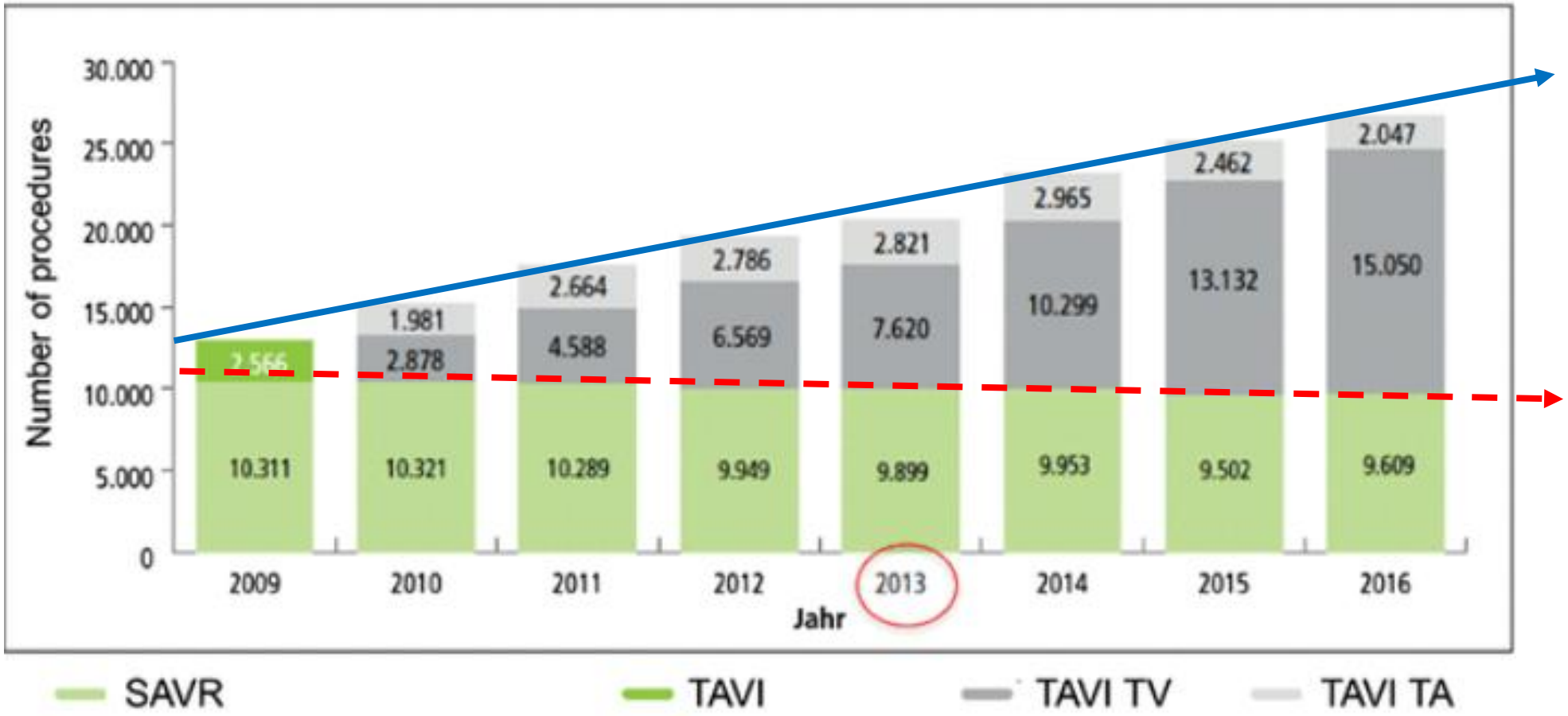
Fokusy z pohledu intervenčního kardiologa

