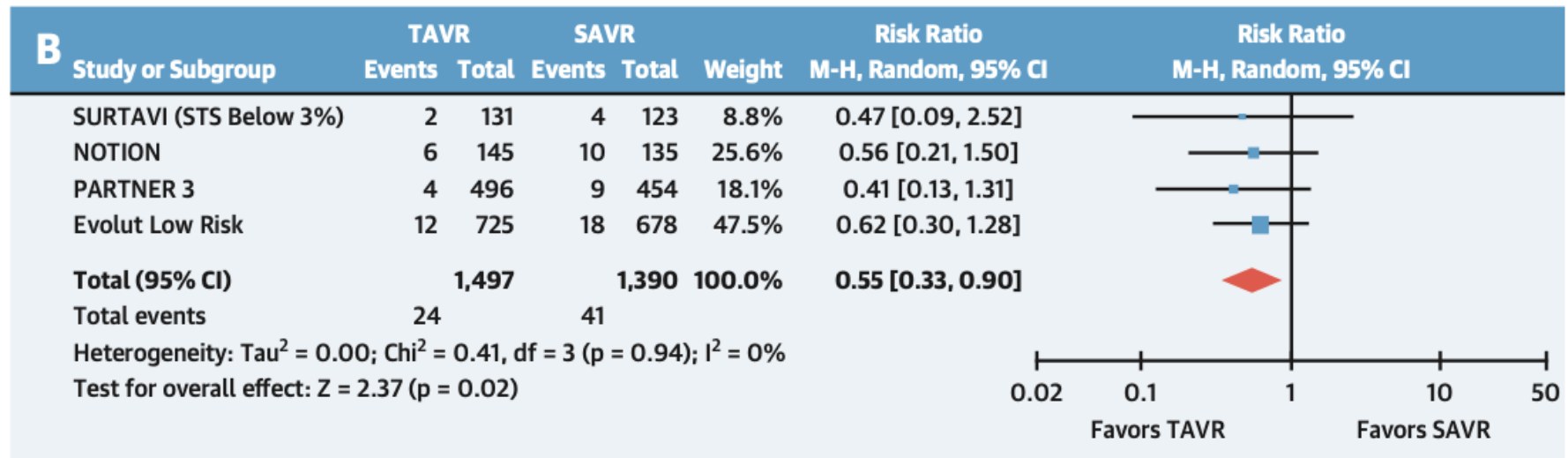
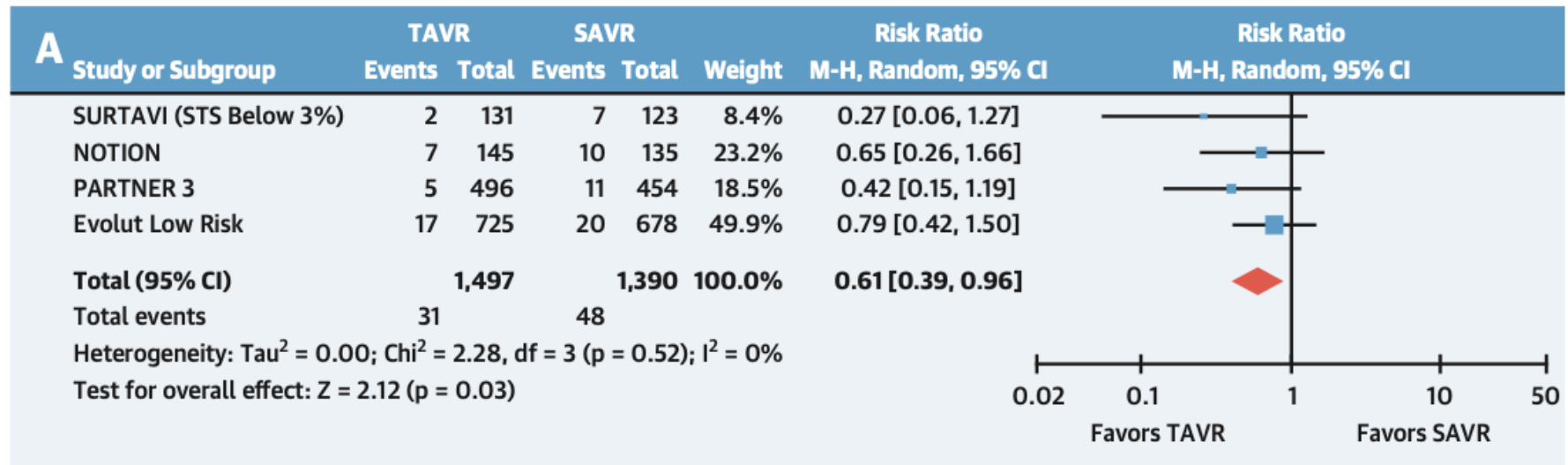


