Annual Report of Cardiovascular Surgery 2017
Nagasaki University

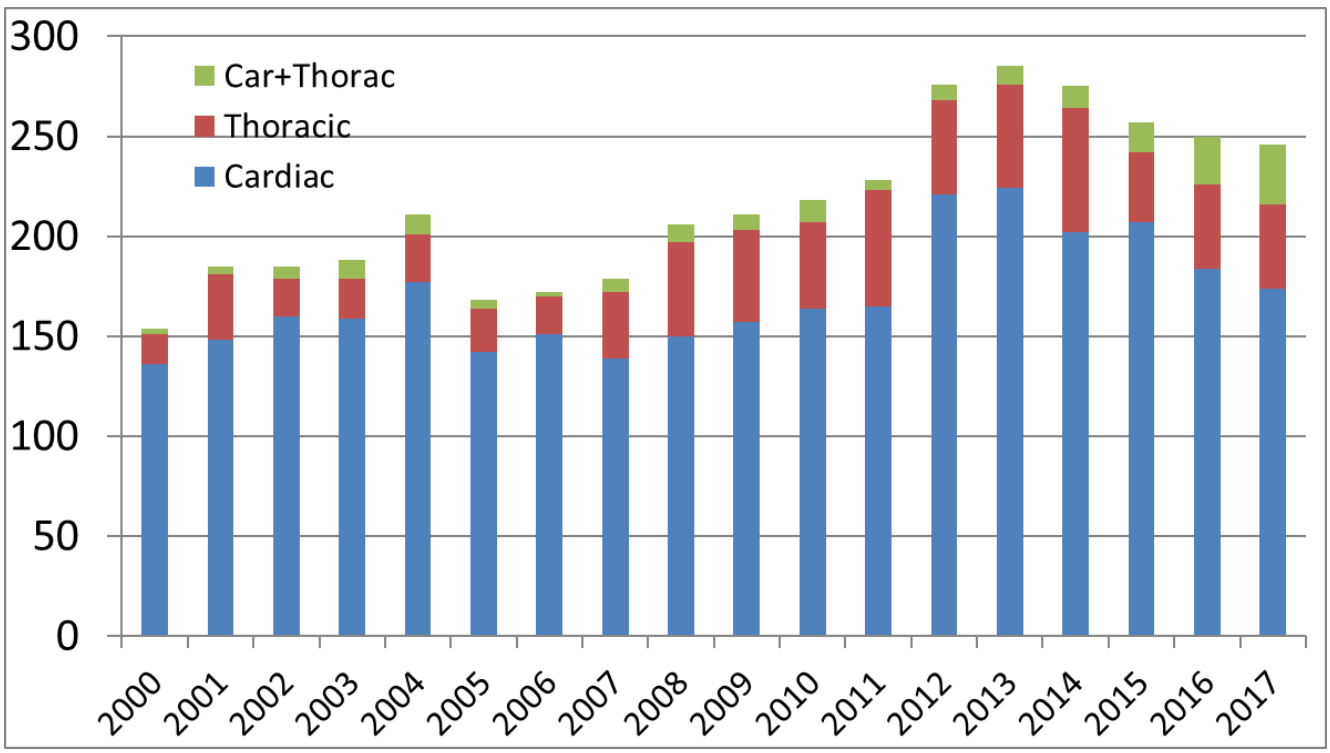
2017.1～2017.12

～Overall～

Ⅰ. Number of Operations and Surgical mortality

Division	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac Thoracic	173 42	174 42	1(0.6) 1(2.4)	4 (2.3) 1(2.4)
Car. + Thoracic	29	30	0	0
Total	244	246	2(0.8)	5 (2.0)
Abdominal aorta Peripheral artery	43 23	44 23	1(2.3) 0	1 (2.3) 0