Petr Kala, FN Brno a LF MU

Hradec Králové, 29.2.2024

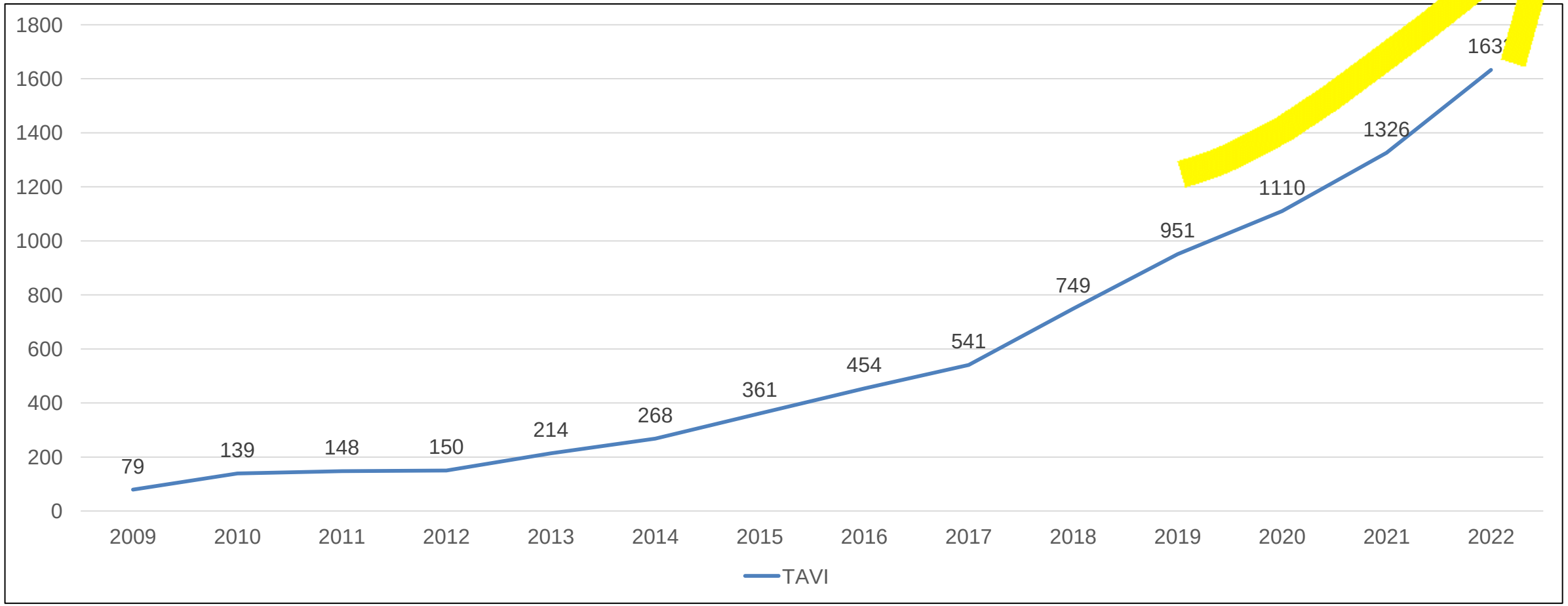
Trendy počtů výkonů TAVI/ SAVR

Trendy počtu TAVI a AVR v Německu



Czech TAVI Registry

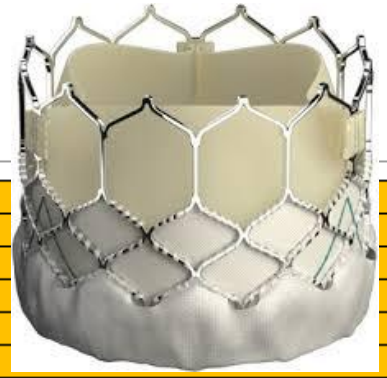
Počet TAVI 2008-2022



Strukturální intervence v ČR 2023

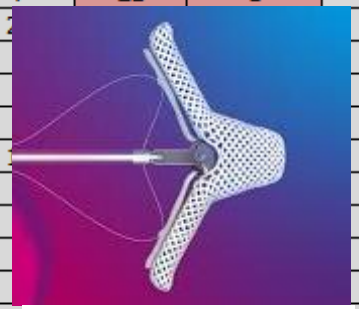
Intervenční výkony v roce 2023 - strukturální výkony - chlopně

Neoficiální Špindlerův seznam - Harmony 2024



Chlopně - perkutánně zaváděné												
Aortální		TAVI-cerebrální protekce	Mitrální		Pulmonání		Trikusp		MITRAclip/ Pascal		TRIclip/ Pascal	BAV pouze	
28	**1827**		8	**62**	-	**40**	8	**9**	3	**231**	**76**	2	**40**
11		11	4		0		9		2			9	
11			0		0		0		1			5	
0	**0**	**0**	0	**0**	0	**0**	0	**0**	0	**0**	**0**	0	**0**
116	**109**	**2**	0	**0**	0	**0**	0	**0**	7	**15**	**0**	0	
103	**129**		1		9	**6**	1	**1**	2			6	
141	**150**	0										13	**8**
0	**0**	0										0	**0**
83	**90**											6	**2**
0	**0**	0										2	**1**
69	**95**	0										0	**0**
45	**60**											2	**4**
45	**51**	**0**		**0**		**0**		**0**					**0**
0	**0**	**0**	0	**0**	0	**0**	0	**0**	0			0	**4**
145	**147**	**18**	8	**8**	3	**3**	3	**4**	4			2	**1**
137	**165**	**2**	4	**1**		**0**		**0**	7			0	**2**
0	**0**	**0**	0	**0**	0	**0**	0	**0**	0			0	**0**
127	**180**	**24**	4	**12**	0	**0**	0	**0**	2			2	**4**
107	**132**		3	**12**		**0**	19	**4**	3			6	**11**
Celkem v ČR	**1 633**	**1 827**	**57**	**47**	**62**	**12**	**11**	**40**	**9**	**187**	**231**	**76**	**55**	**48**

2285



Strukturální intervence v ČR 2023

Intervenční výkony v roce 2023 - strukturální výkony - ostatní

Neoficiální Špindlerův seznam - Harmony 2024

Nemocnice	Defekty septa						Uzávěry LAA		Uzávěr PVL		Alkoholová ablace septa		Neurointervence pro akutní CMP	
	PFO		ASD		Různé									
	2022	**2023**				**2023**	2022	**2023**				**2023**	2022	**2023**
	53	**607**	4	**93**	4		51	**255**	4	**17**	6	**9**	-	-
	10		3				6		1		9	**7**	53	**64**
	11		5		3	3			2					
	1	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**
	31	**21**	5	**9**			12	**5**	0	**0**	20	**10**	0	**0**
	55	**67**	16	**7**			50	**62**	4	**2**	6	**5**		

