

# Re-Hospitalization After PCI and CABG

**Jung-Min Ahn, MD.**

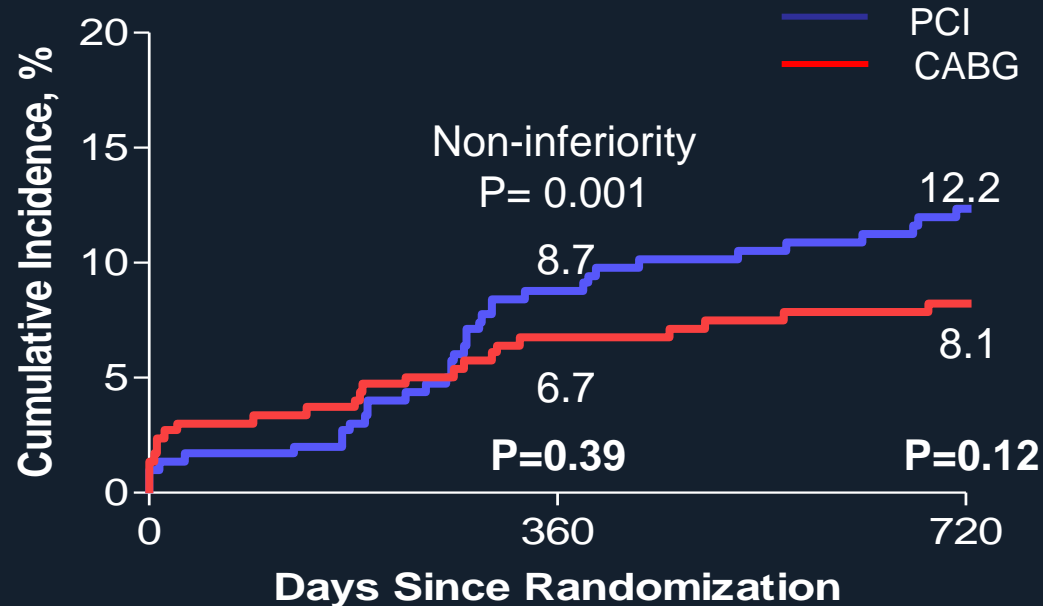
Professor of Medicine, University of Ulsan College of Medicine,  
Heart Institute, Asan Medical Center, Seoul, Korea

# Introduction

- Analysis of readmissions after revascularization therapy for coronary artery disease has been conducted to evaluate the quality of care provided during index hospitalization, and to find ways to reduce readmission.
- However, information on potential differences in the risk of morbidity leading to readmission may help patients who are facing a treatment choice to decide on a revascularization strategy

