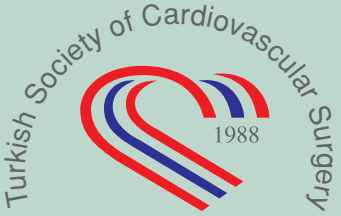
ASCENDING AORTA SURGERY



1) PREOPERATIVE DATA

Demographic Data	
	Institution
	Patient number
	Age
	Sex Male Female
	Height (cm)
	Weight (kg)
	Body mass index (kg/m^2)
	Body surface area

Laboratory Result			
	Hemoglobin	g/dL	
	Hematocrit	%	
	MCV	fl	
	MCHC	g/dL	
	Reticulocyte	%	
	Thrombocyte count	10^9/L	
	PT	sec	
	aPTT	sec	
	INR		
	Fibrinogen	mg/dL	
	D-Dimer	µg/L	
	Blood group	A Rh (–)	A Rh (+)
		B Rh (+)	B Rh (+)
		AB Rh (–)	AB Rh (+)
		0 Rh (–)	0 Rh (+)
	AST	U/L	
	ALT	U/L	
	Total bilirubin	µmol/L	

	Albumin	gr/L
	CRP	mg/L
	Creatinine	mg/dL
	Urea*	mg/dL
	Glomerular filtration rate**	eGFRcr= $142 \times \min(Scr/\kappa, 1)^{\alpha} \times \max(Scr/\kappa, 1)^{-1.200} \times 0.9938^{Age} \times 1.012$ [if female] mL/min/1.73 m^2
	Potassium	mmol/L
	Phosphorus	mmol/L
	Calcium	mmol/L
	Iron	µg/dL
	Ferritin	mg/L
	Folic acid	ng/mL
	Transferrin saturation	% (Iron/total iron binding capacity*100)
	Vitamin B12	pg/mL
	Troponin	ng/mL
	CK-MB	U/L
	Triglycerides	mmol/L
	Total cholesterol	mmol/L
	HDL cholesterol	mmol/L
	LDL cholesterol	mmol/L

PT: Prothrombin time; aPTT: Activated partial thromboplastin time; CRP: C-reactive protein; HDL: High density lipoprotein; LDL: Low density lipoprotein.
* Blood Urea Nitrogen may be preferred. Automated calculation is possible.
** There are several equations for GFR estimate. CKD-epi 2021 calculation is added to this form. Automated calculation is possible.
eGFRcr= 142 $\times \min(Scr/\kappa, 1)^{\alpha} \times \max(Scr/\kappa, 1)^{-1.200} \times 0.9938^{Age} \times 1.012$ [if female]
where:
Scr= Standardized serum creatinine in mg/dL
κ= 0.7 (females) or 0.9 (males)
α= –0.241 (female) or –0.302 (male)
min(Scr/κ, 1) is the minimum of Scr/κ or 1.0
max(Scr/κ, 1) is the maximum of Scr/κ or 1.0

Comorbidities		
	Hypertension requiring treatment	Yes/No
	Diabetes mellitus	Yes/No Treatment 1. Diet 2. Oral antidiabetics 3. Insulin
	Echocardiographic findings	EF, LVDD, LVSD etc.
	Congestive heart failure	Yes/No
	NYHA classification	1. NYHA I 2. NYHA II 3. NYHA III 4. NYHA IV
	Hyperlipidemia	Yes/No
	Extra cardiac arteriopathy	Yes/No
	Neurological dysfunction	Yes/No
	CVA/TIAs	Yes/No
	Smoking	Yes/No 1. Never 2. Ex-smoker (>1 month) 3. Current smoker
	COPD	Yes/No
	Chronic kidney disease*	1. Stage 1: Kidney damage with normal or increased GFR (>90 mL/min/1.73 m^2) 2. Stage 2: Mild reduction in GFR (60-89 mL/min/1.73 m^2) 3. Stage 3a: Moderate reduction in GFR (45-59 mL/min/1.73 m^2) 4. Stage 3b: Moderate reduction in GFR (30-44 mL/min/1.73 m^2) 5. Stage 4: Severe reduction in GFR (15-29 mL/min/1.73 m^2) 6. Stage 5: Kidney failure (GFR <15 mL/min/1.73 m^2 or dialysis)
	Connective tissue disorder	1. Marfan syndrome 2. Ehlers Danlos syndrome
	Hereditary aneurysms	
	Intracranial aneurysms	
	Vasculitis	1. Giant cell arteritis 2. Takayasu arteritis
	EuroSCORE***	

EF: Ejection fraction; LVDD: Left ventricular diastolic diameter; LVSD: Left ventricular systolic diameter; NYHA: New York Heart Association; CVA: Cerebrovascular accident; TIAs: Transient ischemic attacks; COPD: Chronic obstructive pulmonary disease; GFR: Glomerular filtration rate.
* The Kidney Disease Outcomes Quality Initiative (KDOQI) of the National Kidney Foundation (NKF) classification. Automated selection is possible.
** Any complication related to transfusion.
*** EuroSCORE or STS score can be preferred according to institution.