# Evidências dos Estudos Randomizados em TAVI



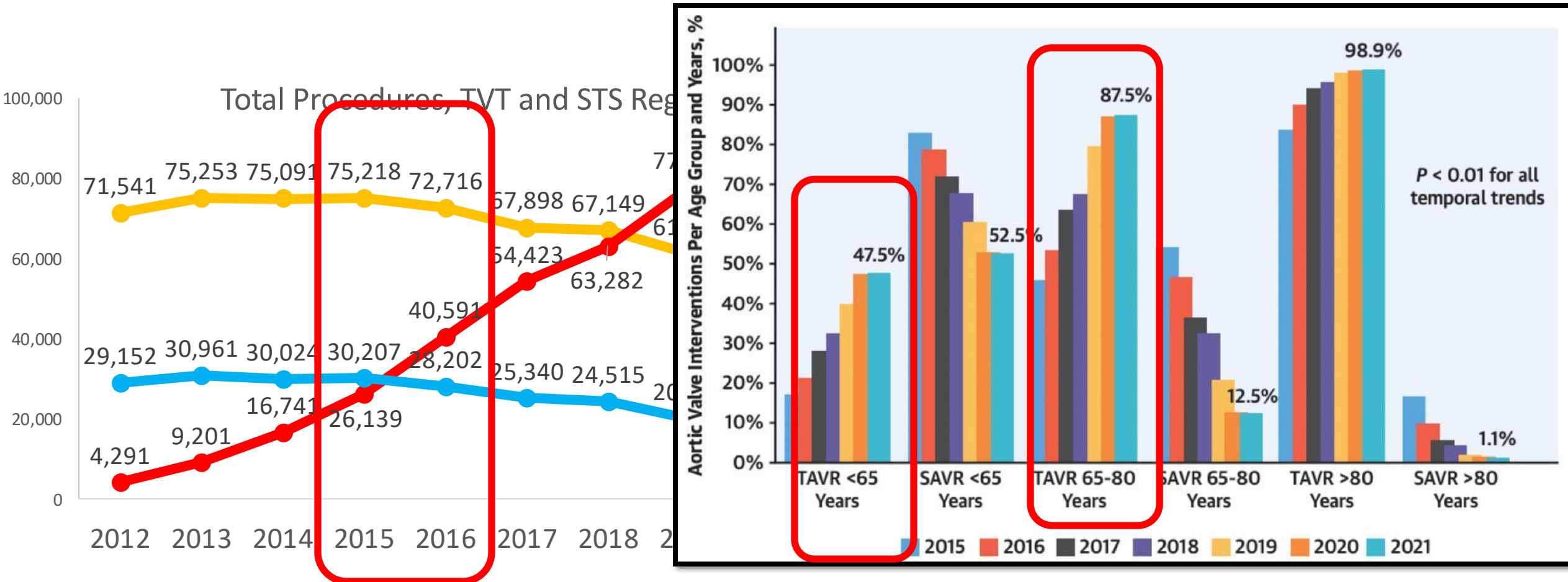
## LOW RISK

# Meta-analysis: All-Cause and Cardiovascular Death at 1 Year



# TAVI vs. SAVR IN THE USA

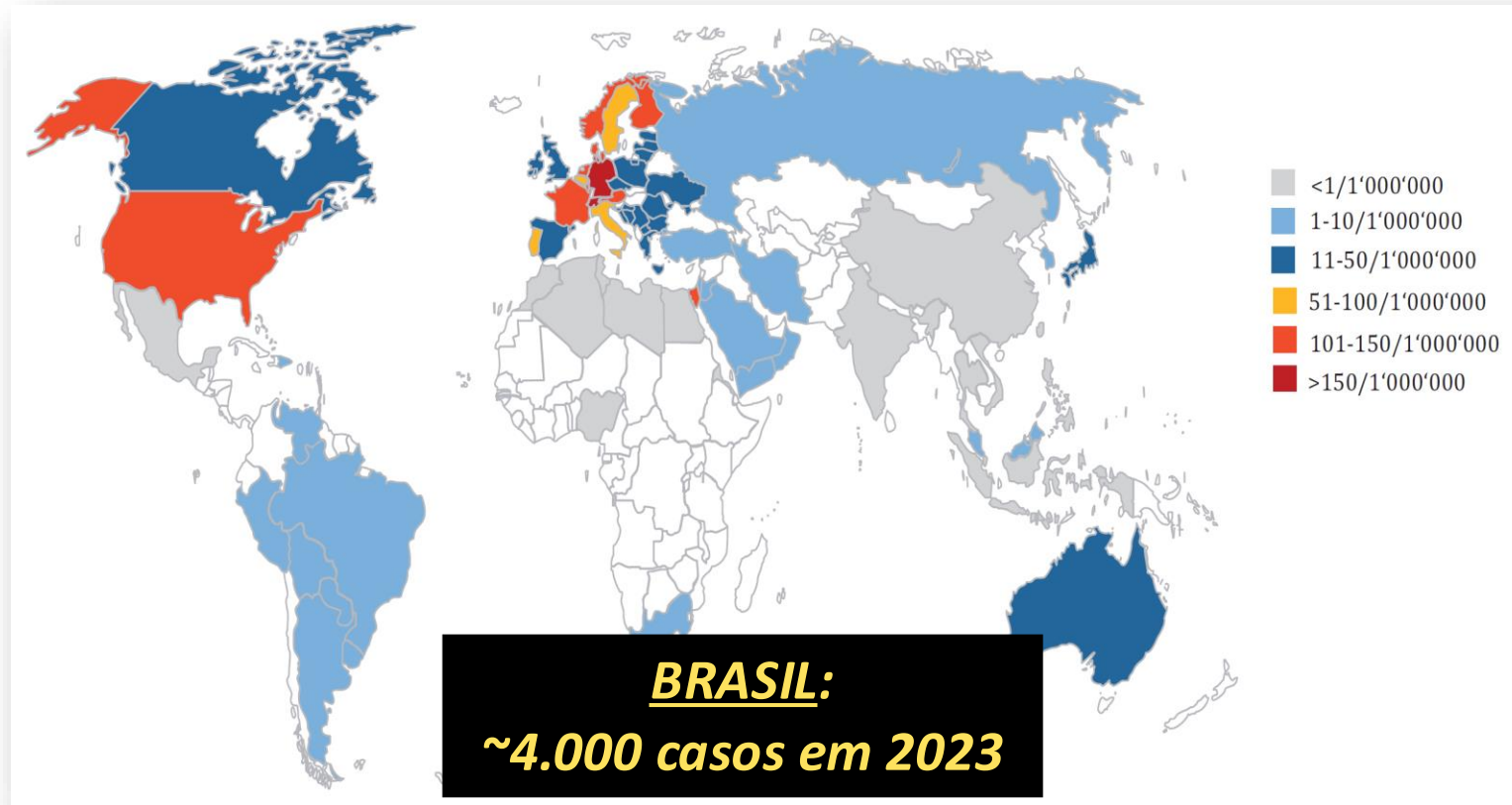
TAVI annual case volumes in the U.S. surpassed isolated surgical AVR for the first time in 2016.  
In 2019, the total yearly TAVR surpassed SAVR in all its forms.



