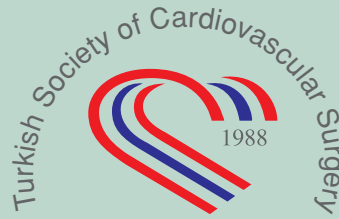


MINIMALLY INVASIVE MITRAL VALVE SURGERY



Erasmus+

1) PREOPERATIVE DATA

Demographic							
Patient's Name:		Patient's No:		ID No:			
Date of Birth: (year)		Age:	Sex: Male Female	Ethnicity:			
Height:cm		Weight:kg	BMI:	BSA:			

BMI: Body mass index; BSA: Body surface area.

Risk Factors							
Hypertension		Yes: No:					
Diabetes		Yes: No:	IDDM	Yes: No:	NIDDM	Yes: No:	
Smoking		Yes: No:	Pack/years:				
COPD		Yes: No:					
Chronic renal failure		Yes: No:	Dialysis	Yes: No:			
Stroke		Yes: No:					
Rheumatic disease		Yes: No:					
Atrial fibrillation		Yes: No:					
NYHA		Class 1:	Class 2:	Class 3:	Class 4:		
Carotid artery stenosis		Yes: No:	Right: Left:	Degree of stenosis:	Symptomatic: Asymptomatic:		
Coronary artery disease		Yes: No:	Coronary angioplasty			Yes: No:	
Peripheral artery disease		Yes: No:	Imaging modality:				
EuroSCORE II							
STS score							

IDDM: Insuline depend DM; NIDDM: Non insuline depend DM; COPD: Chronic obstructive pulmonary disease; NYHA: New York Heart Association, STS: Society of Thoracic Surgeons.

Laboratory Values					
	Blood type:				
	Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L		PT:sec
	APTT:sec	INR:	Fibrinogen level:mg/dL		Bleeding time (PFA 100):sec
	MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
	AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
	CRP*mg/L	Creatinin*mg/dL	Urea*		GFR:%
	Potassium*mmol/L	Phosphorus*mmol/L	Calcium*mmol/L		Iron*µg/dL
	Ferritin*mg/L	Iron binding capacity*µg/dL		Transferrin saturation*%	
	Folic acid*ng/mL	B12 vitamin*pg/mL		D vitamin*pg/mL	
	LDL:	HDL:		Total cholesterol:	
	Triglyceride:	Glucose:		HbA1c:	
	Troponin I:	CK MB:			

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; PFA: Platelet function test; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate; LDL: Low-density lipoprotein; HDL: High density lipoprotein; HbA1c: Hemoglobin A1C.

Preoperative Medications			
	Dose		Dose
Acetylsalicylic acid		Angiotensin II receptor blocker	
Clopidogrel		Alpha blocker	
Calcium channel blocker		Digoxin	
ACE inhibitor		Statin	
Diuretic		Nitrate	
Anticoagulant		Antiarrhythmic	
NOAC		Beta blocker	
Other			

Echocardiography							
	Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
	Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
	Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
	AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
	LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR mild moderate severe	VC (mm)	EOA (cm ²)	RV (mL)
	Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
	RA diameter (mm)	RA area (mm2)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)		TR velocity
	TR degree	sPAB (mmHg)					
	Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
	RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV subcostal wall thickness (mm)	TAPSE (mm)	Tri S’ TDI (10-19 cm/s)	
LVED: Left ventricular end-diastolic; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TAPSE: Tricuspid annular plane systolic Excursion; TDI: Tissue doppler imaging.							
Preoperative pulmoner vascular resistance:wood/U.							

Surgery Planing			
	Elective surgery:	Early surgery:	Emergency surgery:

2) PERIOPERATIVE DATA

Type of Surgery					
	Minimally invasive MVR + ablation	☐	Minimally invasive MVP + ablation	☐	
	Minimally invasive MVR + TVP + ablation	☐	Minimally invasive MVP + TVP + ablation	☐	
	Minimally invasive TVP + ablation	☐	Minimally invasive TVP + ablation	☐	
	Minimally invasive TVP	☐	Minimally invasive TVR	☐	
	Other	☐	Redo surgery	☐	
Intubation durationhour	Intensive care durationdays	Drainage amountmL	Amount of erythrocytes usedU	Amount of platelets usedU	
Amount of plasma usedU	Temporary pace needed Yes ☐ No ☐	Permanent pace needed Yes ☐ No ☐	ECMO needed Yes ☐ No ☐		
Arrhythmia	Atrial fibrillation Yes ☐ No ☐ Durationhour	Ventricular fibrillation Yes ☐ No ☐ Durationhour	A-V block Yes ☐ No ☐ Durationhour	SVT Yes ☐ No ☐ Durationhour	VT Yes ☐ No ☐ Durationhour
Length of hospital staydays	Postoperative delirium Yes ☐ No ☐				
Inotrope use	Adrenalin Yes ☐ No ☐	Noradrenalin Yes ☐ No ☐	Dopamin Yes ☐ No ☐	Dobutamin Yes ☐ No ☐	Other
Dialysis Yes ☐ No ☐	Tracheostomy Yes ☐ No ☐	Sepsis Yes ☐ No ☐	Multiorgan failure Yes ☐ No ☐		
Gastrointestinal complications Yes ☐ No ☐	Perforation ☐	Bleeding ☐	Ileus ☐		
Re-admission to intensive care Yes ☐ No ☐	Durationdays	Reason			

Reexploration Yes ☐ No ☐	Tamponade ☐	Bleeding ☐	Hemodynamic instability ☐		
Wound infection Yes ☐ No ☐	Superficial infection Yes ☐ No ☐	Deep infection Yes ☐ No ☐			
Pulmonary complications Yes ☐ No ☐	Pneumonia Yes ☐ No ☐	Pneumothorax Yes ☐ No ☐	Atelectasis Yes ☐ No ☐	Pleural effusion Yes ☐ No ☐	Pulmonary edema Yes ☐ No ☐
SV Yes ☐ No ☐	Hemorrhagic Yes ☐ No ☐	Ischemic Yes ☐ No ☐	Shkel Yes ☐ No ☐		
Early tamponade (Before Day 30) Yes ☐ No ☐	Late tamponade (After Day 30) Yes ☐ No ☐				
Complication of cannulation Yes ☐ No ☐	Pseudoaneurysm Yes ☐ No ☐	Dissection Yes ☐ No ☐	Thrombosis Yes ☐ No ☐	Infection Yes ☐ No ☐	
Rehospitalization Yes ☐ No ☐	Durationdays	Reasondays			

MVR: Mitral valve replacement; TVP: Tricuspid valvuloplasty.

Operation Parameters						
	Technical	Robotic	Video assisted	Direct vision		
	Arterial cannulation	Aortic cannulation	Femoral cannulation	Subclavian cannulation Graft..... Direct.....		
	Venous cannulation	Two stage	Jugular			
	Cross clamp	Chitwood clamp	Endoaortic balloon	Beating heart		
	Cardioplegia	Cold blood cardioplegia	Isothermal blood cardioplegia	Del Nido	Custodiol	Crystalloid blood cardioplegia
	Use of retrograde cardioplegia Yes..... No.....	Degree of hypothermia:				
	Prime volumemL	Cross clamp timemin	CPB timemin	Operation timemin	Perioperative erythrocytesU	Perioperative plasmaU
	CO ₂ using Yes..... No.....	Transseptal approach	Approach via left atriotomy:	LAA ligation: Yes..... No.....		
	Pump output inotrope requirement	Adrenalin Yes..... No.....	Noradrenalin Yes..... No.....	Dopamin Yes..... No.....	Dobutamin Yes..... No.....	Other
	Pump output IABP requirement Yes..... No.....	Post cardiogenic shock ECMO Yes..... No.....	Pump output pacemaker requirement Yes..... No.....	Amount of Hemofiltration during pumpingmL		
	Type of valve	Mechanical	Biological			
Valve size	Valve brand	Venous cannulation site	Complication of venous cannulation			

CPB: Cardiopulmonary bypass; IABP: Intra-aortic balloon pump; ECMO: Extracorporeal membrane oxygenation.

3) POSTOPERATIVE DATA

Postoperative 1 st Day Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.				

Postoperative 2 nd Day Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.				

Postoperative 3 rd Day Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.				

Laboratory Values at Discharge				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.				

Postoperative 1st Month Laboratory Values

Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*		GFR:%
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L		Iron*:µg/dL

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.

Postoperative 3rd Month Laboratory Values

Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*		GFR:%
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L		Iron*:µg/dL

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.

