

Annual Report of Cardiovascular Surgery 2024

Nagasaki University

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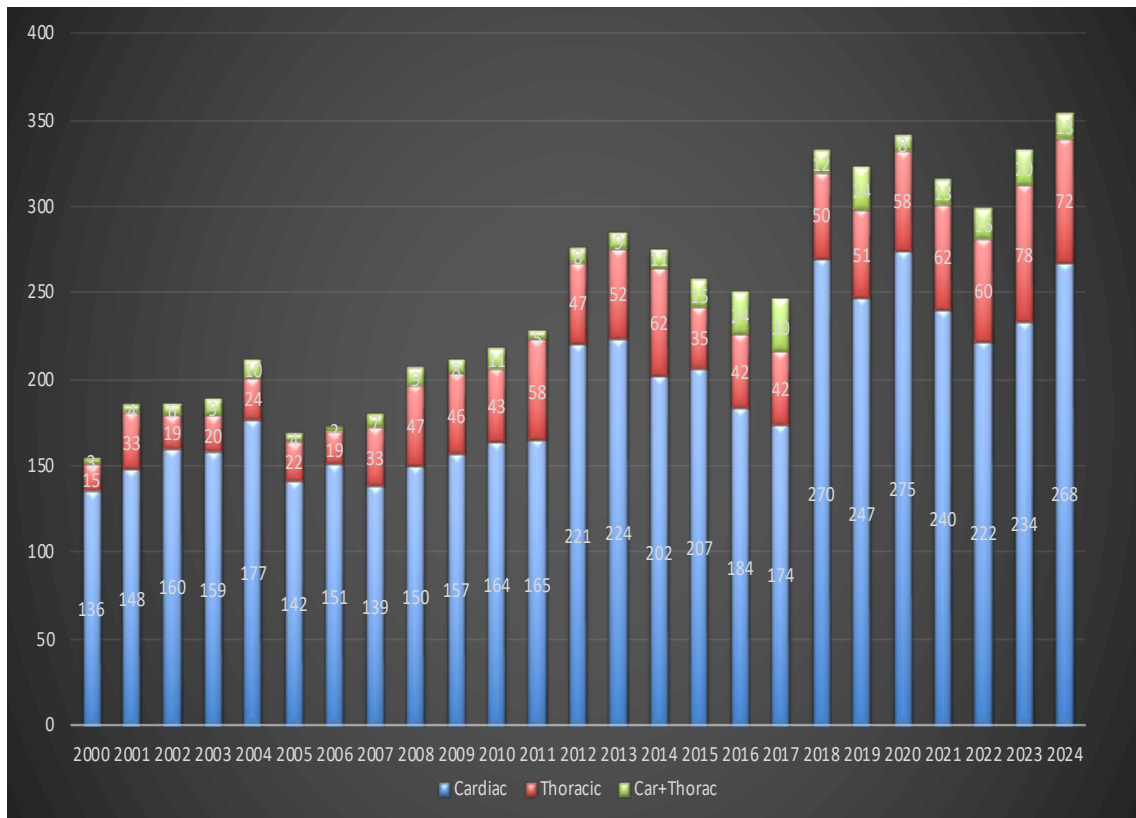
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~ Overall~

I . Number of Operations and Surgical mortality

Division	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac	268 (74*)	1	2
Car. + Thoracic	13	0	0
Thoracic	72	0	0
Total	353 (74*)	1 (0.3)	2 (0.6)
Abdominal aorta	38	0	1
Peripheral	28	0	0
Total	419 (74*)	1 (0.2)	3 (0.7)