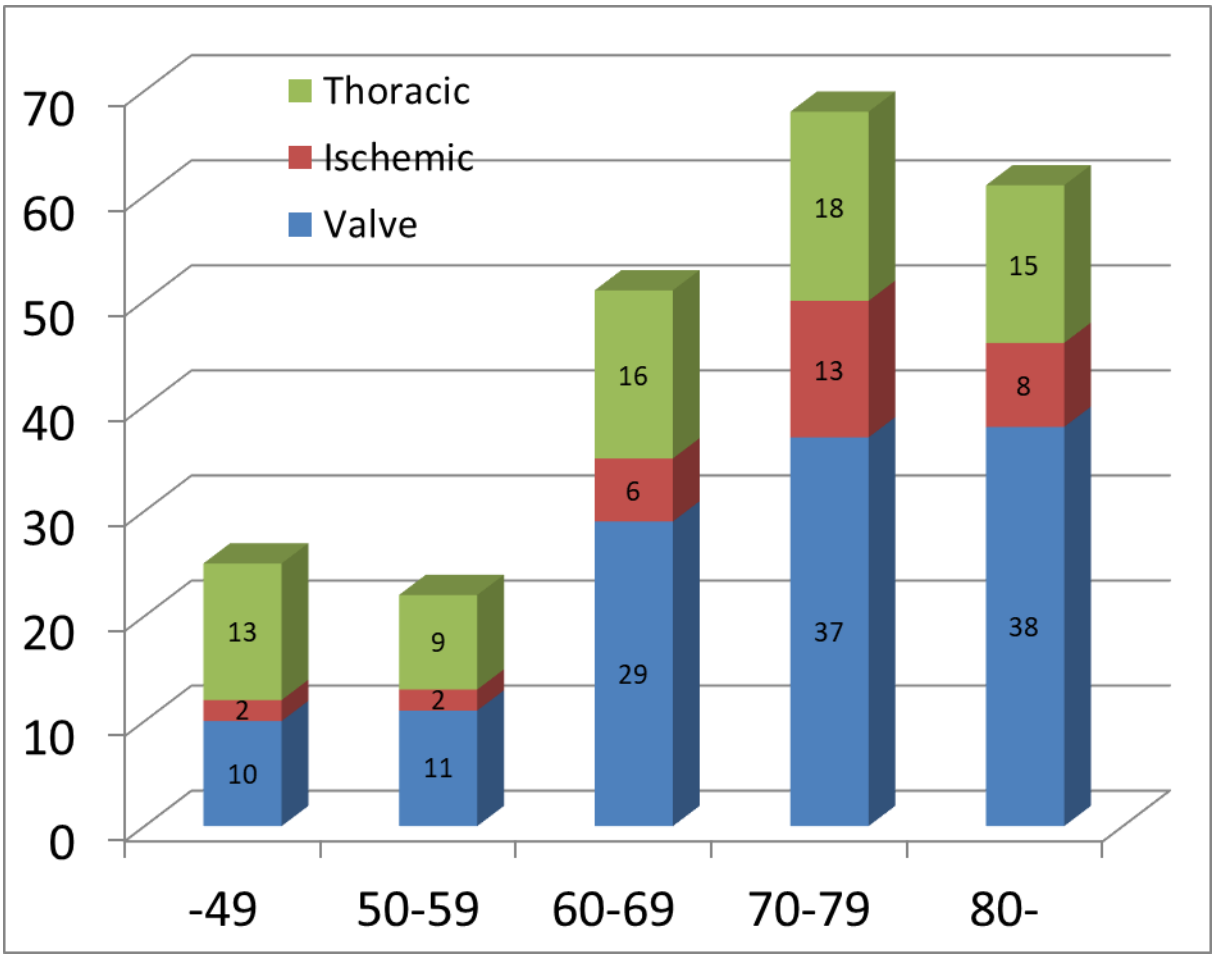
Operations



Ⅱ. Mode of Operation

	total	Scheduled (%)	Urgent (%)	Emergent (%)
Ischemic	31	24(77.4)	4(12.9)	3(9.7)
Valvular	125	114(91.2)	7(5.6)	4(3.2)
Congenital	5	4(80.0)	0	1(20.0)
Others	14	8(57.2)	1(7.1)	5(35.7)
Thoracic aorta	71	40(56.4)	4(5.6)	27(38.0)
Abdominal aorta	44	34(77.3)	3(6.8)	7(15.9)
Peripheral artery	23	6(26.1)	2(8.7)	15(65.2)
Total	313	230(73.5)	21(6.7)	62(19.8)

Ⅲ. Age Distribution



～Summary of Cardio-Vascular Division～

Ⅰ. Number of Operations and Surgical Mortality

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac				
Valvular	153	155	1(0.7)	2(1.3)
(redo)	(19)			
Ischemic	54	54	1(1.8)	1(1.8)
(redo)	(4)			
Congenital	6	6	0	0
Others	49	51	1(1.9)	2(3.9)
Vascular				
Thoracic aorta	71	72	1(1.4)	1(1.4)
(redo)	(6)			
(Stent graft)	(4)			
Abdominal aorta	43	44	1(2.3)	1(2.3)
(Stent graft)	(12)			
Peripheral artery	23	23	0	0

Concomitant Procedure

Valvular(only): 80 cases
CABG(only): 24 cases
Congenital (only): 4 cases
Others(only): 12 cases
Thoracic aorta(only): 42 cases

Valvular + CABG: 19 cases
Valvular + Thoracic aorta: 22 cases
Valvular + Others: 31 cases
Valvular + Thoracic aorta + Others: 1 case
Valvular +CABG + Thoracic: 8 cases
Valvular + Congenital+ Others: 2 cases
Thoracic aorta + CABG: 3 cases
Valvular + Thoracic aorta + CABG + Others: 1 case