# PRECOMBAT Study

Death, MI, Stroke or iTVR



No. at Risk

PCI

300

272

236

CABG

300

276

239

Park SJ, Kim YH, et al N Engl J Med 2011;364:1718-27

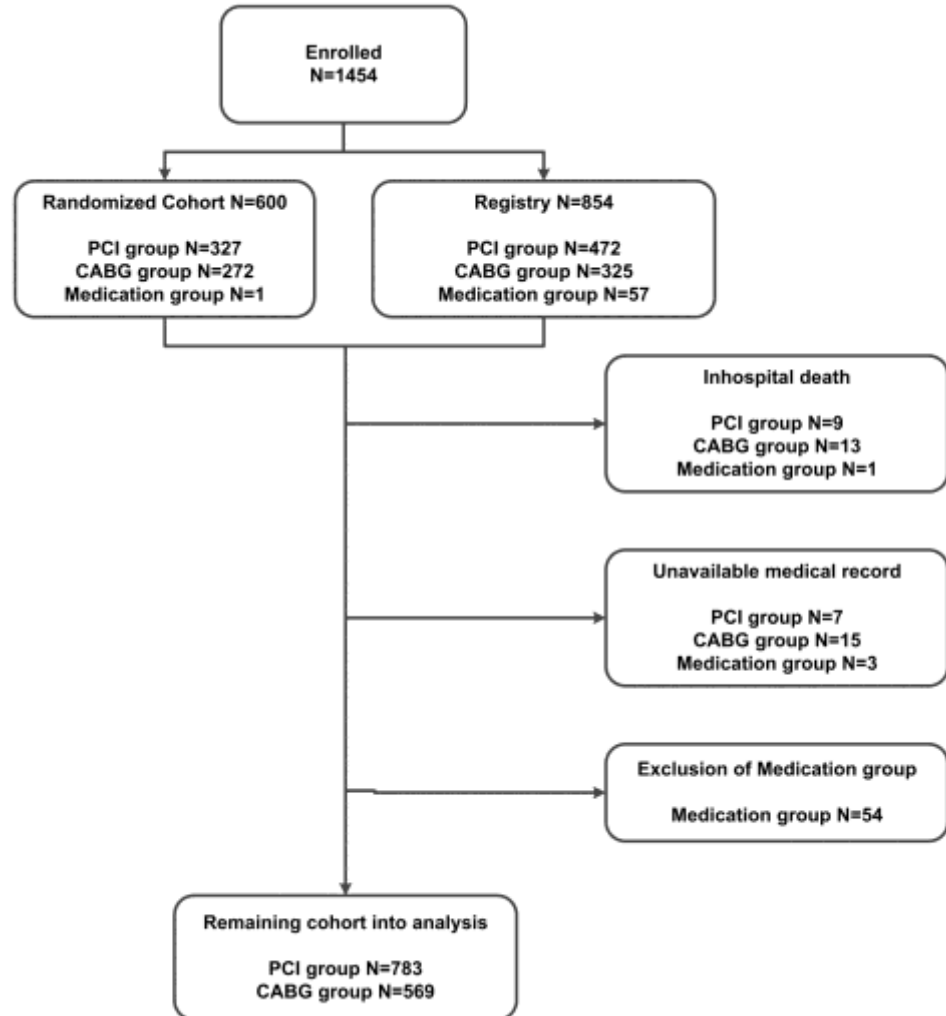
Ahn JM, Roh JH et al JACC in press

# Objective

- To investigate the morbidity of ULMCA stenosis patients treated with PCI and CABG, we compared readmissions of the PRECOMBAT trial patients, in both the randomized group and the pre-specified registry.

