

Annual Report of Cardiovascular Surgery 2018
Nagasaki University

2018.1~2018.12

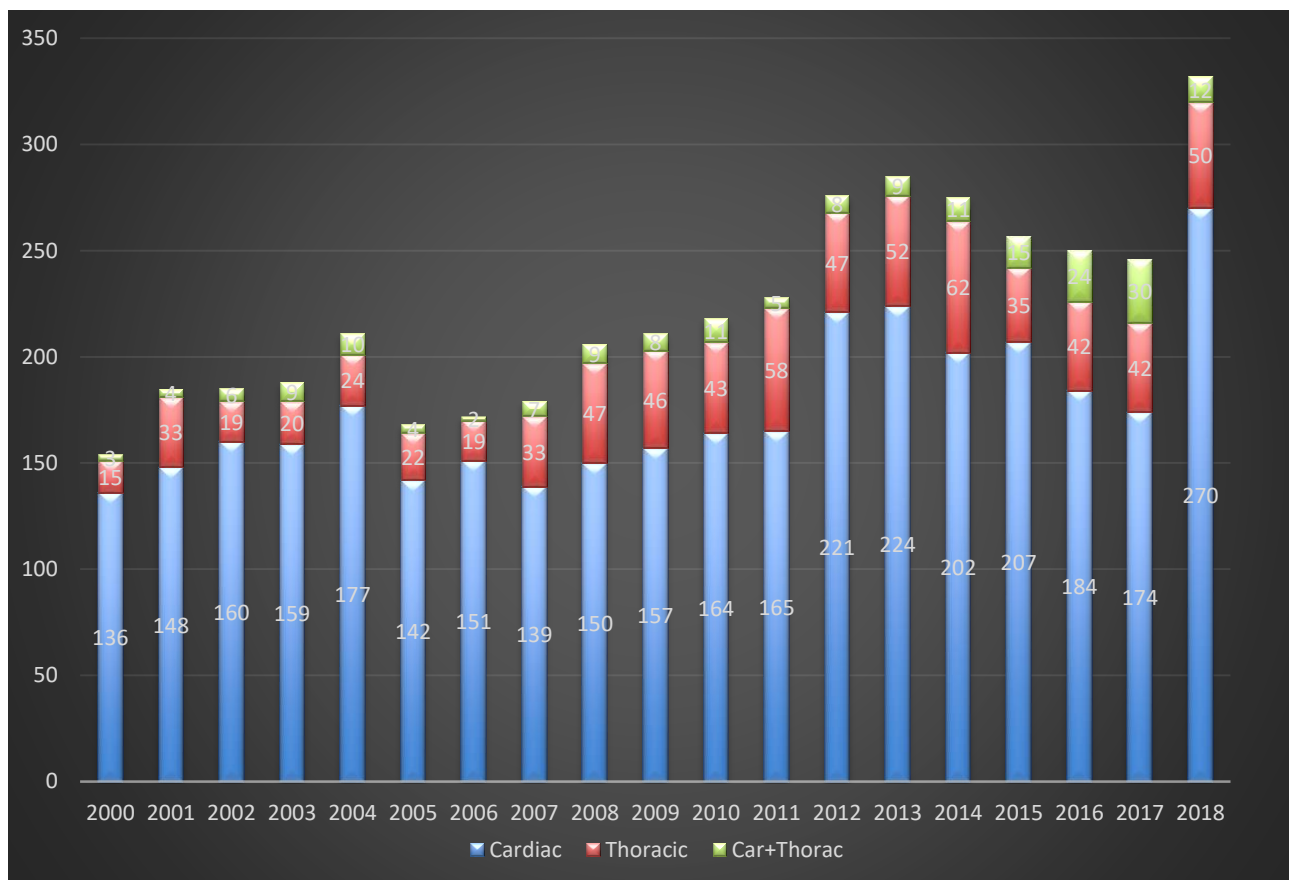
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~Overall~

I . Number of Operations and Surgical mortality

Division	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Cardiac	270	263	4 (1.5)	6 (2.3)
Car. + Thoracic	12	12	1 (8.3)	1 (8.3)
Thoracic	50	50	2 (4.0)	2 (4.0)
Total	332	323	7 (2.2)	9 (2.8)
Abdominal aorta	35	35	0	1 (2.9)
Peripheral	22	21	2 (9.5)	2 (9.5)

