

Annual Report of Cardiovascular Surgery 2016
Nagasaki University

2016.1~2016.12

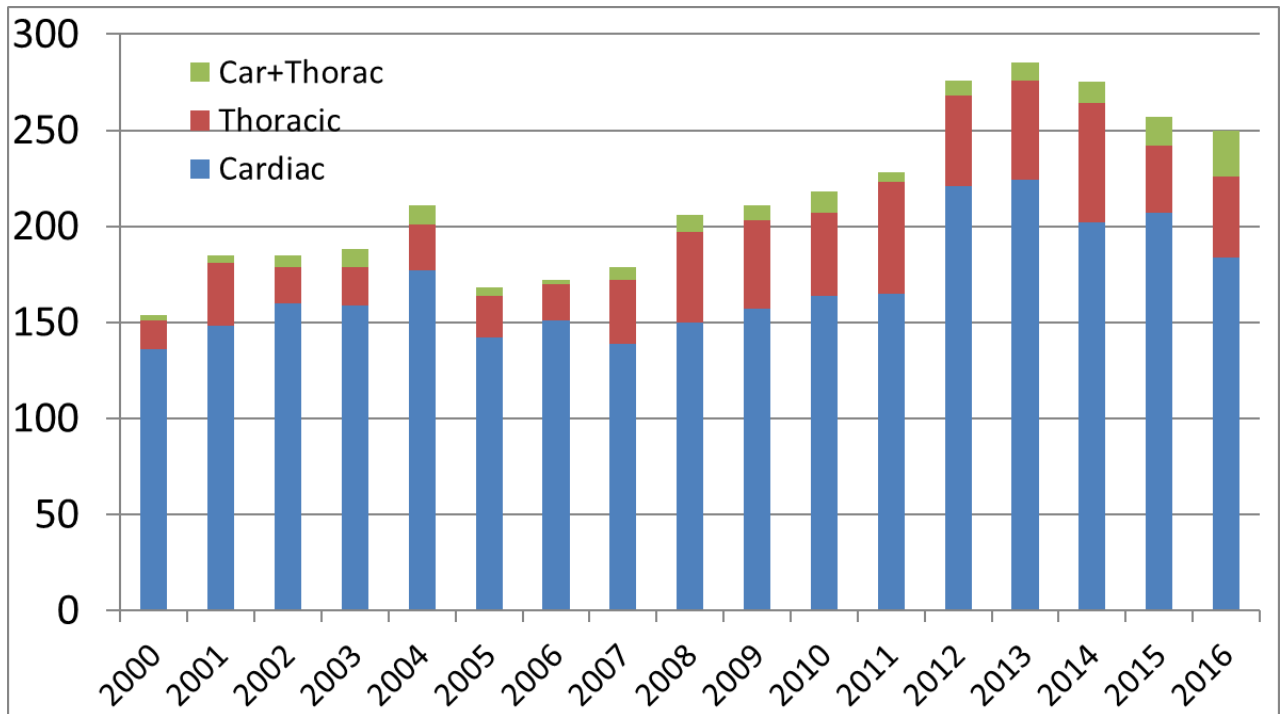
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~Overall~

I . Number of Operations and Surgical mortality

Division	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac	179	184	0	4 (2.2)
Thoracic	40	42	0	0
Car. + Thoracic	24	24	1 (4.2)	1 (4.2)
Total	243	250	1 (0.4)	5 (2.0)
Abdominal aorta	43	43	2 (4.7)	2 (4.7)
Peripheral artery	20	20	0	0