*TAVI

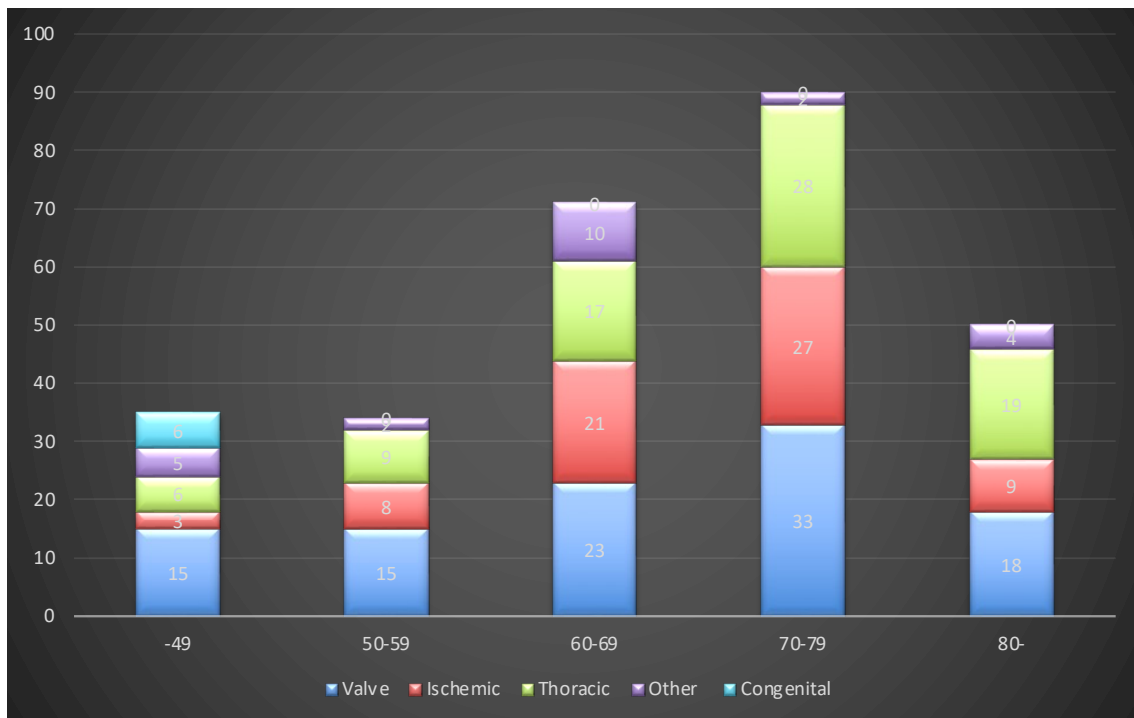


II. Mode of Operation

	Total	Scheduled (%)	Urgent (%)	Emergent (%)
Ischemic	68	52 (76.5)	13 (19.1)	3 (4.4)
Valvular	178 (74*)	167 (93.8)	9 (5.1)	2 (1.1)
Congenital	7	7 (100)	0	0
Others	23	16 (69.6)	4 (17.4)	3 (13.0)
Thoracic aorta	79	38 (48.1)	4 (5.1)	37 (46.8)
Abdominal aorta	38	32 (86.5)	0	5 (13.5)
Peripheral artery	28	14 (50.9)	0	14 (50.0)
Total	419 (74*)	325 (74*) (77.6)	30 (7.2)	64 (15.3)

*TAVI

III. Age Distribution



TAVI excluded

~ Summary of Cardio-Vascular Division ~

I . Number of Operations and Surgical Mortality

	No. OP.	No. Cases	OP. mortality, n	Hosp. mortality, n
<u>Cardiac</u>				
Valvular	196 (74*)	196 (74*)	0	0
(redo)	(21)	(21)	0	0
Ischemic	80	79	0	1 ^{#1}
(redo)	(2)	(2)	0	0
Congenital	7	7	0	0
Others	44	43	1	1 ^{#2}
<u>Vascular</u>				
Thoracic aorta	90	89	0	0
(TEVAR)	(22)	(21)	0	0
(redo)	(10)	(10)	0	0
Abdominal aorta	38	38	0	1 ^{#3}
(EVAR)	(15)	(15)	0	0
Peripheral artery	28	28	0	0

*TAVI

Concomitant Procedure

Valvular (only): 72 cases

Valvular + Thoracic aorta: 23 cases

CABG (only): 59 cases

Valvular + Congenital: 1 case

Congenital (only): 6 cases

Valvular + Others: 16 cases

Others (only): 20 cases

CABG + Thoracic aorta: 3 cases

Thoracic aorta (only): 61 cases

CABG + Others: 5 cases

Valvular + CABG: 7 cases

Thoracic Extra: 3 cases

Valvular + + CABG + Others: 3 cases

Valvular + Thoracic aorta + CABG: 2 case

Valvular + Congenital + Others: 1 cases

II . Valvular Heart Disease

	No. OP.	No. Cases	OP mortality	Hosp. mortality
Aortic *	136 (74*)	136	0	0
Mitral	44	44	0	0
Tricuspid	0	0	0	0
Pulmonary	1	1	0	0

