JCR 2015
Korean Society of Myocardial Infarction
Busan, Korea
Dec 12 2015

Recent Update of Korea Acute Myocardial Infarction Registry (KAMIR)

Myung Ho Jeong, MD, PhD, FACC, FAHA, FESC, FSCAI, FAPSIC
On Behalf of KAMIR Investigators

Principal Investigator of Korea Acute Myocardial Infarction Registry,
Director of Korea Cardiovascular Stent Research Institute,
Director of Heart Research Center Nominated by Korea Ministry of Health and Welfare,
Professor of Gwangju Institute of Science and Technology
and Chonnam National University Hospital, Gwangju, Korea

Korea Acute Myocardial Infarction Registry (KAMIR) for the memorandum of 50th Anniversary of Korean Circulation Society

Sep 29-30th 2005

KAMIR: Korea Acute Myocardial Infarction Registry

Principal Investigator: Jeong MH

Sub-investigators: Kim YJ, Kim CJ, Cho MC, Ahn YK

Co-investigators: **55 primary PCI centers**

Ko YP, Koo BG, Gwon HC, Kim KS, Kim DI, Kim MH, Kim BO, Kim SW, Kim SJ, Kim YJ, Kim JK, Kim CJ, Kim TI, Rha SW, Rhew JY, Park GS, Park SW, Park SH, Bae JH, Seong IW, Seung KB, Ahn YK, Ahn TH, Yang JY, Oh SK, Yoon Jh, Lee HS, Lee MY, Lee SH, Lee SW, Rhim JY, Jeong KT, Jeong MH, Chung WS, Jeong HJ, Cho MC, Cho JH, Cho JM, Joo SJ, Jin DG, Jin SW, Chae SC, Chae IH, Chae JK, Choi DH, Tahk SJ, Han KR, Hur SH, Hwang JY

Steering Committee:

Park SJ, Jang YS, Seung KB, Chung WS, Cho JG, Kim YJ, Kim CJ, Cho MC, Yoon JH, Chae IH, Jeong MH

Purpose of KAMIR Study

1. On-line registration of Korean AMI patients
2. Early detection of high risk patients
3. Risk factor documentation and analysis
4. New therapeutic strategy for AMI
5. Effective prevention strategy for AMI

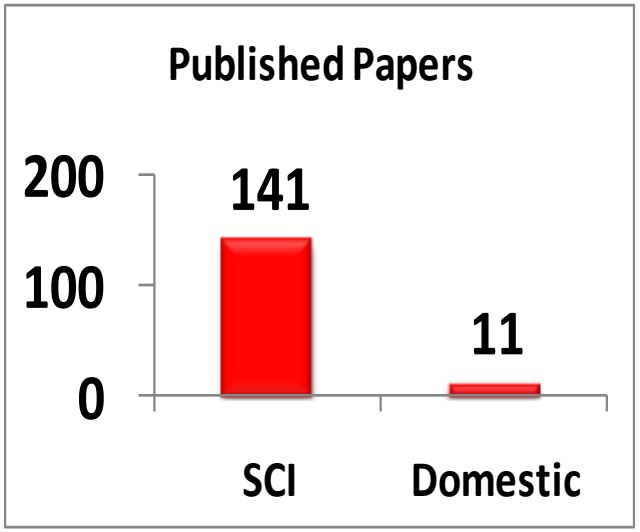
KAMIR Supported by KSC and Korea NIH

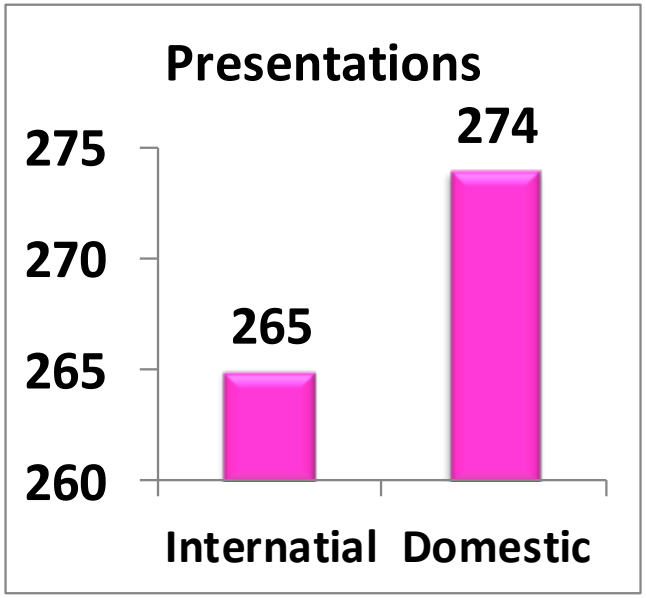
KAMIR-I
(Nov 2005-Dec 2006)
N=8,489

KAMIR-II
(Jan 2007-Jan 2008)
N=6,381
(14,870)

KAMIR-III
(Feb 2008-Mar 2012)
N=24,600
(39,470)

KAMIR-IV
(Apr 2012~)
KAMIR-NIH (Nov 2011~)
=18,978
(58,448)



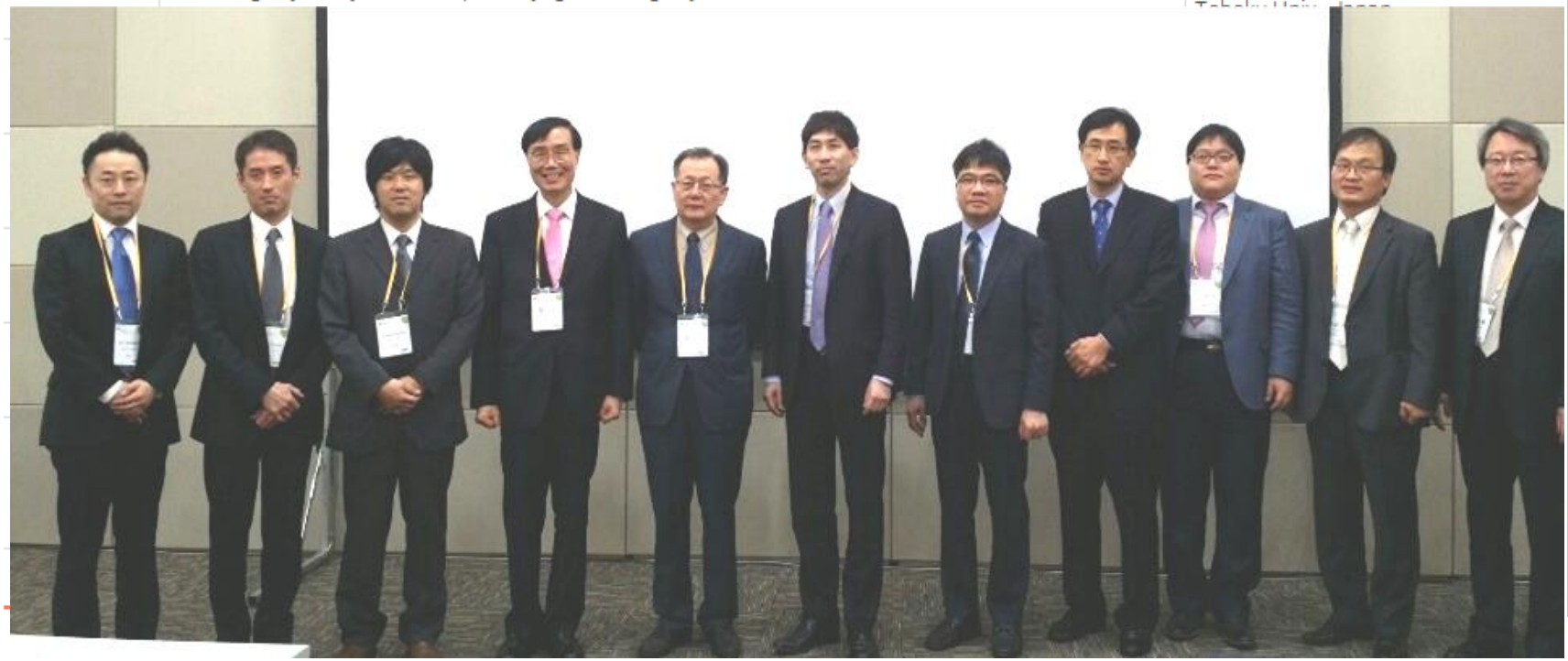


61th Japanese College of Cardiology, Sep 20-22 2013, Kumamoto, Japan

[English Session] Myocardial Infarction [April 18, 10:00-12:10 Rm.4]

Current Status of Acute Myocardial Infarction in Japan and Korea

Chairpersons	Satoshi Yasuda, Young-Jo Kim	
Panel	Seung Woon Rha, Young-Keun Ahn, Sang Rok Lee, Jang Hoon Lee, Kwang Soo Cha, Kyoo-Rok Han	
10:00-10:12	Korea AMI Registry	Myung-Ho Jeong/ Chonnam Univ., Korea
10:12-10:24	AMI Registry Study in Urban Japan	Makoto Suzuki/ Sakakibara Heart Institute, Japan
10:24-10:36	AMI Registry Study in Rural Japan Miyagi AMI Registry	Jun Takahashi/



58th Korean Society of Cardiology, Apr 18-19 2014, Gwangju, Korea

JAMIR Team Visited CNUH

NIH 국립보건연구원 Korea National Institute of Health

Research Headquarter of KAMIR at CNUH
Supported by KSC and NIH

Animal Catheterization Lab

Pig Miniatures in My Office

The 79th Annual Scientific Meeting of the Japanese Circulation Society Fireside Seminar 34

第79回 日本循環器学会学術集会　ファイアサイドセミナー34

JAMIR-KAMIR Joint Symposium in JCS 2015

抗血栓療法の国際比較を目指して

2015 JAMIR-KAMIR Joint Symposium Osaka, Japan 2015.4.25

The Korean Society of Myocardial Infarction Symposium

대한심장학회 심근경색증 연구회 동계 Symposium

- KAMIR 10주년 기념 / KAMIR-JAMIR Joint Symposium -

2015년 11월 27일 (금) WALKERHILL 서울 워커힐W호텔

Current Trend of KAMIR

Current Trend of KAMIR - *Dec 2014 Am J Cardiol*

Current Trend of Acute Myocardial Infarction in Korea (from the Korea Acute Myocardial Infarction Registry from 2006 to 2013)

Hyun Yi Kook, RN[a], Myung Ho Jeong, MD[a,*], Sangeun Oh, RN, PhD[b], Sung-Hee Yoo, RN, PhD[b], Eun Jung Kim, RN[a], Youngkeun Ahn, MD[a], Ju Han Kim, MD[a], Leem Soon Chai, RN[c], Young Jo Kim, MD[d], Chong Jin Kim, MD[e], and Myeong Chan Cho, MD[f], other Korea Acute Myocardial Infarction Registry Investigators

Although the incidence of acute myocardial infarction (AMI) in Korea has been rapidly changed because of westernization of diet, lifestyle, and aging of the population, the recent trend of the myocardial infarction have not been reported by classification. We investigated recent trends in the incidence and mortality associated with the 2 major types of AMI. We reviewed 39,978 patients registered in the Korea Acute Myocardial Infarction Registry for either ST-segment elevation acute myocardial infarction (STEMI) or non–ST-segment elevation acute myocardial infarction (NSTEMI) from 2006 to 2013. When the rate for AMI were investigated according to each year, the incidence rates of STEMI decreased markedly from 60.5% in 2006 to 48.1% in 2013 ($p < 0.001$). In contrast, a gradual increase in the incidence rates of NSTEMI was observed from 39.5% in 2006 to 51.9% in 2013 ($p < 0.001$). As risk factors, hypertension, diabetes mellitus, and dyslipidemia were much more common in patients with NSTEMI than STEMI. Among medical treatments, the use of β blockers, angiotensin receptor blocker, and statin were increased from 2006 to 2013 in patients with STEMI and NSTEMI. Patients with STEMI and NSTEMI were more inclined to be increasingly treated by invasive treatments with percutaneous coronary intervention. In conclusion, this study demonstrated that the trend of myocardial infarction has been changed rapidly in the aspect of risk factors, ratio of STEMI versus NSTEMI, and therapeutic strategies during the recent 8 years in Korea. (Am J Cardiol 2014;■:■–■)

KAMR Investigators, Am J Cardiol 2014;114:1817-22

Current Trend of KAMIR

Variables	STEMI (n=22,514)	NSTEMI (n=17,464)	*p* value
	n(%) or mean±SD		
Age (years)	64.1±13.2	66.5±12.5	<0.001
Male	16,823 (74.8)	11,715 (67.2)	<0.001
Body mass index (kg/m^2)	24.0±3.4	23.9±3.4	0.831
Overweight (BMI≥23)	7,541 (37.5)	5,773 (36.4)	0.029
Risk factors			
Hypertension	10,390 (48.9)	9,596 (58.4)	<0.001
Diabetes mellitus	5,548 (26.2)	5,546 (33.8)	<0.001
Dyslipidemia	2,221 (10.5)	2,227 (13.6)	<0.001
Smoking history	11,324 (51.2)	6,828 (39.8)	<0.001
Previous angina	7,278 (32.9)	7,512 (43.8)	<0.001

