Figure S1 Study flow chat. AS, aortic stenosis; TAVR, transcatheter aortic valve replacement; MS, mitral stenosis.

Table S1 Baseline characteristics in subjects with different levels of LAVi

Category of LAVi	<34 mL/m² (n=96)	34–48 mL/m² (n=108)	>48 mL/m² (n=296)	P value
Age (years)	75 (69, 78)	74 (70, 78)	74 (70, 79)	0.782
Female sex	39 (40.6)	44 (40.7)	139 (47.0)	0.382
Body mass index (kg/m²)	21.9 (20.1, 24.4)	22.8 (20.5, 24.3)	22.3 (20.2, 24.9)	0.571
Comorbidities				
Hypertension	37 (38.5)	49 (45.4)	132 (44.6)	0.534
Diabetes	16 (16.7)	14 (13.0)	68 (23.0)	0.058
COPD	49 (51.0)	51 (47.2)	152 (51.4)	0.756
Coronary artery disease	36 (37.5)	36 (33.3)	114 (38.5)	0.633
Chronic kidney disease	2 (2.1)	7 (6.5)	36 (12.2)	0.007
Atrial fibrillation	15 (15.6)	10 (9.3)	60 (20.3)	0.031
Pacemaker (after TAVR)	20 (20.8)	34 (31.5)	57 (19.3)	0.033
STS score	5.82 (3.86, 8.44)	5.39 (2.95, 8.04)	6.80 (4.32, 9.33)	0.009
NYHA functional class				
II	9 (9.4)	21 (19.4)	35 (11.8)	0.066
III	56 (58.3)	49 (45.4)	132 (44.6)	0.057
IV	31 (32.3)	38 (35.2)	129 (43.6)	0.083
Degenerative aortic valve changes	87 (90.6)	99 (91.7)	273 (92.2)	0.882
Bicuspid aortic valve	55 (57.3)	65 (60.2)	138 (46.6)	0.025
IVS (mm)	14.0 (12.0, 14.4)	14.0 (13.0, 16.0)	14.0 (12.0, 15.0)	0.057
LVPW (mm)	12.0 (11.0, 12.0)	12.0 (11.0, 13.0)	12.0 (11.0, 13.0)	0.070
LVDd (mm)	46.0 (42.3, 50.0)	49.0 (44.3, 56.5)	54.0 (47.0, 60.0)	<0.001
LVEDV (mL/m²)	89.0 (72.5, 116.0)	104.5 (84.2, 142.0)	134.5 (95.0, 172.1)	<0.001
LVESV (mL/m²)	31.4 (26.6, 47.1)	42.1 (28.7, 74.8)	66.2 (40.8, 109.1)	<0.001
LVEF (%)	62.3 (55.1, 67.0)	60.0 (47.4, 65.6)	50.0 (34.9, 60.0)	<0.001
LVGLS (%)	−16.4 (−18.6, −13.9)	−15.4 (−18.7, −12.2)	−12.6 (−15.7, −8.8)	<0.001
Septal E/e'	15.0 (12.0, 20.0)	16.7 (14.0, 20.0)	23.3 (17.5, 29.1)	<0.001
Moderate-severe mitral regurgitation	10 (10.4)	9 (8.3)	65 (22.0)	0.001
Moderate-severe aortic regurgitation	15 (15.6)	20 (18.5)	89 (30.1)	0.004
Maximum aortic velocity (m/s)	4.7 (4.3, 5.2)	5.0 (4.6, 5.6)	4.9 (4.4, 5.5)	0.009
Mean transaortic pressure gradient (mmHg)	53.5 (44.3, 66.0)	62.0 (51.0, 81.8)	59.0 (47.0, 74.8)	0.004
Effective orifice area (cm²)	0.62 (0.50, 0.76)	0.60 (0.45, 0.76)	0.55 (0.44, 0.71)	0.027
Laboratory data				
NT-proBNP (pg/mL)	731 (321, 2,388)	1586 (587.5, 4,630)	4,045 (1,752, 10,014)	<0.001
Ablumin (g/L)	41.6 (39.5, 44.0)	41.8 (39.0, 44.1)	41.0 (38.2, 43.7)	0.133
Globulin (g/L)	26.3 (24.2, 30.1)	26.1 (23.6, 29.5)	26.7 (23.8, 29.9)	0.697
A/G ratio	1.61 (1.34, 1.78)	1.57 (1.40, 1.78)	1.53 (1.34, 1.74)	0.220
Triglycerides (mmol/L)	1.18 (0.92, 1.67)	1.19 (0.80, 1.77)	1.09 (0.87, 1.61)	0.671
Total cholesterol (mmol/L)	4.20 (3.45, 4.92)	4.17 (3.57, 4.68)	3.99 (3.18, 4.72)	0.209
HDL-c (mmol/L)	1.39 (1.08, 1.64)	1.35 (1.03, 1.63)	1.21 (1.01, 1.51)	0.010
LDL-c (mmol/L)	2.31 (1.60, 2.95)	2.23 (1.72, 2.64)	2.16 (1.68, 2.85)	0.640
CK (U/L)	67.5 (51.3, 98.0)	73.0 (47.0, 95.5)	70.0 (54.0, 95.0)	0.842
Hemoglobin (g/L)	130.0 (121.0, 140.5)	129.0 (115.5, 139.0)	128.0 (113.0, 141.0)	0.707