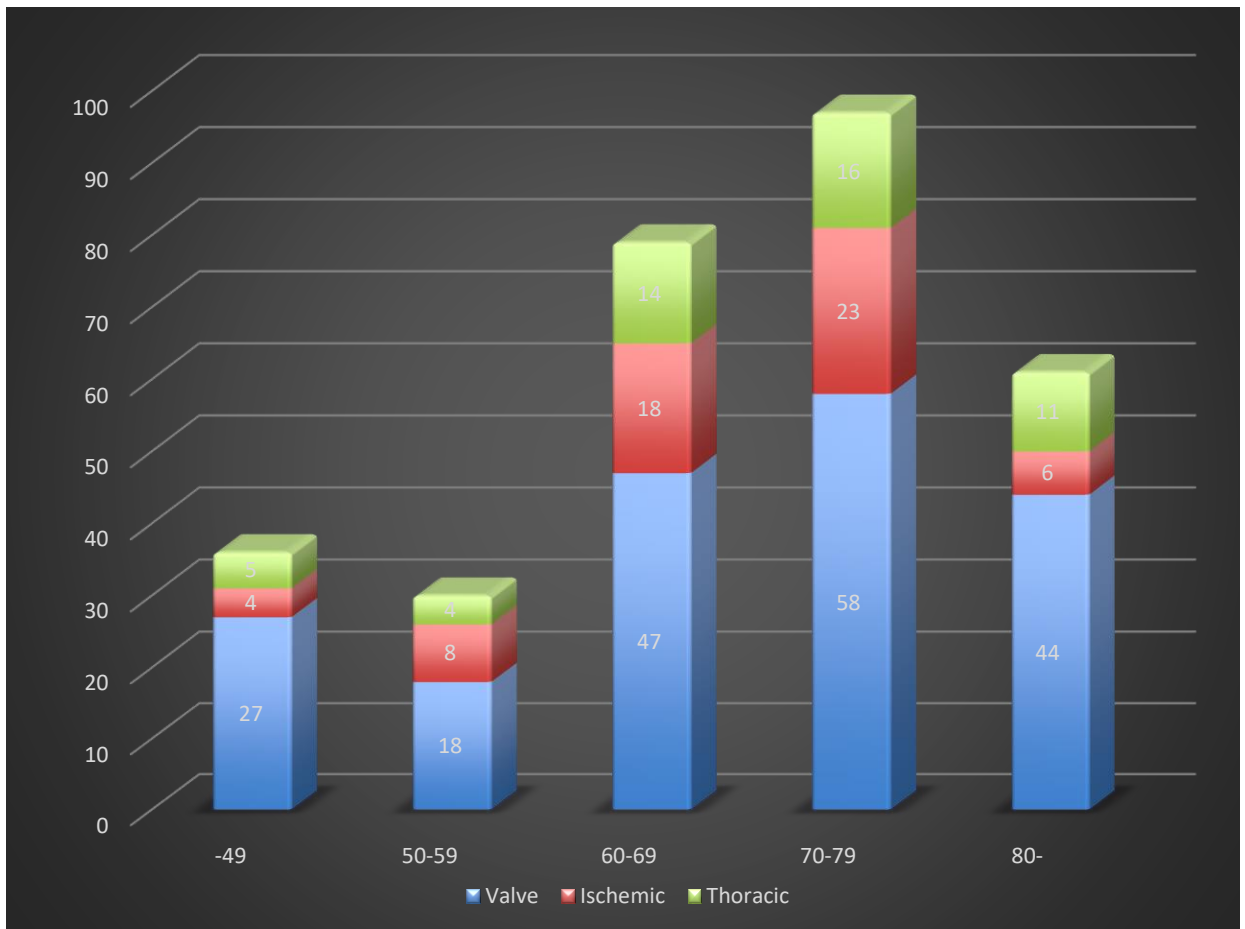
Operations



II. Mode of Operation

	Total	Scheduled (%)	Urgent (%)	Emergent (%)
Ischemic	59	46 (78.0)	9 (15.3)	4 (6.8)
Valvular	194	169 (87.1)	13 (6.7)	12 (6.2)
Congenital	6	6 (100)	0	0
Others	22	11 (52.4)	6 (28.6)	5 (22.7)
Thoracic aorta	51	17 (33.3)	5 (9.8)	29 (54.7)
Abdominal aorta	35	27 (77.1)	1 (2.9)	7 (20.0)
Peripheral artery	22	9 (40.9)	1 (4.5)	12 (54.5)
Total	389	285 (73.3)	35 (9.0)	69 (17.7)