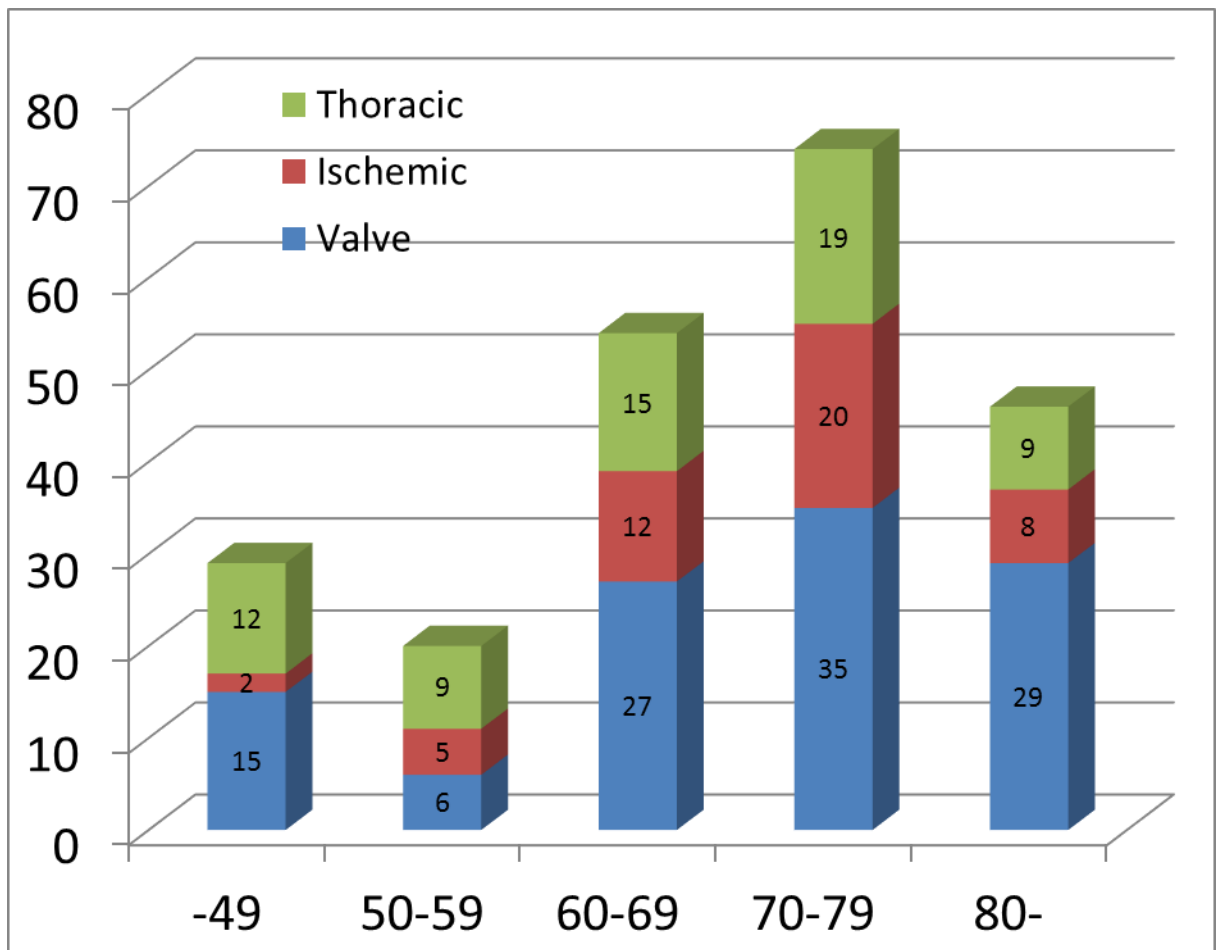
Operations



II. Mode of Operation

	total	Scheduled (%)	Urgent (%)	Emergent (%)
Ischemic	47	35 (74.4)	6 (12.8)	6(12.8)
Valvular	112	101(90.2)	4 (3.6)	7 (6.3)
Congenital	9	9 (100)	0	0
Others	16	9 (56.3)	5 (31.3)	2 (12.5)
VAD	3	2 (66.6)	0	1 (33.3)
Thoracic aorta	64	34 (53.1)	2 (3.1)	28 (44.8)
Abdominal aorta	43	34 (79.1)	1 (2.3)	8 (18.6)
Peripheral artery	20	6 (30.0)	3 (15.0)	11 (55.0)
Total	314	230(73.2)	21 (6.7)	63 (20.1)

III. Age Distribution



~Summary of Cardio-Vascular Division~

I . Number of Operations and Surgical Mortality

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
<u>Cardiac</u>				
Valvular (redo)	134 (14)	136	0	2 (1.5)
Ischemic (redo)	62 (0)	62	1 (1.6)	3 (4.8)
Congenital	9	9	0	0
Others	38	41	0	2 (4.9)
VAD	2	3	0	0
<u>Vascular</u>				
Thoracic aorta (redo) (Stent graft)	64 (4) (10)	66	1 (1.5)	1 (1.5)
Abdominal aorta (Stent graft)	44 (16)	44	2 (4.5)	2 (4.5)
Peripheral artery	20	20	0	0

Concomitant Procedure

Valvular(only): 86 cases
 CABG(only): 44 cases
 Congenital (only): 6 case
 Others(only): 9 cases
 Thoracic aorta(only): 41 cases
 Valvular + CABG: 7 cases
 Valvular + Thoracic aorta: 13 cases
 Valvular + Others: 21 cases
 Valvular + Thoracic aorta + Others: 1 cases
 CABG + Others: 4 cases
 Valvular +CABG + Thoracic: 2 cases
 Valvular + Congenital: 2 cases
 Valvular + Congenital+ Others: 1 case
 Congenital + Valvular +Thoracic 1 case
 Thoracic aorta + CABG: 6 case
 Thoracic aorta + Abdominal aorta : 1 case
 Thoracic aorta + Others : 1 case
 VAD only :1 case
 VAD + Valvular: 2 case