Current Trend of KAMIR

Variables	STEMI (n=22,514)	NSTEMI (n=17,464)	*p* value
	n(%) or mean±SD		
Clinical characteristics			
Chest pain	19,287 (86.9)	13,041 (75.9)	<0.001
Dyspnea	5,021 (22.9)	4,649 (27.2)	<0.001
PCI	20,882 (93.1)	13,670 (78.5)	<0.001
Killip class (≥III)	3,188 (15.0)	2,178 (13.3)	<0.001
In-hospital mortality	1,310 (5.9)	637 (3.7)	<0.001

KAMR Investigators, Am J Cardiol 2014;114:1817-22

Current Trend of KAMIR

		2006	2007	2008	2009	2010	2011	2012	2013	*p* for trend
Risk factors										
HT	STEMI	1,753 (45.3)	1,453 (45.4)	1,670 (47.6)	1,456 (46.5)	1,206 (47.5)	1,172 (49.1)	920 (62.8)	760 (66.7)	<0.001
	NSTEMI	1,365 (53.9)	1,118 (54.3)	1,392 (56.3)	1,382 (56.0)	1,094 (56.1)	1,169 (57.6)	1,097 (69.4)	979 (73.4)	<0.001
DM	STEMI	951 (24.6)	794 (24.8)	878 (25.0)	771 (24.6)	616 (24.3)	622 (26.1)	505 (34.5)	411 (36.1)	<0.001
	NSTEMI	821 (32.5)	664 (32.2)	788 (31.8)	772 (31.3)	644 (33.0)	637 (31.4)	667 (42.2)	553 (41.5)	<0.001
DL	STEMI	238 (6.2)	310 (9.7)	370 (10.6)	298 (9.5)	338 (13.4)	288 (12.1)	200 (13.7)	179 (15.7)	<0.001
	NSTEMI	265 (10.5)	281 (13.7)	366 (14.8)	298 (12.1)	287 (14.8)	279 (13.8)	227 (14.4)	224 (16.8)	<0.001

KAMR Investigators, Am J Cardiol 2014;114:1817-22

Current Trend of KAMIR

		2006	2007	2008	2009	2010	2011	2012	2013	*p* for trend
Smoking history	STEMI	2,380 (62.0)	1,922 (60.4)	1,653 (47.5)	1,475 (47.4)	1,166 (46.6)	1,129 (46.9)	871 (44.6)	728 (44.6)	<0.001
	NSTEMI	1,285 (51.1)	1,0848 (51.3)	963 (39.4)	889 (36.7)	674 (34.8)	671 (32.9)	690 (34.9)	608 (34.5)	<0.001
Previous angina	STEMI	1,467 (38.3)	1,170 (37.0)	1,233 (35.2)	953 (30.8)	826 (32.6)	804 (33.3)	461 (23.7)	364 (22.3)	<0.001
	NSTEMI	1,199 (47.7)	1081 (52.9)	1,134 (46.0)	1,015 (42.1)	888 (45.7)	964 (47.2)	671 (33.9)	560 (31.8)	<0.001

KAMR Investigators, Am J Cardiol 2014;114:1817-22

Current Trend of KAMIR

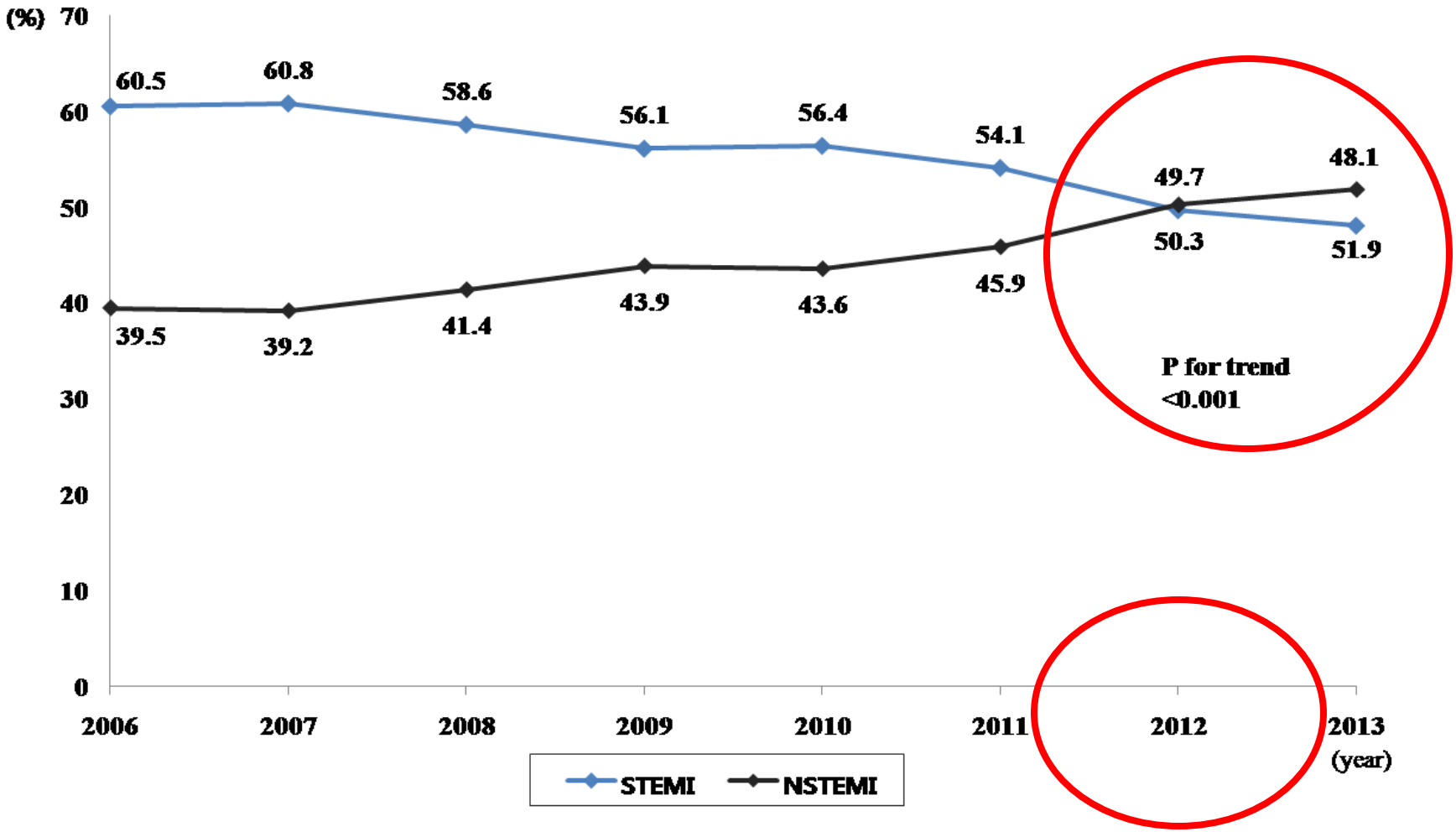
		2006	2007	2008	2009	2010	2011	2012	2013	*p* for trend
Aspirin	STEMI	3,508 (90.2)	2,838 (88.2)	3,047 (97.7)	2,792 (98.6)	2,211 (99.2)	2,084 (99.1)	1,837 (97.2)	1,570 (96.2)	<0.001
	NSTEMI	2,314 (91.0)	1,822 (87.9)	2,199 (96.5)	2,181 (97.4)	1,724 (97.8)	1,831 (97.1)	1,856 (96.6)	1,684 (95.6)	<0.001
Clopidogrel	STEMI	2,380 (62.0)	1,922 (60.4)	1,653 (47.5)	1,475 (47.4)	1,166 (46.6)	1,129 (46.9)	871 (44.6)	728 (44.6)	<0.001
	NSTEMI	1,285 (51.1)	1,084 (51.3)	963 (39.4)	889 (36.7)	674 (34.8)	671 (32.9)	690 (34.9)	608 (34.5)	<0.001
Cilostazol	STEMI	1,374 (35.3)	865 (26.9)	803 (27.4)	874 (32.9)	525 (24.4)	454 (22.2)	365 (19.4)	122 (7.5)	<0.001
	NSTEMI	771 (30.3)	469 (22.6)	556 (26.2)	561 (26.6)	365 (21.4)	414 (22.4)	374 (19.5)	168 (9.5)	<0.001

2014 AHA November 15-19, Am J Cardiol 2014;114:1817-22

Current Trend of KAMIR

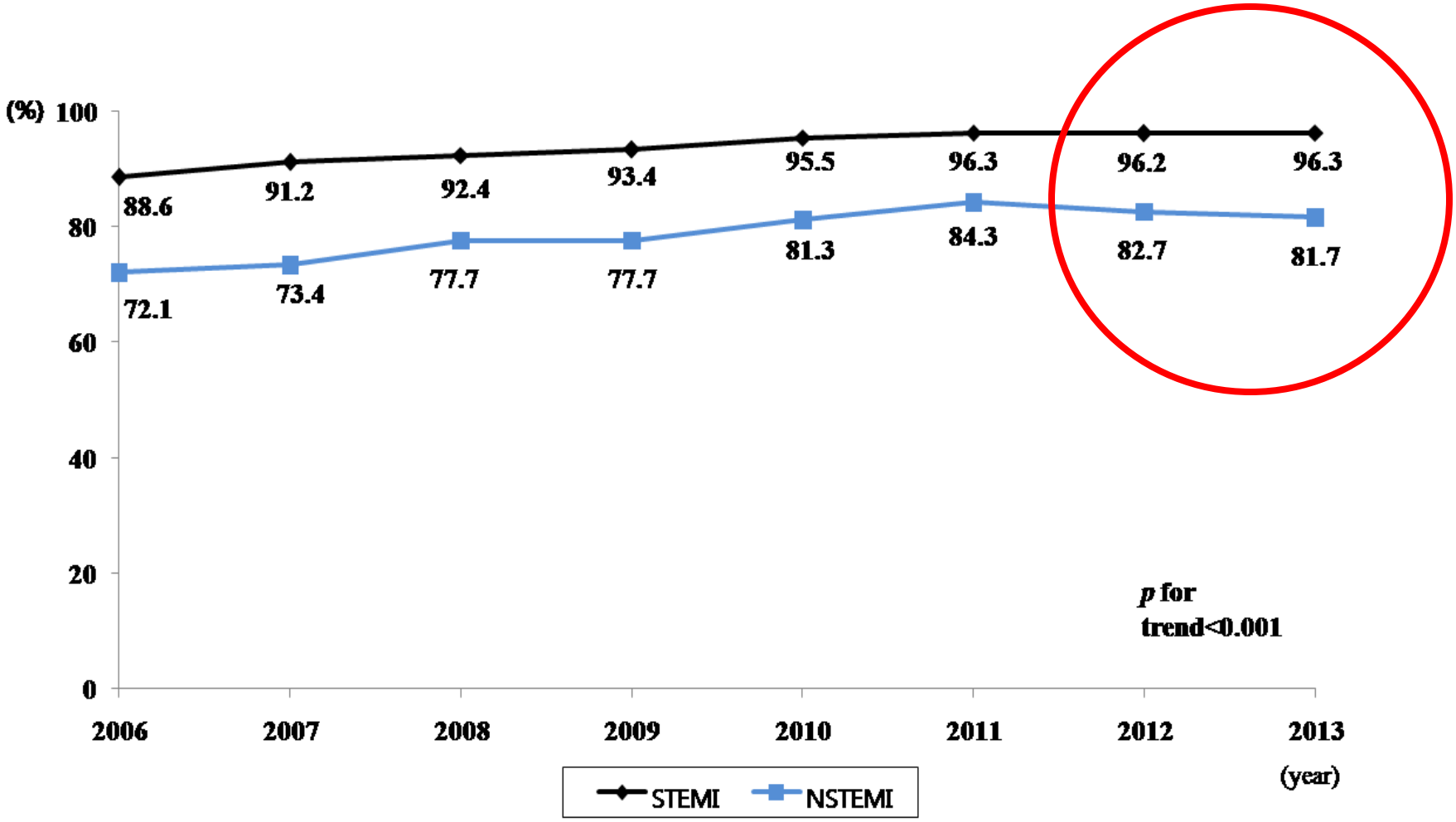
		2006	2007	2008	2009	2010	2011	2012	2013	*p* for trend
Beta blocker	STEMI	2,500 (64.3)	2,120 (65.9)	2,386 (67.0)	2,375 (74.3)	1,938 (74.9)	1,797 (72.9)	1,614 (82.2)	1,352 (82.8)	<0.001
	NSTEMI	1,684 (66.2)	1,329 (64.1)	1,703 (67.8)	1,803 (72.1)	1,448 (72.5)	1,511 (72.4)	1,559 (78.4)	1,440 (81.7)	<0.001
ACEi	STEMI	2,411 (62.0)	1,938 (60.2)	2,066 (58.0)	1,721 (53.8)	1,364 (52.7)	1,053 (42.7)	941 (47.9)	961 (58.9)	<0.001
	NSTEMI	1,505 (59.2)	1,205 (58.2)	1,337 (53.2)	1,247 (49.8)	963 (48.2)	874 (41.9)	757 (38.1)	834 (47.3)	<0.001
ARB	STEMI	607 (15.6)	376 (11.7)	523 (14.7)	685 (21.4)	502 (19.4)	631 (25.6)	596 (30.4)	345 (21.1)	<0.001
	NSTEMI	1,060 (16.5)	662 (12.5)	998 (16.4)	1,306 (22.9)	962 (21.0)	1,257 (27.6)	1,336 (33.8)	903 (26.6)	<0.001
Statin	STEMI	2,718 (69.9)	2,128 (66.1)	2,380 (66.8)	2,188 (68.4)	1,731 (66.9)	1,799 (73.0)	1,635 (83.3)	1,460 (89.5)	<0.001
	NSTEMI	1,693 (66.6)	1,362 (65.7)	1,609 (64.0)	1,622 (64.8)	1,315 (65.9)	1,601 (76.7)	1,634 (82.2)	1,558 (88.4)	<0.001

