

Supplementary data

Supplementary Table 1. Procedural data.

Procedural data	N = 149	Annular sizing N = 77	ICD/Combined sizing N = 72	p
THV				0.7
Evolut PRO 23, n (%)	0 (0)	0 (0)	0 (0)	
Evolut PRO 26, n (%)	20 (13.4)	10 (13)	10 (13.9)	
Evolut PRO 29, n (%)	73 (49)	37 (48.1)	36 (50)	
Evolut R XL 34, n (%)	55 (36.9)	29 (37.1)	26 (36.1)	
Other, n (%)	1 (0.7)*	1 (1.3)	0 (0)	
Number of valves used				
1, n (%)	146 (98)	74 (96.1)	72 (100)	0.2
2, n (%)	3 (2)	3 (3.9)	0 (0)	
3, n (%)	0 (0)			
Repositioning, n (%)	45(30.2)	20 (26.3)	25 (34.2)	0.4
Predilatation, n (%)	130 (87.2)	65 (84.4)	65 (90.3)	0.3
- Size of balloon, median (IQR)	23 (22-24)	23 (22-24)	23 (22-24)	0.9
Postdilatation, n (%)	83 (55.7)	43 (55.8)	40 (55.8)	1
- Size of balloon, median (IQR)	25 (23-28)	25 (23-26)	25 (23-28)	0.9
AR index, median (IQR)	30 (24.6-38)**	34.9 (30.3-42)	25.3 (20.8-30.5)	<0.0001
Mean gradient (invasive), mmHg, median (IQR)	4 (0-7)***	5 (2-7)	2 (0-6)	0.1
Procedural mortality, n (%)	1 (0.7)	0 (0)	1 (1.4)	0.5
Correct positioning of single THV, n (%)	146 (98)	74 (96.1)	72 (100)	0.2

IQR:interquartile range ; THV: transcatheter heart valve

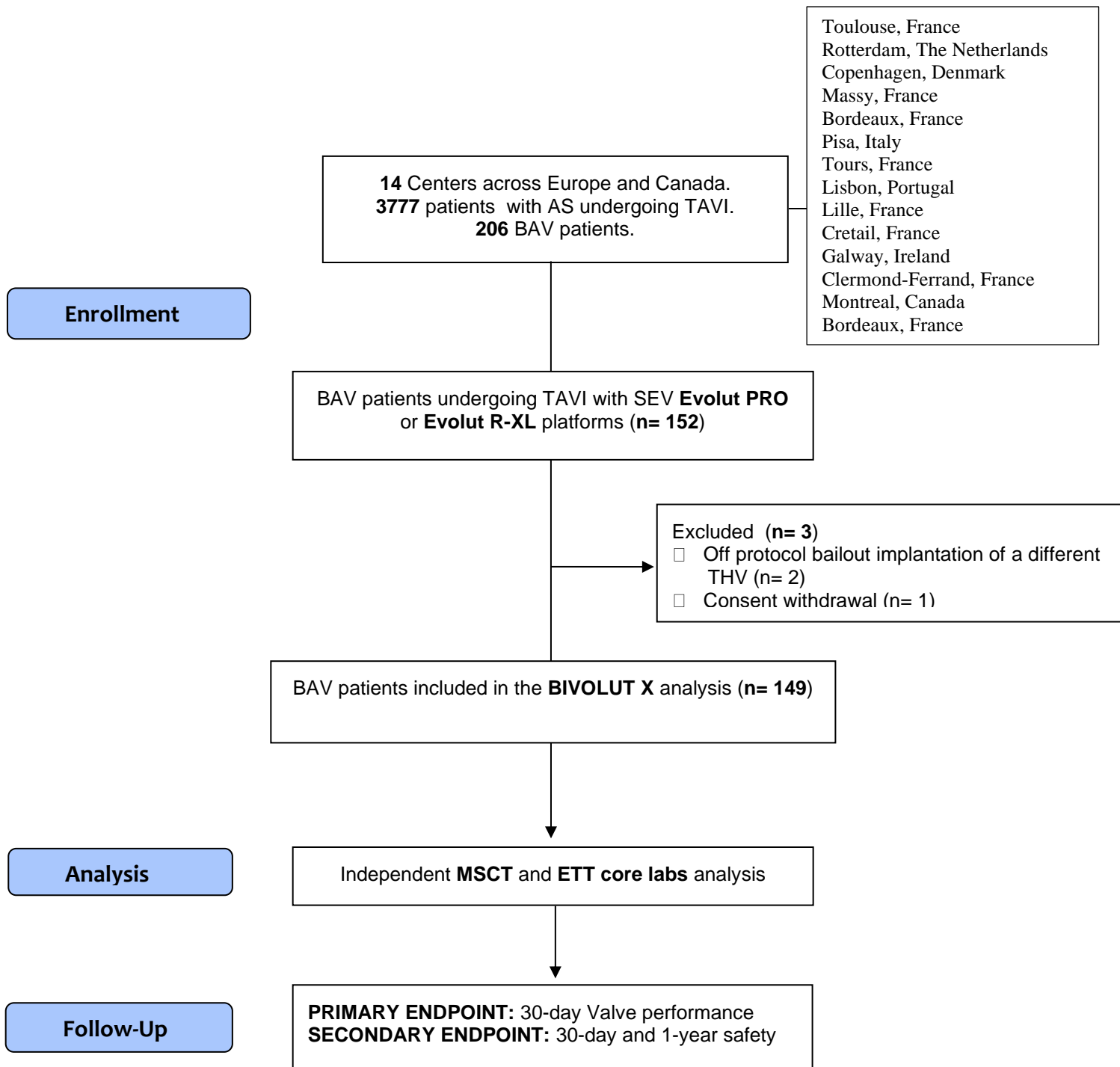
Supplementary Table 2. Thirty-day clinical and echocardiographic follow-up.