Symptomatology		
	Acute chest pain	Yes/No
	Syncope	Yes/No
	Hypotension	Yes/No
	Shock	Yes/No
	Tamponade	Yes/No
	Pleural effusion	Yes/No
	Cardiac arrest	Yes/No
	Neurologic events	Yes/No
	Malperfusion	Cerebral malperfusion Visceral malperfusion Renal malperfusion Limb malperfusion
	Onset of pain prior to surgery	
	Dissection of LMCA	Yes/No
	Dissection of RCA	Yes/No
LMCA: Left main coronary artery; RCA: Right coronary artery.		

Aortic Morphology and Pathologies		
	Ascending aorta diameter (cm)	
	Descending aorta diameter (cm)	
	Aortic root diameter (cm)	
	Aortic root area/height	
	Ascending aorta length (cm)	Frontal plane Sagittal plane
	Ascending aorta volume (cm^3)	
	Aortic wall thickness (mm)	
	Aortic valve morphology	Bicuspid valve Tricuspid valve Other

Aortic Pathologies		
	Ascending aortic aneurysm	
	Aortic dissection (Intimal tear localization)	Type 1 Type 2 Type 3
	Extension of dissection	Aortic arch Supraaortic vessels Descending or further downstream Other
	Acute aortic syndrome	Aortic dissection IMH PAU
	Chronicity	Hyperacute <24 h Acute 1-14 d Subacute 15-90 d Chronic >90 d
	Previous surgery	CABG AVR TEVAR EVAR
	Iatrogenic	Post open surgery Post angiography
	Imaging modalities	CT MRI Angiography Intravascular ultrasound

IMH: Intramural hematoma; PAU: Penetrating atherosclerotic ulcer; CABG: Coronary artery bypass grafting; AVR: Aortic valve replacement; TEVAR: Thoracic endovascular aneurysm repair; EVAR: Endovascular aneurysm repair; CT: Computed tomography; MRI: Magnetic resonance imaging.

2) PERIOPERATIVE DATA

Aortic Operation Variables		
	Surgery time from symptom	Salvage Emergent Urgent Elective
	Arterial cannulation sites	
	Cannulation techniques	With graft Without graft
	Venous cannulation sites	
	Aortic root repair	David, Yacoub etc.
	Aortic root replacement types	Bentall Homograft Xenograft Ross Cabrol
	Ascending aortic replacement	Yes/No
	Hemiarcus replacement	Yes/No
	Total arcus replacement	Yes/No
	Total arcus replacement types	*En bloc* technique Anatomic branch technique Trifurcated branch technique
	Additional surgical procedures	Frozen elephant trunk Evita open plus Handmade back-table aortic stent-graft
	Total operation time (min)	
	Cardiopulmonary bypass time (min)	
	Aortic cross-clamp time (min)	
	HCA (hypothermic circulatory arrest) time (min)	
	SACP (selective antegrade cerebral perfusion) time (min)	
	Minimal core temperature (°C)	

Operative Details		
	Autologous blood donation*	Yes/No ……. Units
	Acute normovolemic hemodilution	Yes/No ……. mL
	Antifibrinolytic	Yes/No
	Type of fibrinolytic**	1. Aprotinin 2. TxA 1. EACA low dose 2. Medium dose 1. High dose bolus and maintenance 2. Postoperative bolus
	Antegrade or retrogade autologous priming	Yes/No
	Amount of AAP/RAP	……. mL
	Ultrafiltration	Yes/No ……. mL
	Anticoagulation type	1. Heparin 2. Bivaluridin
	Heparin dosage (initial bolus)	1. 150 U/kg 2. 300 U/kg 3. 400 U/kg
	Total heparin (bolus+prime+maintenance)	Units
	Antithrombin III concentrate replacement to increase ACT	Yes/No
	FFP replacement to increase ACT	Yes/No ……. Units
	Protamine	……. Units
	Protamin/heparin ratio	Automated calculation
	Type of operation	1. CABG 2. Valve 3. Combination 4. Aorta
	Redo case	Yes/No
	Off-pump surgery	Yes/No
	Prime volume	mL
	Residual prime***	mL
	Type of cardioplegia	1. Blood 2. Crystalloid 3. Histidine-Tryptophan-Ketoglutarate (HTK) 4. Del Nido

	Route of cardioplegia	1. Antegrade 2. Retrograde 3. Antegrade + retrograde
	Amount of cardioplegia	mL
	MIECC	Yes/No
	Cell saver? Amount of transfusion	Yes/No ……. mL
	RBC transfusion during CPB	Yes/No ……. Units
	Topical hemostatic agent usage	Yes/No