III. Age Distribution



~Summary of Cardio-Vascular Division~

I . Number of Operations and Surgical Mortality

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
<u>Cardiac</u>				
Valvular	206	199	3 (1.5)	4 (2.0)
(redo)	(28)	(21)	0	(1) (4.8)
Ischemic	79	77	2 (2.6)	2 (2.6)
(redo)	(2)	(2)		
Congenital	13	13	0	0
Others	35	35	3 (8.6)	4 (11.4)
<u>Vascular</u>				
Thoracic aorta	71	70	3 (4.3)	3 (4.3)
(redo)	(8)	(8)	0	0
(Stent graft)	(8)	(8)	0	0
Abdominal aorta	36	36	1 (2.8)	2 (5.6)
(Stent graft)	(23)	(23)	1 (2.8)	2 (8.7)
Peripheral artery	22	21	2 (9.5)	2 (9.5)

Concomitant Procedure

Valvular (only): 143 cases

CABG (only): 49 cases

Congenital (only): 7 cases

Others (only): 19 cases

Thoracic aorta (only): 47 cases

Valvular + CABG: 24 cases

Valvular + Thoracic aorta: 23 cases

Valvular + Congenital: 6 cases

Valvular + Others: 11 cases

CABG + Others: 5 cases

II. Valvular Heart Disease

	No. OP.	No. Cases	OP mortality (%)	Hosp. mortality (%)
Aortic *	103	100	2 (2.0)	2 (2.0)
Mitral	65	63	0	0
Tricuspid	7	7	0	0
Combined				
A+M	9	9	0	0
M+T	20	19	0	1 (5.3)
A+M+T	2	2	0	0
A+T	2	2	1 (50.0)	1 (50.0)
Total	208	202	3 (1.5)	4 (2.0)

*: AVR 61, Bentall 6, Reimplantation 5, Reimplantation +AVP 2, Total Root Remodeling 2, Total Root Remodeling +AVP 11, TAVI-TF 29, -SA 2, direct Ao 1

a) Mitral valve disease

Diagnosis

MR	MS	MSR	Total	MVR (%)	Repair (%)
83	8	3	94	18 (19.1)	76 (80.9)

b) Mitral valve repair

Etiology

Congenital	Infectious	Degenerative	Rheumatic	Ischemic	DCM	Other
0	11	57	2	6	1	6

Post ope. follow up

Jet area	Intra. Op.	@ discharge	Follow(~12M)
non to trivial (0-2cm ²)	68	60	27
Mild (2-4cm ²)	8	13	14
mild to moderate, (4-8cm ²)	0	2	1
moderate to severe, (8cm ² -)	0	1	0

c) Valve Substitutes implanted

	Mechanical	Tissue	Total
AVR	26	71*	97
MVR	12	6	18
TVR	0	0	0
PVR	0	1	1
Total	38	78	116

* (TAVI弁32例を含む)

d) Minimally Invasive Cardiac Surgery

Procedures	No. OP.
MP*	42 (2)
MVR**	9 (1)
AVR	1
ASD/PFO	8
TP	2
MIDCAB	0
LA mass/ thrombus	2
Total	65

(-)内はredo症例数

*) MP isolated 22
 MP+TAP 6
 MP+Maze 8
 MP+TAP+Maze 4
 MP+TAP+LAAP 1
 MP+TAP+Maze+LAAP 1

***) MVR单独 5
 MVR+Maze 3
 MVR+LAAP 1
 LAAP:左心耳閉鎖

III. Ischemic Heart Disease

	Total	Isolated CABG	OP. mortality (%)	Hosp. mortality (%)
SVD	20	3	0	0
DVD	18	10	2 (11.1)	2 (11.1)
TVD	31	26	0	0
LMT	10	9	0	0
Total	79	48	2 (2.5)	2 (2.5)

Conventional CABG: 63 cases
 Off pump CABG: 13 cases
 On pump beating CABG: 3 cases

a) Conduit

178 (2.3 / patient)

	ITA	SVG	Cases
SVD	11	9	20
DVD	16	21	18
TVD	36	62	31
LMT	14	14	10
Total	77	101	178/79 cases

b) Anastomoses

183 (2.3 / patient)