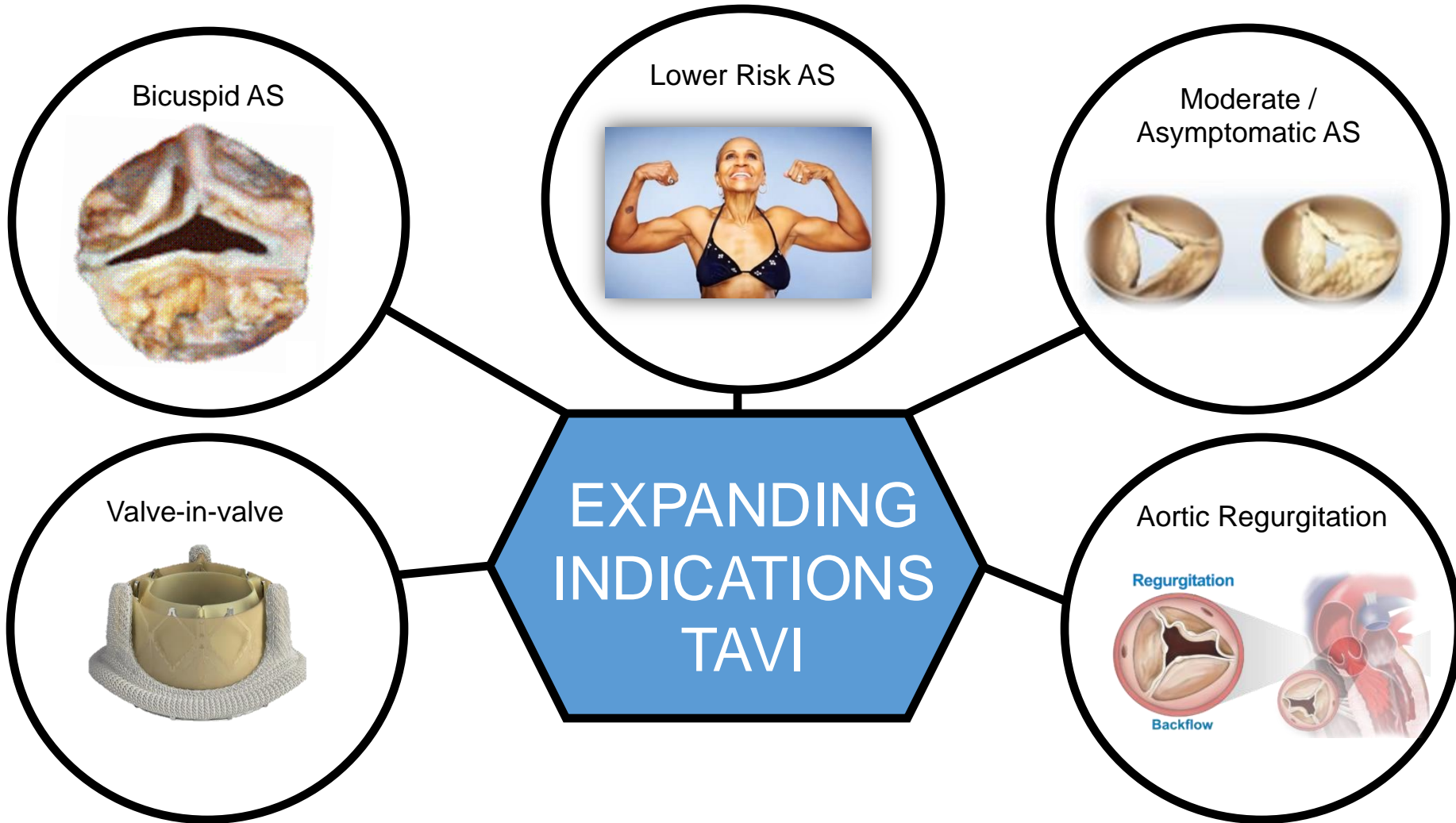


# GAPS IN IMPLEMENTATION: GEOGRAPHICAL DISPERSION AND SOCIOECONOMIC INEQUALITIES - TAVI

Pilgrim T et al. *Eur Heart J* 2018



Estimates for Q1–Q4 2017 (Western Europe) or Q4 2016–Q3 2017  
(all other regions) including moving annual total (MAT) data.  
Data are subject to end of year adjustment.



