SUPPLEMENTAL MATERIAL

TABLE S1. PATIENTS GROUPS ACCORDING TO AORTIC VALVE CHARACTERISTICS

		Aortic valve area index (cm^2/m^2)				
	Controls	**>0.52**	**0.46-0.52**	**0.36-0.45**	**<0.36**	**p**
MEE, %	21.0 ± 1.6	20.7 ± 3.6	21.7 ± 3.4	22.4 ± 3.6	21.1 ± 5.3	0.76
MVO2, mL/min/g	0.105 ± 0.020	0.122 ± 0.028	0.106 ± 0.021	0.119 ± 0.026	0.122 ± 0.030	0.26
GLS, %	-19 ± 2	-19 ± 3	-16 ± 2	-17 ± 3	-13 ± 4	<0.001
NT-proBNP, ng/L	31 (23-74)	88 (34-2111)	149 (50-1343)	256 (53-2026)	1030 (46-12677)	<0.001
		Mean gradient (mmHg)				
	Controls	**<24.6**	**24.6-33.2**	**33.3-47.6**	**>47.6**	**p**
MEE, %	21.0 ± 1.6	20.2 ± 3.3	22.1 ± 3.6	23.0 ± 4.2	20.5 ± 4.7	0.23
MVO2, mL/min/g	0.105 ± 0.020	0.114 ± 0.027	0.118 ± 0.029	0.114 ± 0.021	0.125 ± 0.030	0.42
GLS, %	-19 ± 2	-17 ± 3	-18 ± 3	-15 ± 3	-13 ± 3	<0.001
NT-proBNP, ng/L	31 (23-74)	74 (38-2111)	149 (34-401)	300 (46-1243)	1169 (112-12677)	<0.001

Patients with aortic valve stenosis (n=58) were subdivided into 4 groups according to interquartile range of aortic valve area index and mean gradient, respectively. Values are mean ± SD. N-terminal pro-B-type natriuretic peptide (NT-proBNP) is presented as median (interquartile range). Global longitudinal strain (GLS). Myocardial external efficiency (MEE). Myocardial oxygen consumption (MVO_2).

TABLE S2. PARADOXICAL LOW FLOW, LOW GRADIENT VS. NORMAL FLOW AS

	NFHG (n=14)	**NFLG (n=21)**	**P-LFLG (n=8)**	**p**
MEE, %	22.9 ± 3.4	23.3 ± 3.4	19.3 ± 1.7*†	0.01
EW, mmHg x mL/min x 10^3	884 ± 213	661 ± 165	442 ± 815*†	<0.001
Total MVO_2, mL/min	26.1 ± 6.8	19.3 ± 5.8	15.3 ± 2.9*	<0.001
MVO_2, mL/min/g	0.124 ± 0.029	0.116 ± 0.025	0.104 ± 0.016	0.19
NYHA class I/II/III/IV, n	7/6/1/0	20/1/0/0	7/0/1/0	0.02
NT-proBNP, ng/L	463 (46-2379)	127 (53-682)	82 (50-401)*	0.003
AVA index, cm^2/m^2	0.3 ± 0.1	0.5 ± 0.1	0.5 ± 0.1*	<0.001
GLS, %	-15 ± 3	-18 ± 2	-17 ± 2*	0.002
LVEF, %	67 ± 7	71 ± 5	71 ± 5	0.26
LV mass index, g/m^2	109 ± 24	87 ± 19	75 ± 11*	<0.001
EDV index, mL/m^2	84 ± 20	72 ± 13	51 ± 5*†	<0.001
ESV index, mL/m^2	28 ± 11	21 ± 7	15 ± 3*†	<0.001
Cardiac index, $L/m^2/min$	3.1 ± 0.5	2.8 ± 0.5	2.0 ± 0.2*†	<0.001
Concentric remodeling‖	1.3 ± 0.2	1.2 ± 0.2	1.5 ± 0.3†	0.02

*Values are mean ± SD. *p < 0.05 vs. normal flow, high gradient (NFHG). †p < 0.05 vs. normal flow, low gradient (NFLG). Paradoxical low flow, low gradient (P-LFLG). N-terminal pro-B-type natriuretic peptide (NT-proBNP) is presented as median (interquartile range). ‖Concentric remodeling = LV mass/ EDV. Aortic valve area (AVA). End-diastolic volume (EDV). End-systolic volume (ESV). Global longitudinal strain (GLS). Left ventricle (LV). Left ventricular ejection fraction (LVEF). Mechanical external work (EW). Myocardial external efficiency (MEE). Myocardial blood flow (MBF). Myocardial oxygen consumption (MVO_2)*