

2023 대한심장혈관흉부외과학회

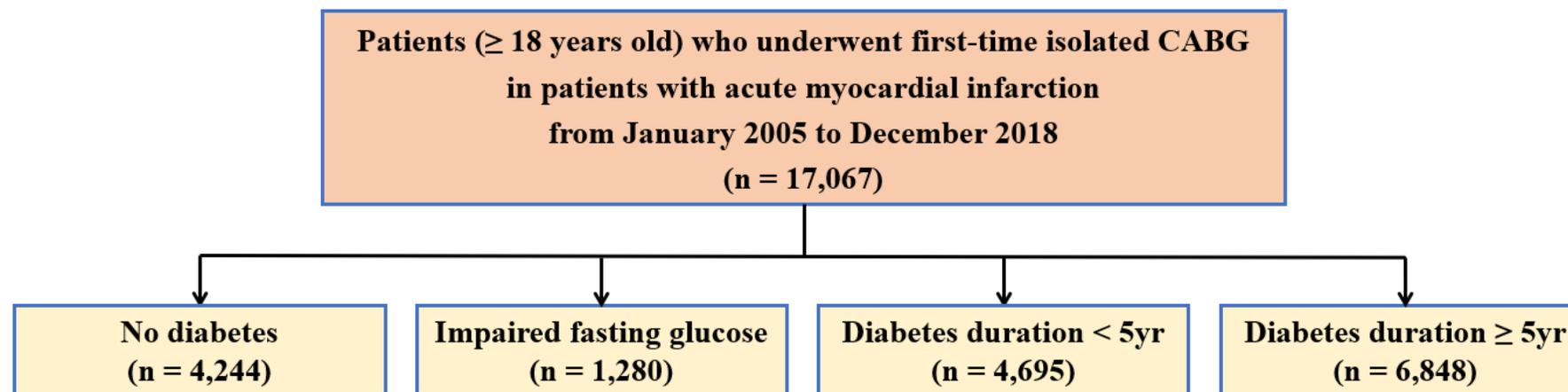
# 제55차 추계학술대회 & APELSO 2023

2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

**Impact of diabetes mellitus on clinical outcomes  
following coronary artery bypass grafting  
in patients with acute myocardial infarction:  
A nationwide population-based study in South Korea**



- Diabetes mellitus
  - One of the risk factors for cardiovascular disease, and increases the risk of postoperative mortality
- Previous studies on the association between glycemic control and coronary artery bypass grafting (CABG)
  - Most of them are single center studies.
- Few studies specifically focusing on acute myocardial infarction (AMI)
- We aimed to explore the impact of baseline glucose tolerance status on clinical outcomes after CABG in patients with AMI.



- National Health Insurance Service Database
- Diabetes: E11.x – E14.x
- Fasting glucose measurement: Health screening
- No diabetes: fasting glucose <100 mg/dL
- Impaired fasting glucose: 100-125 mg/dL
- Index date
  - The admission date for the first-time isolated CABG
- Primary outcome
  - 10-year mortality
- Secondary outcomes
  - 30-day mortality
  - 30-day stroke
  - 10-year repeat revascularization

• Table 1. Baseline characteristics

	Total (n = 17,067)	No diabetes (n = 4,244)	Impaired fasting glucose (n = 1,280)	Diabetes duration < 5yr (n = 4,695)	Diabetes duration ≥ 5yr (n = 6,848)	p value
Age (median, IQR) (year)	65.0 (57.0-72.0)	62.0 (53.0-70.0)	63.0 (55.0-70.0)	64.0 (57.0-71.0)	68.0 (61.0-74.0)	< 0.001
Male (%)	73.9	79.3	83.4	73.1	69.4	< 0.001
Comorbidities (%)						
Hypertension	82.5	63.8	66.1	<b>87.8</b>	<b>93.5</b>	< 0.001
Dyslipidemia	77.4	52.6	58.5	<b>82.0</b>	<b>93.0</b>	< 0.001
Stroke	22.1	11.3	9.5	<b>22.4</b>	<b>31.1</b>	< 0.001
Chronic kidney disease	11.8	3.1	2.3	<b>9.3</b>	<b>20.6</b>	< 0.001
Peripheral vascular disease	28.4	13.9	16.6	<b>22.8</b>	<b>43.4</b>	< 0.001
Cardiogenic shock (%)						
Inotropic use	38.1	40.4	40.6	33.1	39.6	< 0.001
ECMO use	1.5	1.9	1.3	1.3	1.4	0.070
IABP use	2.6	2.9	2.5	2.4	2.5	0.440
CPR	5.0	4.0	3.1	5.9	5.4	< 0.001