# Clinical practice guideline for transcatheter versus surgical valve replacement in patients with severe aortic stenosis in Latin America

Pablo Lamelas <sup>1,2</sup>, Martin Alberto Ragusa <sup>3,4</sup>, Rodrigo Bagur <sup>5</sup>, Iqbal Jaffer <sup>6</sup>, Henrique Ribeiro <sup>7</sup>, Adrian Baranchuk <sup>8</sup>, Fernando Wyss <sup>9</sup>, Alvaro Sosa Liprandi <sup>10</sup>, Gabriel Olivares <sup>11</sup>, Magaly Arrais <sup>12</sup>, Juan Camilo Rendon <sup>13</sup>, Jorge Catrip <sup>14</sup>, Carla Agatiello <sup>15</sup>, Fernando Cura <sup>1</sup>, Alfaro Marchena <sup>16</sup>, Fabio Sandoli de Brito Jr <sup>17</sup>, José A Mangione <sup>18</sup>, Anibal Damonte <sup>19</sup>, Omar Santaera <sup>20</sup>, Pedro Hidalgo <sup>21</sup>, Robby Nieuwlaet <sup>22</sup>, Ariel Izcovich <sup>3</sup> Endorsed by the Sociedad Latino Americana de Cardiología Intervencionista (SOLACI) and the Sociedad Interamericana de Cardiología (SIAC)



## Latin America

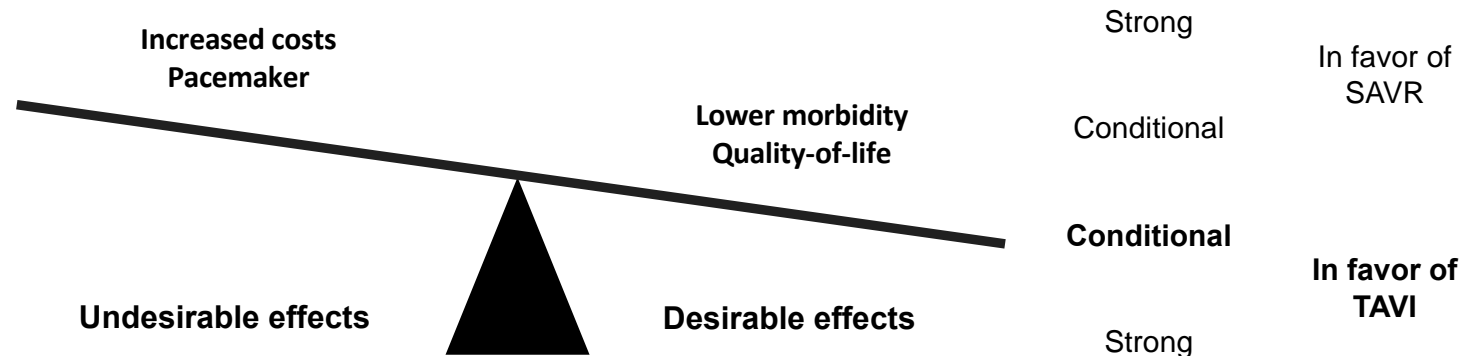


SOLACI



SIAC

## Patients with severe symptomatic aortic stenosis from 75 years of age eligible for transfemoral TAVI



### Scenarios favoring SAVR

### Subgroup considerations: Assess through Heart Team

### Scenarios favoring TAVI

Unfavorable anatomy for TAVI

Older age

Unsuitable for transfemoral access

High- or moderate-risk for surgery

Presence of concomitant valvular disease with surgical indication

Prior sternotomy or surgical aortic valve replacement

Multivessel coronary artery disease

Frailty

Patients placing a higher value on bioprosthetic valve durability or pacemaker risk

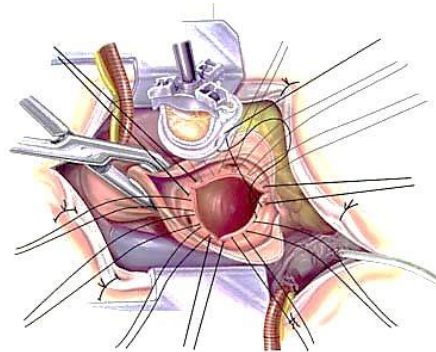
Patients placing a higher value on lower procedural morbidity and rapid recovery



