

Table 1 Clinical characteristics

	Total (n=30)
Age, years	62.8±7.7
Male gender, n (%)	15 (50)
Body surface area, m²	1.58±0.21
Atrial fibrillation, (%)	5 (17)
Symptoms	
Angina, n (%)	5 (17)
Syncope, n (%)	1 (3)
Heart failure, n (%)	20 (67)
Hypertension, n (%)	21 (70)
Dyslipidemia, n (%)	13 (43)
Diabetes mellitus, n (%)	10 (33)
Smoking, n (%)	10 (33)
Hemodialysis, n (%)	11 (37)
Coronary artery disease, n (%)	9 (30)

Table 2 Pre- and Post-operative (1 month and 12 months) echocardiographic findings

	Pre-AVR (n=30)	Post-AVR (1 month) (n=28)	Post-AVR (12 months) (n=19)	p value
LVDd, cm	5.03±0.61	4.61 [‡] _{0.78*}	4.72±0.66 [#]	0.003
LVDs, cm	3.16±0.78	3.32 [‡] _{0.74}	3.12±1.03	0.805
IVS, cm	1.23±0.26	1.27 [‡] _{0.25†}	1.03±0.23 [#]	<0.001
PW, cm	1.19±0.24	1.23 [‡] _{0.20†}	1.00±0.17 [#]	<0.001
LVM, g	245.1±84.3	222.7 [‡] _{71.2*}	173.4±62.6 [#]	<0.001
LVM index, g / m ²	155.9±46.3	149.1 [‡] _{50.8†}	109.4±31.8 [#]	<0.001
Absolute LVM regression, g	—	-30.7 [‡] _{44.8}	-76.8±37.9	<0.001
LVM regression rate, %	—	-7.2 [‡] _{21.8}	-30.0±9.26	<0.001
Sinotubular junction, cm	2.60 [‡] _{0.37}	2.62 [‡] _{0.42}	2.54 [‡] _{0.40}	0.558
Aortic cross sectional area, cm	5.43 [‡] _{1.59}	5.52 [‡] _{1.84}	5.19 [‡] _{1.70}	0.558
LVEF, %	58.8±13.0	55.4 [‡] _{11.1}	56.5±10.8	0.814

LVDd: left ventricular diastolic diameter, LVDs: left ventricular systolic diameter

IVS: interventricular septal thickness , PW: posterior wall thickness,

LVM; left ventricular mass, LVEF: left ventricular ejection fraction

*Post-AVR(1 month) versus pre-AVR P value <0.05

[#]Post-AVR(12 month) versus pre-AVR P value <0.05

†Post-AVR(1 month) versus Post-AVR(12 month) P value <0.05

Table 3 Change of severity of AS

	Pre-AVR (n=30)	Post-AVR (12 months) (n=19)	p value
Peak aortic velocity, m / s	4.55±0.73	2.83±0.59	<0.001
Mean pressure gradient, mmHg	47.1±16.0	14.5±5.28	<0.001
EOA, cm ²	0.71±0.18	1.42±0.34	<0.001
EOAI, cm ² / m ²	0.46±0.18	0.91±0.19	<0.001
ELCo, cm ²	0.83±0.24	1.97±0.58	<0.001
ELI, cm ² / m ²	0.53±0.15	1.26±0.34	<0.001
ΔEOAI, cm ² / m ²	–	0.41±0.21	–
ΔELI, cm ² / m ²	–	0.74±0.37	–

EOA: effective orifice area, EOAI: effective orifice area index

ELCo: energy loss coefficient, ELI: energy loss index

Table 4 Clinical characteristics were compared between patients with smaller and larger LVM regression rate

