

Supplement Table 1. The pre- and post-operative (during ICU stay) hemodynamic characteristics among 108 patients receiving mitral valve (MV) repair

Variables	Pre-operation	Post-operation (ICU stay)	P value
Hemodynamic data			
RA pressure (mmHg)	11.2±6.5	8.6±4	0.28
mRV pressure(mmHg)	25.4±8.3	16±5.3	0.14
mPA pressure (mmHg)	38.6±12.8	25.1±10.2	0.06
Wedge (mmHg)	22.5±8.3	18.3±4.4	0.34
Cardiac index (l/m ²)	2.8±1.1	3.4±0.6	0.62
PVR (woods)	3.07±2.5	2.1±2.4	0.1

Data are expressed as mean ± SD.

ICU= intensive care unit; RA= right atrial; mRV= mean right ventricular; mPA= mean pulmonary arterial; PVR= pulmonary vascular resistance

Supplement Table 2. The pre- and post-operative inotropic uses among 108 patients receiving mitral valve (MV) repair

Inotropic support	
Dobutamine, N (%)	78 (72.2)
Duration (day)	5.8±4.3
Milrinone, N (%)	6 (5.5)
Duration (day)	2.1±2.7

Data are expressed as mean ± SD.

Supplement Table 3. The baseline and follow-up clinical and echocardiographic characteristics of patients developing heart failure or not post mitral valve (MV) repair

Variables	Free from HF readmission (N=91)	HF readmission (N=17)	P value
Clinical			
Age (y/o)	55.9 ± 25	60.5 ± 18.3	3.28
Male (%)	38 (41.7)	9 (52.9)	2.82
Body weight (kg)	61.8 ± 11.3	57.8 ± 19.2	1.53
Body height (cm)	161.5 ± 18.9	160 ± 10.9	2.58
NYF _c , n(%)			
II	42 (46.2)	6 (35.3)	0.68
III	29 (31.8)	7 (41.2)	0.47
IV	20 (22)	4 (23.5)	0.28
Hypertension, n(%)	45 (49.4)	8 (47)	0.23
Diabetes, n(%)	11 (12.1)	2 (11.7)	0.26
CAD, n(%)	10 (10.9)	3 (17.6)	0.34
Af (baseline)	42 (46.1)	13 (76.4)	0.08
Creatinine (mg/dl)	1.2 ± 1.4	0.9 ± 0.2	0.5
NT-proBNP (pg/ml)	4832.4 ± 1998.4	4988.1 ± 3862.8	0.28
Surgeries	11(47.8)	44 (51.7)	
MV annular ring	79 (86.8)	14 (87.1)	0.21
Repair leaflet			
Anterior leaflet	24 (26.4)	4 (23.5)	0.63
Posterior leaflet	35 (38.4)	8 (47)	0.73
Both leaflets	17 (18.7)	5 (29.4)	0.18
Operation time (hr)	5.8 ± 0.9	5.8 ± 0.6	0.11
Aortic clamping time (min)	113.8 ± 33.9	112 ± 42.3	0.28
CPB time (min)	176.4 ± 49.3	171 ± 39.5	2.16
ICU stay (days)	2.8 ± 3.6	3.4 ± 2.7	0.14
Echocardiography			
LVEDV (baseline) (ml)	67.2 ± 28.7	73.2 ± 47.1	0.63
LVESV (baseline) (ml)	20.6 ± 10.9	28.8 ± 21.8	0.11
LVM _I (baseline) (g/M ²)	123.5 ± 39.9	106.3 ± 40.2	0.32
E/A (baseline)	2.9 ± 5.5	1 ± 0.3	0.44
E/e' (baseline)	11.2 ± 4.6	15.7 ± 9.1	0.03
LVEF (baseline) (%)	65.5 ± 10.4	62.5 ± 15.8	0.46

