

**Special
Report**

Coronary Artery Surgery in Japan in 2017

**Annual Report by The Japanese Association for Coronary
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This survey was conducted by Japanese Association for Coronary Artery Surgery (JACAS). This is the 23rd survey since the first in 1996. Here, we have summarized the results from our annual survey of coronary artery surgery performed during 2017.

Thirty-day mortality (so called “operative mortality”) is defined as death within 30 days of operation regardless of the patient’s geographic location and even though the patient had been discharged from the hospital. Stroke is defined as neurological deficit deriving from central nervous system, irrespective of ischemia or hemorrhage, which lasted more than 72 hours and was accompanied by irreversible brain damage or persistent physiological disorders.

We got response from 306 institutions among 495 in Japan, the response ratio is 61.8%. We express our deep appreciation for the cooperation of so many researchers and institutions.

2017 Final Report

A total of 12584 cases including 8497 isolated CABG cases and 4087 concomitant CABG cases were reported. Among 8497 isolated CABG cases, initial elective cases

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Table 1 Coronary artery bypass grafting (CABG), 2017

	Case	(%)
Total cases	12584	
Isolated CABG	8497	68
Previous year		67
Concomitant CABG	4087	32
Previous year		33
<hr/>		
Isolated CABG		
Initial elective	7144	
Off-pump	4562	64
On-pump	2582	
Previous year		62
Except initial elective	1353	
Off-pump	646	48
On-pump	707	
Previous year		51

were 7144. Among these 7144 initial elective CABG, off-pump CABG was intended in 4562 cases (63.9%) with a success rate of 97.1%; so final success rate of off-pump CABG was 62.0% (**Table 1**).

The percentage of intended off-pump CABG was 52.5% in 2003, and was increased to 62.0% in 2004, then was kept over 60% until now (**Fig. 1**).

CABG cases are getting older year by year, more than 70 years old patients rate was 51.6%, more than 80 was 12.7%, showing high rate (**Fig. 2**).

Arterial grafts were used in 58.8% of all grafts, while vein grafts were used in 40.9%. The frequency of vein graft usage increased in recent years (**Fig. 3**).

The mortality of isolated CABG was 1.52%, that of initial elective CABG was 0.81%, indicating better excellent results than those of previous year (1.09%). The mortality of off-pump was 0.61%, which was much lower than that of previous year (0.86%), indicating excellent results (**Table 2**).

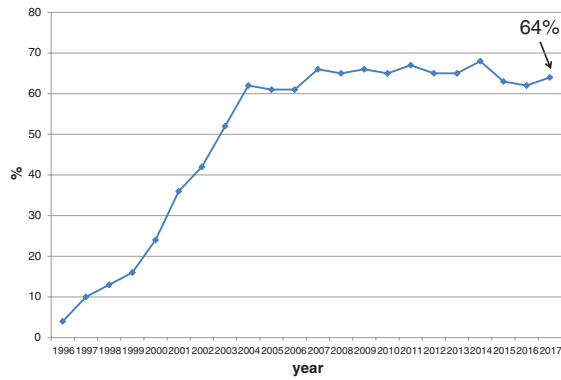


Fig. 1 Changes of off-pump CABG rate (initial elective CABG).

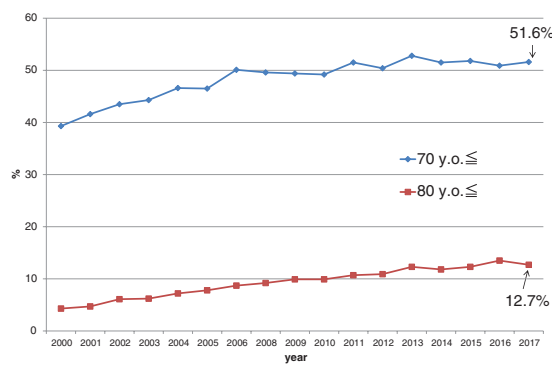


Fig. 2 Changes of elderly cases (initial elective CABG).

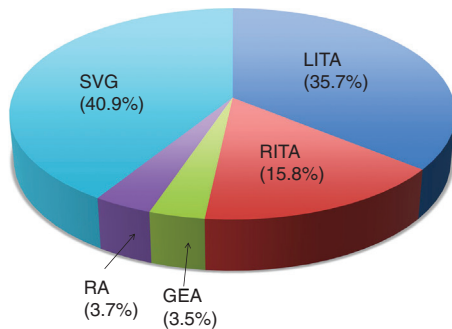


Fig. 3 Graft selection (total graft number of isolated CABG: 22293).

Although off to on-pump conversion rate was worse than previous year 2.3-2.9%, the mortality of those cases was remarkably better than that of previous year (5.88-2.29%) (Table 3).

After PCI complications, emergency operation underwent in 0.88% of all isolated CABG within 24 hours.

Table 2 Mortality of CABG, 2017

	(%)
Mortality of isolated CABG	1.52
Previous year	1.66
Mortality of initial elective CABG	0.81
Previous year	1.09
On-pump (arrest)	0.73
On-pump (beating)	1.59
Off-pump (total)	0.65
Off-pump (complete)	0.61
Previous year	0.86
On-pump (conversion)	2.29
Previous year	5.58

Table 3 Procedures of CABG, 2017

		(%)
Initial elective CABG	7144	(100)
On-pump (arrest)	1516	(21.2)
On-pump (beating)	1066	(14.9)
Off-pump (total)	4562	(63.9)
Off-pump (complete)	4431	
On-pump (conversion)	131	
Off-pump complete rate		(97.1)
Off to on-pump conversion rate		(2.9)
Previous year		(2.3)

Table 4 Results of emergency CABG after PCI complications

Case	75		
Rate	75/8497		
Isolated CABG	0.88%		
Death cases	11		
Mortality	14.67%		
Results	Cases	Death cases	Mortality (%)
CABG 1	25	4	16
CABG 2	26	3	11.54
CABG 3	11	1	9.09
CABG 4	8	2	25
Other procedures	5	1	20

Emergency CABG; operation after PCI complications (coronary occlusion and/or bleeding), within 24 hours.

The mortality of those cases was 14.67%, showing still high rate (Table 4).

The complication rate of central nerve system stroke of all isolated CABG was 1.14%. This rate of off-pump CABG showed significantly lower than those of on-pump beating cases (1.86%) (Fig. 4).

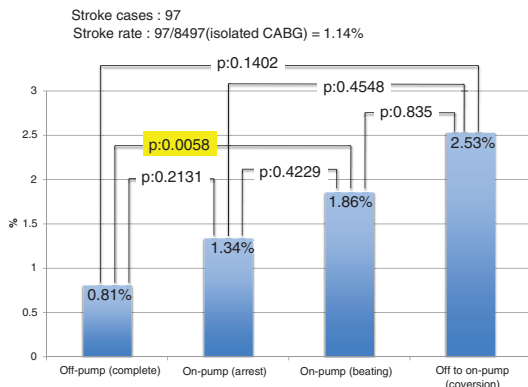


Fig. 4 Stroke rate according to procedures (isolated CABG).

A total of 371 patients underwent surgery for complications of acute myocardial infarction, including 172 operations for a ventricular septal perforation, 68 operations for a papillary muscle rupture of the mitral valve, and 131 operations for a free wall rupture of the left ventricle, with mortality of 23.2%, 19.1%, and 35.1%, respectively.