Ⅱ. Valvular Heart Disease

	No. Cases	No. OP.	OP mortality (%)	Hosp. mortality (%)
Aortic *	77	80	0	0
Mitral	31	31	1(3.2)	1(3.2)
Tricuspid	4	4	0	0
Pulmonary	0	0	0	0
Combined				
A+M	11	11	0	0
M+T	18	18	0	0
A+M+T	5	5	0	1(20.0)
A+T	4	4	0	0
Total	150	153	1(0.7)	2(1.3)

*: AVR 58, AVP 2, Bentall 4, Reimplantation 6, Reimplatation +AVP 3,
Total Root Remodeling 6, Total Root Remodeling +AVP 10, TAVI-TF 16, TAVI-TA 1

a) Mitral valve disease

Diagnosis

MR	MSr	MsR	MS	MSR	Total		MVR (%)	Repair (%)
58	0	0	4	4	66		9 (13.6)	57 (86.4)

b) Mitral valve repair

Etiology

Congenital	Infectious	Degenerative	Rheumatic	Ischemic	DCM	Other
0	5	50	0	0	2	0

Post ope. follow up

Jet area	Intra. Op.	Post ope. (～discharge)	Follow(～12M)
non to trivial ($0\text{-}2cm^2$)	50	47	11
mild ($2\text{-}4cm^2$)	3	3	3
mild to moderate ($4\text{-}8cm^2$)	0	0	1
moderate to severe ($8cm^2$-)	0	0	0

c) Valve Substitutes implanted　　89 Prostheses

	Mechanical	Tissue	Total
AVR	25	53*	78
MVR	5	4	9
TVR	1	0	1
PVR	0	1	1
Total	31	58	89

＊ TAVI valve 17個を含む

d) Minimally Invasive Cardiac Surgery

Procedures	No.Cases
MP*	33(3)
MVR**	2(1)
AVR	1
ASD/PFO	4
TP	1
MIDCAB	1(1)
LA mass/ thrombus	1
Total	43

( )内はredo症例数

*)　MP isolated　19
　　MP+TAP　1
　　MP+Maze　3
　　MP+TAP+Maze　8
　　MP+TAP+Maze+LAAP　2

**)　MVR+Maze　1
　　MVR+TAP+Maze

LAAP:左心耳閉鎖

Ⅲ. Ischemic Heart Disease

	Total	Isolated CABG	OP. mortality(%)	Hosp. mortality(%)
SVD	18	1	0	1(5.6)
DVD	7	4	0	0
TVD	15	11	0	0
LMT	14	7	0	0
Total	54	23	0	1(1.9)

Conventional CABG : 41 cases
Off pump CABG : 9 cases
On pump beating CABG : 4 cases

a) Conduit 109 (2.0 / patient)

	Artery	SVG	Cases
SVD	3	15	18
DVD	8	7	7
TVD	20	25	15
LMT	15	16	14
Total	46	63	109 conduits / 54cases

b) Anastomoses 109 (2.0 / patient)

No. Anastomoses	No. Cases (%)
1	23(42.6)
2	10(18.5)
3	18(33.3)
4	3(5.5)
5	0
Total Cases	54
Total anast.	109

b') Anastomoses by OPCAB 18 (2.0 / patient)

No. Anastomoses	No. Cases (%)
1	3(33.3)
2	3(33.3)
3	3(33.3)
4	0
5	0
Total Cases	9
Total anast.	18

c) Anastomoses

No. Anastomoses	1	2	3	4	5	No. OP.
SVD	18	0	0	0	0	18
DVD	1	4	2	0	0	7
TVD	0	3	9	3	0	15
LMT	4	3	7	0	0	14
Total	23	10	18	3	0	54
Total anast.	23	20	54	12	0	109

d) Graft patency

	No. of grafts	Examined	Patent	Patentcy Rate(%)	Stenosis*	Stenosis Rate(%)
SVG	63	54	52	96.3	2	3.7
Artery	46	42	42	100	0	0
LITA	34	30	30	100	0	0
RITA	12	12	12	100	0	0
GEA	0	0	0			
RA	0	0	0			
Total	109	96	94	97.9	2	2.1

Intervention： 0 case

*Stenosis：≧90%

Ⅳ. Congenital Heart Disease

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
ASD	4	4	0	0
VSD	1	1	0	0
PDA	0	0	0	0
VSA(Valsalva)	1	1	0	0
Total	6	6	0	0

Ⅴ. Others

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac tumor	3	3	0	0
Thrombus/ CAT	1	1	0	0
Surgical ventricular repair	3	4	1(25.0)	2 (50.0)
Bleeding (LV rupture)	4	4	0	0
Maze	32	32	0	0
Morrow	3	3	0	0
Pericardiectomy	0	0	0	0
LAAP	4	4	0	0
Other	3	3	0	0
Total	53	54	1(1.9)	2(3.7)