Incidence Rate for STEMI and NSTEMI



KAMR Investigators, Am J Cardiol 2014;114:1817-22

PCI Rate for STEMI and NSTEMI



KAMR Investigators, Am J Cardiol 2014;114:1817-22

Original Article

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kcj
Korean Circulation Journal

Impact of Smoking on Clinical Outcomes in Female Patients with Acute Myocardial Infarction

Yun Ah Jeong, MD[1], Myung Ho Jeong, MD[1], Hae Chang Jeong, MD[1], Youngkeun Ahn, MD[1], Young Jo Kim, MD[2], Chong Jin Kim, MD[3], Myeong Chan Cho, MD[4], and Other Korea Acute Myocardial Infarction Registry (KAMIR) Investigators

[1]*Department of Cardiovascular Medicine, Chonnam National University Hospital, Gwangju,*
[2]*Department of Cardiovascular Medicine, Yeungnam University Hospital, Daegu,*
[3]*Department of Cardiovascular Medicine, Kyung Hee University Hospital, Seoul,*
[4]*Department of Cardiovascular Medicine, Chungbuk National University Hospital, Cheongju, Korea*

Background and Objectives: Cigarette smoking has been recognized as a prominent threat to women's health. We investigated the impact of smoking on clinical outcomes in Korean female patients after acute myocardial infarction (AMI).

Subjects and Methods: Out of the AMI patients who enrolled in the Korea AMI Registry, 4444 female patients were included in this study. Patients were divided into two groups–non-smoker and smoker–according to their current smoking status. We compared in-hospital mortality and major adverse cardiac events (MACE), including cardiac death, myocardial infarction, repeated percutaneous coronary intervention (PCI), or coronary artery bypass grafting during the one-year clinical follow-up period between two groups.

Results: The non-smoker group had more hypertension (HTN) and diabetes mellitus. The levels of total cholesterol, triglyceride, and low-density lipoprotein cholesterol were higher in the non-smoker group. However, in-hospital mortality was significantly higher in the smoker group (1.0% vs. 2.4%, p=0.002), and cardiac death during the 12-month clinical follow-up was significantly more frequent in the smoker group (2.2% vs. 4.5%, p=0.003). Total MACEs during the 12 months were higher in the smoker group (4.9% vs. 6.8%, p=0.014). Smoking and HTN were independent predictors of MACE {odds ratio (OR): 1.742, 95% confidence interval (CI): 1.010–3.000, p=0.046; OR: 1.573, 95% CI: 1.003–2.466, p=0.049, respectively}.

Conclusion: Female smokers with AMI showed significantly higher in-hospital mortality and MACE rates during the one-year clinical follow-up period. **(Korean Circ J 2015;45(1):22-27)**

Table 5. Predictors of MACE according to multivariate logistic regression analysis

Variable	ORs (95% CI)	p
Smoking	1.742 (1.010–3.004)	0.046
Hypertension	1.573 (1.003–2.466)	0.049
LVEF (≤40%)	1.973 (0.905–4.303)	0.088
Diabetes mellitus	1.467 (0.919–2.342)	0.108
Chest pain	1.377 (0.861–2.203)	0.182
Age (≥65 years)	1.362 (0.745–2.488)	0.315
Pre-TIMI flow	0.863 (0.542–1.373)	0.533
Body mass index (≥25 kg/m^2)	0.780 (0.353–1.722)	0.538
Dyslipidemia	1.110 (0.565–2.179)	0.763
Multivessel disease	1.027 (0.657–1.606)	0.906

KAMIR Investigators. Korean Circ J *2015;45:22-7*

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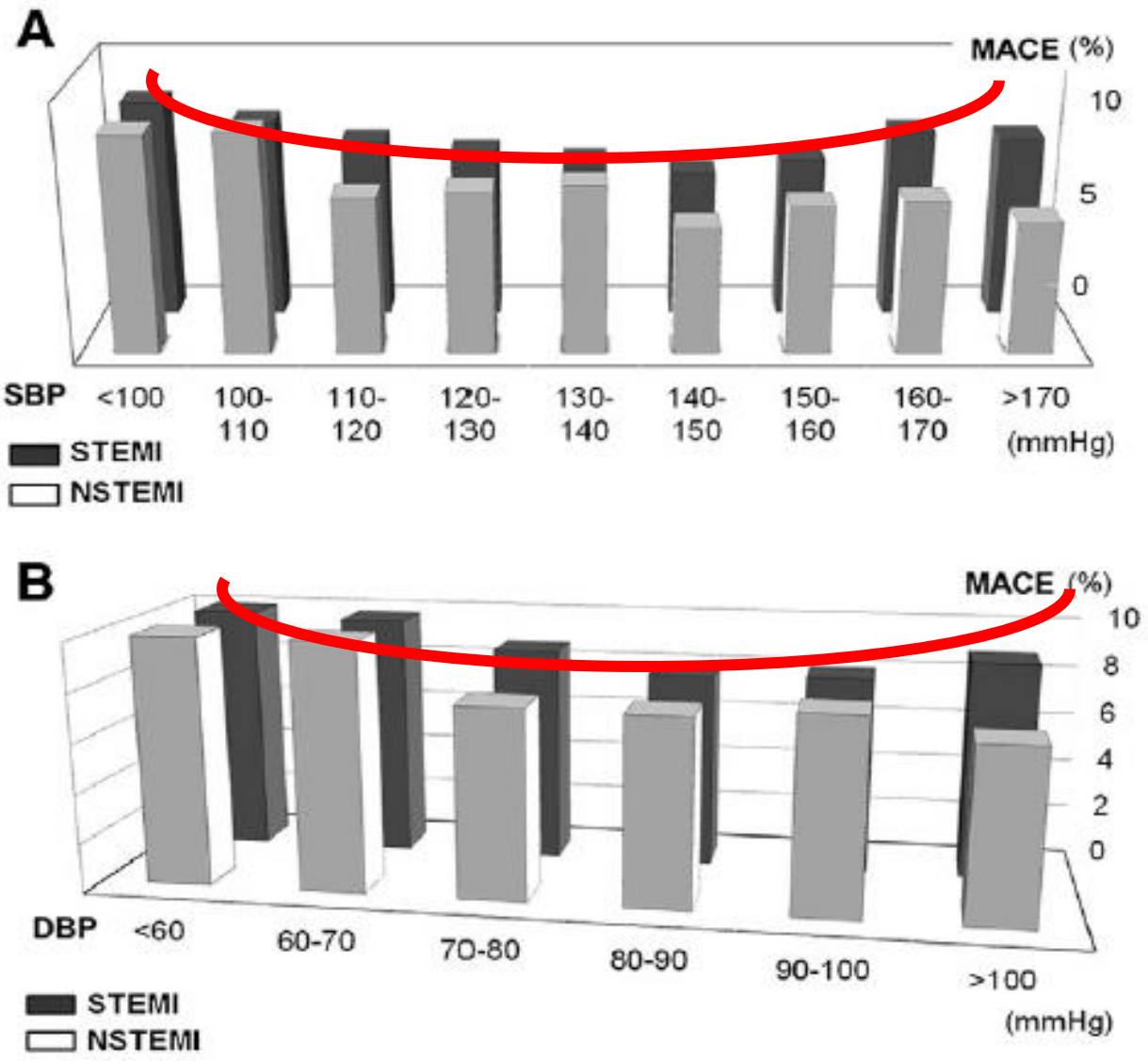
Impact of high admission blood pressure without history of hypertension on clinical outcomes of patients with acute myocardial infarction: From Korea Acute Myocardial Infarction Registry

Jae Yeong Cho [a], Myung Ho Jeong [a,*], Youngkeun Ahn [a], Hae Chang Jeong [a], Su Young Jang [a], Sung Soo Kim [a], Shi Hyun Rhew [a], Young Wook Jeong [a], Ki Hong Lee [a], Keun-Ho Park [a], Doo Sun Sim [a], Nam Sik Yoon [a], Hyun Ju Yoon [a], Kye Hun Kim [a], Young Joon Hong [a], Hyung Wook Park [a], Ju Han Kim [a], Jeong Gwan Cho [a], Jong Chun Park [a], Young Jo Kim [b], Chong Jin Kim [c], Myeong Chan Cho [d], Kyoo Rok Han [e], Hyo Soo Kim [f], the Korea Acute Myocardial Infarction Registry Investigators

KAMIR Investigators. *Int J Cardiol 2014;172:e54-8*



KAMIR Investigators. *Int J Cardiol 2014;172:e54-8*

Hypoglycemia at Admission in Patients With Acute Myocardial Infarction Predicts a Higher 30-Day Mortality in Patients With Poorly Controlled Type 2 Diabetes Than in Well-Controlled Patients

*Sang Ah Lee,[1] Suk Ju Cho,[2] Myung Ho Jeong,[3] Young Jo Kim,[4] Chong Jin Kim,[5] Myeong Chan Cho,[6] Hyo-Soo Kim,[7] Youngkeun Ahn,[3] Gwanpyo Koh,[1] Jeong mi Lee,[8] Seok Kyu Oh,[9] Kyeong Ho Yun,[9] Ha Young Kim,[9] Chung Gu Cho,[9] and Dae Ho Lee,[9] on behalf of the KAMIR/KorMI Registry**

Diabetes Care 2014;37:2366–2373 | DOI: 10.2337/dc13-2856

KAMIR Investigators. *Diabetic Care 2014;37:2366-73*

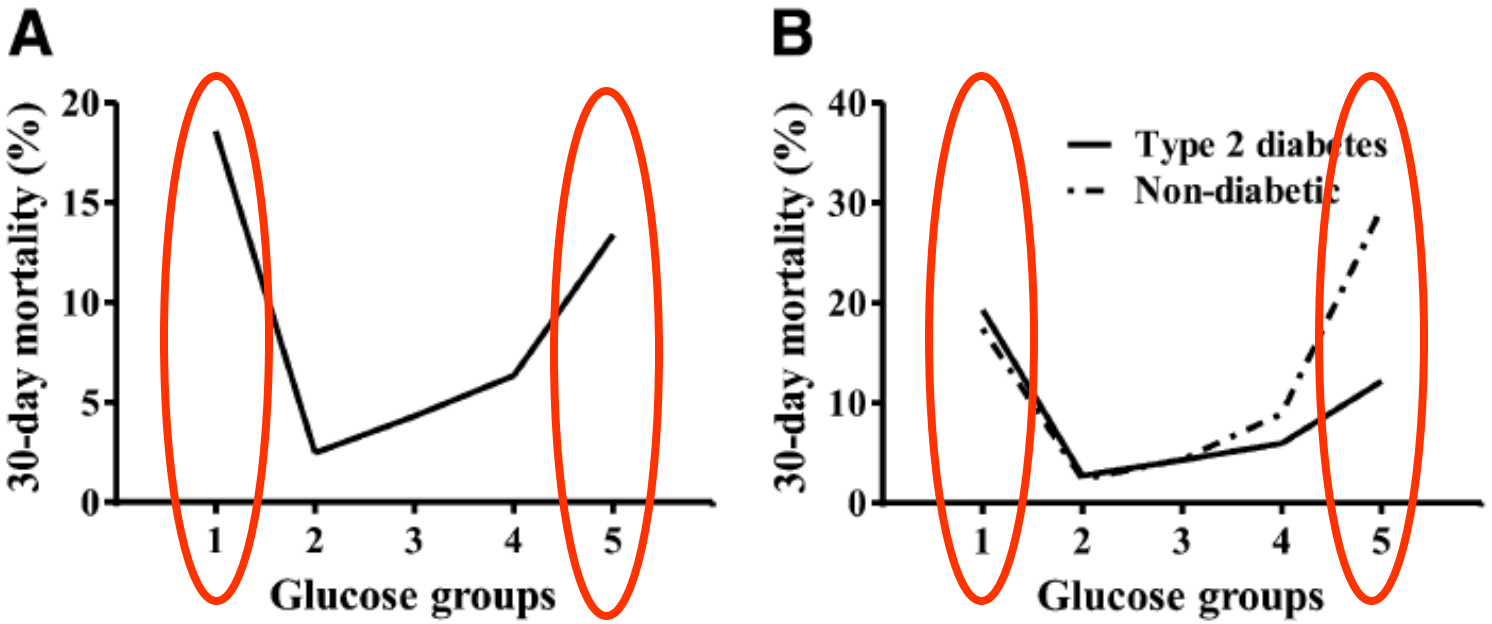


Figure 1—The 30-day mortality rates of the five glucose-based groups among the total AMI patient cohort (n = 34,943) (*A*) and the AMI patients with (n = 20,714) and without type 2 diabetes (n = 14,229) (*B*). The five glucose subgroups of AMI patients were categorized according to the admission serum-glucose levels, as follows: group 1, <3.9 mmol/L (<70 mg/dL); group 2, 3.9–7.72 mmol/L (70–139 mg/dL); group 3, 7.78–11.06 mmol/L (140–199 mg/dL); group 4, 11.11–14.39 mmol/L (200–259 mg/dL); and group 5, ≥14.44 mmol/L (≥260 mg/dL).

