



Fever within 48h after Melody implantation is a risk factor of late infective endocarditis

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Background

- Percutaneous pulmonary valve implantation (PPVI): excellent results
- Problem: Melody valve infective endocarditis (IE)
- Only few studies on IE risk factors (male gender, discontinued antiplatelet therapy)
- Impact of fever following PPVI ?



Objective

The aim of this study was to analyze clinical and biological parameters of inflammation immediately after the Melody valve implantation, and to see if early onset of inflammation can predict the risk of late infective endocarditis (IE)



Methods

- Retrospective & bicentric study (Necker and HEGP)
- Between January 2008 and December 2016
- Datas: Temperature + routine blood sampling



Results

- 198 patients
- 22.8±11.3 years old.
- The median follow-up was 3.3 [1.3-5.3] years.

Table 1. Patient characteristics (total = 198)

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Demographic characteristic	
Sex (M/F)	121 (61%) / 77 (39%)
Initial anatomy	
Tetralogy of Fallot without PA	62 (31.3%)
Tetralogy of Fallot with PA	47 (23.7%)
Ross intervention (aortic stenosis, regurgitation or atresia; HCM)	31 (15.6%)
Common truncus arteriosus	19 (9.6%)
TGA – VSD – Pulmonary valve stenosis	14 (7.1%)
DORV – Fallot type	11 (5.6%)
Absent pulmonary valve	8 (4.1%)
Pulmonary valve stenosis	5 (2.5%)
PA without VSD	1 (0.5%)
RVOT statute before Melody implantation	
Pulmonary valved conduits	74 (37.4%)
Natives (with or without valve)	57 (28.8%)
Homografts	50 (25.2%)
Valveless conduits	17 (8.6%)



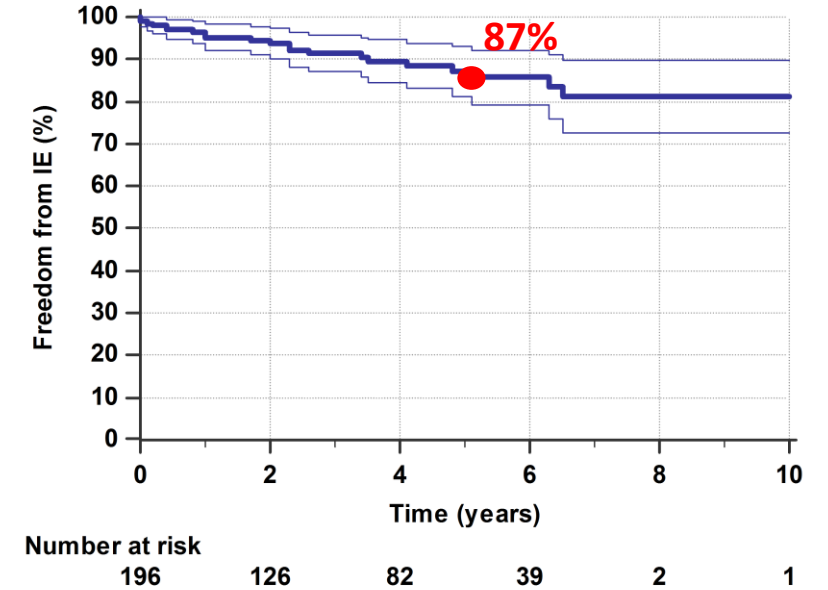
Results – event before discharge

- Fifty-eight patients (29.3%) had fever within 48h after PPVI. None of these patients had positive blood cultures.
- No IE before discharge



Results – IE & Death

- Twenty-one patients (10.6%) had a IE during follow-up.
 - Mean interval between PPVI and IE was 1.8 [0.3-3.5] years.
 - Blood cultures were positive in 17/21 (81%).
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- Seven patients (3.5%) died. All were after the discharge.
 - Mean interval between PPVI and death was 2.1 [0.2-5.2] years.
 - IE (HR=8.34, IC95% [1.9-37.4], p=0.005) was a significant risk factor for death