Postoperative 6 th Month Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:			
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate.				

Postoperative 12 th Month Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:	Fibrinogen level:mg/dL	Bleeding time (PFA 100 with):sec	
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
Ferritin*mg/L	Iron binding capacity*µg/dL	Transferrin saturation*%		
Folic acid*ng/mL	B12 vitamin*pg/mL	D vitamin*pg/mL		
LDL:	HDL:	Total cholesterol:		
Triglyceride	Glucose:	HbA1c:		
Troponin I:	CK MB:			
Complete urine test				
PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate; LDL: Low-density lipoprotein; HDL: High density lipoprotein; HbA1c: Hemoglobin A1C; CK: Creatin kinaz.				

Postoperative 2nd Year Laboratory Values

Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:	Fibrinogen level:mg/dL	Bleeding time (PFA 100 with):sec	
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
Ferritin*mg/L	Iron binding capacity*µg/dL	Transferrin saturation*%		
Folic acid*ng/mL	Vitamin B12*pg/mL	Vitamin D*pg/mL		
LDL:	HDL:	Total cholesterol:		
Triglyceride	Glucose:	HbA1c:		
Troponin I:	CK MB:			

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate; LDL: Low-density lipoprotein; HDL: High density lipoprotein; HbA1c: Hemoglobin A1C; CK: Creatin kinaz.

Postoperative 3rd Year Laboratory Values

Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:	Fibrinogen level:mg/dL	Bleeding time (PFA 100 with):sec	
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
Ferritin*mg/L	Iron binding capacity*µg/dL	Transferrin saturation*%		
Folic acid*ng/mL	Vitamin B12*pg/mL	Vitamin D*pg/mL		
LDL:	HDL:	Total cholesterol:		
Triglyceride	Glucose:	HbA1c:		
Troponin I:	CK MB:			

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate; LDL: Low-density lipoprotein; HDL: High density lipoprotein; HbA1c: Hemoglobin A1C; CK: Creatin kinaz.

Postoperative 5 th Year Laboratory Values				
Blood type:				
Hemoglobin:g/dL	Hematocrit:%	Platelet count:10/L	PT:sec	
APTT:sec	INR:	Fibrinogen level:mg/dL	Bleeding time (PFA 100 with):sec	
MPV:	Total bilirubin:mg/dL	Direct bilirubin:mg/dL	Albumin:gr/L	Haptoglobin:gr/L
AST:U/L	ALT:U/L	GGT:U/L	ALP:U/L	
CRP*:mg/L	Creatinin*:mg/dL	Urine*	GFR:%	
Potassium*:mmol/L	Phosphorus*:mmol/L	Calcium*:mmol/L	Iron*:µg/dL	
Ferritin*mg/L	Iron binding capacity*µg/dL	Transferrin saturation*%		
Folic acid*ng/mL	Vitamin B12*pg/mL	Vitamin D*pg/mL		
LDL:	HDL:	Total cholesterol:		
Triglyceride	Glucose:	HbA1c:		
Troponin I:	CK MB:			

PT: Prothrombin time; APTT: Activated partial thromboplastin time; INR: Internationalized normal ratio; MPV: Mean platelet volume; AST: Aspartate transaminase; ALT: Alanine transaminase; CRP: C-reactive protein; GFR: Glomerular filtration rate; LDL: Low-density lipoprotein; HDL: High density lipoprotein; HbA1c: Hemoglobin A1C; CK: Creatin kinaz.