KAMIR Investigators. *Diabetic Care 2014;37:2366-73*

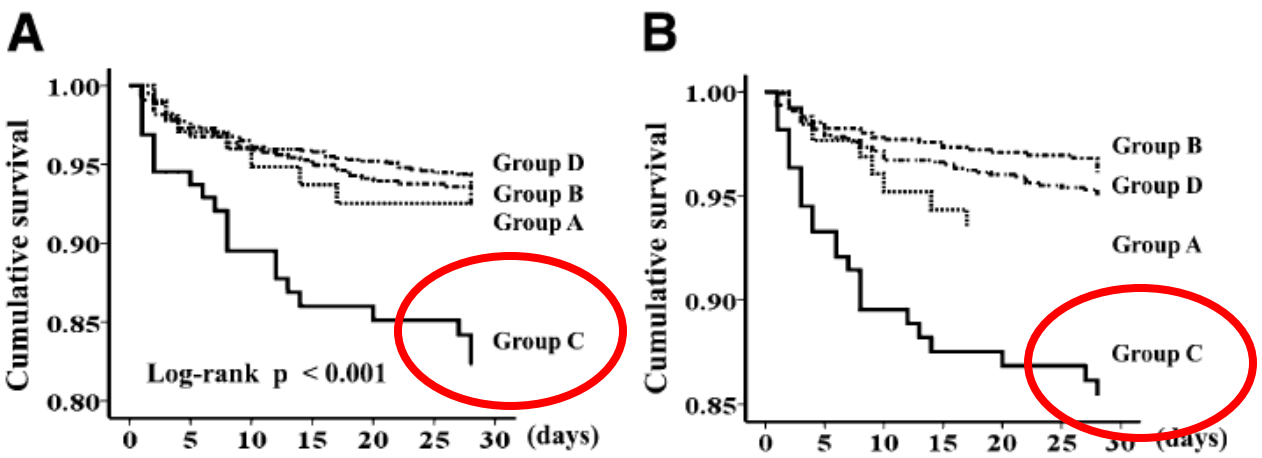


Figure 3—The effects of admission hypoglycemia and the preadmission diabetes-control status on 30-day cumulative survival in AMI patients with type 2 diabetes. Kaplan-Meier survival estimates (*A*) and the Cox proportional hazards regression analysis (*B*) after adjusting for age, sex, BMI, hypertension, hypertensive medication use, dyslipidemia, sBP, dBP, Killip class, aspirin use, statin use, hsCRP, smoking, total cholesterol, TGs, HDL cholesterol, LDL cholesterol, serum creatinine, PAD, CVA, previous MI history, and HF. We classified the AMI patients with type 2 diabetes according to the HbA_{1c} and serum-glucose levels at admission as follows: group A, HbA_{1c} <6.5% (48 mmol/mol) and serum glucose <3.9 mmol/L (<70 mg/dL); group B, HbA_{1c} <6.5% (48 mmol/mol) and serum glucose ≥11.11 mmol/L (≥200 mg/dL); group C, HbA_{1c} ≥8.0% (64 mmol/mol) and serum glucose <3.9 mmol/L (<70 mg/dL); and group D, HbA_{1c} ≥8.0% (64 mmol/mol) and serum glucose ≥11.11 mmol/L (≥200 mg/dL).

KAMIR Investigators. *Diabetic Care 2014;37:2366-73*

International Journal of Cardiology 175 (2014) 147–153

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International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

One-year clinical impact of cardiac arrest in patients with first onset acute ST-segment elevation myocardial infarction

Ki Hong Lee [a], Myung Ho Jeong [a,*], YoungkeunAhn [a], Sung Soo Kim [a], Shi Hyun Rhew [a], Young Wook Jeong [a], Soo Young Jang [a], Jae Yeong Cho [a], Hae Chang Jeong [a], Keun-Ho Park [a], Nam Sik Yoon [a], Doo Sun Sim [a], Hyun Ju Yoon [a], Kye Hun Kim [a], Young Joon Hong [a], Hyung Wook Park [a], Ju Han Kim [a], Jeong Gwan Cho [a], Jong Chun Park [a], Myeong Chan Cho [b], Chong Jin Kim [c], Young Jo Kim [d], KAMIR (Korea Acute Myocardial Infarction Registry) Investigators

KAMIR Investigators. Int J Cardiol *2014;175:147-53*

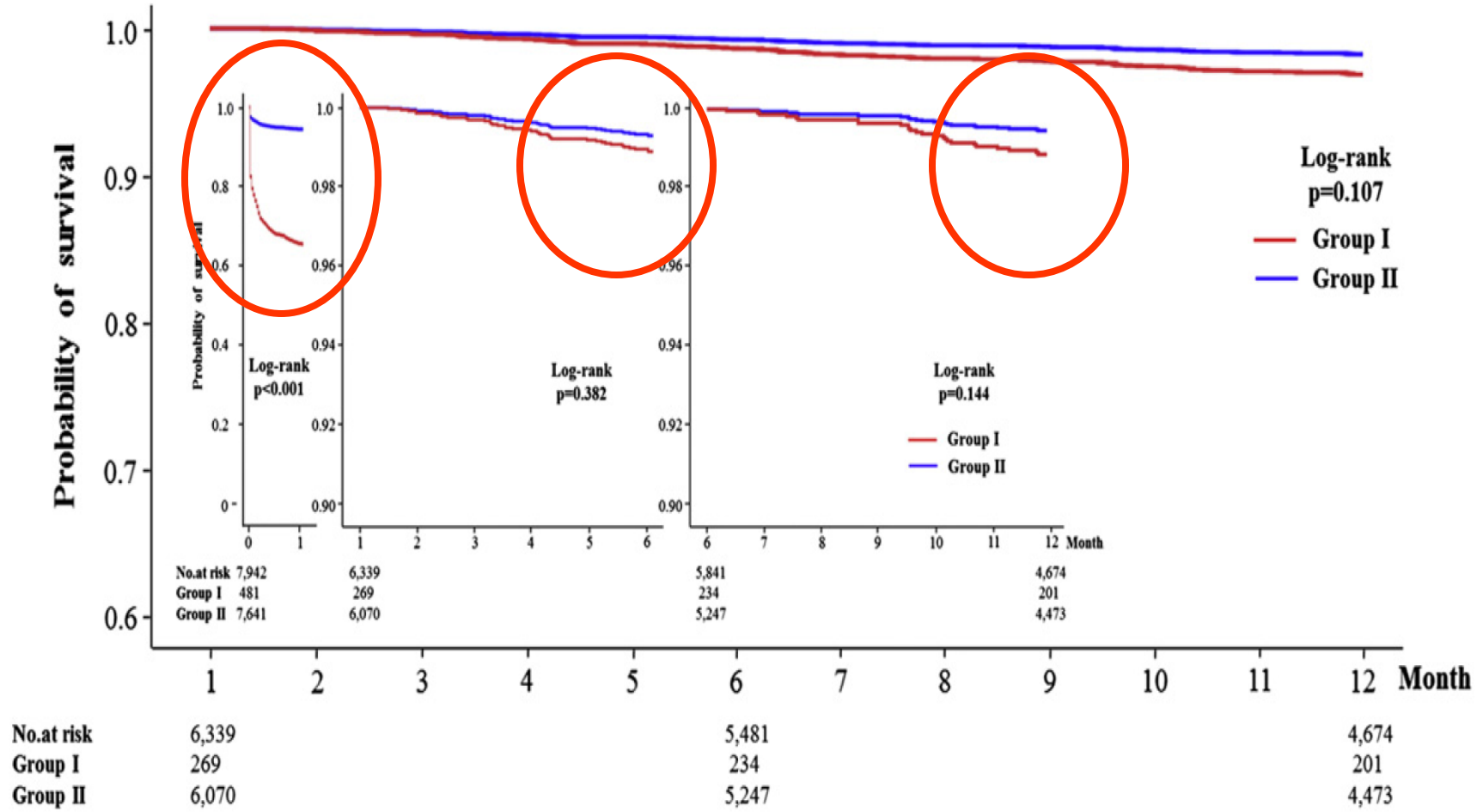

Fig. 1. The probability of survival. Patients with cardiac arrest had significantly higher mortality up to 30 days than the patients without cardiac arrest (log-rank $p < 0.001$). However, the probability of 6-month and 12-month survival in 30-day survivors was not different between the 2 groups (log-rank p for 6-month = 0.382, log-rank p for 6 to 12-month = 0.144, log-rank p for 12-month = 0.107). Group I = patients with cardiac arrest complicating ST-segment elevation myocardial infarction; group II = patients without cardiac arrest complicating ST-segment elevation myocardial infarction.

KAMIR Investigators. Int J Cardiol *2014;175:147-53*

Table 7
Risk factors for 12-month mortality in 30-day survivors.

	Unadjusted HR (95% CI)	p value	Adjusted HR (95% CI)	p value
Previous history of CKD	5.72 (2.66–12.30)	<0.001	3.72 (1.68–8.22)	0.001
Previous history of CVA	3.63 (2.16–6.09)	<0.001	2.14 (1.21–3.78)	0.009
Diabetes mellitus	1.79 (1.21–2.66)	0.004	1.88 (1.23–2.87)	0.003
Cardiac arrest	1.79 (0.87–3.68)	0.113	1.84 (0.83–4.05)	0.131
Smoking	1.21 (0.82–1.77)	0.338	1.27 (0.77–2.07)	0.352
Male gender	1.52 (1.02–2.27)	0.041	1.14 (0.67–1.92)	0.632
Dyslipidemia	1.27 (0.77–2.07)	0.352	1.13 (0.52–2.47)	0.751
Hypertension	1.19 (0.81–1.73)	0.381	1.09 (0.72–1.65)	0.692
Age	1.08 (1.06–1.10)	<0.001	1.08 (1.06–1.10)	<0.001
LVEF	0.95 (0.93–0.96)	<0.001	0.96 (0.94–0.98)	<0.001
Beta-blocker	0.60 (0.40–0.88)	0.010	0.74 (0.46–1.18)	0.205
ACEI/ARB	0.54 (0.36–0.82)	0.004	0.68 (0.43–1.08)	0.100
PCI	0.46 (0.28–0.76)	0.002	0.56 (0.33–0.96)	0.036

KAMIR Investigators. Int J Cardiol *2014;175:147-53*

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A new risk score system for the assessment of clinical outcomes in patients with non-ST-segment elevation myocardial infarction

Hyun Kuk Kim [a], Myung Ho Jeong [a,*], Youngkeun Ahn [a], Jong Hyun Kim [b], Shung Chull Chae [c], Young Jo Kim [d], Seung Ho Hur [e], In Whan Seong [f], Taek Jong Hong [g], Dong Hoon Choi [h], Myeong Chan Cho [i], Chong Jin Kim [j], Ki Bae Seung [k], Wook Sung Chung [k], Yang Soo Jang [h], Seung Woon Rha [l], Jang Ho Bae [m], Jeong Gwan Cho [a], Seung Jung Park [n]
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Korea Acute Myocardial infarction Registry (KAMIR) Study Group of Korean Circulation Society

A B S T R A C T

Background and objectives: Prediction for long-term clinical outcomes in patients with non-ST elevation acute coronary syndrome is important as well as early risk stratification. The aim of this study is to develop a simple assessment tool for better early bedside risk stratification for both short- and long-term clinical outcomes.
Subjects and methods: 2148 patients with non-ST-segment elevation myocardial infarction (NSTEMI) (64.9 ± 12.2 years, 35.0% females) were enrolled in a nationwide prospective Korea Acute Myocardial Infarction Registry (KAMIR). A new risk score was constructed using the variables related to one year mortality: TIMI risk index (17.5–30: 1 point, >30: 2 points), Killip class (II: 1 point, >II: 2 points) and serum creatinine (≥ 1.5 mg/dL: 1 point), based on the multivariate-adjusted risk relationship. The new risk score system was compared with the Global Registry of Acute Coronary Events (GRACE) and TIMI risk scores during a 12-month clinical follow-up.
Results: During a one year follow-up, all causes of death occurred in 362 patients (14.3%), and 184 (8.6%) patients died in the hospital. The new risk score showed good predictive value for one year mortality. The accuracy for in-hospital and one year post-discharge mortality rates, the new risk score demonstrated significant differences in predictive accuracy when compared with TIMI and GRACE risk scores.
Conclusion: A new risk score in the present study provides simplicity with accuracy simultaneously for early risk stratification, and also could be a powerful predictive tool for long-term prognosis in NSTEMI.