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VOL. 81, NO. 4, 2023

THE PRESENT AND FUTURE

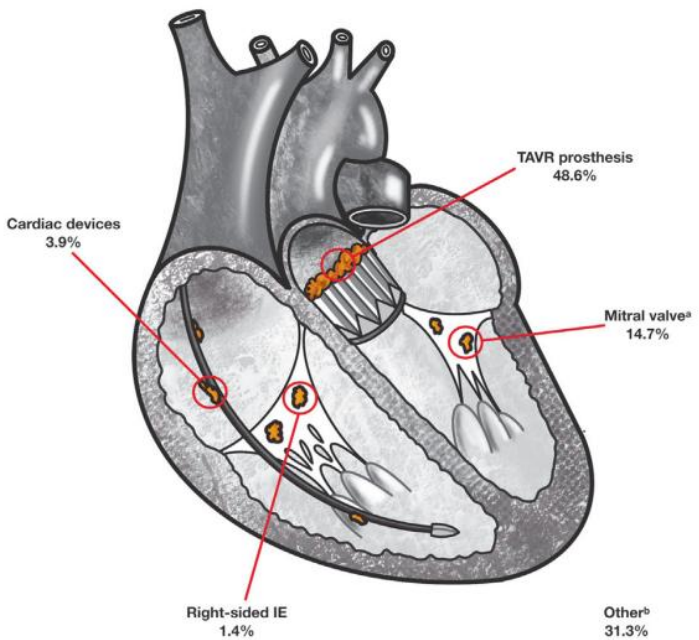
JACC STATE-OF-THE-ART REVIEW

Infective Endocarditis After Transcatheter Aortic Valve Replacement

JACC State-of-the-Art Review

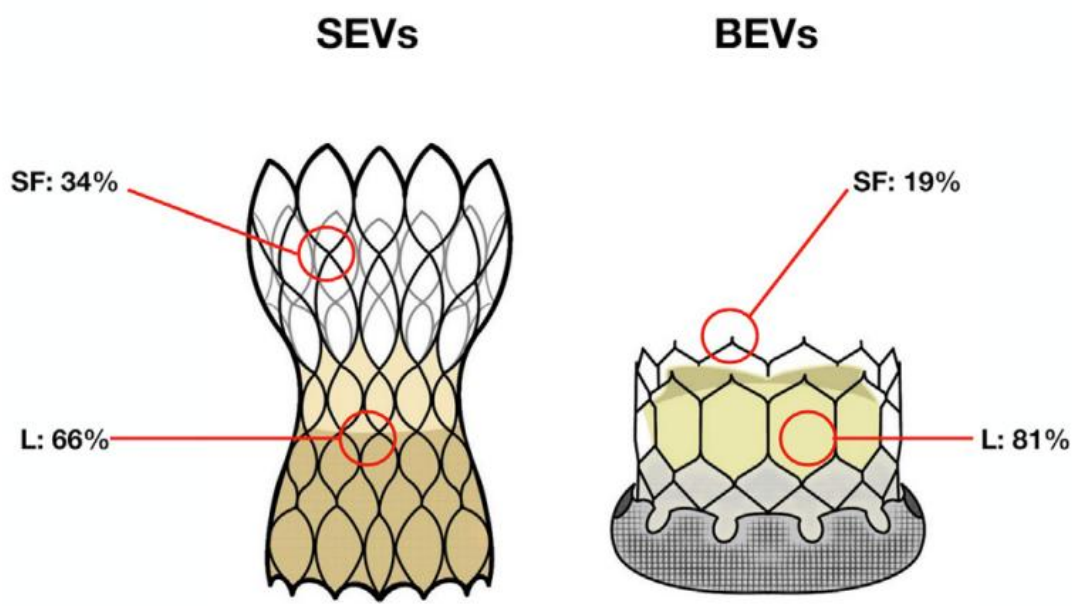
David del Val, MD, PhD,[a,b,c] Vassili Panagides, MD,[c] Carlos A. Mestres, MD, PhD,[d] José M. Miró, MD, PhD,[e,f] Josep Rodés-Cabau, MD, PhD[c,g]

FIGURE 2 Cardiac Structure Involvement in Patients With IE After TAVR



Data from the Infectious Endocarditis after TAVR International Registry. Isolated involvement of the TAVR prosthesis was the most frequent presentation followed by involvement of the mitral valve (native or prosthetic valve), cardiac devices, or right-side IE. Roughly one-third of the patients had IE with at least 2 cardiac structures affected. [a]Native or prosthetic mitral valve. [b]2 localizations at least. Abbreviations as in Figure 1.

FIGURE 3 Location of Vegetations According to Different TAV Designs



Data from the Infectious Endocarditis after TAVR International Registry. BEV = balloon-expandable valve; L = leaflets; SEV = self-expanding valve; SF = stent frame; TAVR = transcatheter aortic valve replacement.