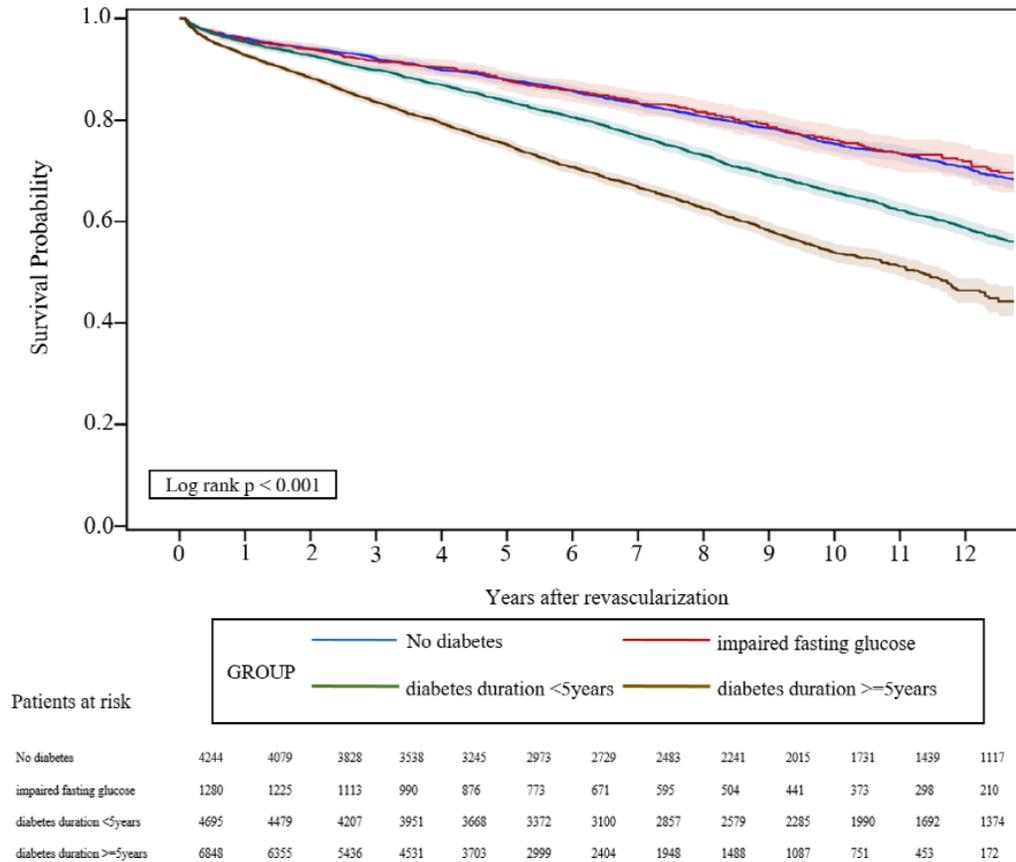
	Total (n = 17,067)	No diabetes (n = 4,244)	Impaired fasting glucose (n = 1,280)	Diabetes duration < 5yr (n = 4,695)	Diabetes duration ≥ 5yr (n = 6,848)	p value
PCI profile (%)						
Single territory (LCA or RCA)	33.9	35.7	34.2	33.3	33.1	0.024
Multi-territory	1.0	1.1	1.6	0.8	1.0	0.110
CABG profile (%)						
Off-pump CABG (One vessel)	6.1	7.5	6.3	5.5	5.7	< 0.001
Off-pump CABG (Two or more)	50.0	48.5	49.4	49.6	51.4	0.022
On-pump CABG (One vessel)	1.9	2.4	2.0	1.9	1.6	0.035
On-pump CABG (Two or more)	41.9	41.6	42.4	43.0	41.3	0.278

Follow-up duration: 6.0 (IQR, 2.8–10.4) years

- Table 2. Multivariable analysis of outcomes

	Total (n = 17,067)	No diabetes (n = 4,244)	Impaired fasting glucose (n = 1,280)	Diabetes duration < 5yr (n = 4,695)	Diabetes duration ≥ 5yr (n = 6,848)
30-day mortality, n (%)	681 (4.0)	164 (3.9)	57 (4.5)	120 (2.6)	340 (5.0)
HR (95% CI)		Reference	1.14 (0.84-1.54)	0.63 (0.50-0.81)	1.05 (0.84-1.30)
30-day stroke, n (%)	1,957 (11.5)	402 (9.5)	99 (7.7)	583 (12.4)	873 (12.8)
HR (95% CI)		Reference	1.08 (0.86-1.34)	0.95 (0.84-1.09)	<b>1.76 (1.54-2.03)</b>
10-year mortality, n (%)	4,441 (26.0)	836 (19.7)	217 (17.0)	1,373 (29.2)	2,015 (29.4)
HR (95% CI)		Reference	0.96 (0.83-1.11)	<b>1.23 (1.13-1.35)</b>	<b>1.44 (1.31-1.58)</b>
10-year repeat revascularization, n (%)	2,771 (16.2)	724 (17.1)	188 (14.7)	840 (17.9)	1,019 (16.2)
HR (95% CI)		Reference	<b>1.19 (1.01-1.40)</b>	0.92 (0.83-1.02)	<b>2.28 (2.03-2.56)</b>

Figure. Kaplan-Meier survival curves for long-term survival



- Multivariable models were adjusted for differences in age, sex, and comorbidities.

- This population-based cohort study suggests that diabetes mellitus is an independent risk factor for long-term outcomes after CABG.
- A longer diabetes duration has been also important factor that significantly increases the 10-year mortality rate and the occurrence of 10-year repeat revascularization.