Data are expressed as median (first quartile and third quartile) or number (percentage). LAVi, left atrial volume index; COPD, chronic obstructive pulmonary disease; TAVR, transcatheter aortic valve replacement; STS, Society of Thoracic Surgeons; NYHA, New York Heart Association; IVS, interventricular septum; LVPW, left ventricular posterior wall; LVDd, diameter of left ventricular end-diastolic; LVEDV, left ventricular end-diastolic volume; LVESV, left ventricular end-systolic volume; LVEF, left ventricular ejection fraction; LVGLS, left ventricular global longitudinal strain; E/e', the early diastolic (E) wave peak velocity/the early diastolic (e') tissue velocity; NT-proBNP, N-terminal pro-brain natriuretic peptide; A/G ratio, ablumin/globulin ratio; HDL-c, high-density lipoprotein cholesterol; LDL-c, low-density lipoprotein cholesterol; CK, creatine kinase.

Table S2 Cox regression analysis for the prediction of the mortality after TAVR

	Continuous	Category of LAVi		
		<34 mL/m²	34–48 mL/m²	>48 mL/m²
No. of non-survivors	64	6	10	48
No. of survivors	436	90	98	248
Model				
1: matched for age, sex and body mass index	1.022 (1.014–1.030)	Reference	1.592 (0.578–4.381)	2.900 (1.240–6.781)
2: same as model 1 plus adjustment for comorbidities[a]	1.022 (1.014–1.030)	Reference	1.510 (0.548–4.162)	2.586 (1.096–6.100)
3: same as model 2 plus adjustment for NYHA and STS score	1.026 (1.016–1.036)	Reference	2.047 (0.630–6.647)	3.450 (1.235–9.641)
4: same as model 3 plus adjustment for laboratory data[b]	1.023 (1.013–1.033)	Reference	3.021 (0.609–14.976)	4.992 (1.187–21.002)
5: same as model 4 plus adjustment for IVS, LVPW, LVEF, LVGLS, Septal E/e'	1.022 (1.012–1.033)	Reference	3.054 (0.616–15.143)	4.890 (1.160–20.607)
6: same as model 5 plus adjustment for effective orifice area, maximum aortic velocity, mean transaortic pressure gradient	1.023 (1.013–1.033)	Reference	3.053 (0.616–15.135)	4.796 (1.137–20.238)

Data are expressed as hazard ratio (95% confidence interval). [a], include hypertension, diabetes, COPD, coronary artery disease, atrial fibrillation and chronic kidney disease; [b], include NT-proBNP, albumin, globulin, triglycerides, total cholesterol, HDL-c, LDL-c, CK, and hemoglobin. TAVR, transcatheter aortic valve replacement; LAVi, left atrial volume index; NYHA, New York Heart Association; STS, Society of Thoracic Surgeons; IVS, interventricular septum; LVPW, left ventricular posterior wall; LVEF, left ventricular ejection fraction; LVGLS, left ventricular global longitudinal strain; E/e', the early diastolic (E) wave peak velocity/the early diastolic (e') tissue velocity; COPD, chronic obstructive pulmonary disease; NT-proBNP, N-terminal pro-brain natriuretic peptide; HDL-c, high-density lipoprotein cholesterol; LDL-c, low-density lipoprotein cholesterol; CK, creatine kinase.