# Patients

From PRECOMBAT study,  
1352 patients



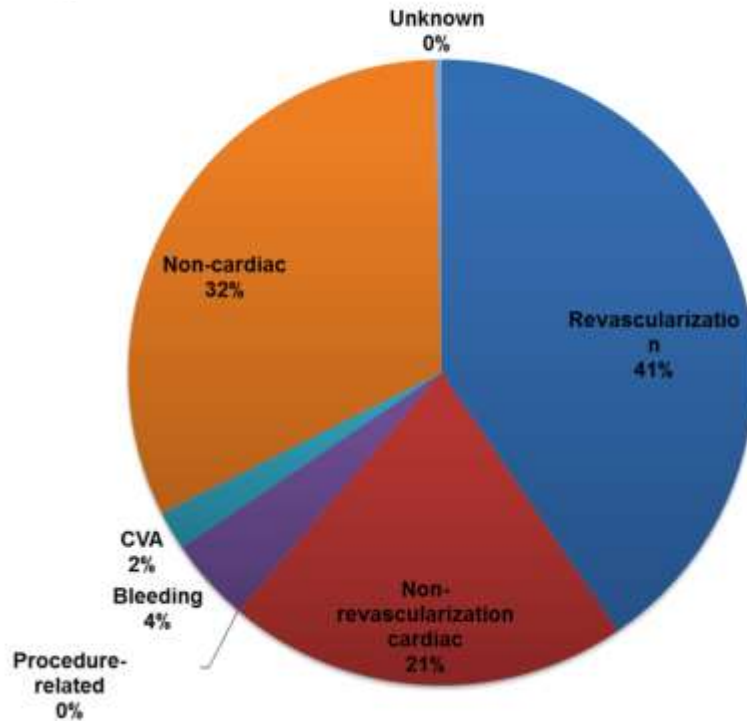
# Baseline Characteristics

Variables	PCI (N=783)	CABG (N=569)	P-value
Age, years	62.2 ± 10.6	63.6 ± 9.1	0.014
Male sex	589 (75.2)	438 (77.0)	0.46
Body mass index	24.5 ± 2.8	24.7 ± 3.0	0.33
Medically treated diabetes			
Any	269 (34.4)	215 (37.8)	0.19
Requiring insulin	23 (2.9)	41 (7.2)	< 0.001
Hypertension	437 (55.8)	315 (55.4)	0.87
Hyperlipidemia	318 (40.6)	195 (34.3)	0.018
Current smoker	212 (27.1)	164 (28.8)	0.48
Ejection fraction, %	60.7 ± 9.0	57.9 ± 10.7	< 0.001

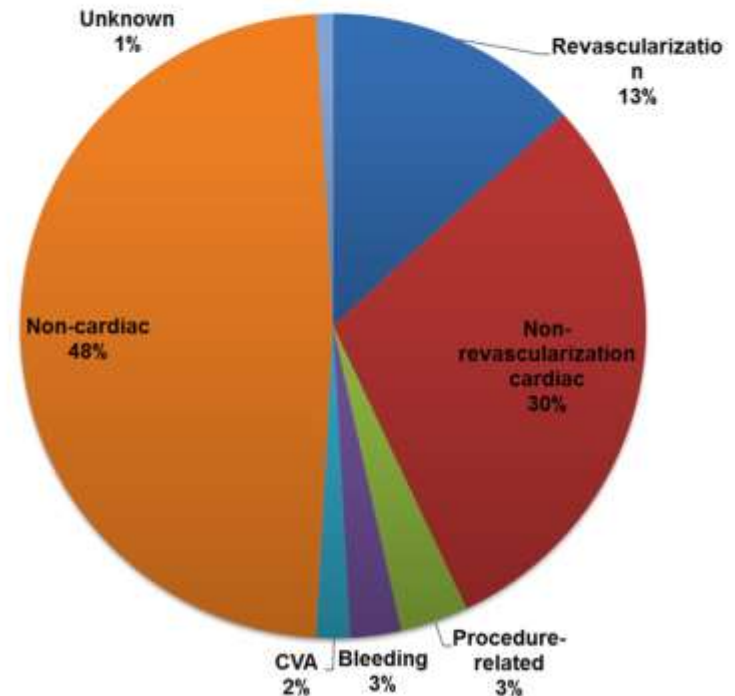
# Causes of Readmission

During the follow-up period, 413 (30.5%) readmissions occurred, 299 in the PCI group and 114 in the CABG group.