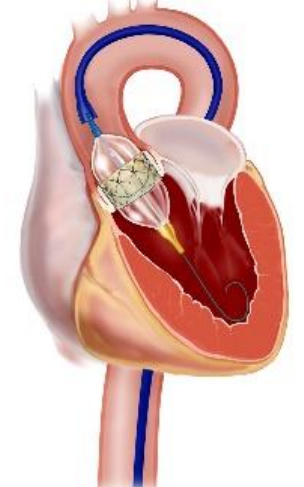


**PAST**

**SAVR: 1<sup>ST</sup>**



**TAVR:  
EXCEPTION IN  
HIGHER RISK  
PTS**

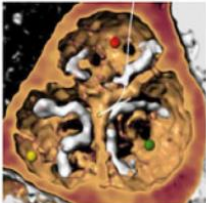
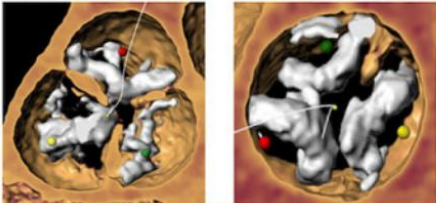
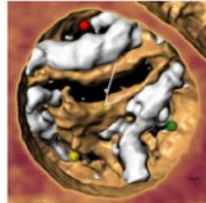
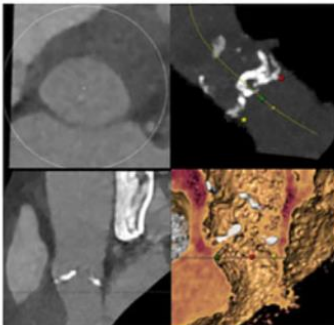
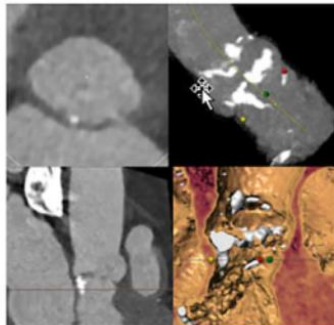
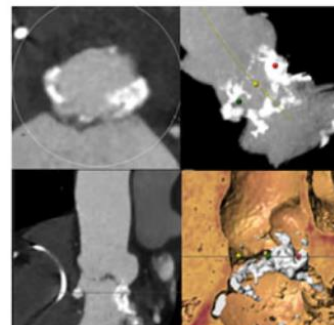
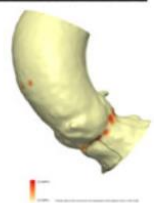
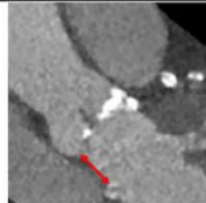
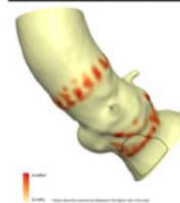
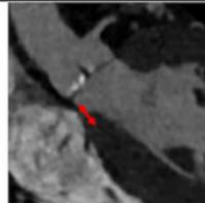


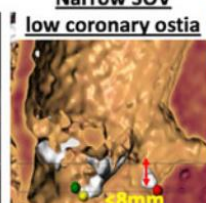
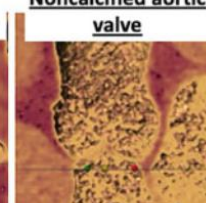
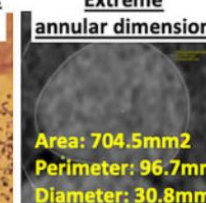


**PRESENT**

**Which patients with aortic stenosis should be referred to surgery rather than transcatheter aortic valve implantation?**

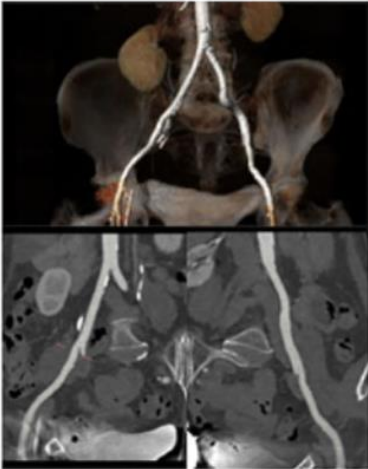


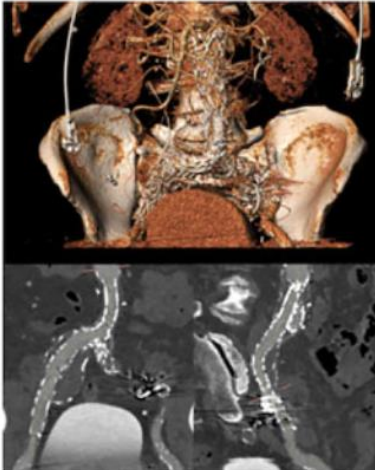

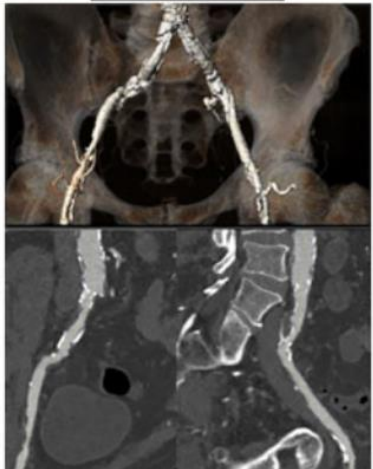
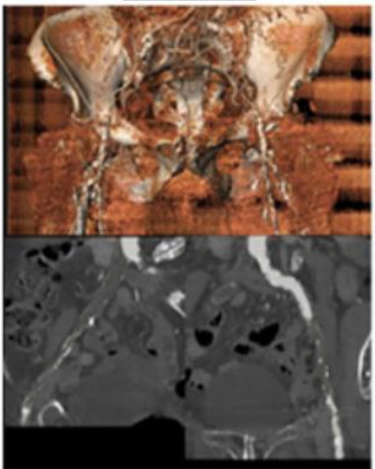
Stephan Windecker <sup>1\*</sup>, Taishi Okuno <sup>1</sup>, Axel Unbehaun <sup>2,3</sup>, Michael Mack<sup>4</sup>,  
Samir Kapadia <sup>5</sup>, and Volkmar Falk <sup>2,3,6,7</sup>