No. Anastomoses	No. Cases (%)
1	20 (25.3)
2	21 (26.6)
3	31 (39.2)
4	7 (8.9)
5	0
Total Cases	79
Total anast.	183

b') Anastomoses by OPCAB

35 (2.7 / patient)

No. Anastomoses	No. Cases (%)
1	2 (15.4)
2	2 (15.4)
3	7 (53.8)
4	2 (15.4)
5	0
Total Cases	13
Total anast.	35

c) Anastomoses

No. Anastomoses	1	2	3	4	5	No. OP.
SVD	20	0	0	0	0	20
DVD	0	17	1	0	0	18
TVD	0	0	26	5	0	31
LMT	0	4	4	2	0	10
Total	20	21	31	7	0	79
Total anast.	20	42	93	28	0	183

d) Graft patency

	No. of grafts	Examined	Patent	Patency Rate (%)
<u>SVG</u>	105	92	88	95.7
<u>Artery</u>	77	69	69	100
LITA	65	58	58	100
RITA	12	11	11	100
Total	182	161	157	97.5

*Stenosis : $\geq 90\%$

IV. Congenital Heart Disease

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
ASD/PFO	11	11	0	0
VSD	1	1	0	0
PDA	1	1	0	0
Total	13	13	0	0

V. Others

	No. OP.	No. Cases	OP. mortality	Hosp. mortality
Cardiac tumor	7	7	0	0
Thrombus/ CAT	6	6	1	1
Surgical ventricular repair	5	5	0	0
VAS implantation	5	5	0	1
Bleeding (LV rupture)	2	1	1	1
Pericardiectomy	1	1	1	1
Morrow / Myectomy	4	4	0	0
LAAP	8	8	0	0
不整脈手術	34	34	0	0
Other	3	3	0	0
Total	75	74	3 (4.1)	4 (5.4)

VI. Maze operation

	Device	SR recover / Total cases
Full Maze* , n = 14	cryo-ICE	7/14 (50.0)
LA Maze** , n = 17	cryo-ICE	11/17 (64.7)
PV isolation only, n=3	RF (Clamp type)	2/3 (66.7)
Total 34		20/34 (58.8)

* PV isolation + mitral isthmus ablation + RA Maze

** PV isolation + mitral isthmus ablation

VII. VAD

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Nipro LVAS	0	0	0	0
HeartMate II	5*	5*	0	1 (20.0)
Total	5	5	0	1 (20.0)

*Pump exchange 1 case

VIII. Vascular Disease

a) Replacement site

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Thoracic				
Root	18	18	0	1 (5.6)
Ascending aorta	13	13	0	0
Hemiarch	1	1	0	0
Total arch	19	19	0	0
Descending aorta	9	9	0	0
(Stent graft)	(8)	(8)	(0)	(0)
Thoracoabdominal Ao.	7	7	2 (28.6)	2 (28.6)
Total	67	67	2 (3.0)	3 (4.5)

	No. OP.	No. Cases	OP. mortality (%)	Hosp. mortality (%)
Abdominal aorta	36	36	1 (2.8)	2 (5.6)
(Stent graft)	(23)	(23)	1 (4.3)	2 (8.7)
Peripheral artery	22	21	2 (9.5)	2 (9.5)
Total	58	57	4 (7.0)	6 (10.5)

b) Classification of Thoracic aorta

	No. Cases	Hosp. mortality (%)
<u>Dissection</u>		
Acute	26	1 (3.4)
I	21	1 (4.8)
II	4	0
IIIa	1	0
IIIb	0	0
Chronic	1	0
I	0	0
II	0	1(25.0)
IIIa	0	0
IIIb	4	0
<u>True</u>		
Root	14	0
Ascending	3	0
Arch	8	0
Descending	7	0
Thoracoabdominal	6	1 (16.7)
<hr/>		
Root replacement		18
Bentall		2
Reimplantation		2
Total Root Remodeling		9
Bentall + Ascending		3
Reimplantation + Ascending		1
Total Root Remodeling+ Ascending		1
Bentall + TAR		0
Reimplantation + TAR		0
Total Root Remodeling + TAR		0
Bentall + TAR+OSG		0
Reimplantation + TAR + OSG		0
Total Root Remodeling + TAR + OSG		1
Ascending aorta replacement		8
Hemiarch replacement		1
Total arch replacement (TAR)		12
TAR+OSG		7
Descending aorta replacement		2
Thoracoabdominal aorta replacement		7
TEVAR		8
Debranch TEVAR		0