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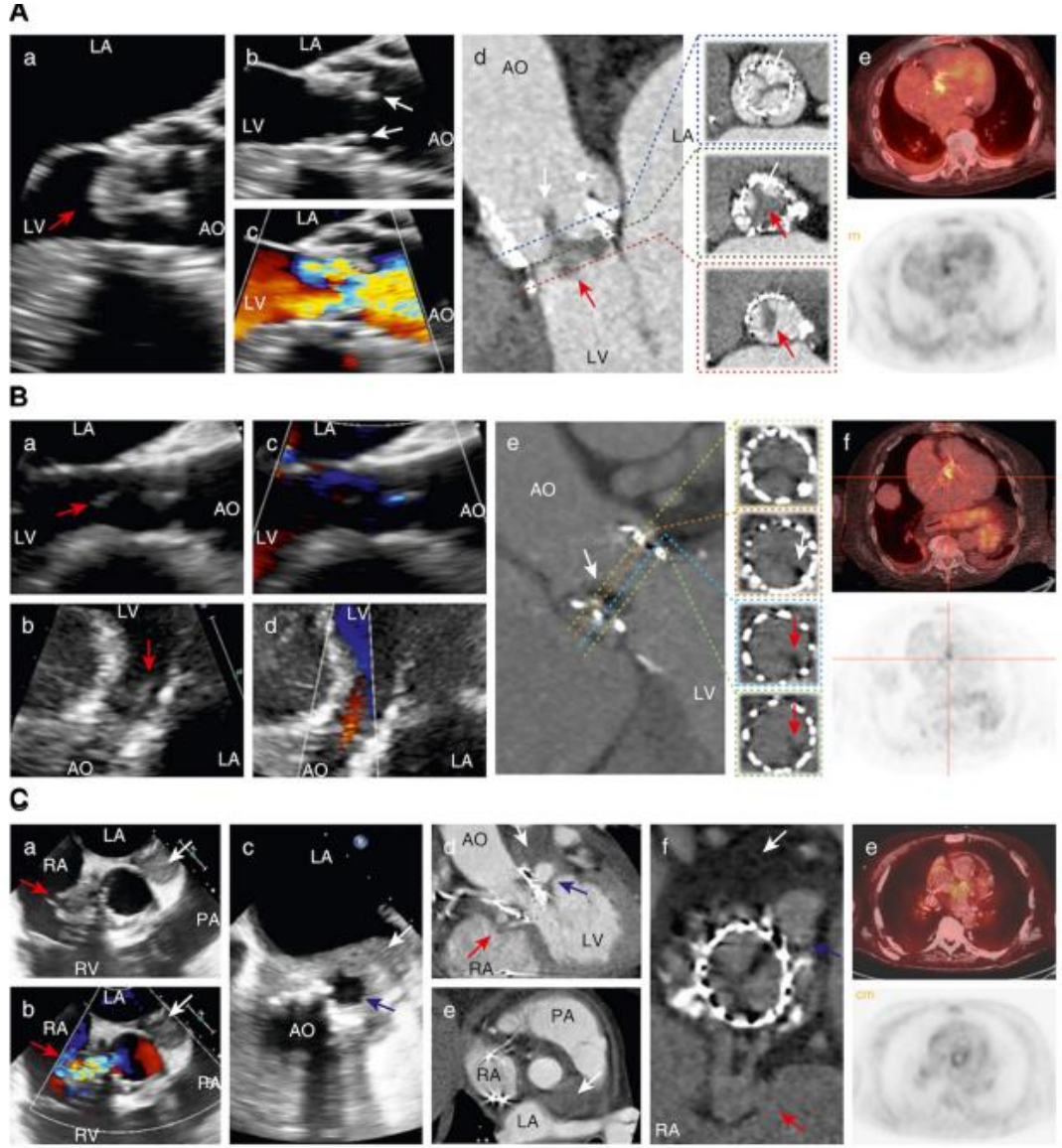

Examples of a multimodality imaging approach in patients with definite IE after TAVR. **(A)** Definite TAVR-IE caused by *S salivarus* 6 months after 26-mm Edwards SAPIEN 3 implantation. Transesophageal echocardiography (TEE) showed a large vegetation **(red arrow in a)** and leaflets thickening **(white arrows in b)** with a high turbulent jet **(c)** and moderate obstruction. Cardiac computed tomography (CT) **(d)** revealed the leaflet thickening at the upper level of the TAVR prosthesis and the vegetation at the lower levels. ^{18}F-fluorodeoxyglucose positron emission tomography (^{18}F-FDG-PET)/CT uptake pattern **(e). (B)** Definite TAVR-IE caused by *S aureus* 17 months after 23-mm Edwards SAPIEN XT implantation. TEE **(a)** and transthoracic echocardiography **(b)** showed a mobile vegetation with only a trivial central regurgitation **(c and d).** Cardiac CT **(e)** confirmed the presence of vegetation **(red arrows)** at the lower levels of the TAVR prosthesis. ^{18}F-FDG-PET/CT uptake pattern **(f). (C)** Definite TAVR-IE caused by *Enterococcus faecalis* months after 26-mm Edwards SAPIEN 3 implantation. TEE revealed an abscess on the external aortic trigon **(white arrows in a to c)** with a pseudo-aneurysm near the stent frame **(blue arrow in c)** and a critical internal aortic periannular lesion with an aorto–right atrial (RA) fistulae **(red arrows in a and b).** Cardiac CT confirmed all the cardiac lesions in **d, e, and f.** ^{18}F-FDG-PET/CT uptake pattern **(g).** Reproduced with permission from Salaun et al.[36] AO = aorta; LA = left atrium; LV = left ventricle; PA = pulmonary artery RV = right ventricle; other abbreviations as in Figure 1.