KAMIR Investigators. Int J Cardiol *2010;145:450-4*

Table 2
Univariate analysis for predictors of one year mortality.

Characteristics	β coefficiency	*P* value	HR (95% CI)
TIMI risk index			
17.5–30	1.045	<0.001	2.84 (1.68–4.81)
>30	2.379	<0.001	10.79 (6.58–17.70)
Female	0.757	<0.001	2.13 (1.86–2.44)
Risk factors			
Hypertension	0.515	<0.001	1.67 (1.32–2.13)
Diabetes mellitus	0.639	<0.001	1.90 (1.51–2.39)
Hypercholesterolemia	−0.257	0.19	0.77 (0.53–1.13)
Current smoker	−0.786	<0.001	0.46 (0.34–0.61)
Family history	−0.285	0.27	0.75 (0.45–1.25)
At least 3 risk factors	−0.070	0.71	0.93 (0.65–1.34)
Previous history			
Regular aspirin medication	0.517	<0.001	1.68 (1.30–2.17)
Stroke or PAD	0.838	<0.001	2.31 (1.73–3.09)
Significant coronary stenosis	0.652	<0.001	1.92 (1.51–2.43)
On admission Killip class			
Killip class			
II	1.392	<0.001	4.02 (2.89–5.59)
III–IV	2.238	<0.001	9.37 (7.20–12.21)
Severe angina symptom	−0.294	0.17	0.75 (0.49–1.14)
ST-segment depression	0.564	<0.001	1.76 (1.40–2.21)
Serum creatinine ≥ 1.5 mg/dL	1.806	<0.001	6.08 (4.83–7.67)

CI = confidence interval; HR = hazard ratio; TIMI = thrombolysis in myocardial infarction.
TIMI risk index = (heart rate × [age/10]^2) / systolic blood pressure.
PAD = peripheral artery disease.

KAMIR Investigators. Int J Cardiol *2010;145:450-4*

Table 3
Independent predictors of one year mortality.

Characteristics	β coefficiency	*P* value	HR (95% CI)
TIMI risk index			
17.5–30	0.708	0.009	2.03 (1.19–3.46)
>30	1.631	<0.001	5.11 (3.07–8.05)
Killip class			
II	0.952	<0.001	2.59 (1.84–2.77)
III–IV	1.456	<0.001	4.29 (3.20–5.75)
Serum creatinine ≥ 1.5 mg/dL	1.091	<0.001	2.97 (2.32–3.83)

CI = confidence interval; HR = hazard ratio; TIMI = thrombolysis in myocardial infarction.

KAMIR Investigators. Int J Cardiol *2010;145:450-4*

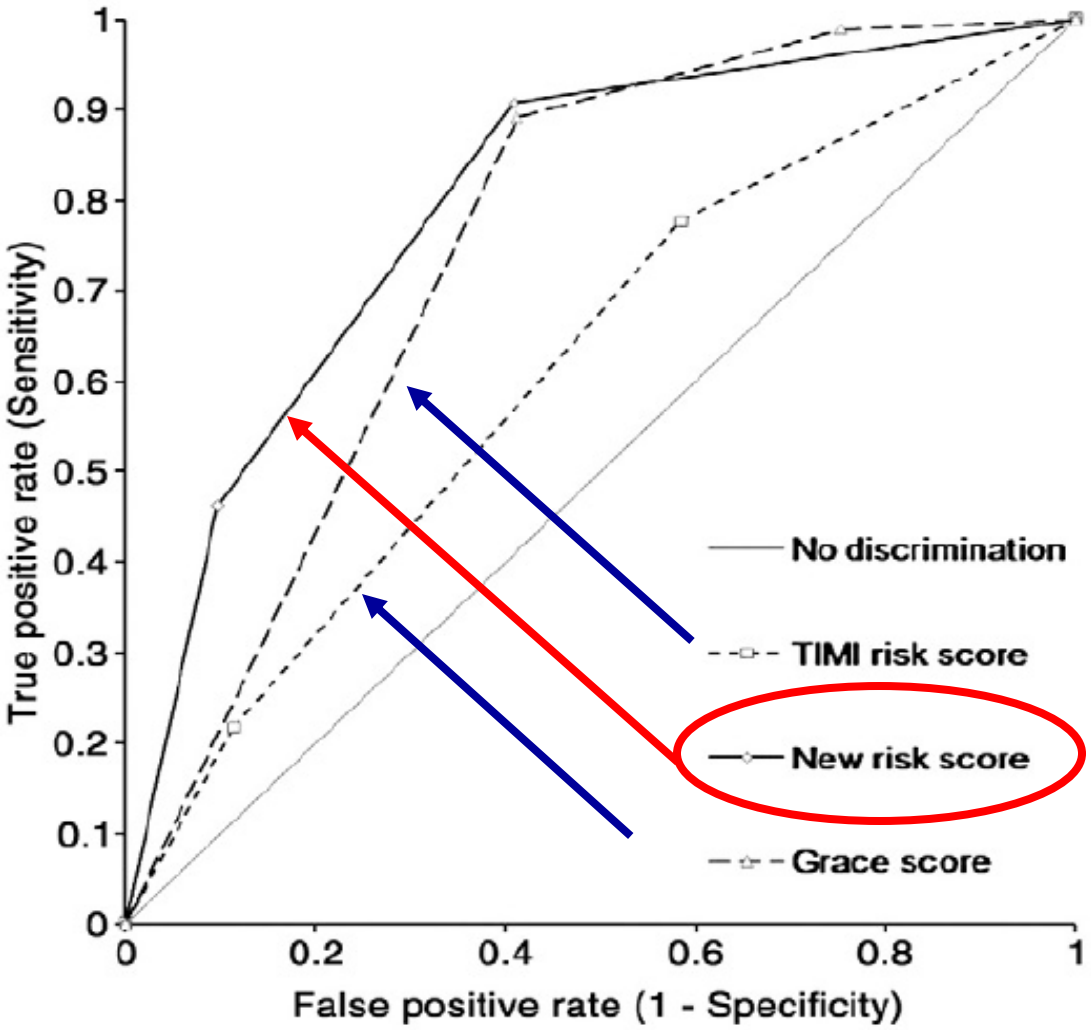


Fig. 4. Receiver-operating characteristic curves of the new risk score, GRACE and TIMI risk scores for post-discharge for one year mortality.

KAMIR Investigators. Int J Cardiol *2010;145:450-4*

CHA_2DS_2-VASc scoring system as an initial method for screening high-risk patients in acute myocardial infarction

Young Wook Jeong [a], Myung Ho Jeong [a,*], Sung Soo Kim [a], Shi Hyun Rhew [a], Youngkeun Ahn [a], Jong Hyun Kim [b], Shung Chull Chae [c], Young Jo Kim [d], Seung Ho Hur [e], In Whan Seong [f], Taek Jong Hong [g], Dong Hoon Choi [h], Myeong Chan Cho [i], Chong Jin Kim [j], Ki Bae Seung [k], Wook Sung Chung [k], Yang Soo Jang [l], Seung Yun Cho [l], Seung Woon Rha [m], Jang Ho Bae [n], Jeong Gwan Cho [a], Seung Jung Park [o]

A total of 23,243 patients (age 65.24 ± 12.81 years, 16,428 men) with acute myocardial infarction were enrolled. Basically all of the patients were assigned one point because of AMI as a vascular disease and assigning one point for the congestive heart failure (LVEF <40%), hypertension, diabetes, female, age 65–74 years; assigning two points for a prior history of stroke or transient ischemic attack and age beyond 75. Then all of patients were categorized into 4 groups according to the CHA_2DS_2-VASc: Group I (score 1–2), Group II (score 3–4), Group III (score 5–6) and Group IV (score 7–9).

KAMIR Investigators. ***Int J Cardiol 2014;174:777-80***

Table 1
Baseline coronary angiographic and procedural characteristics (n = 21,525).

	Group I (n = 8996)	Group II (n = 8039)	Group III (n = 3940)	Group IV (n = 550)	p value
Baseline angiographic variables					
Number of diseased vessels					
One vessel (%)	28.8	27.7	16.9	15.2	<0.001
Two vessel (%)	16.0	16.3	18.9	12.8	<0.001
Three vessel (%)	8.2	13.4	18.9	23.9	<0.001
ACC/AHA type B2C lesion (%)	75.4	78.4	80.5	82.6	<0.001
TIMI flow grade 0–1 (%)	60.7	58.9	56.8	53.1	<0.001
TIMI flow grade 3 (%)	28.9	29.1	29.1	29.8	<0.001
Infarct-related artery					
Left main (%)	1.2	2.3	2.4	2.5	<0.001
LM complex lesion (%)	0.9	2.1	2.0	2.9	<0.001
LAD (%)	44.4	42.5	41.0	42.1	<0.001
LCx (%)	15.7	15.0	13.6	13.6	0.010
RCA (%)	30.1	30.4	28.4	22.4	<0.001
Procedural characteristics					
S to D time (hr)	10.80 ± 22.56	15.12 ± 27.12	18.00 ± 29.76	19.44 ± 31.92	<0.001
D to B time (hr)	21.36 ± 29.04	23.76 ± 29.76	25.68 ± 34.80	24.24 ± 33.12	<0.001
PCI success rate (%)	84.0	79.6	73.0	64.6	<0.001
Strategies of revascularization					
Multivessel revascularization (%)	8.5	10.6	13.8	17.0	<0.001
No revascularization of IRA (%)	9.3	10.9	12.1	14.6	<0.001
Revascularization of only IRA in multivessel (%)	18.4	25.1	29.3	28.7	<0.001
Revascularization of single IRA (%)	50.0	39.4	30.6	27.4	<0.001
Total revascularization (%)	13.5	13.9	14.3	12.3	<0.001
GpIIb/IIIa during PCI (%)	19.2	16.1	15.9	17.9	0.073
Final TIMI flow grade 0–1 (%)	2.2	3.1	3.9	5.1	<0.001
Final TIMI flow grade 3 (%)	94.0	92.0	89.9	89.2	<0.001
IABP (%)	0.8	1.3	2.5	2.4	<0.001
Complication (%)	7.5	11.2	14.9	19.2	<0.001

Table 2
In-hospital mortality by each CHA_2DS_2-VASc score.

	CHA_2DS_2-VASc score	1	2	3	4	5	6	7	8	9	p value
In-hospital mortality (%)	NSTEMI	0.2	0.7	1.7	2.6	3.8	6.7	8.8	12.0	7.4	<0.001
	STEMI	0.3	0.9	2.2	3.8	6.2	9.3	10.9	17.1	9.1	<0.001

NSTEMI = non-ST elevation myocardial infarction; STEMI = ST elevation myocardial infarction

KAMIR Investigators. *Int J Cardiol 2014;174:777-80*

Hospital Discharge Risk Score System for the Assessment of Clinical Outcomes in Patients With Acute Myocardial Infarction (Korea Acute Myocardial Infarction Registry [KAMIR] Score)

Hyun Kuk Kim, MD[a], Myung Ho Jeong, MD[a,*], Youngkeun Ahn, MD[a], Jong Hyun Kim, MD[b], Shung Chull Chae, MD[c], Young Jo Kim, MD[d], Seung Ho Hur, MD[e], In Whan Seong, MD[f], Taek Jong Hong, MD[g], Dong Hoon Choi, MD[h], Myeong Chan Cho, MD[i], Chong Jin Kim, MD[j], Ki Bae Seung, MD[k], Wook Sung Chung, MD[k], Yang Soo Jang, MD[h], Seung Woon Rha, MD[l], Jang Ho Bae, MD[m], Jeong Gwan Cho, MD[a], and Seung Jung Park, MD[n], and Other Korea Acute Myocardial Infarction Registry Investigators

