Impact of oral anticoagulation on clinical outcomes and hemodynamic parameters after successful TAVR

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Introduction

- Transcatheter aortic valve replacement (TAVR), is validated therapeutic alternative to patients with symptomatic severe aortic stenosis
- Patients undergoing TAVR remain at high risk of both ischemic and bleeding events after the procedure
- Nonetheless, optimal antithrombotic treatment after transcatheter aortic valve replacement (TAVR) is not yet established

Objective

- We evaluated the impact of oral anticoagulation (OAC) on clinical outcome and valvular hemodynamic deterioration (VHD) within the first year of TAVR

Methods

- All consecutive patients undergoing successful TAVR, in 2 large-volume French centers were prospectively enrolled.
- Clinical endpoint of interest was the composite of death, stroke, hospitalization for heart failure or major/life-threatening (MLT) bleeding within one-year of hospital discharge. Clinical events were defined according to the VARC-2 criteria.
- Echocardiographic follow-up, as performed by local physician, was collected. VHD was defined as mean transprothetic gradient≥20mmHg or an increase ≥10mmHg compared to baseline
- Determinants of clinical endpoint and VHD were assessed using Cox proportional Hazard model and Logistic regression model, respectively. All variables with p-value <0.2 in univariate analysis were considered, including both OAC at discharge and AF

Results

- A total of 1,139 patients were enrolled, including 400 (35.1%) patients discharged with OAC.

Table 1. Baseline characteristics

	Overall (N=1139)	No OAC (n=739)	OAC (n=400)	p-value
Age (years)	82.4 ± 7.7	81.9 ± 8.1	83.2 ± 6.8	0.009
Male sex	594 (52.2%)	381 (51.6%)	213 (53.3%)	0.59
BMI (kg/m²)	26.7 ± 5.4	26.6 ± 5.4	26.8 ± 5.5	0.40
Previous non-CABG surgery	78 (6.8%)	42 (5.7%)	36 (9.0%)	0.03
Coronary artery disease	512 (45%)	347 (47%)	165 (41.3%)	0.065
Peripheral artery disease	309 (27.1%)	201 (27.2%)	108 (27%)	0.94
Chronic pulmonary disease	224 (19.7%)	137 (18.5%)	87 (21.8%)	0.19
Diabetes mellitus	304 (26.7%)	198 (26.8%)	106 (26.5%)	0.92
Systemic hypertension (N=1133)	894 (78.9%)	589 (80.2%)	305 (76.4%)	0.13
Chronic kidney disease	617 (54.2%)	382 (51.7%)	235 (58.8%)	0.02
History of atrial Fibrillation	422 (37.1%)	93 (12.6%)	329 (82.3%)	<0.001
Procedural Characteristics				
Transfemoral approach	939 (82.4%)	602 (81.5%)	337 (84.3%)	0.44
Balloon-expandable device	691 (60.7%)	433 (58.6%)	258 (64.5%)	0.051
Self-expanding device	448 (39.3%)	306 (41.4%)	142 (35.5%)	
Valve-in-Valve procedure Device	54 (4.7%)	35 (4.7%)	19 (4.8%)	0.99
diameter>23mm	903 (79.3%)	584 (79.1%)	319 (79.8%)	0.81
Hospital discharge				
LVEF (%)	55.4 ± 10.5	55.8 ± 10.4	54.5 ± 10.6	0.047
LVEF ≤ 30%	46 (4%)	29 (3.9%)	17 (4.3%)	0.79
Mean gradient (mmHg) Severe	10.6 ± 5.4	10.9 ± 5.6	10 ± 5	0.009
Aortic regurgitation	7 (0.6%)	4 (0.6%)	3 (0.8%)	0.70
Antiplatelet therapy				<0.001
Single antiplatelet therapy	389 (34.2%)	264 (35.7%)	125 (31.3%)	
Dual antiplatelet therapy	488 (42.8%)	464 (62.8%)	24 (6%)	
No antiplatelet therapy	262 (23%)	11 (1.5%)	251 (62.8%)	

- Echocardiogram follow-up was available with 746 (66%) of patients, with 58 (8%) presenting with VHD.