# TAVR vs. SAVR

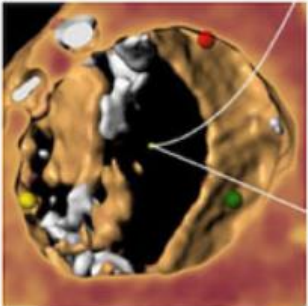
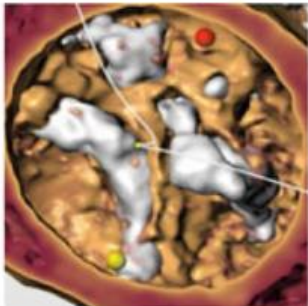
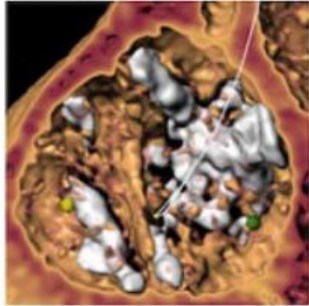
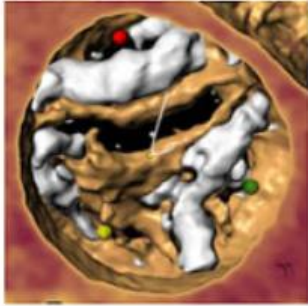

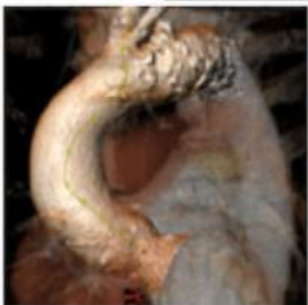

Categories	Favourable		Intermediate	Unfavourable
Leaflet calcification	<u>Symmetrically calcified leaflets</u>		<u>Asymmetrically/heavily calcified leaflets</u>	<u>Calcified raphe &amp; Excess leaflet calcification</u>
				
LVOT calcification	<u>None</u>		<u>Mild-Moderate</u>	<u>Severe</u>
				
Risk of conduction disturbance	<u>Low contact pressure</u>	<u>Long membranous septum</u>	<u>High contact pressure</u>	<u>Short membranous septum</u>
				 + 
Others	<u>Horizontal aorta</u>		<u>Narrow SOV</u>	<u>Noncalcified aortic valve</u>
				