	Smaller LVM regression group (n=10)	Larger LVM regression group (n=9)	p value
Age, years	63.8±8.0	61.3±5.4	0.437
Gender, male, n (%)	6 (60)	4 (44)	0.656
Body surface area, m²	1.58±0.14	1.55±0.25	0.765
Atrial fibrillation, (%)	3 (30)	0 (0)	0.211
Angina, n (%)	3 (30)	1 (11)	0.333
Syncope, n (%)	0 (0)	0 (0)	-
Heart failure, n (%)	7 (70)	5 (56)	0.650
Hypertension, n (%)	6 (60)	7 (78)	0.628
Dyslipidemia, n (%)	2 (20)	5 (56)	0.170
Diabetes mellitus, n (%)	2 (20)	3 (33)	0.628
Smoking, n (%)	4 (40)	5 (56)	1.000
Hemodialysis, n (%)	4 (40)	5 (56)	0.656
Coronary artery disease, n (%)	2 (20)	3 (33)	0.628

Table 5 Echocardiographic indices were compared between patients with smaller and larger LVM regression rate

	Pre-AVR			Post-AVR(12 months)		
	Smaller LVM	Larger LVM	P value	Smaller LVM	Larger LVM	P value
	regression group (n=10)	regression group (n=9)		regression group (n=10)	regression group (n=9)	
LVDd, cm	5.16±0.46	5.23±0.79	0.828	4.931±0.59	4.48±0.69*	0.151
LVDs, cm	3.35±1.01	3.17±0.70	0.667	3.37±1.21	2.85±0.76	0.282
IVS, cm	1.17±0.27	1.23±0.16	0.588	1.01±0.26*	1.05±0.21*	0.746
PW, cm	1.13±0.31	1.21±0.15	0.468	0.99±0.21*	1.05±0.10*	0.754
LVM, g	243.9±96.6	262.8±82.1	0.578	183.1±71.5*	162.6±71.5*	0.492
LVM Index, g / m ²	150.0.7±52.9	166.7±33.2	0.428	115.0±39.7*	103.1±20.4*	0.431
Absolute LVM regression, g	-	-	-	-56.0±27.9	-99.9±34.8	0.007
LVM relative regression, %	-	-	-	-23.0±5.04	-37.7±5.96	<0.001
Sinotubular junction, cm	2.53±0.30	2.75±0.46	0.214	2.42±0.37	2.64±0.42	0.393
Aortic cross sectional area, cm	5.07±1.22	6.09±2.05	0.216	4.68±1.47	5.58±1.86	0.347
LVEF, %	53.0±16.9	62.1±9.1	0.316	54.8±16.9	61.3±8.34	0.472
Peak aortic velocity, m / s	4.45±0.55	4.60±0.83	0.637	3.09±0.45*	2.53±0.60*	0.033
Mean pressure gradient, mmHg	45.8±16.8	47.8±15.7	0.829	21.8±7.35*	13.1±6.02*	0.021
EOA, cm ²	0.69±0.09	0.70±0.16	0.921	1.29±0.34*	1.60±0.30*	0.049
EOAI, cm ² / m ²	0.44±0.06	0.46±0.11	0.680	0.80±0.18*	1.03±0.11*	0.004
PPM, n (%)	-	-	-	6 (60)	0 (0)	0.011
ELCo, cm ²	0.81±0.12	0.80±0.18	0.861	1.73±0.58*	2.24±0.46*	0.049
ELI, cm ² / m ²	0.51±0.07	0.52±0.14	0.841	1.09±0.34*	1.45±0.24*	0.019
ΔEOAI, cm ² / m ²	-	-	-	0.31±0.20	0.52±0.16	0.026
ΔELI, cm ² / m ²	-	-	-	0.58±0.35	0.93±0.30	0.036

LVDd: left ventricular diastolic diameter, LVDs: left ventricular systolic diameter

IVS: interventricular septal thickness, PW: posterior wall thickness, LVM; left ventricular mass

LVEF: left ventricular ejection fraction, EOA: effective orifice area

EOAI: effective orifice area index,

PPM: prosthesis-patient mismatch (defined as EOAI < 0.85 cm² / m²)

ELCo: energy loss coefficient, ELI: energy loss index

*Post-AVR versus pre-AVR P value <0.05