Results – Risk factors of IE

	Univariate analysis			Multivariate analysis		
	HR	95% IC	p	HR	95% IC	p
Demographic characteristics						
Age	1.0008	0.9622 to 1.0409	0.9692			
Sex (male gender)	7.6896	1.7881 to 33.068	0.0061	7,5435	1,7551 to 32,422	0,0066
Anatomy						
Initial anatomy	1.2012	0.4235 to 2.3476	0.7347			
RVOT statue before Melody implantation	0,9291	0,6397 to 1,3494	0,6994			
PPVI procedure						
Duration	0.9988	0.9519 to 1.0560	0.9733			
Associated procedure	1.5372	0.6902 to 3.4202	0.5619			
Post-dilatation	1.6716	0.7009 to 4.1238	0.2561			
Before discharge						
Fever within 48h	6,0903	2,4517 to 15,129	0,0001	5,9854	2,4125 to 14,849	0,0001
Elevated WBC	0,7757	0,2839 to 2,1198	0,6205			
Elevated CRP	0,9480	0,3978 to 2,2591	0,9041			

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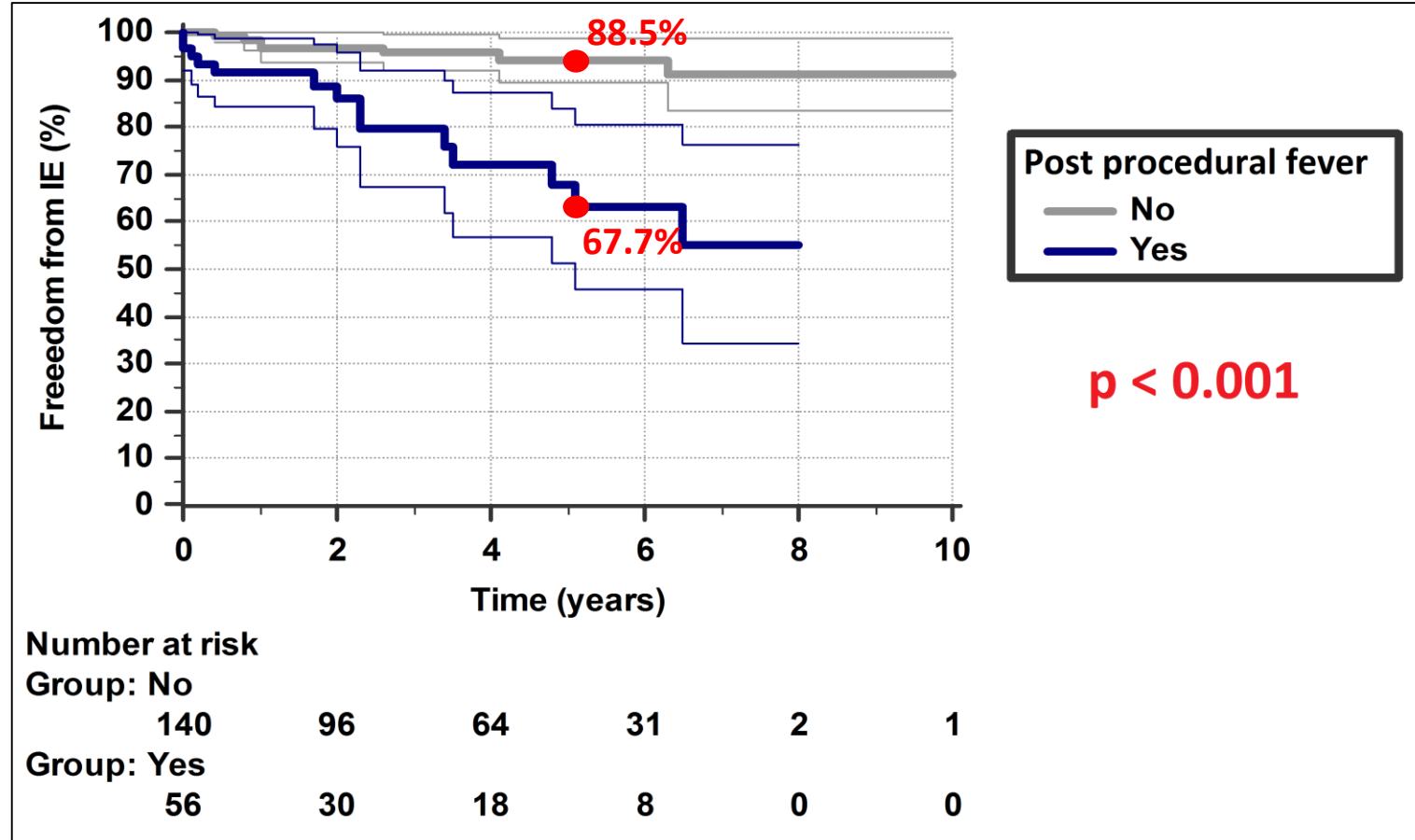