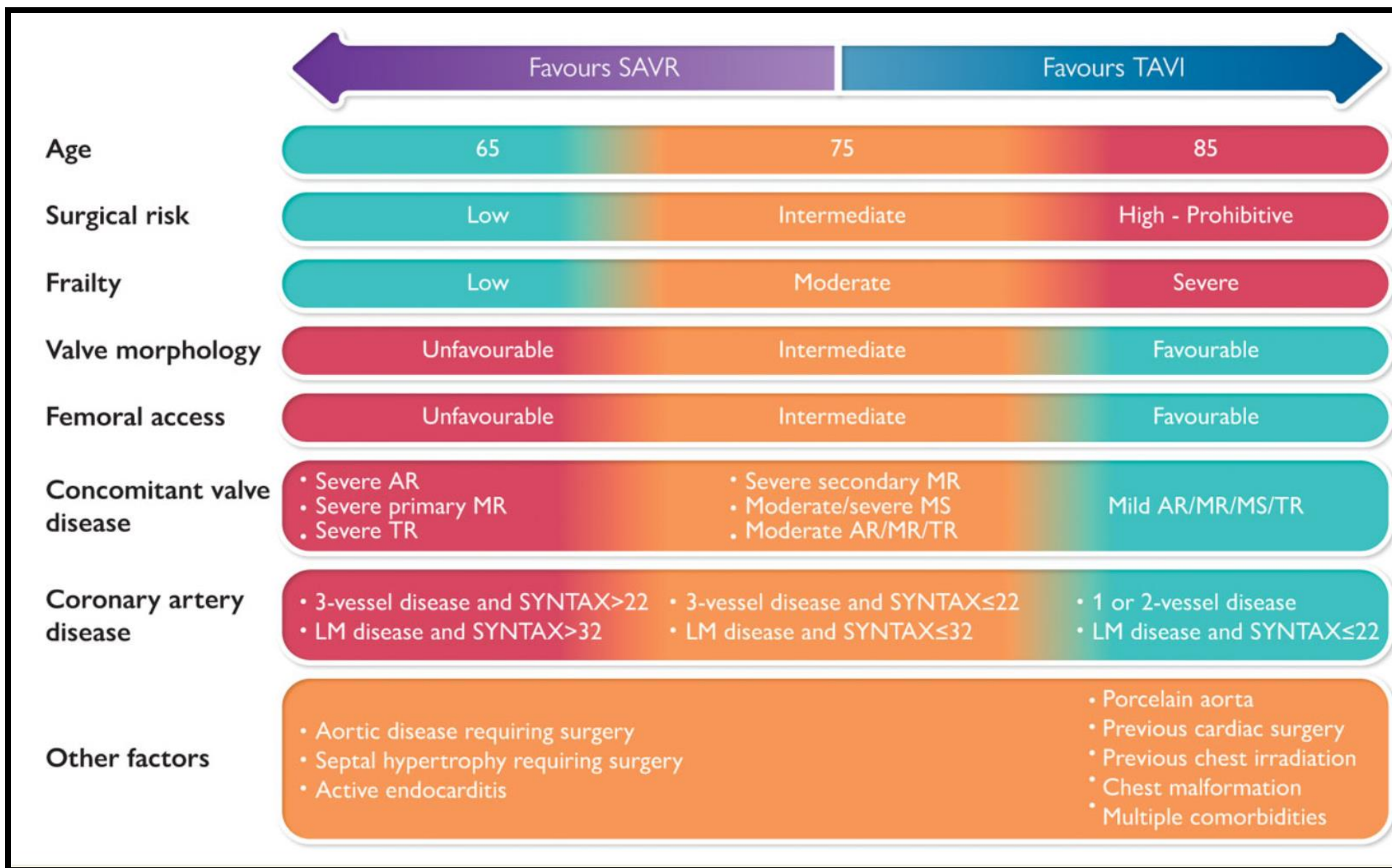
# TAVR vs. SAVR

Categories	Favourable	Intermediate		Unfavourable
Femoral access		<u>Tortuosity</u> 	<u>Tortuosity &amp; Calcification</u> 	<u>Post EVAR</u> 
		<u>Calcification</u> 	<u>Distal stenosis</u> 	<u>Occlusion</u> 

# TAVR vs. SAVR

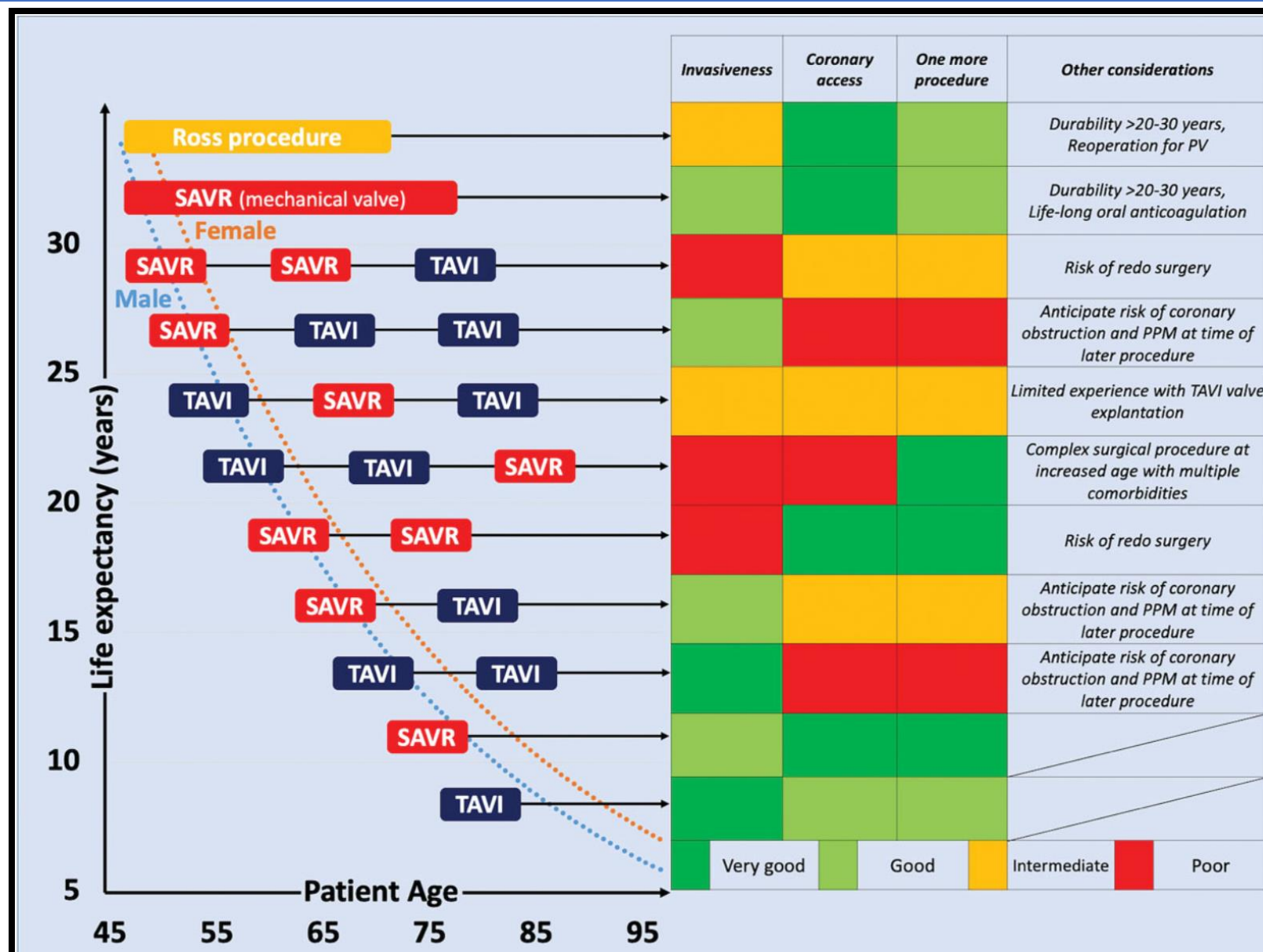
Categories	Favourable	Intermediate		Unfavourable
Bicuspid aortic valve	<u>No Calcified Raphe or Excess Leaflet Calcification</u> 	<u>Excess Leaflet Calcification</u> 	<u>Calcified Raphe</u> 	<u>Calcified Raphe Plus Excess Leaflet Calcification &amp; Calcified raphe</u> 
	<u>No dilation of ascending aorta</u> 	<u>Dilated ascending aorta (&gt;45mm, &gt;50mm, &gt;55mm)</u>  		