FAKULTNÍ NEMOCNICE BRNO

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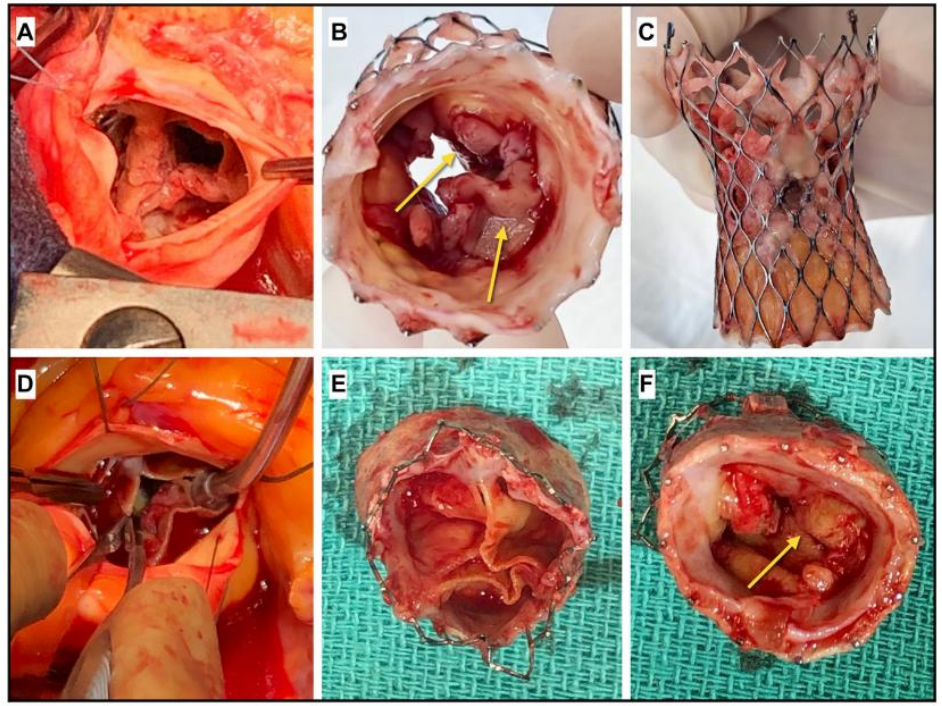
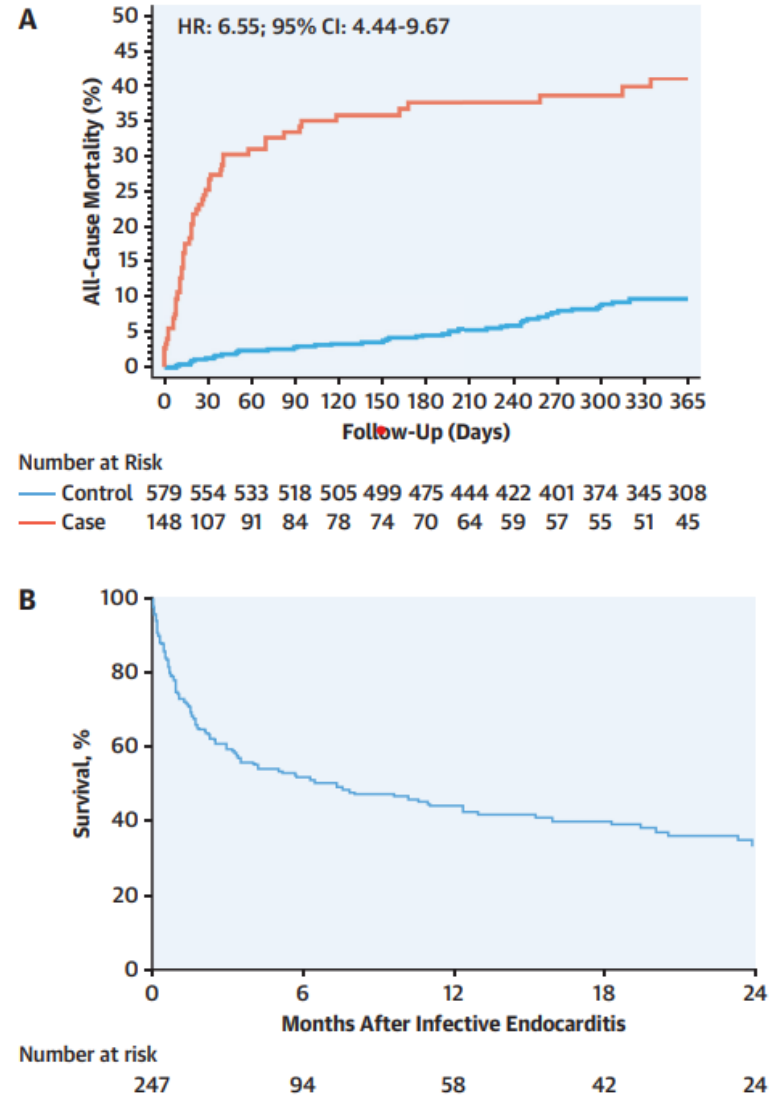
FIGURE 7 IE Involving Transcatheter Aortic Valves