c) Classification of Abdominal aorta, peripheral artery

	No. Cases	Hosp. mortality (%)	Operation method	
<u>Abdominal aorta</u>	36	2 (5.5)		
AAA	34	2 (5.9)	Graft replacement	13
Scheduled	24	1 (4.2)	Stent Graft	23
Impending rupture or Ruptured	10	1 (10.0)		
ASO	2	0		
<u>Peripheral artery</u>	22	2 (8.7)	Thrombectomy	7
ASO	6	0	Bypass grafting	7
Acute arterial occlusion	8	2 (25.0)	Plasty	7
Aneurysm	5	0	Resection	0
Traumatic	2	0	Others	1
Others	1	0		

～ Summary of Hospital death ～

No	Age	Sex	Dx Operation procedures	Ope date POD (days)	Emergency Autopsy	Risk factors Cause of death	*1 *2
Cardiac 6 cases							
1	69	M	MR, TR, redo (3回目) MP, TAP	2018/2/23 64	Elective Not done	LC, Child-Pugh B, MELD score 14, 気道出血, NOMI	30.0 62.0
2	77	F	左房内血栓、右房内血栓 両房血栓除去、左心耳閉鎖、Maze	2018/2/23 11	Emergency Not done	Septic shock, DIC, Systemic embolism 下腿壊死、DIC, NOMI	68.9 86.5
3	74	M	収縮性心膜炎(拘束性心外膜炎、放射線性心筋症)、食道癌CRT後 心膜剥離術	2018/5/3 20	Urgent Not done	放射線性肺臓炎、 再膨張性肺水腫、LOS (ECMO)	4.3 40.6
4	56	M	DCM, low EF, p/o MVR, TVR, CABG、CRF o HD L-VAD (HM- II)	2018/8/8 47	Elective Not done	Re-do, , IP SAH	73.9 82.3
5	78	F	AS, AP, HD AVR, CABG-1	2018/10/26 5	Elective Not done	CRF on HD, ASO Bradycardia、Shock	5.9 37.1
6	86	M	TAVI中の左室穿孔 左室穿孔部修復、TAP	2018/11/29 25	Emergency Not done	Steroid user, High age MOF	(-) (-)
Thoracic 3 cases							
1	61	M	TAAA, Chronic AD 胸腹部全置換、上行全弓部置換術	2018/1/18 3	Elective Not done	動脈の高度石灰化 DIC, NOMI	(-) (-)
2	82	M	TAAA impending rupture 胸腹部全置換術	2018/8/29 17	Urgent Not done	High age, 多発性骨髄腫 脾損傷、DIC, NOMI	(-) (-)
3	81	M	AAD type A Bentall operation, 上行置換術	2018/10/21 8	Emergency Not done	Shock, 冠動脈閉塞 LOS	(-) (-)
Abdominal 1 cases							
1	82	M	AAA EVAR	2018/1/24 91	Elective Not done	CRF on HD NOMI	(-) (-)
2	90	M	右内腸骨瘤破裂 EVAR, coil embolism	2018/8/28 20	Emergency Not done	Shock, High age 直腸穿孔、敗血症	(-) (-)
Peripheral 2 cases							
1	88	F	急性動脈閉塞 血栓除去	2018/8/10 3	Emergency Not done	High age, SMA閉塞 腸管虚血	(-) (-)
2	51	F	腹部大動脈急性閉塞 Axillo-bifemoral bypass	2018/12/28 11	Emergency Not done	DIC、Shock 全身の虚血壊死、MOF	(-) (-)

* 1 : Japan score 手術死亡 発生予測値
 * 2 : Japan score 手術死亡 + 主要合併症 発生予測値
 (主要合併症 : Stroke, Newly dialysis, Prolonged ventilation >24hrs, Deep sternal wound infection, Reoperation for bleeding)
 基本的にJapan Score Ver.4から算出。

各種データの解釈

1)OP mortality: 術後30日以内の全死亡。

Hospital mortality:術後院内での全死亡。(他科転科後の他病死も含む。他院転院後の手術関連死も含む)

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,Reimpantation→ 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 Reimpantation+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としてカウントしている。