Assessment of risk at time of discharge could be a useful tool for guiding postdischarge management. The aim of this study was to develop a novel and simple assessment tool for better hospital discharge risk stratification. The study included 3,997 hospital-discharged patients with acute myocardial infarction who were enrolled in the nationwide prospective Korea Acute Myocardial Infarction Registry-1 (KAMIR-1) from November 2005 through December 2006. The new risk score system was tested in 1,461 hospital-discharged patients who were admitted from January 2007 through January 2008 (KAMIR-2). The new risk score system was compared to the Global Registry of Acute Coronary Events (GRACE) postdischarge risk model during a 12-month clinical follow-up. During 1-year follow-up, all-cause death occurred in 228 patients (5.7%) and 81 patients (5.5%) in the development and validation cohorts, respectively. The new risk score (KAMIR score) was constructed using 6 independent variables related to the primary end point using a multivariable Cox regression analysis: age, Killip class, serum creatinine, no in-hospital percutaneous coronary intervention, left ventricular ejection fraction, and admission glucose based on multivariate-adjusted risk relation. The KAMIR score demonstrated significant differences in its predictive accuracy for 1-year mortality compared to the GRACE score for the developmental and validation cohorts. In conclusion, the KAMIR score for patients with acute myocardial infarction is a simpler and better risk scoring system than the GRACE hospital discharge risk model in prediction of 1-year mortality. (Am J Cardiol 2011;107:965–971)

KAMIR Investigators. *Am J Cardiol 2011;107:965-71*

Table 3
Multivariate analysis for predictors of one-year mortality

Characteristics	Beta Coefficient	p Value	HR (95% CI)
Age (years)			
65–74	0.871	0.001	2.39 (1.44–3.97)
>75	1.468	<0.001	4.34 (2.59–7.28)
Killip class			
II	0.850	0.001	2.34 (1.39–3.94)
III to IV	1.401	<0.001	4.06 (2.54–6.50)
No percutaneous coronary intervention	0.797	<0.001	2.22 (1.65–2.98)
Serum creatinine ≥1.5 mg/dl	0.580	0.012	1.79 (1.13–2.81)
Left ventricular ejection fraction <40%	0.805	<0.001	2.24 (1.47–3.41)
Admission glucose >180 mg/dl	0.417	0.040	1.52 (1.02–2.26)

KAMIR Investigators. *Am J Cardiol 2011;107:965-71*

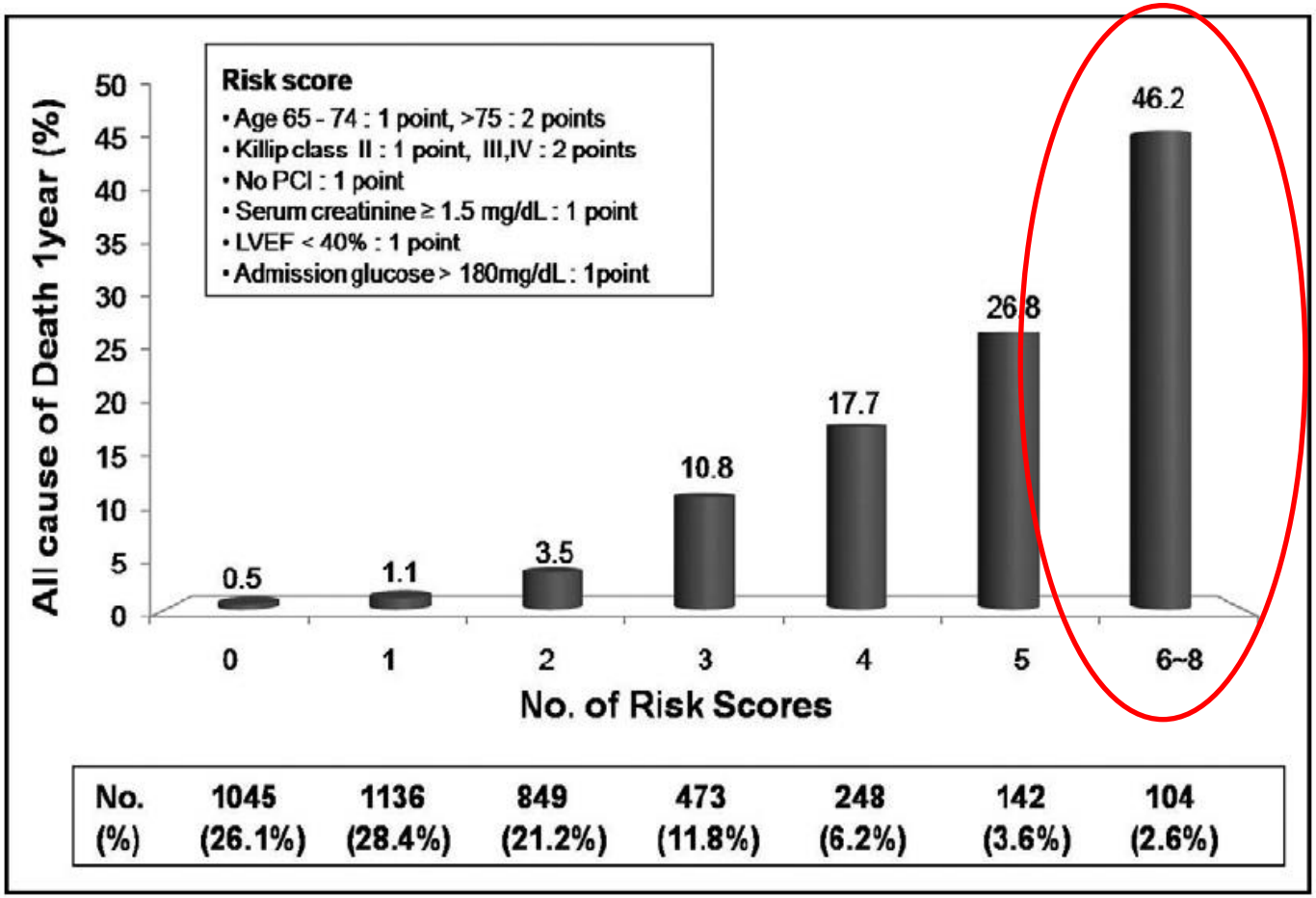


Figure 1. A new risk score predicting 1-year death from acute myocardial infarction. LVEF = left ventricular ejection fraction.

KAMIR Investigators. *Am J Cardiol 2011;107:965-71*

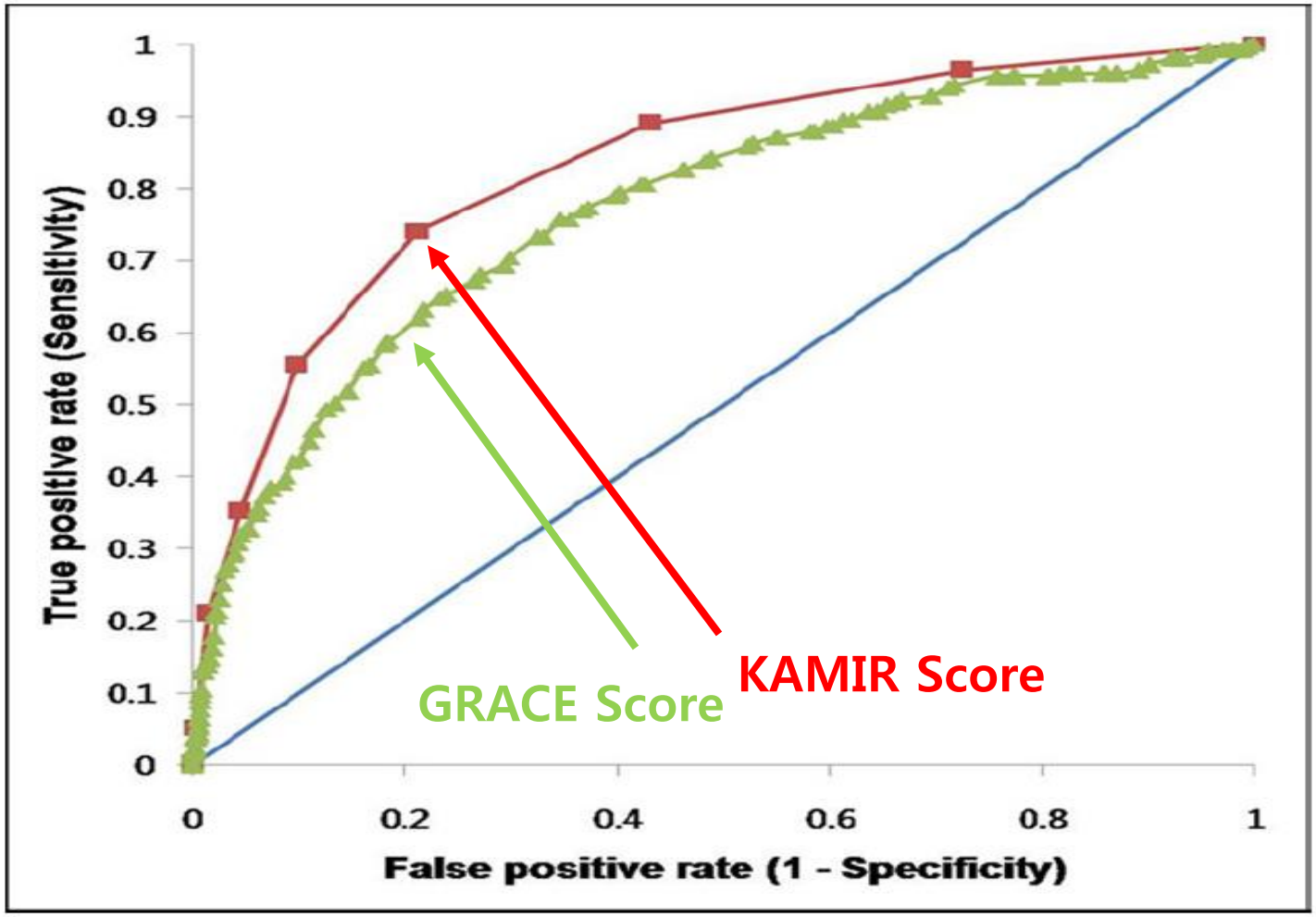
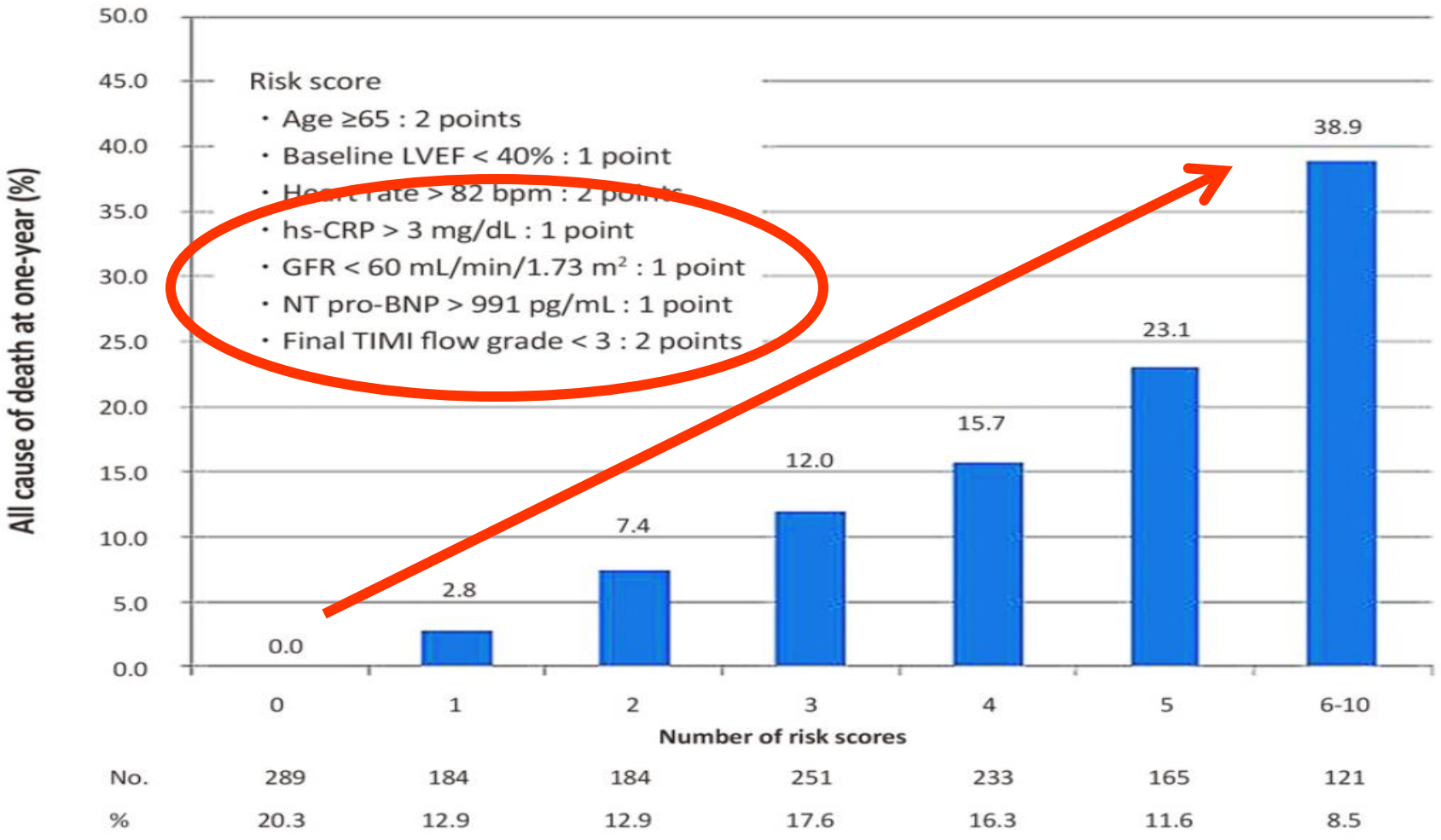


Figure 2. Receiver operator characteristic curves of no discrimination *(solid line)*, new risk score *(squares)*, and Global Registry of Acute Coronary Events score *(triangles)* for 1-year mortality in patients with acute myocardial infarction.