II. Valvular Heart Disease

	No. Cases	No. OP.	OP mortality (%)	Hosp. mortality (%)
Aortic *	56	56	0	0
Mitral	35	36	0	0
Tricuspid	4	4	0	0
Pulmonary	0	0	0	0
Combined				
A+M	7	7	0	0
M+T	23	23	0	1 (4.3)
A+M+T	5	5	0	0
A+T	2	2	0	1 (50.0)
Total	132	133	0	2 (1.5)

*: Reimplantation 4 cases, 大動脈弁形成術 5 cases, Reimplantation+ 大動脈弁形成術 5 cases
Bentall 3 cases, TAVI: Tranfemoral 7cases, Transapical 1case

a) Mitral valve disease

Diagnosis

MR	MSr	MsR	MS	MSR	Total		MVR (%)	Repair (%)
67	0	0	6	2	75		21 (28.0)	54 (72.0)

b) Mitral valve repair

Etiology

Congenital	Infectious	Degenerative	Rheumatic	Ischemic	DCM	Other
0	2	43	0	1	6	2

Post ope. follow up

Jet area	Intra. Op.	Post ope. (~discharge)	Follow(~12M)
non to trivial (0-2cm ²)	50	49	21
mild (2-4cm ²)	4	5	6
mild to moderate (4-8cm ²)	0	0	1
moderate to severe (8cm ² -)	0	0	0

c) Valve Substitutes implanted

79 Prostheses

	Mechanical	Tissue	Total
AVR	22	34	56
MVR	15	6	21
TVR	1	1	2
PVR	0	0	0
Total	38	41	79

d) Minimally Invasive Cardiac Surgery

Procedures	No.Cases
MP*	30(2)
MVR**	13(5)
AVR	1
ASD/PFO	5
TP***	1
MIDCAB	0
LA mass/ thrombus	2
Total	52

()内はredo症例数

*) MP isolated 12
 MP+TAP 9
 MP+Maze 3
 MP+LAAP 1
 MP+TAP+Maze 4
 MP+TAP+PFO 1

**) MVR isolated 7
 MVR+Maze 1
 MVR+TAP 2
 MVR+TAP+LAAP 1
 MVR+TVR 1
 MVR+PFO closure 1

***) TP+ASD 1

LAAP: 左心耳閉鎖

III. Ischemic Heart Disease

	Total	Isolated CABG	OP. mortality(%)	Hosp. mortality(%)
SVD	15	4	1 (6.7)	3 (20.0)
DVD	3	2	0	0
TVD	21	19	0	0
LMT	23	20	0	0
Total	62	45	1 (1.6)	3 (4.8)

Conventional CABG : 33 cases
 Off pump CABG : 28 cases
 On pump beating CABG : 1 cases

a) Conduit

160 (2.5 / patient)

	Artery	SVG	Cases
SVD	5	11	15
DVD	4	2	3
TVD	31	36	21
LMT	34	28	23
Total	74	77	62

b) Anastomoses

158 (2.5 / patient)

b') Anastomoses by OPCAB

79 (2.8 / patient)

No. Anastomoses	No. Cases (%)
1	14(22.6)
2	11 (17.7)
3	29 (46.8)
4	6 (9.7)
5	2 (3.2)
Total Cases	62
Total anast.	157

No. Anastomoses	No. Cases (%)
1	2 (7.1)
2	4 (14.3)
3	19 (67.9)
4	3 (10.7)
5	0
Total Cases	28
Total anast.	79

c) Anastomoses

No. Anastomoses	1	2	3	4	5	No. OP.
SVD	15	1	0	0	0	16
DVD	0	1	1	1	0	3
TVD	0	1	15	3	2	21
LMT	0	8	13	2	0	23
Total	16	11	29	6	2	63
Total anast.	16	22	87	24	10	159

d) Graft patency

	No. of grafts	Examined	Patent	Patency Rate(%)	Stenosis*	Stenosis Rate(%)
SVG	77	70	66	94.3	4	5.7
Artery	74	67				
LITA	51	46	46	100	0	0
RITA	23	21	20	95.2	1	4.8
GEA	0	0	0	0	0	0
RA	0	0	0	0	0	0
Total	152	137	132	96.4	5	3.6

Intervention : 0 case

*Stenosis : $\geq 90\%$

IV. Congenital Heart Disease

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
ASD	6	6	0	0
VSD	3	3	0	0
PDA	0	0	0	0
VSA(Valsalva)	0	0	0	0
Total	9	9	0	0

V. Others

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Cardiac tumor	3	3	0	0
Thrombus/ CAT	3	3	0	0
Surgical ventricular repair	6	8	0	2 (25.0)
Bleeding (LV rupture)	0	0	0	0
Maze	15	15	0	0
Morrow	1	1	0	0
Pericardiectomy	1	1	0	0
LAAP	7	7	0	0
Other	5	5	0	0
Total	41	43	0	2 (4.7)