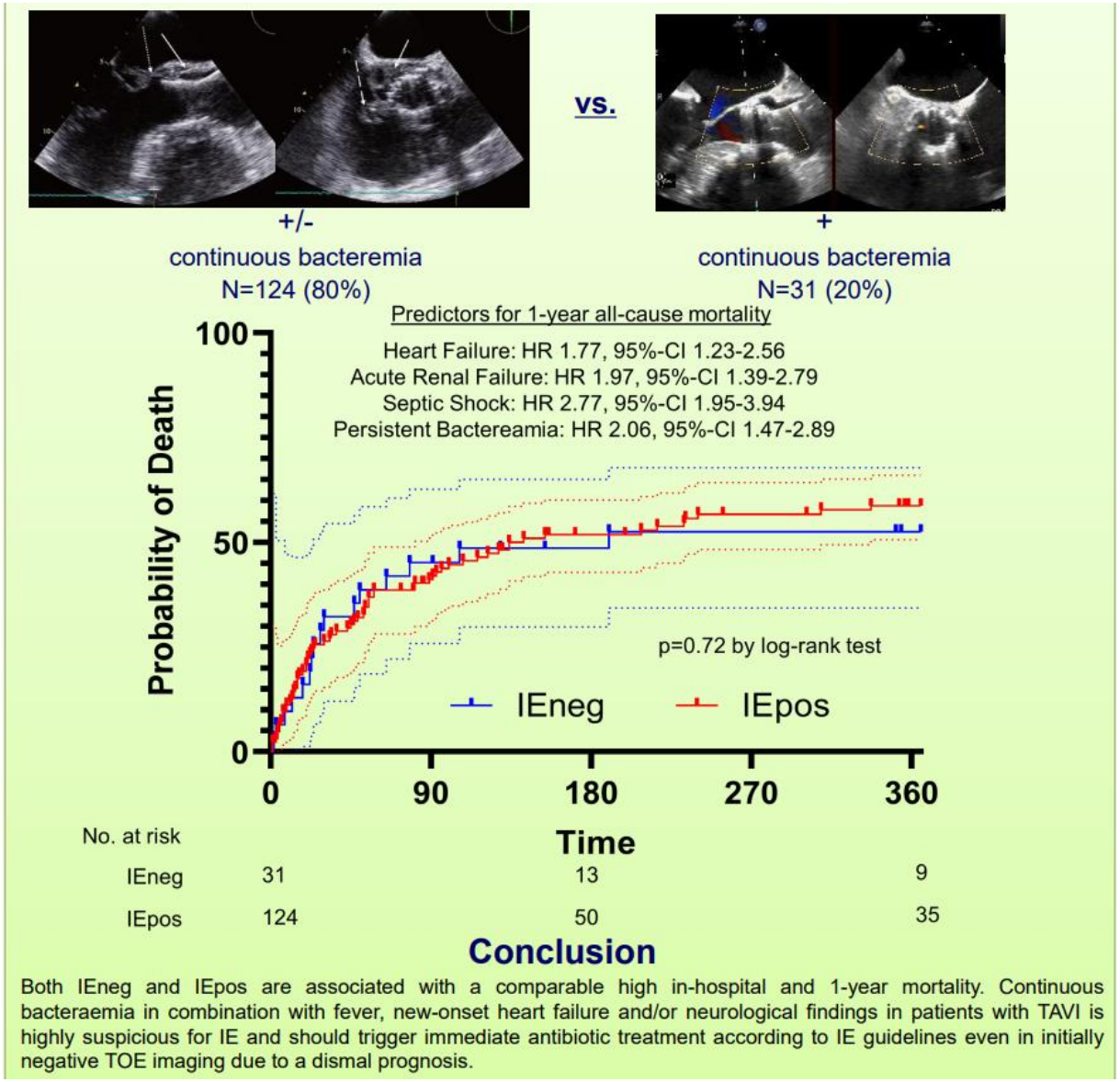
Surgically explanted infected transcatheter aortic valves. **(A to C)** Evolut R 29 mm (Medtronic, Inc) and **(D to F)** SAPIEN 3 23 mm (Edwards Lifesciences) showing IE with vegetations anchored to the valve leaflets **(yellow arrows).** Courtesy of Dr Gamarra and Dr Reyes (Hospital Universitario de La Princesa, Madrid, Spain) and Dr Dumont (Institut Universitaire de Cardiologie et de Pneumologie de Québec, Québec, Canada). Abbreviations as in Figure 1.