## PCI



## CABG



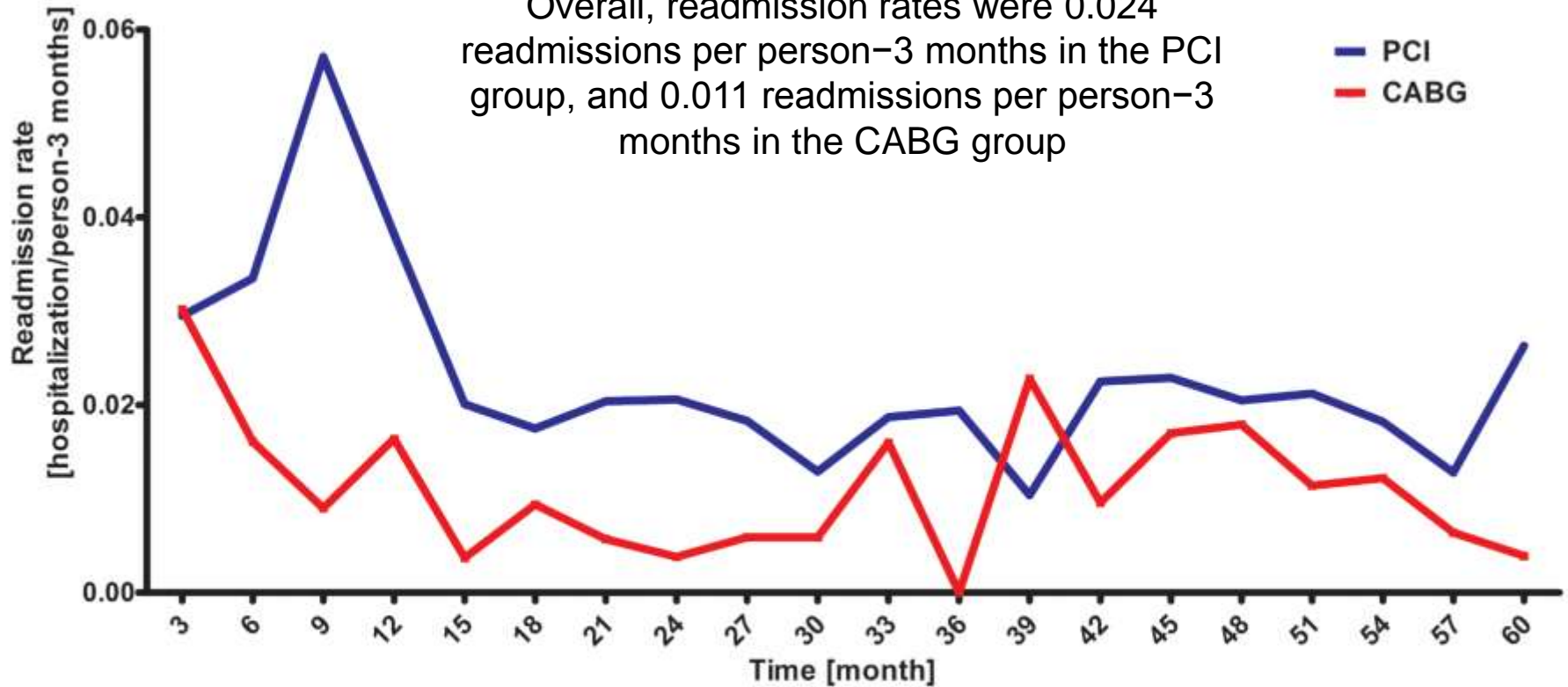
# Non-cardiac causes of readmission

	PCI (N=96)	CABG (N=55)
Malignancy	12 (12.5)	13 (23.6)
Gastro-intestinal	11 (11.5)	5 (9.1)
Related to bone and soft tissue	11 (11.5)	3 (5.5)
Pulmonologic	12 (12.5)	1 (1.8)
Peripheral vascular disease	6 (6.3)	4 (7.3)
General weakness	3 (3.1)	6 (10.9)
Neurologic	5 (5.2)	3 (5.5)
Related to diabetes	3 (3.1)	5 (9.1)
Infection	4 (4.2)	2 (3.6)
Ophthalmologic	5 (5.2)	1 (1.8)
Related to urogenital organ	3 (3.1)	1 (1.8)
Other	21 (21.9)	11 (20.0)