KAMIR Investigators. *Am J Cardiol 2011;107:965-71*

A New Risk Score to Predict 1-Year Mortality in Acute Non-ST Elevation Myocardial Infarction



CNUH data. Korean Med J **2015;88:168-76**

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Clinical impacts of high-sensitivity C-reactive protein reduction for secondary prevention in Asian patients with one-year survivor after acute myocardial infarction ☆

Hyun Kuk Kim [a], Myung Ho Jeong [a,*], Hyeong Won Seo [a], Joon Ho Ahn [a], Kyung Hoon Cho [a], Young Joon Hong [a], Ju Han Kim [a], Youngkeun Ahn [a], Jeong Gwan Cho [a], Jong Chun Park [a], Kyung Woo Park [b], Hyo-Soo Kim [b], Sang Rok Lee [c], Jei Keon Chae [c], Korea Acute Myocardial Infarction Registry Investigators

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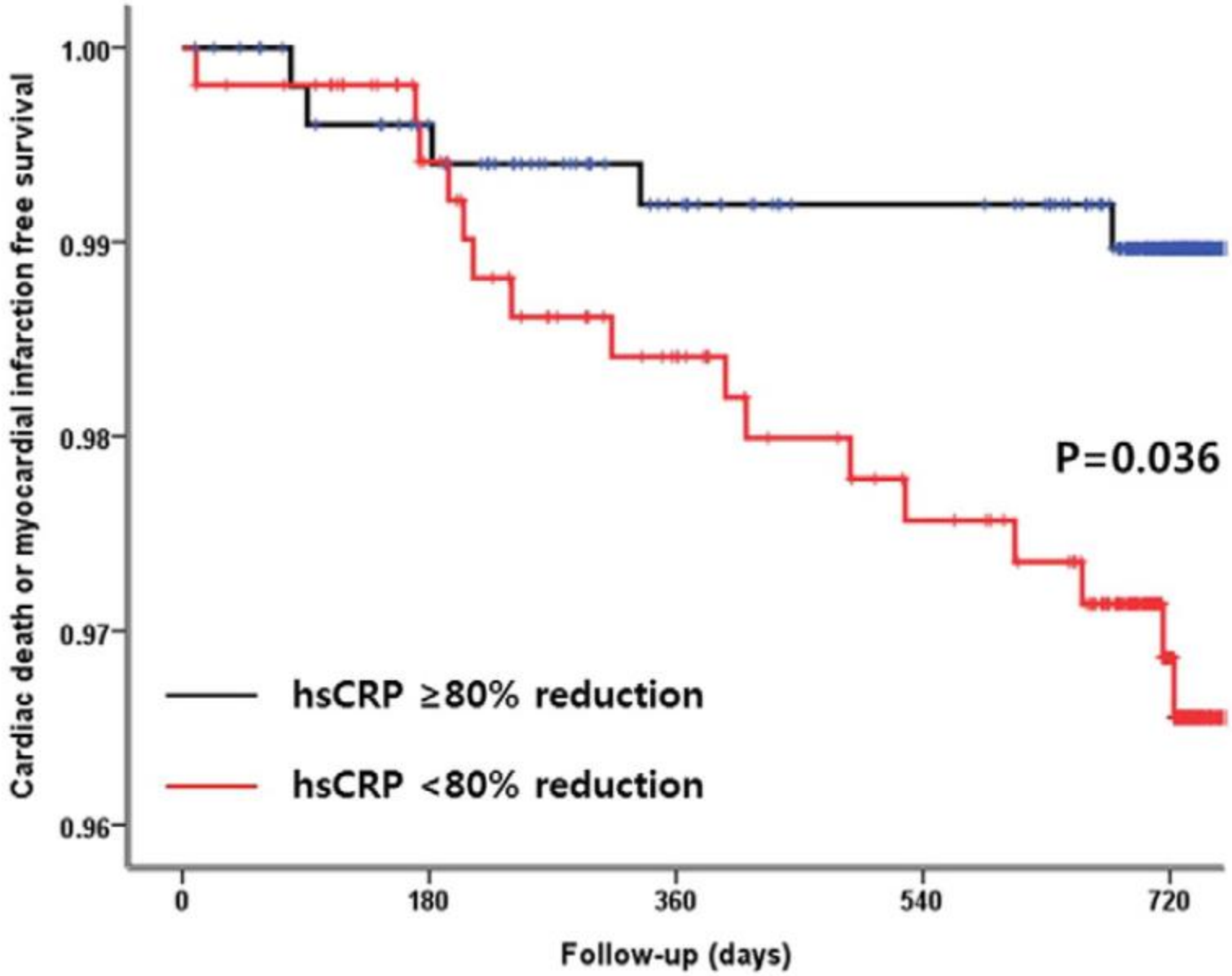
[b] Seoul National University Hospital, South Korea
[c] Chonbuk National University Hospital, South Korea

KAMIR Investigators. *Int J Cardiol 2015;193:20-2*



KAMIR Investigators. *Int J Cardiol 2015;193:20-2*

Prognostic Value of the Age, Creatinine, and Ejection Fraction Score for 1-Year Mortality in 30-Day Survivors Who Underwent Percutaneous Coronary Intervention After Acute Myocardial Infarction

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Few simple and effective tools are available for determining the prognosis of 30-day survivors after acute myocardial infarction. We aimed to assess whether the simple age, creatinine, and ejection fraction (ACEF) score could predict 1-year mortality of 12,000 post–myocardial infarction 30-day survivors who underwent percutaneous coronary intervention. The ACEF score was computed as follows: (age/ejection fraction) + 1, if the serum creatinine was >2 mg/dl. Accuracy was defined through receiver-operating characteristics analysis and area under the curve (AUC) evaluation. Twelve risk factors were selected and ranked according to their AUC value. Age, ejection fraction, and serum creatinine levels indicated the best AUC value. The ACEF score was significantly higher in the non-survivors (1.95 ± 0.82 vs 1.28 ± 0.50; p <0.001) and was an independent predictor of 1-year mortality (adjusted hazard ratio 2.26; p <0.001). The best accuracy was achieved by a prediction model including 12 risk factors (AUC = 0.80), but this did not significantly differ compared with the AUC (0.79) of the ACEF score (p = ns). Adjusted hazard ratios for 1-year mortality were 1 (reference), 3.11 (p <0.001), and 10.38 (p <0.001) for the $ACEF_{LOW}$ (ACEF score <1.0), $ACEF_{MID}$ (ACEF score 1.0 to 1.39), and $ACEF_{HIGH}$ (ACEF score ≥1.4) groups, respectively. The ACEF score may be a novel valid model to stratify the 1-year mortality risk in 30-day survivors who underwent percutaneous coronary intervention after acute myocardial infarction. (Am J Cardiol 2015;115:1167–1173)

KAMIR Investigators. *Am J Cardiol 2015;115:1167-73*

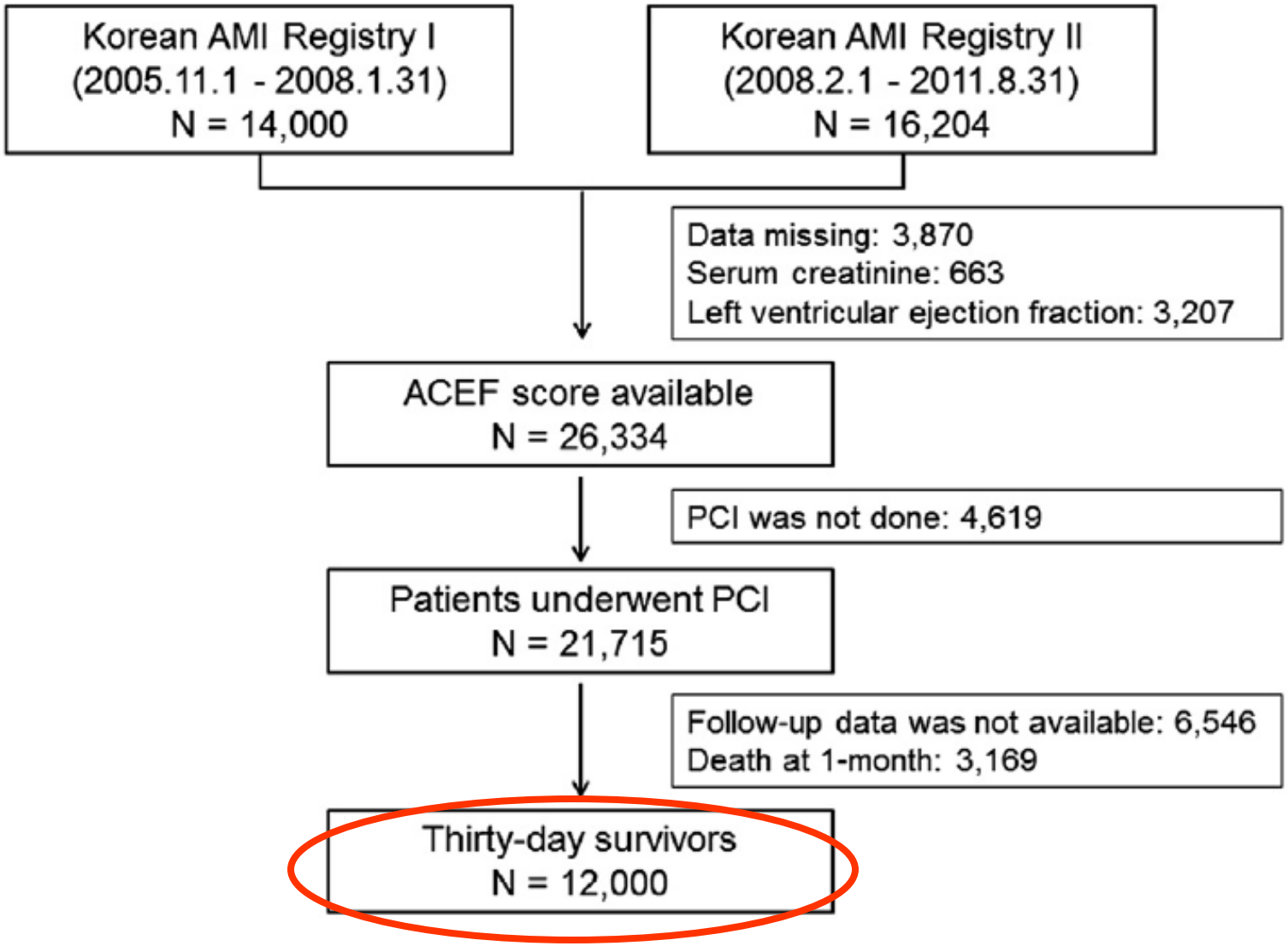


Figure 1. Flow diagram of the study subjects.

KAMIR Investigators. *Am J Cardiol 2015;115:1167-73*

Table 3

Cox-proportional hazards model for predicting 1-year mortality

Variable	HR	95% CI	*p* value
ACEF score	2.48	2.22 – 2.76	<0.001
Male	0.75	0.56 – 0.99	0.049
Body mass index ≥25 kg/m^2	0.58	0.43 – 0.80	0.001
Current smoking	1.33	0.99 – 1.79	0.057
Previous coronary heart disease	1.32	0.97 – 1.81	0.082
Hypertension	1.29	0.99 – 1.70	0.063
Diabetes mellitus	1.26	0.96 – 1.66	0.091
Total cholesterol ≥200 mg/dL	0.72	0.53 – 0.98	0.034
Multivessel disease	1.62	1.21 – 2.17	0.001
Optimal medical treatment	0.74	0.57 – 0.95	0.019

ACEF = age, creatinine, and ejection fraction; CI = confidence interval; HR = hazard ratio.