Ⅵ. Maze operation

	Cryo Ablation (Old type)	RF:AtriCure (Pen type)	RF:Atricure (Clamp type)	CryoICE	(Total)
Full Maze	6/7(85.7%)	(—)	(—)	12/16(75.0%)	18/23(78.3%)
LA Maze	1/1(100%)	3/5(60.0%)	(—)	(—)	4/6(66.3%)
PV isolation only	(—)	(—)	2/3(66.7%)	(—)	2/3(66.7%)
Total	7/8(87.5%)	3/5(60.0%)	2/3(66.7%)	12/16(75.0%)	24/32(75.0%)

＊洞調律復帰数／対象患者数

Ⅶ. VAD

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Nipro LVAS	1	1	0	0
HeartMate Ⅱ DCM (Bridge to Transplantation)	1	1	0	0
Total	2	2	0	0

Ⅷ. Vascular Disease

a) Replacement site

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Thoracic				
Root	22	23	0	0
Ascending aorta	15	15	0	0
Hemiarch	3	3	0	0
Total arch	24	24	0	0
Descending aorta	6	6	1	1
(Stent graft)	(3)	(3)	(0)	(0)
Thoracoabdominal Ao.	1	1	0	0
Total	71	72	1(1.4)	1(1.4)

	No. Cases	No. OP.	OP. mortality(%)	Hosp. mortality (%)
Abdominal aorta	43	44	0	1(2.3)
(Stent graft)	(13)	(16)	0	0
Peripheral artery	23	23	0	0
Total	66	67	0	1(1.5)

b) Classification of Thoracic aorta

	No. Cases	Hosp. mortality (%)	Operation method	
Dissection			Root replacement	
Acute			Bentall+Ascending	1
Ⅰ	21	0	Bentall+TAR+OSG	1
Ⅱ	4	0	Reimplantation+TAR+OSG	1
Ⅲa	0	0	Ascending aorta replacement	11
Ⅲb	1	0	Hemi arch replacement	3
			Total arch replacement (TAR)	5
Chronic			Total arch replacement+OSG	5
Ⅰ	0	0	Descending aorta replacement	2
Ⅱ	0	0	Thoracoabdominal aorta replacement	0
Ⅲa	0	0	Stent Graft	1
Ⅲb	4	1(25.0)	Stent Graft+Debranch	0
True			Root replacement	
Root	20	0	Bentall	1
Ascending	3	0	Bentall+Asecending	1
Arch	15	0	Reimplantation	3
Descending	3	0	Reimplantation+Asecending	1
Thoracoabdominal	1	0	Total Root Remodeing	13
			Total Root Remodeing+TAR	1
			Ascending aorta replacement	3
			Total arch replacement(TAR)	10
			TAR+OSG	4
			TAR+OSG+Stent graft	1
			Descending aorta replacement	1
			Thoracoabdominal aorta replacement	1
			Stent Graft	2
			Stent Graft+Debranch	0

c) Classification of Abdominal aorta, peripheral artery

	No. Cases	Hosp. mortality (%)	Operation method	
Abdominal aorta			Graft replacement	30
AAA	41	0	Stent Graft	12
Non-ruptured	37	0	Bypass(Iliac artery→SMA)	1
Ruptured	4	0		
ASO	1	0		
Others	1	1(100)		
Peripheral artery			Thrombectomy	11
ASO	4	0	Bypass grafting	4
Acute arterial occlusion	11	0	Plasty	7
Aneurysm	0	0	Others	1
Traumatic	0	0	Resection	0
Others	8	0		

～ Summary of Hospital death ～

No.	年齢	性別	診断	手術日	緊急度	術後日数	＊1
			術式	死亡日	剖検	死因	＊2
Cardiac 4cases							
1	62	男	AR, MSR, TR, 肝硬変	2017/7/12	予定	44	45.5%
			AVR, MVR, TAP	2017/8/25	無	肝不全	83.2%
2	72	男	AP, HD, p/o AVR	2017/10/6	予定	48	36.5%
			CABG	2017/11/23	無	敗血症	66.5%
3	71	男	DCM, MR, af	2017/11/10	予定	20	（－）
			MP, 左室形成術,Maze	2017/11/30	無	LOS	（－）
4	67	男	ICM, LV aneurysm	2017/12/8	準緊急	38	（－）
			左室形成術	2018/1/15	無	LOS	（－）
Thoracic 1case							
1	50	男	Chronic AD(DeBakey Ⅲb)	2017/11/28	予定	1	（－）
			下行大動脈置換	2017/11/29	無	DIC	（－）
Abdominal 2cases							
1	76	女	AAD (DeBakey Ⅰ), SMA閉塞	2017/3/29	緊急	263	（－）
			Iliac Artery – SMA Bypass	2017/12/17	無	腸管虚血	（－）

＊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。