Clinical data	N = 149	Annular sizing N = 77	ICD/Combined sizing N = 72	p
Mortality, n (%)	6 (4)	3 (3.9)	3 (4.2)	
- Cardiovascular mortality	4 (2.6)	2 (2.5)	2 (2.7)	-
- Non cardiovascular mortality	2 (1.3)	1 (1.2)	1 (1.3)	-
- Unknown	0(0)	0 (0)	0 (0)	
Myocardial Infarction, n (%)	0 (0)	0 (0)	0 (0)	-
NYHA \geq III, n (%)	4 (2.6)	3 (4.1)	1 (1.4)	-
Neurological events:				
- TIA	1 (0.7)	0 (0)	1 (1.4)	-
- Non-disabling stroke	1 (0.7)	1 (1.3)	0 (0)	
- Disabling stroke	5 (3.4)	3 (3.9)	2 (2.9)	
Acute Kidney Injury, n (%)	3 (2)	3 (3.9)	0 (0)	-
Bleeding, n (%)				
- Minor bleeding	8 (5.4)	3 (3.9)	5 (7)	-
- Major bleeding	7 (4.7)	2 (2.6)	5 (7)	
- Life threatening bleeding	4 (2.7)	3 (3.9)	1 (1.4)	
Vascular Complications, n (%)	13 (8.7)	7 (9.1)	6 (8.3)	
- Major vascular complications	6 (4.0)	3 (3.8)	3 (4.1)	-
- Minor vascular complications	7 (4.6)	4 (5.1)	3 (4.1)	
- Percutaneous closure device failure	0 (0)	0 (0)	0 (0)	
Conduction disturbances and arrhythmias, n (%)	52 (35.1)	30 (39.0)	22 (31)	
Pacemaker Implantation, n (%)	29 (19.5)	13 (16.9)	16 (22.5)	
High degree AV block, n (%)	16 (10.7)	8 (10.3)	8 (11.1)	
Atrial fibrillation, n (%)	0 (0)	0 (0)	0 (0)	
Bradycardia, n (%)	3 (10.7)	2 (2.5)	1 (1.3)	-
LBBB or RBBB + 1 degree AV block, n (%)	8 (5.3)	3 (2.0)	5 (6.9)	
Other, n (%)	2 (1.3)	0 (0)	2 (2.7)	
Coronary obstruction, n (%)	0 (0)	0 (0)	0 (0)	-
Unplanned use of bypass, n (%)	0 (0)	0 (0)	0 (0)	-
Endocarditis, n (%)	1 (0.7)	1 (1.3)	0 (0)	-
Valve thrombosis, n (%)	1 (0.7)	0 (0)	1 (1.4)	-
Valve malpositioning, n (%)	2 (1.3)	2 (2.6)	0 (0)	-
Rehospitalization, n (%)	16 (10.7)	8 (10.4)	8 (11.1)	-
New onset or worsening of heart failure, n (%)	3 (2)	2 (2.6)	1 (1.4)	-
New cardiac intervention, n (%)	2 (1.4)	1 (1.3)	1 (1.4)	-
Early Safety, n (%)	96 (64.4)	52 (67.5)	44 (61.1)	0.3
Device success, n (%)	136 (91.3)	70 (90.9)	66 (91.6)	0.6
TAVI in TAVI	3 (2.0)	3 (3.9)	0 (0)	
Cardiac tamponade	4 (2.7)	3 (3.9)	1 (1.4)	
Conversion to open surgery	2 (1.3)	2 (2.6)	0 (0)	
Procedural mortality	1 (0.7)	0 (0)	1 (1.4)	
Ventricular septal perforation	2 (1.3)	2 (2.6)	0 (0)	
Mitral valve apparatus damage or dysfunction	3 (2.0)	0 (0)	3 (4.2)	