Combined				
A+M *	4	4	0	0
M+T	13	13	0	0
A+M+T *	2	2	0	0
Total	126	126	0	0

* AVR 47, Bentall 3, Reimplantation 9 (+AVP 4), Total Root Remodeling only 2, Total Root Remodeling +AVP 5, STJ-plication 1, TAVI-TF 74

a) Mitral valve disease

Diagnosis

MR	MS / MSR	Total	MVR (%)	Repair (%)
53	8	61	16 (26.2)	45 (73.8)

b) Mitral valve repair

Etiology

Congenital	Infectious	Degenerative	Rheumatic	Ischemic	Tethering	Others
0	3	32	0	1	0	9

Post ope. follow up

Jet area	Intra. Op. n = 45	At discharge, n=45	Follow up, n = 42
non to trivial (0-2cm ²)	41	40	36
Mild (2-4cm ²)	3	5	6
mild to moderate, (4-8cm ²)	1	0	0
moderate to severe, (8cm ² -)	0	0	0

c) Valve substitutes implanted

	Mechanical	Tissue	Total
AVR	16	108 (74*)	124 (74*)
MVR	9	7	16
PVR	0	1	1
Total	25	116 (74*)	141 (74*)

*TAVI

d) Minimally invasive cardiac surgery

Procedures	No. Op.
MP*	28 (0)
MVR**	4 (1)
AVR	6
ASD/PFO	4
LA mass/ thrombus	4
Total	45 (1)

() redo

*) MP isolated (\pm Maze, LAAP) 23

MP+TAP (\pm Maze, LAAP) 5

***) MVR isolated (\pm Maze, LAAP) 4

III. Ischemic heart disease

	Total	Isolated CABG	Op. Mortality	Hosp. Mortality
SVD	14	5	0	0
DVD	28	23	0	1 ^{#1}
TVD	38	34	0	0
LMT	0	0	0	0
Total	80	62	0	1

Conventional CABG: 56 cases

Off pump CABG: 2 cases

On pump beating CABG: 22 cases

a) Conduit 2.5 / patient

	ITA	SVG	Cases
SVD	5	9	14
DVD	32	37	28
TVD	52	63	38
LMT	0	0	0
Total	89	109	198 / 80 cases

b) Anastomoses (Distal site) 2.5 / patient

No. Anastomoses	No. Cases (%)
1	13 (17.5)
2	22 (27.5)
3	35 (42.5)
4	9 (11.3)
5	1 (1.3)
Total Cases	80
Total anast.	203

b) Anastomoses

No. Anastomoses	1	2	3	4	5	No. OP.
SVD	13	1	0	0	0	14
DVD	0	21	7	0	0	28
TVD	0	0	28	9	1	38
LMT	0	0	0	0	0	0
Total cases	13	22	35	9	1	80
Total anast.	13	44	105	36	5	203

d) Graft patency

	No. of grafts	Examined	Patent	Patency Rate (%)
<u>Artery</u>	84	80	80	100
LITA	64	60	60	100
RITA	20	20	20	100
<u>SVG</u>	119	110	107	97.2
Total	203	190	187	98.4

IV. Congenital heart disease

	No. Cases	No. OP.	OP. mortality	Hosp. mortality
ASD/PFO	5	5	0	0
VSD	0	0	0	0
PDA	2	2	0	0
Total	7	7	0	0

V. Others

	No. OP.	No. Cases	OP. mortality	Hosp. mortality
Cardiac tumor	6	6	0	0
Thrombus/ CAT	1	1	0	0
Surgical ventricular repair (VSP)	5	5	0	0
VAS implantation	2	2	0	0
Bleeding (LV rupture)	2	2	0	0
Morrow / Myectomy	6	6	0	0
LAAP	11	11	0	0
Atrial Fibrillation Surgery	15	15	0	0
Pulmonary endarterectomy	1	1	0	0
Other	7	7	0	0
Total	56	56	0	0

VI. Maze operation

	Device	SR recover / Total cases
Full Maze*, n = 2	cryo-ICE	2 / 2 (100)
LA Maze**, n = 12	cryo-ICE	9 / 12 (75.0)
Total, n = 14		11 / 14 (78.6)

VII. VAD HeartMate III

	No. OP.	No. Cases	OP. mortality	Hosp. mortality
Total	2	2	0	0

VIII. Vascular disease

a) Replacement site (Thoracic)