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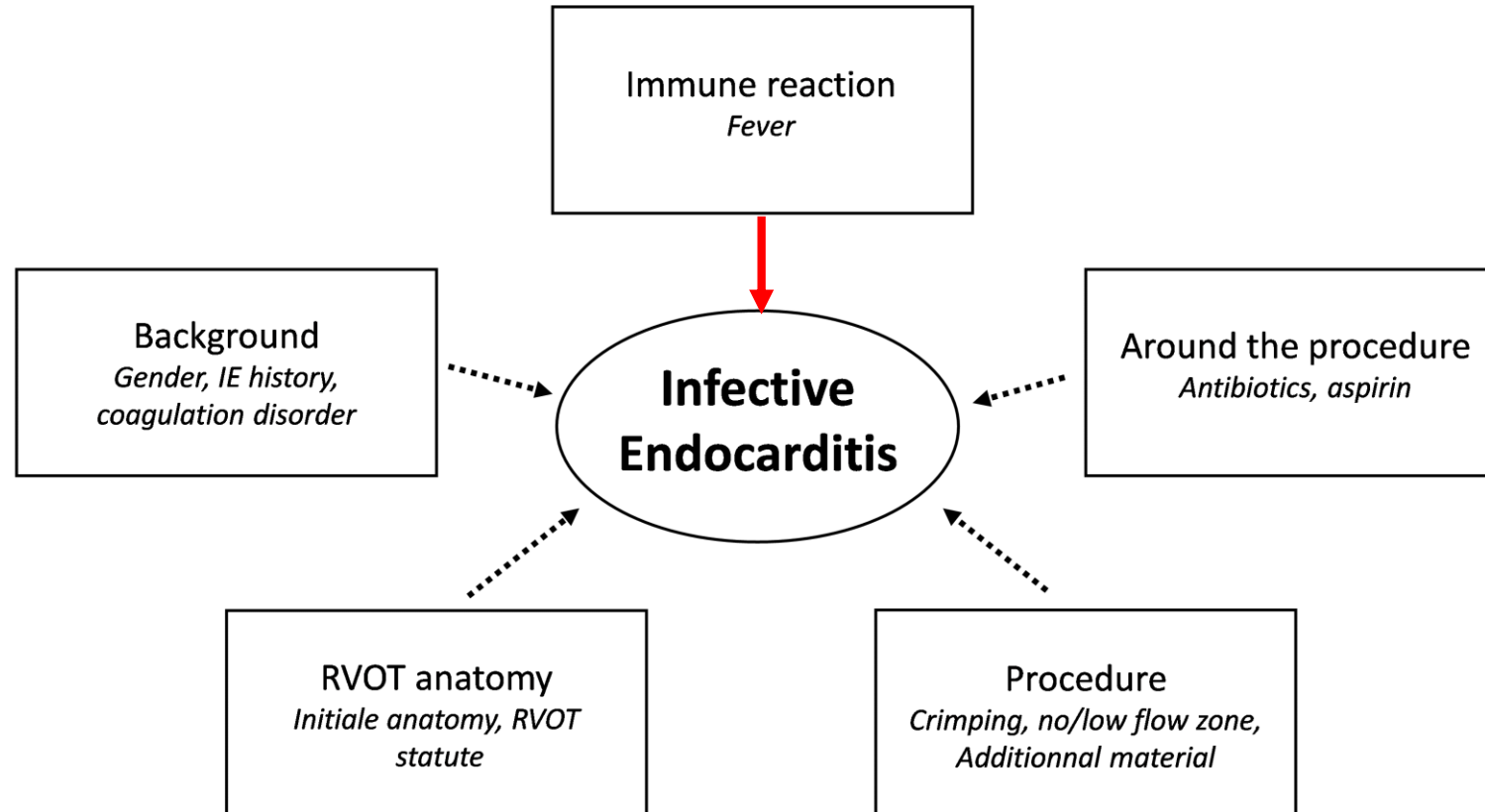
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Discussion



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Conclusion

Importance of fever within 48h after procedure

The results of our study should be considered hypothesis generating.

Perspectives:

- results apply to other transcatheter heart valve types than the Sapien prosthesis?
- need to reconsider probabilistic antibiotic therapy in case of fever before discharge (confirmed by prospective and targeted studies)
- legitimate to envisage a closer follow-up and especially a very specific education of these patients



Thank you for your attention

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