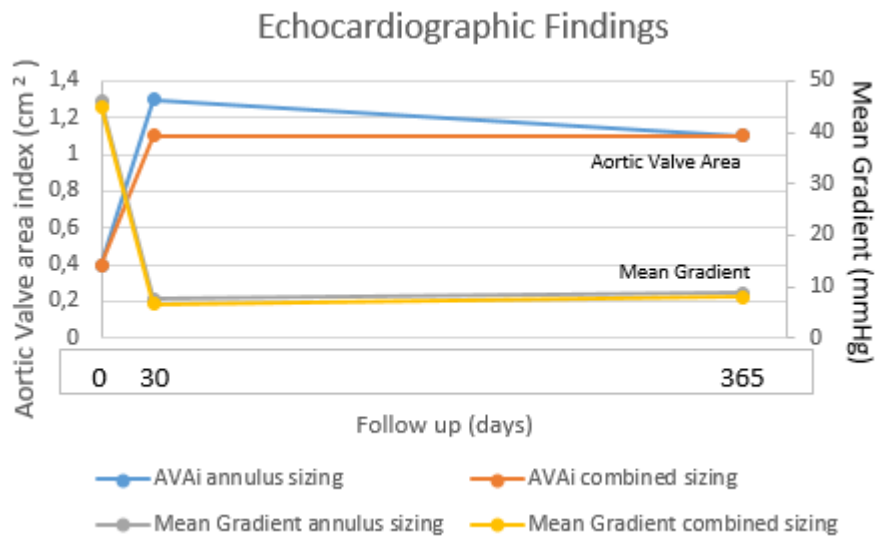
Valve Performance n (%)	142 (97.9)	74 (97.4)	68 (98.6)	1
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Echocardiography data	N = 149	Annular sizing N = 77	ICD/Combined sizing N = 72	p
Septum mm, median (IQR)	11.6 (9-13)	12 (9.9-13.5)	11 (9-13)	0.4
LVEDd mm, median (IQR)	51 (47-56)	51 (47-56)	52 (44.5-55.5)	0.9
LVEF %, median (IQR)	62 (53-65)	63 (52-65)	62 (53-65)	0.5
AVA cm ² , median (IQR)	2.1 (1.8-2.6)	2.2 (1.7-2.8)	2.0 (1.8-2.5)	0.2
AVA index, median (IQR)	1.2 (1-1.5)	1.3 (1-1.6)	1.1 (0.9-1.5)	0.2
Peak aortic velocity (m/s), median (IQR)	1.8 (1.6-2.2)	1.9 (1.6-2.3)	1.8 (1.5-2.1)	0.1
Mean aortic gradient (mmHg), median (IQR)	7.2 (5.4-9.5)	7.7 (5.6-10)	6.7 (5.0-8.6)	0.2
Prosthetic valve regurgitation, n (%)	106 (73.1)	56 (73.7)	50 (72.5)	1
- Trivial	8 (7.5)	6 (10.7)	2 (4.0)	0.2
- Mild	86 (81.1)	46 (82.1)	40 (80.0)	
- Mild-Moderate	9 (8.5)	2 (3.6)	7 (14)	
- Moderate	3 (2.8)	2 (3.6)	1 (2)	
- Moderate-Severe	0 (0)	0 (0)	0 (0)	
- Severe	0 (0)	0 (0)	0 (0)	
Pulmonary hypertension > 60 mmHg, n (%)	2 (1.4)	0 (0)	2 (2.8)	0.3
Prosthesis-patient mismatch, n (%)	13 (9)	5 (6.7)	8 (11.4)	0.4
- PPM BMI ≤ 30				
Moderate 0.85-0.65	9 (6)	3 (3.9)	6 (8.3)	
Severe < 0.65	2 (1.3)	1 (1.3)	1 (1.4)	
- PPM BMI > 30				
Moderate 0.70-0.60	2 (1.3)	1 (1.3)	1 (1.4)	
Severe < 0.60	0 (0)	0(0)	0(0)	
Doppler velocity index, median (IQR)	0.6 (0.5-0.6)	0.6 (0.5-0.6)	0.5 (0.5-0.6)	0.2

AVA: aortic valve area; BMI: body mass index; IQR:I interquartile range; LBBB: left bundle branch block; LVEDD: left ventricular end-diastolic diameter; LVEF: left ventricular ejection fraction; PM: pace-maker; PPM: patient prosthesis mismatch; SD: standard deviation; RBBB: right bundle branch block; TAVI: transcatheter aortic valve implantation.



Supplementary Figure 1. Study flow diagram.



Supplementary Figure 2. Echocardiographic findings.

Aortic valve area index (AVA index) and aortic valve Mean Gradient (MG), over time in the transcatheter aortic valve replacement with annular sizing (blue and grey lines, respectively) and combined sizing (orange and yellow lines, respectively) groups. TAVR was associated with large AVA index and low MG with both sizing groups.