FIGURE 6 Outcomes of IE After TAVR



Outcomes of IE after TAVR at 1, 2, and 5 years. **(A)** Kaplan-Meier mortality curve at 1 year follow-up in patients with **(red line)** and without **(blue line)** IE after TAVR. **(B)** Kaplan-Meier survival curve at 2 years follow-up after IE following TAVR. **(C)** Kaplan-Meier survival curve at 5-year follow-up of patients with IE after TAVR who survived the initial IE hospitalization. Reproduced with permission from Stortecky et al,[18] Regueiro et al,[17] and Del Val et al.[46] Abbreviations as in Figure 1.

NEGATIVNÍ (20%) vs POSITIVNÍ TEE u IE po TAVI



Mangner et al.@TCT 2022

frontiers in Cardiovascular Medicine

CASE REPORT
published: 06 January 2022
doi: 10.3389/fcvm.2021.810054

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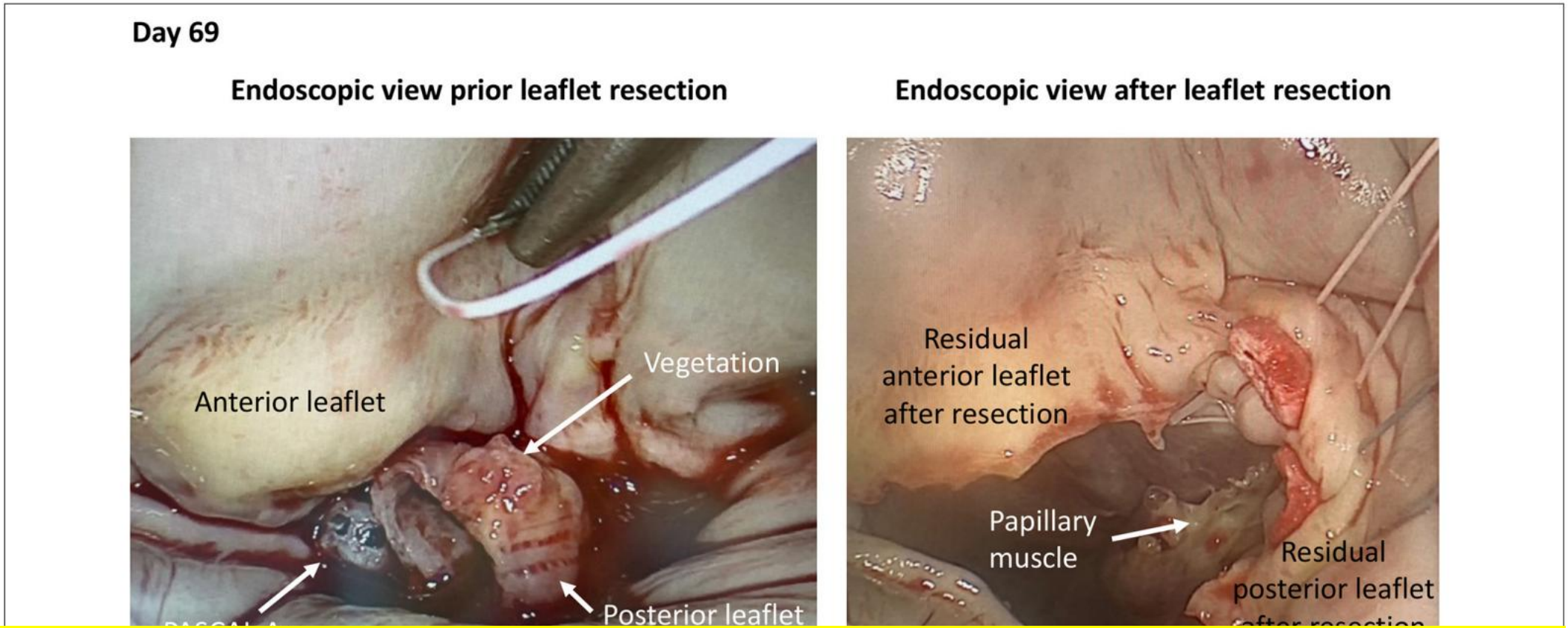