# Readmission Rate

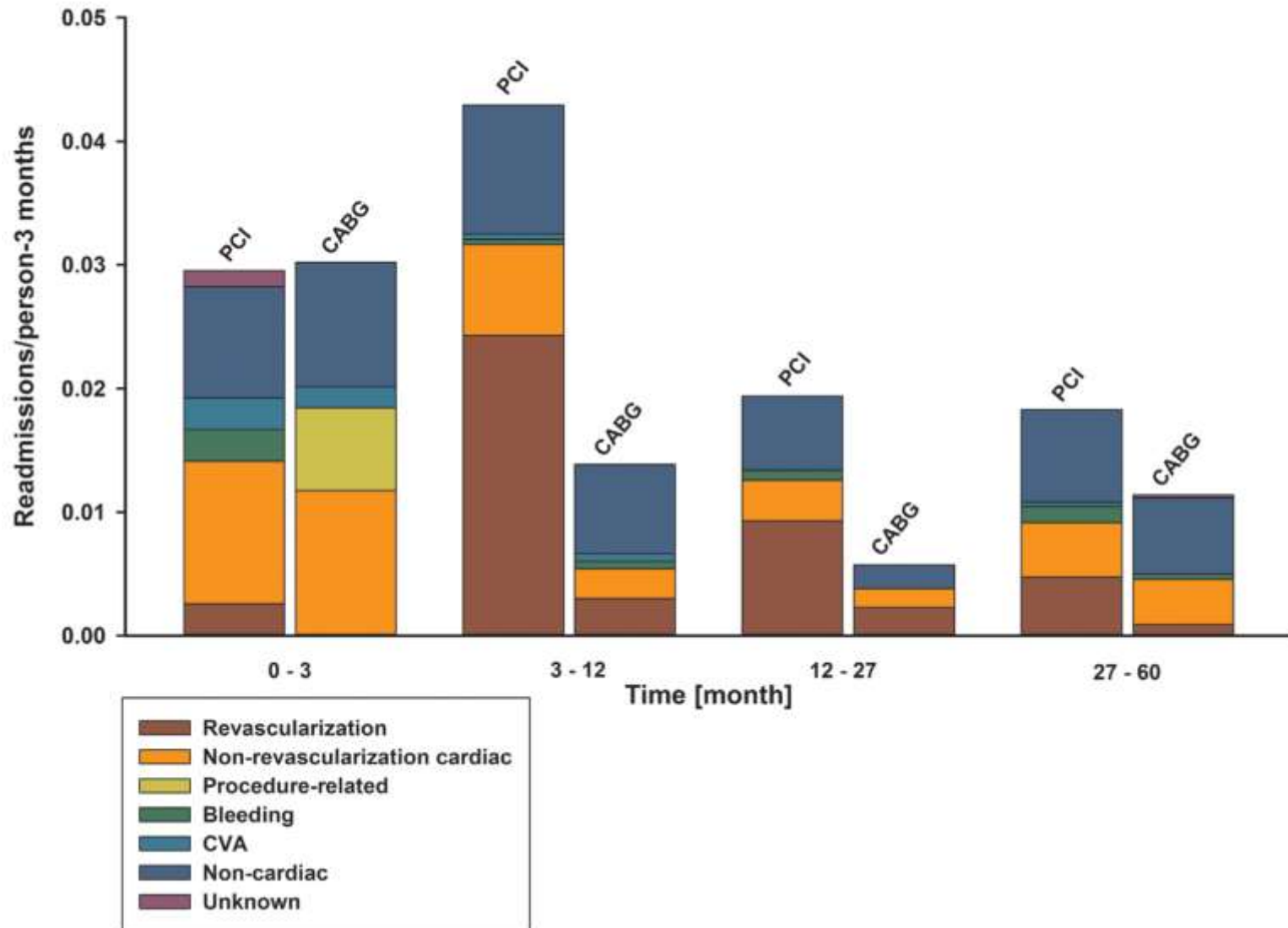
Overall, readmission rates were 0.024 readmissions per person-3 months in the PCI group, and 0.011 readmissions per person-3 months in the CABG group



N. of persons-3 months

PCI	779.07	770.67	746.59	734.67	711.19	694.40	577.21	522.95	378.11	311.66
CABG	562.95	555.49	536.59	527.71	509.39	499.59	439.48	411.05	351.20	312.13