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Root	9	9	0	0
Ascending aorta	16	16	0	0
Hemiarch	10	10	0	0
Total arch	28	28	0	0
Descending aorta	23	23	0	0
(Stent graft)	(21)	(21)	(0)	(0)
Thoracoabdominal aorta	3	3	0	0
Total	89	89	0	0

b) Classification of Thoracic aorta

	No. Cases	Hosp. mortality
<u>Dissection</u>		
Acute	40	0
I	32	0
II	6	0
IIIa	1	0
IIIb	1	0
Chronic	12	0
I	1	0
IIIa	5	0
IIIb	6	0
<u>True</u>	49	0
Root	7	0
Ascending	13	0
Arch	14	0
Descending	14	0
Thoracoabdominal	3	0

Operation method	
Root replacement	17
Bentall	3
Isolated	2
+ Ascending	1
Reimplantation (David)	10
Isolated	6
+ TAR	3
+TAR + OSG	1
Total Root Remodeling (Sleeve)	4
Isolated	1
+ Ascending	3
Ascending aorta replacement	21
Hemiarch replacement	11
Total arch replacement (TAR)	11
Descending aorta replacement	0
Thoracoabdominal aorta replacement	3
TEVAR	19
(Debranch TEVAR)	(19)

c) Classification of Abdominal aorta, peripheral artery

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Abdominal aorta	38	38	0	0
(Stent graft)	(17)	(17)	0	0
Peripheral artery	28	28	0	0
Total	67	67	0	0

	No. Cases	Hosp. mortality	Operation method	
<u>Abdominal aorta</u>	38	1#3		
AAA	36	0	Graft replacement	19
Impending rupture	0	0	EVAR	17
Ruptured	4	1		
ASO	2	0		
<u>Peripheral artery</u>				
ASO	11	0	Thrombectomy	12
Acute arterial occlusion	13	0	Bypass grafting	10
Aneurysm	2	0	Plasty	7
Traumatic	0	0	Resection	1
Others	5	0	Others	1

~ Summary of hospital death ~

No	Age	Gender	Dx	Emergency	Risk factors	
			Operation procedures	POD (days)	Autopsy	Cause of death
1	77	M	uAP		Elective	HD, RMI, Low EF
			CABG-2 (OPCAB)	30	Not done	MOF
2	59	M	MS, Paf		Elective	HD, AHF, ARF (Intubation)
			Maze	15	Not done	Pneumothorax, pneumomediastinum MOF
3	78	M	AAA rupture		Emergency	Shock
			AAA grafting	42	Not done	Bowel necrosis, Limb compartment syndrome

各種データの解釈

- 1) OP mortality: 術後 30 日以内全死亡。Hospital mortality: 術後院内全死亡。
- 2) Mode of Operation: 二つ以上のカテゴリーを含む手術は主病変と考えられるいずれかのカテゴリーに分類。
- 3) Number of Operations and Surgical : 各手術手技の延べ数を合算。
例: CABG+MP+As.Ao.置換→Ischemic, Valvular, Thoracic aorta のそれぞれに加算。
Bentall1, Reimplantation→ Valvular, Thoracic aorta のそれぞれに加算。
- 4) Valvular Heart Disease: 弁に対する操作を行った (付加手術の有無にかかわらず)症例数、手術数を計算。
- 5) Ischemic Heart Disease: CABG を行った (付加手術の有無にかかわらず)症例数を計算。
- 6) Vascular Disease: Bentall, Reimplantation は Replacement site を新たに Root に分類。ただし Reimplantation+Total Arch Replacement でも Root とする。(2013～)
- 7) Graft patency : 冠動脈 CT による評価が増加したため、分類を Patent, Stenosis (含:occlusion)とした。(2014～)
- 8) MVR 術後の perivalvular leakage 症例に対する修復術は術式を Repair とし、Etiology を Other とした。
- 9) 2016 年の TAVI 開始ともない、TAVI Transfemoral approach, Transapical approach のいずれも Cardiac, Valvular, Tissue valve としてカウントした。
- 10) TRR は Cardiac/Valve/Aortic に分類した。(2017～)
- 11) Number of Operations and Surgical (各手術手技の延べ数)における死亡率算出の対象から、心肺停止蘇生後や PCPS を要するような重症心不全症例、術中の予期しない冠動脈閉塞に対する追加バイパス術などの Salvage 手術を除外した。なお、Mode of Operation (主たる手術をカウント、重複なし)では従来通り全ての死亡症例を含んで算出した。(2019～)
- 12) Number of Operations and Surgical における死亡数の欄に死亡症例の通し番号を追記した。(2019～)