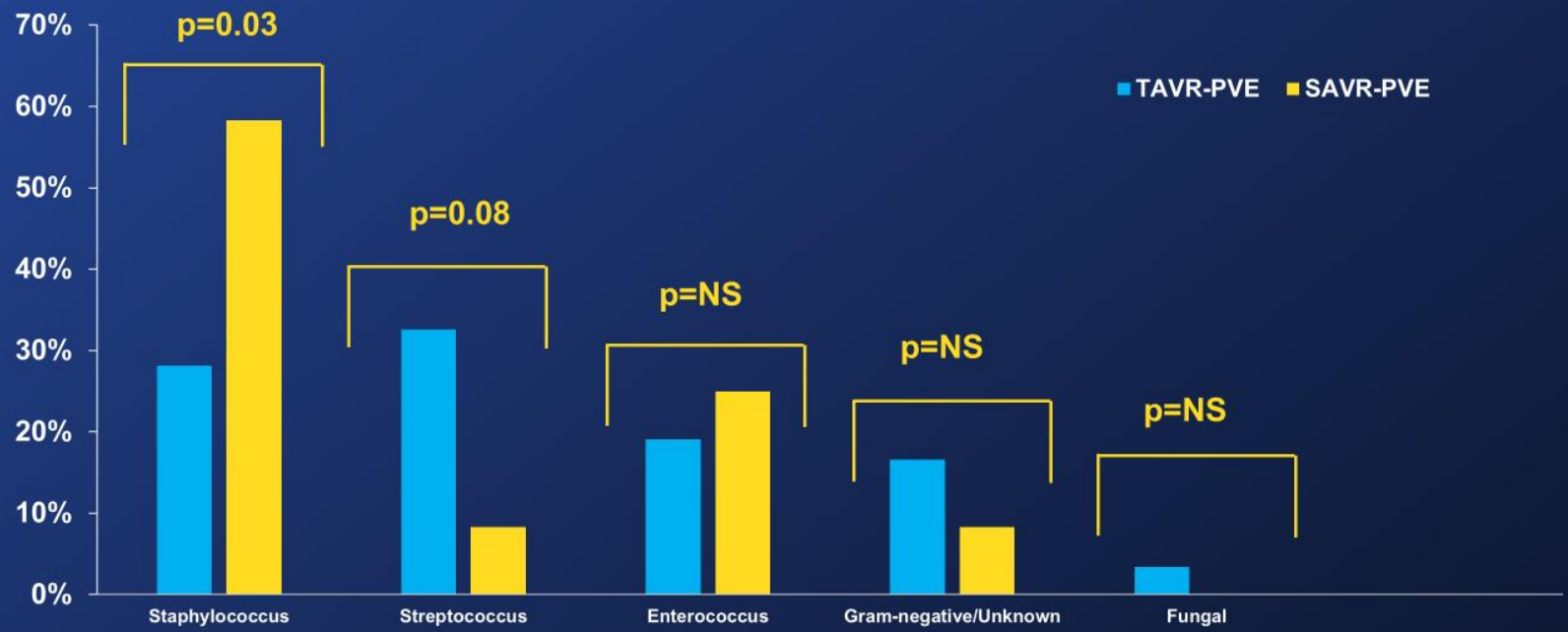
Furthermore, especially when device endothelization is incomplete (up to 3 months), IE prophylaxis seems to be mandatory following TEER. This regime avoids bacteremia and lower the risk of bacterial device colonization.

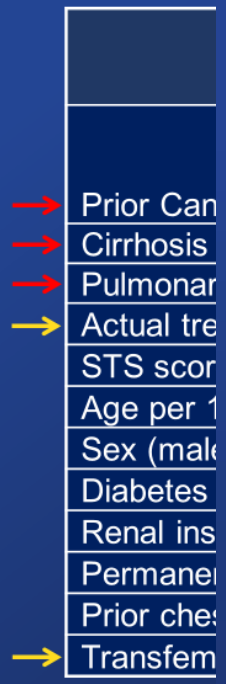
FIGURE 1 | Initial transesophageal echocardiography in recurrent fever and persisting bacteremia. Transes
edge-to-edge repair. Right: Zoom on mitral valve. White arrows indicate an echogenic structure suspicious

FIGURE 2 | Progress of infective endocarditis in transesophageal echocardiography. Transesophageal echocardiography of infective endocarditis at various timepoints during calculated antibiotic therapy. Day 0 = transcatheter mitral valve edge-to-edge repair. White arrows indicate vegetations. Yellow arrows show perforated posterior mitral leaflet and significantly reduced vegetation (Day 36: **Supplementary Videos 3**, **4**; Day 43: **Supplementary Videos 5**, **6**; Day 50: **Supplementary Videos 7**, **8**; Day 57: **Supplementary Videos 9**, **10**).

Analýza studií Partner I,II,S3 reg 8285 pacientů (15% SAVR)

Results
Microbiologic Profile - Organism





* Cumulative

* Multivar

* Hazard Ra

12. Fine JP,

Shrnutí 1
Pohled intervenčního kardiologa na fokusy a profylaxi

- PVE je nejzávažnější formou IE s incidencí 0.3–1.2% ročně a nejvyšším výskytem v průběhu prvního až třetího měsíce (0,36% v UK TAVI národním registru).
- IE po TEER mitrální a nejspíše i trikuspidální chlopně se vyskytuje sporadicky.
- Uzávěry LAA, PFO, ASD jsou z pohledu IE bezpečné.
- ***Počet i spektrum strukturálních intervencí narůstá.***

Shrnutí 2
Pohled intervenčního kardiologa na fokusy a profylaxi

- **Otázky**
  - TAVI/PAVI, TEER, Tendyne, Mi/Tri aj. vzácnější (PVL..) s rizikem IE?
  - Další rizika – minimálně nádor v anamn., jaterní cirhóza, plicní onemocnění?
  - Kombinace?
  - Riziko akutní kardiochirurgické operace?
- **Odpovědi**
  - Ne zcela jasné
  - **Vždy** stomatologické ošetření – rozsah po domluvě se zkušeným týmem v závislosti na individuálním posouzení rizika (ústní hygiena atd).
  - **Vždy** ATB profylaxe.
  - Další fokusy? …opatrný vs reálný pohled….spíše individuálně.

Děkuji za pozornost.