# Causes of Readmission



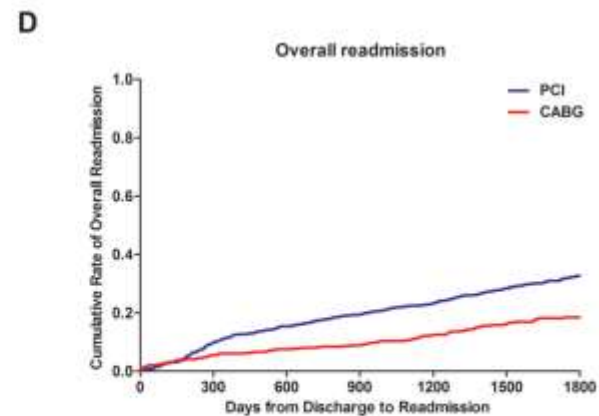
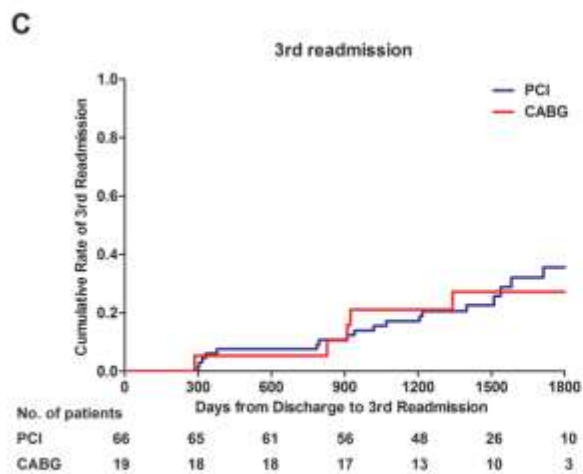
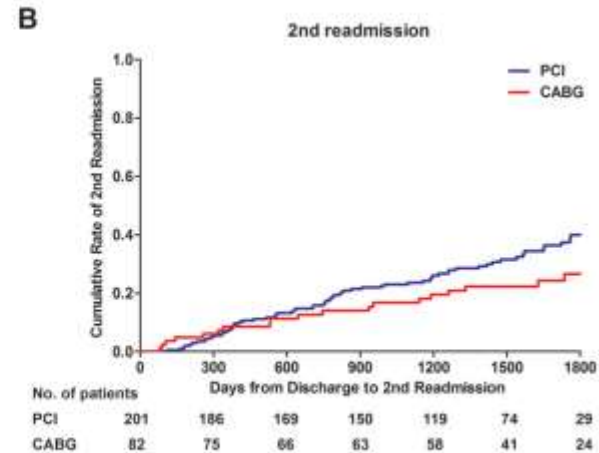
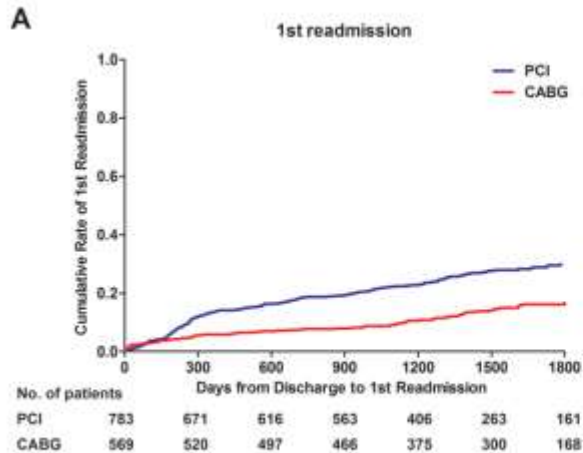
# Repeated Readmissions

---

No. of recurrence	PCI (N=783)	CABG (N=569)
At least one readmission	206 (100)	84 (100)
1 readmission	140 (68.0)	64 (76.2)
2 readmissions	48 (23.3)	15 (17.9)
3 readmissions	12 (5.8)	3 (3.6)
4 readmissions	4 (1.9)	1 (1.2)
5 readmissions	1 (0.5)	-
6 readmissions	1 (0.5)	-
7 readmissions	-	1 (1.2)