# TAVR vs. SAVR





# TAVR vs. SAVR

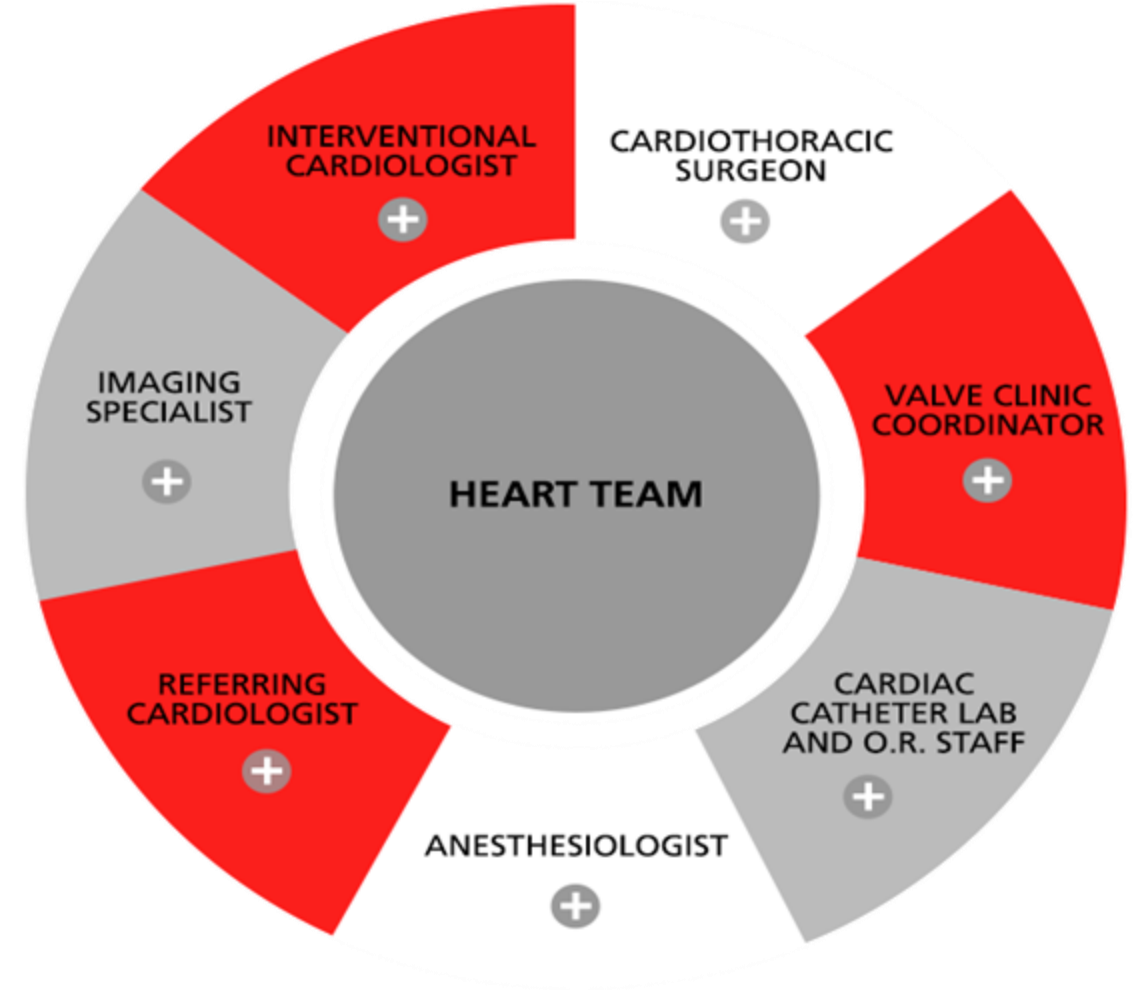


Windecker S, et al.

European Heart Journal  
(2022) 43, 2729–2750

# HEART TEAM

Recommendations for the Multidisciplinary Heart Valve Team and Heart Valve Centers		
COR	LOE	Recommendations
1	C-EO	1. Patients with severe VHD should be evaluated by a Multidisciplinary Heart Valve Team (MDT) when intervention is considered.
2a	C-LD	2. Consultation with or referral to a Primary or Comprehensive Heart Valve Center is reasonable when treatment options are being discussed for 1) asymptomatic patients with severe VHD, 2) patients who may benefit from valve repair versus valve replacement, or 3) patients with multiple comorbidities for whom valve intervention is considered. <sup>1-19</sup>



2020 ACC/AHA Guideline for the management of valvular heart disease. Otto et al.