Table 2. Clinical outcomes

	Overall	OAC at discharge	No OAC at discharge	HR (95%CI)	p-value
Primary endpoint	21.5%	29.4%	17.3%	1.83 (1.42-2.35)	**<0.001**
Death	12.9%	18.8%	9.6%	2.07 (1.49-2.87)	**<0.001**
Stroke	1.6%	2.0%	1.4%	1.35 (0.51-3.55)	0.54
Heart failure	9.2%	12.4%	7.5%	1.70 (1.14-2.52)	**0.008**
MLT bleeding	3.7%	5.3%	2.8%	1.9 (1.02-3.5)	**0.041**

Figure 1. Correlates of the composite endpoints

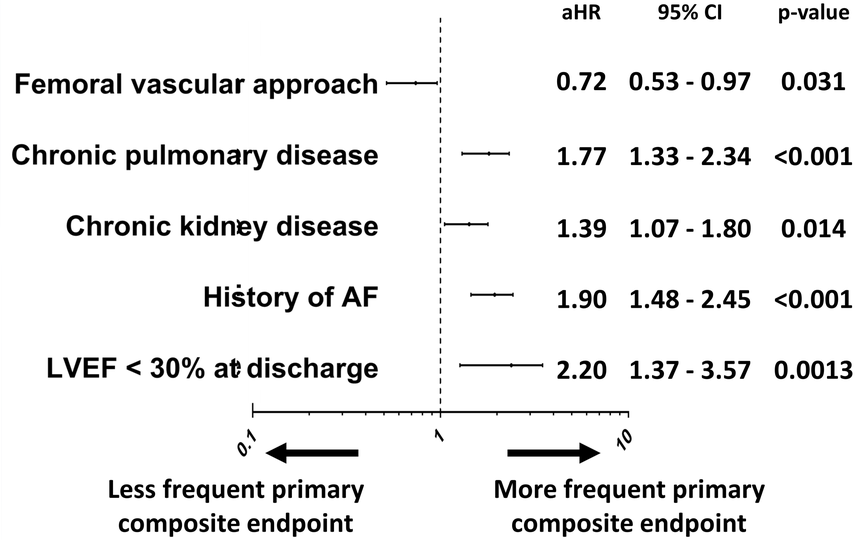
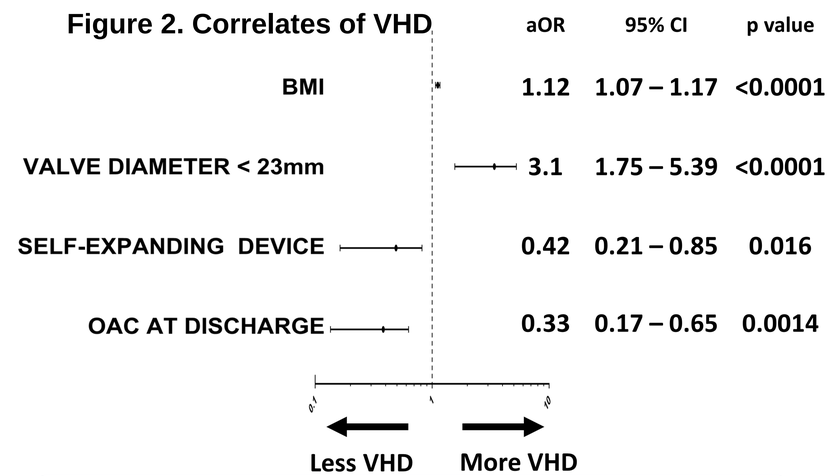


Figure 2. Correlates of VHD



Conclusions

- One-year clinical outcomes were mainly driven by patient baseline characteristics and not OAC prescription
- Occurrence of VHD, however, was driven by procedure-related variable and the prescription of OAC at discharge

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