VI. Maze operation

	No. Cases	Sinus recovery	(%)
Cryoablation	15	11	73.3
PV isolation	0	0	0
Total	15	11	73.3

VII. VAD

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Nipro LVAS	0	0	0	0
HeartMate II DCM (Bridge to Transplantation)	2	3	0	0
Total	2	3	0	0

VIII. Vascular Disease

a) Replacement site

	No. Cases	No. OP.	OP. mortality (%)	Hosp. mortality (%)
Thoracic				
Root	11	11	0	0
Ascending aorta	11	11	0	0
Hemiarch	0	0	0	0
Total arch	24	24	1 (4.2)	1 (4.2)
Descending aorta	16	16	0	0
(Stent graft)	(11)	(11)	(0)	(0)
Thoracoabdominal Ao.	4	4	0	0
Total	66	66	1(1.5)	1(1.5)

	No. Cases	No. OP.	OP. mortality(%)	Hosp. mortality (%)
Abdominal aorta	43	43	2 (4.7)	2(4.7)
(Stent graft)	(16)	(16)	(1,(2.3))	(1,(2.3))
Peripheral artery	20	20	0	0
Total	63	63	2 (3.2)	2 (3.2)

b) Classification of Thoracic aorta

	No. Cases	Hosp. mortality (%)	Operation method	
Dissecting			Root replacement	
Acute			Bentall	1
I	14	1(7.1)	Bentall+Total arch replacement	2
II	4	0	Reimplantation+TAR	2
IIIa	2	0	Ascending aorta replacement	10
IIIb	5	0	Hemi arch replacement	0
			Total arch replacement (TAR)	5
Chronic			Total arch replacement+Open stent	4
I	1	0	TAR+Descending aorta replacement	1
II	1	0	Descending aorta replacement	2
IIIa	1	0	Thoracoabdominal aorta replacement	0
IIIb	8	0	Stent Graft	8
			Stent Graft+Debranch	1
True				
Root	7	0	Root replacement	
Ascending	1	0	Bentall	0
Arch	13	0	Reimplantation	6
Descending	4	0	Reimplantation+TAR+OSG	1
Thoracoabdominal	5	0	Ascending aorta replacement	1
			Hemi arch replacement	0
			Total arch replacement	6
			Total arch replacement+Open stent	6
			TAR+Descending aorta replacement	1
			Descending aorta replacement	3
			Thoracoabdominal aorta replacement	3
			Stent Graft	2
			Stent Graft+Debranch	0

c) Classification of Abdominal aorta, peripheral artery

	No. Cases	Hosp. mortality (%)	Operation method	
Abdominal aorta			Graft replacement	27
AAA	43	2 (4.7)	Stent Graft	16
Non-ruptured	40	1 (2.5)		
Ruptured	3	1 (33.3)		
ASO	0	0		
Peripheral artery			Thrombectomy	5
ASO	4	0	Bypass grafting	8
Acute arterial occlusion	8	0	Plasty	4
Aneurysm	0	0	Others	2
Traumatic	1	0	Resection	1
Others	7	0		

～ Summary of Hospital death ～

No.	氏名	性別	年齢	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	川○ ○木○	女	74	AMI, VSP	2016/1/15	準緊急	67	(-)
				VSP閉鎖術、CABG	2016/3/22	無	脳梗塞	(-)
2	高○ 宏○	男	73	AS, TR, 透析困難症	2016/4/1	緊急	32	61.2
				AVR, TAP	2016/5/3	無	PH, 右心不全	81.4
3	岩○ 明○	女	84	AMI, VSP	2016/11/2	準緊急	74	(-)
				VSP閉鎖術、CABG	2017/1/15	無	腸管虚血	(-)
4	木○ ○	女	79	MR, TR, caf, LC	2016/12/16	予定	34	5.4
				MP, TAP, Maze (MICS)	2017/1/19	無	肝不全	21.7
Thoracic 1case								
1	吉○ 光○	男	62	AAD (Stanford A), CPA	2016/8/15	緊急	3	(-)
				弓部大動脈置換, CABG	2016/8/18	無	脳梗塞	(-)
Abdominal 2cases								
1	山○ 幸○	男	85	AAA rupture, post EVAR	2016/7/6	緊急	1	(-)
				EVAR	2016/7/7	無	出血性ショック	(-)
2	福○ 一○	男	80	AAA	2016/9/12	予定	18	(-)
				腹部大動脈人工血管置換	2016/9/30	無	不明、ACS?	(-)

* 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。(＃)はJapan Score 2 より算出

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,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としてカウントしている。