Pre-Discharge ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m²)	LVES volume (mm/m²)
Mitral valve area-PLN (cm²)	Mitral valve area-PHT (cm²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m²)
Left atrium anteroposterior diameter (27-41 mm)	EROA (cm²)	RV (mL)	LA area (≤23 cm²)			
AVA (cm²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 1 st Month ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	Degree of AR mild moderate severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 2 nd Month ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 3 rd Month ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 6 th Month ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 12 th Month ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 3 rd Year ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative 5 th Year ECHO Findings						
Ejection fraction (%)	LVED diameter (mm)	LVES diameter (mm)	Septum (mm)	Posterior wall (mm)	LVED volume (mm/m ²)	LVES volume (mm/m ²)
Mitral valve area-PLN (cm ²)	Mitral valve area-PHT (cm ²)	Gradient (mmHg)	PHT (msn)	MR level	VC (mm)	LAVI (mL/m ²)
Left atrium anteroposterior diameter (27-41 mm)		EROA (cm ²)	RV (mL)	LA area (≤23 cm ²)		
AVA (cm ²)	Gradient (mmHg)	Stroke volume	LVOT diameter (mm)	Aortic flow rate (m/sn)	Aortic root diameter (mm)	DVI
LVOT flow rate (m/sn)	AR PHT (msn)	AT (msn)	AR Mild Moderate Severe	VC (mm)	EOA (cm ²)	RV (mL)
Ascending aorta (mm)		Sinotubular junction (mm)		Aortic annulus (<31 mm)	Sinus Valsalva (<40 mm)	
RA diameter (mm)	RA area (mm ²)	Tricuspid annulus diameter (mm)	IVC diameter (mm)	Gradient (mmHg)	TR velocity	
TR degree	sPAB (mmHg)					
Pulmonary valve gradient (mmHg)		PR degree	P.ac. time	PR PHT	Pulmonary velocity	QP/QS
RV area variation (%)		Mid-internal diameter-A4B ED (mm)	RV Subcostal wall thickness (mm)	TAPSE (mm)	Tri S' TDI (10-19 cm/s)	
ECHO: Echocardiography; LVES: Left ventricular end-systolic; PLN: Planimetry method; PHT: Pressure half time method; MR: Magnetic resonance; VC: Contracta; LAVI: Left atrial volume index; EROA: Effective regurgitation orifice area; LA: Left atrium; AVA: Effective regurgitation orifice area; AR: Aortic regurgitation; VC: Vena contracta; EOA: Effective orifice area; RV: Right ventricle; RA: Right atrium; IVC: Vena contracta; TR: Tricuspid regurgitation; PR: Pulmoner regurgitation; TDI: Tissue doppler imaging.						

Postoperative Parameters						
	Intubation durationhour	Intensive care durationdays	Drainage amountmL	Amount of erythrocytes usedU	Amount of platelets usedU	
	Amount of plasma usedU	Temporary pace needed Yes..... No.....	Permanent pace needed Yes..... No.....	ECMO needed Yes..... No.....		
	Arrhythmia	Atrial fibrillation Yes..... No.....hour	Ventricular fibrillation Yes..... No.....	A-V block Yes..... No.....	SVT Yes..... No.....	VT Yes..... No.....
	Stay hospital durationdays	Postoperative delirium Yes..... No.....				
	Inotrope use	Adrenalin Yes..... No.....	Noradrenalin Yes..... No.....	Dopamin Yes..... No.....	Dobutamin Yes..... No.....	Other
	Dialysis Yes..... No.....	Tracheostomy Yes..... No.....	Tracheostomy Yes..... No.....	Multiorgan failure Yes..... No.....		
	Gastrointestinal complications Yes..... No.....	Perforation	Bleeding	Ileus		
	Re-admission to intensive care Yes..... No.....	Durationdays	Reason			
	Reexploration Yes..... No.....	Tamponade	Bleeding	Hemodynamic instability		
	Wound infection Yes..... No.....	Superficial infection Yes..... No.....	Deep infection Yes..... No.....			
	Pulmonary complications Yes..... No.....	Pneumonia Yes..... No.....	Pneumothorax Yes..... No.....	Atelectasis Yes..... No.....	Pleural effusion Yes..... No.....	Pulmonary edema Yes..... No.....
	SV Yes..... No.....	Hemorrhagic Yes..... No.....	Ischemic Yes..... No.....	Shekel Yes..... No.....		

	Early tamponade (Before Day 30) Yes..... No.....	Late tamponade (After Day 30) Yes..... No.....				
	Complication of cannulation Yes..... No.....	Pseudoaneurysm Yes..... No.....	Dissection Yes..... No.....	Thrombosis Yes..... No.....	Infection Yes..... No.....	
	Rehospitalization Yes..... No.....	Durationdays	Reason			
	Mortality Yes..... No.....	Time	Reason			
	Warfarin-related complications Yes..... No.....	Bleeding	Valve thrombosis	Embolism		
	Bioprosthetic valve degeneration Yes..... No.....	Time				
	Postoperative return to work perioddays					

ECMO: Extracorporeal membrane oxygenation.