LVEF (post 1M) (%)	68.1 ± 7.3	61.1 ± 12.7	0.08
LVEF (post 6M) (%)	64 ± 8.9	70.5 ± 11.4	0.18
LVEF change (baseline to 1M) (%)	1.1±7.7	-1.4±11.8	0.56
LV GLS (baseline) (%)	-20.1 ± 6.1	-17.6 ± 6.7	0.32
LV GLS (post 1M) (%)	-16.6 ± 3.6	-16.4 ± 4.3	0.88
LV GLS (post 6M) (%)	-15.3 ± 4.5	-18.1 ± 3.37	0.34
LV GLS change (baseline to 1M) (%)	4.7±5.5	1.1±9.6	0.09
MV	3.1±4.4		
ERO (baseline) (%)	2.7±0.7	0.4±0.07	0.3
ERO (post 1M) (%)	0.1±0.08	0.1±0.07	0.53
ERO (post 6M) (%)	0.07±0.05	0.1±0.1	0.35
ERO change (baseline to 1M) (%)	-0.3±0.2	-0.2±0.1	0.47
RVol (baseline) (ml)	73.9±29.8	61.9±11.9	0.26
RVol (post 1M) (ml)	15.6±7.6	25.1±23.4	0.04
RVol (post 6M) (ml)	11.4±10.7	4.4±0.9	0.42
RVol change (baseline to 1M) (%)	22.6±12.5	35.2±13.4	0.3
RV			
TR VC (baseline) (cm)	0.4±0.2	0.3±0.1	0.45
TR VC (post 1M) (cm)	0.3±0.2	0.6±0.3	0.08
TR VC (post 6M) (cm)	0.5±0.5	0.2±0.1	0.43
TR VC change (baseline to 1M) (%)	-0.2±0.2	0.2±0.2	0.04
RVSP (baseline) (mmHg)	34.3±21.1	25.4±10.4	0.22
RVSP (post 1M) (mmHg)	22.7±8.4	22.2±12.3	0.9
RVSP (post 6M) (mmHg)	22.3±9.6	21.5±5	0.86
RVSP change (baseline to 1M) (%)	13.04±17.5	-3.2±12	0.18
PVR (baseline) (woods)	3.2±2.5	1.9±0.9	0.22
PVR (post 1M) (woods)	2.8±1.4	1.8±1.2	0.87
PVR (post 6M) (woods)	2±0.5	1.5±0.4	0.24
PVR change (baseline to 1M) (%)	-0.6±1.4	0.4±1.1	0.22
FAC (baseline) (%)	41.2±15.7	48.8±10.1	0.38

FAC (post 1M) (%)	48.9±10.7	42.6±7.5	0.17
FAC (post 6M) (%)	44.6±15.1	47.8±1.9	0.77
FAC change (baseline to 1M) (%)			0.61
TAPSE (baseline) (cm)	1.8±0.6	1.7±0.4	0.38
TAPSE (post 1M) (cm)	1.6±0.4	1.7±0.6	0.65
TAPSE (post 6M) (cm)	18.1±4.5	21.6±7.8	0.27
TAPSE change (baseline to 1M) (%)	-3.1±9.4	-5.2±6.8	0.41
S' (baseline) (cm/s)	12.9±2.9	13.1±4.4	0.88
S' (post 1M) (cm/s)	11.1±2.2	9.9±2.1	0.26
S' (post 6M) (cm/s)	11.6±2.8	10.5±3.5	0.55
S' change (baseline to 1M) (%)	-2±2.7	-3.1±3.9	
RV strain (baseline) (%)	-13.1±8.4	-16.3±2.7	0.32
RV strain (post 1M) (%)	-16.2±3.3	-11.2±4.2	0.006
RV strain (post 6M) (%)	-17.8±3.3	-15.2±4.4	0.26
RV strain change (baseline to 1M) (%)	-3.5±7.5	5.1±5.7	0.001

Data are expressed as mean ± SD or number (%). P<0.05 as significance.

Abbreviations as Table 1, 2 and 3

Supplement Table 4. The regional differences of right ventricular (RV) strains in patients with non-reserved and reserved RV post mitral valve repair

Variables	RV non-reserved (RV strain declined) N=23	RV reserved (RV strain improved) N=85	P value
RV strain (baseline)			-
Basal RV strain (%)	-16.39±8.42	-12.41±7.2	0.01
Mid RV strain (%)	-19.62±6.39	-14.34±9.23	0.05
Apical RV strain (%)	-18.9±6.22	-17.44±5.52	0.12
RV strain (post 1M)			-
Basal RV strain (%)	-13.49±6.52	-20.72±5.2	0.01
Mid RV strain (%)	-15.37±8.89	-19.11±7.35	0.32
Apical RV strain (%)	-17.23±7.05	-21.49±9.28	0.81
RV strain (baseline to 1M)			-
Basal RV strain (%)	3.8±4.62	-8.02±8.23	0.001
Mid RV strain (%)	4.17±5.84	-5.1±1.5	0.08
Apical RV strain (%)	1.58±6.71	-3.39±1.3	0.45

Abbreviation as Table 2.