---

# Repeated Readmissions



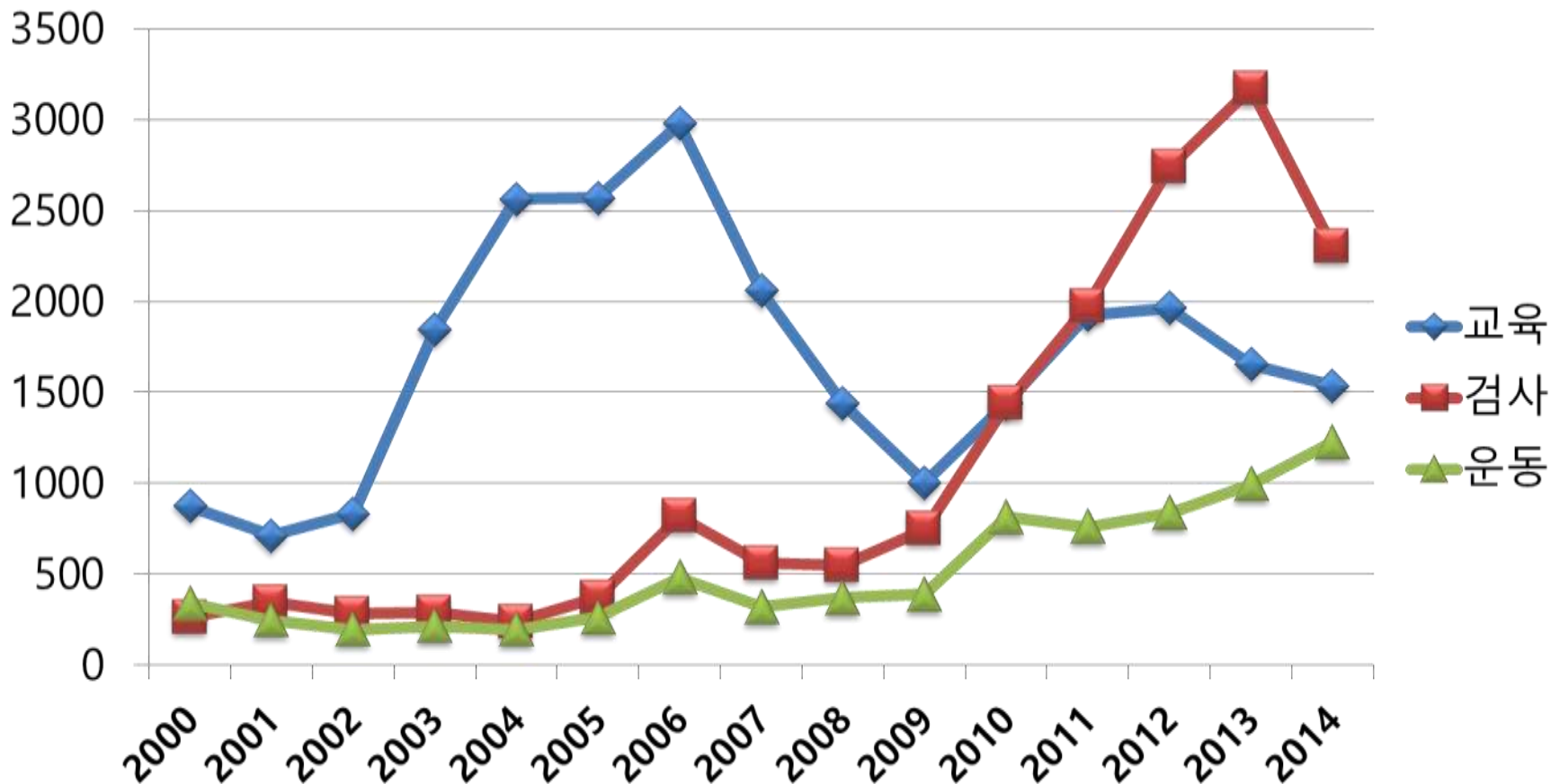
# Independent Predictors of Readmission

Parameters	Hazard Ratio	95% CI	P-value
Age, years	1.000	0.988–1.013	0.98
Male sex	1.243	0.985–1.568	0.067
Hypertension	0.858	0.697–1.055	0.15
Previous PCI	0.920	0.724–1.170	0.50
Chronic renal failure	0.442	0.207–0.942	0.035
Peripheral vascular disease	0.889	0.621–1.273	0.52
Extent of disease vessel			
Left main only	1		
Left main plus single vessel disease	1.143	0.708–1.847	0.58
Left main plus double vessel disease	1.488	0.941–2.353	0.090
Left main plus triple vessel disease	1.270	0.800–2.016	0.31
EuroSCORE value	1.052	0.978–1.132	0.17
PCI vs. CABG, overall effect	1.820	1.420–2.331	< 0.001

# Summary

- Readmission after treatment in ischemic heart disease is frequent.
- Both of cardiac and non-cardiac causes are important factors.
- In patients with ULMCA disease, revascularization with PCI was associated with higher risk of readmission, caused by higher risk of repeated revascularization.
- More judicious selection of patients, refraining from routine follow-up angiography after PCI, and the use of new generation stents have the potential to reduce the risk of readmission after PCI

# 서울아산병원 심장재활 참여 환자수



출처: 서울아산병원 심장병예방재활센터