ACT: Active coagulation time; FFP: Fresh frozen plasma; CABG: Coronary artery bypass grafting; MIECC: Minimally invasive extracorporal circulation; RBC: Red blood cell; CPB: Cardiopulmonary bypass.
* Autologous donations (self donation) are blood donations that patient give for their own use
** Transamine dosage varies between clinics researchers can modify this section
*** Prime volume-AAP/RAP volume

3) POSTOPERATIVE DATA

Postoperative Early Period ICU Follow-up	**Postoperative Early Period ICU Follow up**	
	Total drainage in 12 hours	mL
	Hemorrhage more than 1000 mL	Yes/No
	Tamponade	Yes/No
	Cardiac arrest related to hemorrhage	Yes/No
	Reexploration due to hemorrhage	Yes/No
	Location of reexploration	1. ICU 2. Operating room
	Timing of reexploration	1. ≤6 hours 2. 6-12 hours 3. 12< hours
	Possible cause of hemorrhage	1. Surgical 2. Coagulopathy
	If coagulopathy is considered treatment is guided with viscoelastic tests (VET)?	Yes/No
	Which VET is performed?	1. TEG (Thromboelastography) 2. ROTEM (Rotational thromboelastometry)
	Treshold Hb or RBC transfusion	1. <7 g/dL 2. <8 g/dL 3. <10 g/dL
	Total RBC transfused (Perioperative all transfusions)	……. Units
	Total FFP transfused	……. Units
	Total cryoprecipitate transfused	……. Units
	Total thrombocyte transfused	……. Units
	DIC	1. No 2. Hemorrhage developed 3. Thrombosis developed
	Fibrinogen replacement	Yes/No ……. Units
	PCC replacement	Yes/No ……. Units
	Factor 13 replacement	Yes/No
	Recombinant Factor 7a replacement	Yes/No
	Desmopressin	Yes/No
	Transfusion Related Complications	
	Acute hemolytic	Yes/No
	Late hemolytic	Yes/No

	Transfusion related acute lung injury (TRALI)	Yes/No
	Transfusion associated dyspnea (TAD)	Yes/No
	Transfusion associated circulatory overload (TACO)	Yes/No
	Acute urticaria	Yes/No
	Anaphylaxis/anaphylatoid reaction	Yes/No
	Post transfusion purpura	Yes/No
	Nonhemolytic febrile transfusion reaction (NHFTR)	Yes/No
	Transfusion associated graft versus host disease	Yes/No
	Emboli	Yes/No
	Sepsis	Yes/No
	Transfusion transmitted diseases	Yes/No

ICU: Intesive care unit; RBC: Red blood cell; FFP: Fresh frozen plasma; DIC: Disseminated intravascular coagulation; PCC: Prothrombin complex concentrate.

Postoperative Late Follow-up		
	Arrhythmia	1. None 2. AV block 3. New onset AF 4. Atrial flutter 5. SVT 6. VT 7. VF
	Postoperative highest creatinine	mg/dL
	Acute kidney injury	Stage 1 Stage 2 Stage 3
	Dialysis	Yes/No
	Mechanic ventilation duration	……. hours
	Entubation longer than 24 hours	Yes/No
	Pulmonary complications	1. None 2. Atelectasis 3. Pneumonia 4. ARDS 5. Pulmonary effusion 6. Pulmonary edema
	NIMV	Yes/No
	Reintubation	Yes/No
	Surgical wound infection until discharge	1. None 2. Superficial infection 3. Deep infection
	Surgical wound infection after discharge	1. None 2. Superficial infection 3. Deep infection
	Sternal dehiscence detected until discharge	Yes/No
	Mediastinitis	Yes/No
	Cerebrovascular event	Yes/No
	Type of CVA? 1. Hemorrhagic 2. Ischemic 3. Hypoxic sequela 4. Sequela	 Yes No
	Seizure	Yes/No
	Gastrointestinal complication	Yes/No
	Septicemia proven with positive blood cultures	Yes/No
	Septic shock	Yes/No
	Type 5 MI	Yes/No
	Cardiac Arrest not related with hemorrhage	Yes/No

	Low cardiac output*	1. None 2. Multiple inotropic support 3. IABP 4. ECMO
	Multiple organ failure	Yes/No
	ICU stay	Night
	Hospital stay (ICU and postoperative ward)	Night
	Exitus	Yes/No
	30 days mortality	Yes/No

NIMV: Non invasive mechanic ventilation; CVA: Cerebrovascular accident; IABP: Intra-aortic balloon pump; ECMO: Extracorporeal membrane oxygenation; ICU: Intesive care unit.