KAMIR Investigators. ***Am J Cardiol 2015;115:1167-73***

Triple Versus Dual Antiplatelet Therapy in Patients With Acute ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

Kang-Yin Chen, MD; Seung-Woon Rha, MD; Yong-Jian Li, MD; Kanhaiya L. Poddar, MBBS; Zhe Jin, MD; Yoshiyasu Minami, MD; Lin Wang, MD; Eung Ju Kim, MD; Chang Gyu Park, MD; Hong Seog Seo, MD; Dong Joo Oh, MD; Myung Ho Jeong, MD; Young Keun Ahn, MD; Taek Jong Hong, MD; Young Jo Kim, MD; Seung Ho Hur, MD; In Whan Seong, MD; Jei Keon Chae, MD; Myeong Chan Cho, MD; Jang Ho Bae, MD; Dong Hoon Choi, MD; Yang Soo Jang, MD; In Ho Chae, MD; Chong Jin Kim, MD; Jung Han Yoon, MD; Wook Sung Chung, MD; Ki Bae Seung, MD; Seung Jung Park, MD; for the Korea Acute Myocardial Infarction Registry Investigators

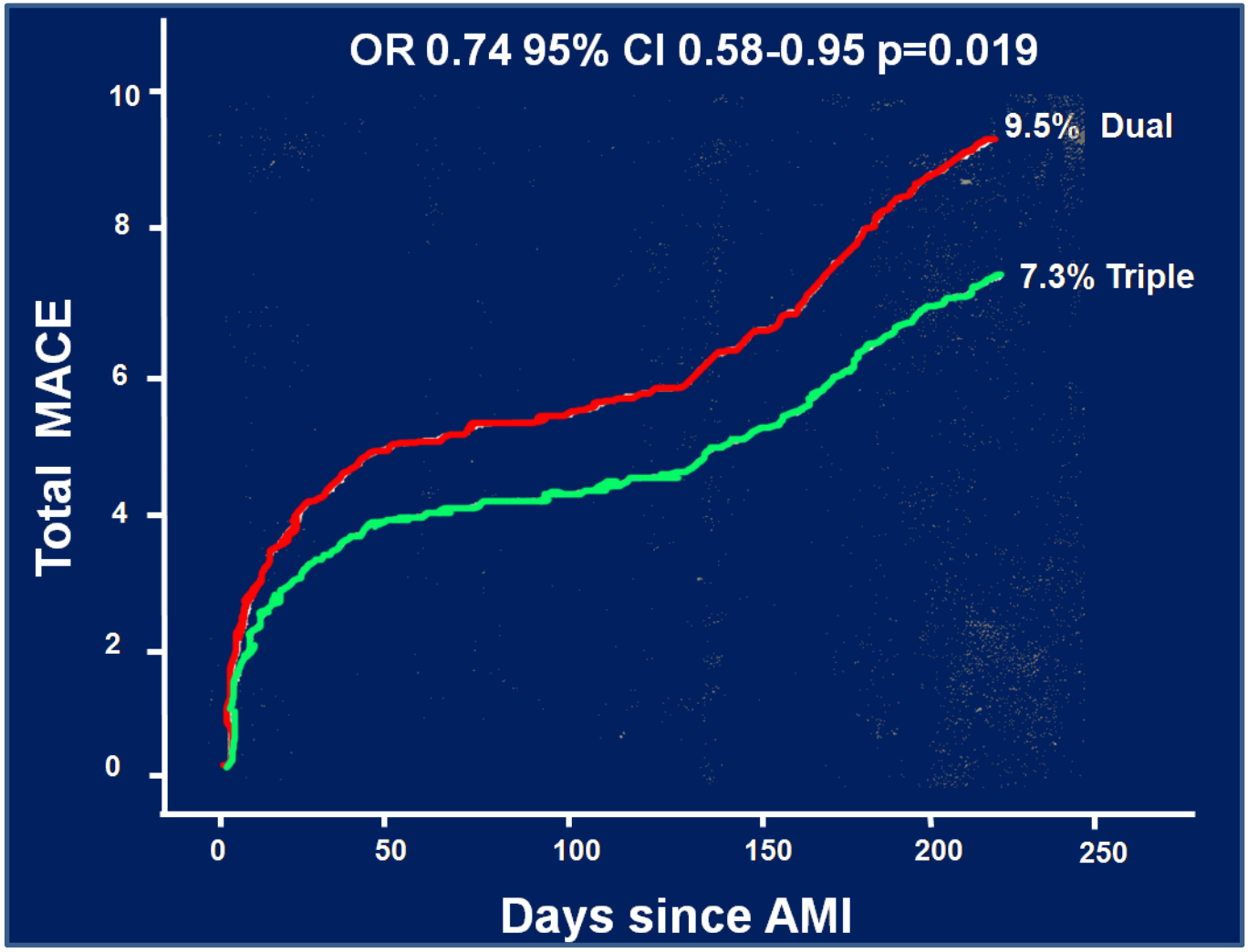
Background—Whether triple antiplatelet therapy is superior or similar to dual antiplatelet therapy in patients with acute ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention in the era of drug-eluting stents remains unclear.

Methods and Results—A total of 4203 ST-segment elevation myocardial infarction patients who underwent primary percutaneous coronary intervention with drug-eluting stents were analyzed retrospectively in the Korean Acute Myocardial Infarction Registry (KAMIR). They received either dual (aspirin plus clopidogrel; dual group; n=2569) or triple (aspirin plus clopidogrel plus cilostazol; triple group; n=1634) antiplatelet therapy. The triple group received additional cilostazol at least for 1 month. Various major adverse cardiac events at 8 months were compared between these 2 groups. Compared with the dual group, the triple group had a similar incidence of major bleeding events but a significantly lower incidence of in-hospital mortality. Clinical outcomes at 8 months showed that the triple group had significantly lower incidences of cardiac death (adjusted odds ratio, 0.52; 95% confidence interval, 0.32 to 0.84; P=0.007), total death (adjusted odds ratio, 0.60; 95% confidence interval, 0.41 to 0.89; P=0.010), and total major adverse cardiac events (adjusted odds ratio, 0.74; 95% confidence interval, 0.58 to 0.95; P=0.019) than the dual group. Subgroup analysis showed that older (>65 years old), female, and diabetic patients got more benefits from triple antiplatelet therapy than their counterparts who received dual antiplatelet therapy.

Conclusions—Triple antiplatelet therapy seems to be superior to dual antiplatelet therapy in patients with ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention with drug-eluting stents. These results may provide the rationale for the use of triple antiplatelet therapy in these patients. (***Circulation*. 2009;119:3207-3214.**)

KAMIR Investigators. *Circulation* 2009;119:3207-14

Triple vs. Dual antiplatelet therapy in AMI Pts



KAMIR Investigators. *Circulation* 2009;119:3207-14

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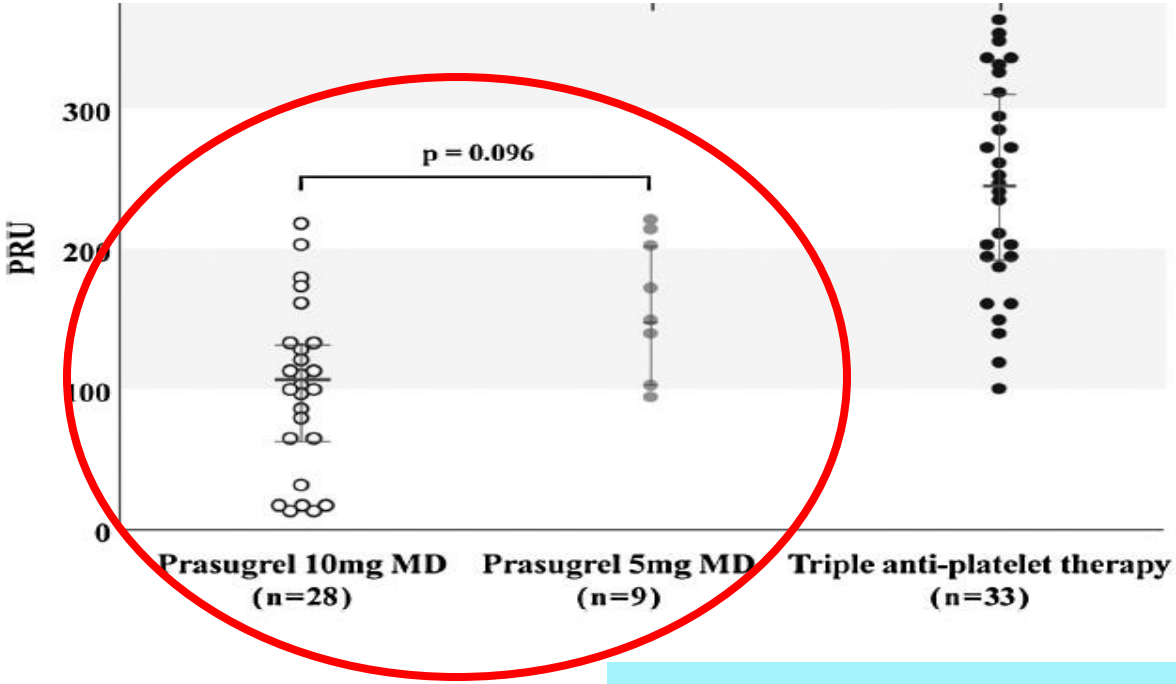
Original article

Comparison of peri-procedural platelet inhibition with prasugrel versus adjunctive cilostazol to dual anti-platelet therapy in patients with ST segment elevation myocardial infarction



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Benefit of Early Statin Therapy in Patients With Acute Myocardial Infarction Who Have Extremely Low Low-Density Lipoprotein Cholesterol

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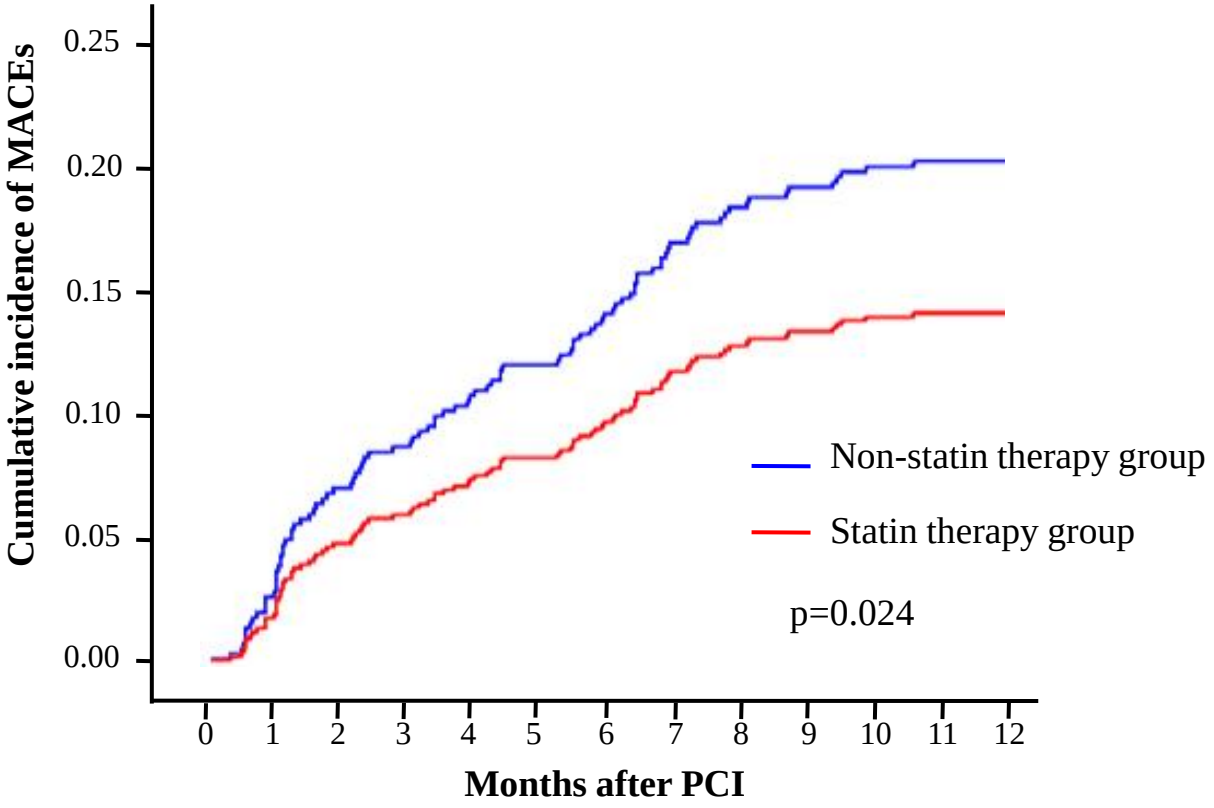
KAMIR Investigators. *J Am Coll Cardiol 2011;58:1664-71*

Statin therapy in AMI patients with LDL-C levels < 70 mg/dL



No.at risk	1,054	894	780	680
Statin therapy group	607	529	457	400
Non-statin therapy group	447	365	323	280

KAMIR Investigators. ***J Am Coll Cardiol 2011;58:1664-71***

International Journal of Cardiology 187 (2015) 478–485

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Comparison of the effects of two low-density lipoprotein cholesterol goals for secondary prevention after acute myocardial infarction in real-world practice: ≥50% reduction from baseline versus <70 mg/dL

Kyung Hoon Cho [a], Myung Ho Jeong [a,*], Kyung Woo Park [b], Hyo-Soo Kim [b], Sang Rok Lee [c], Jei Keon Chae [c], Young Joon Hong [a], Ju Han Kim [a], Youngkeun Ahn [a], Jeong Gwan Cho [a], Jong Chun Park [a], for the KAMIR (Korea Acute Myocardial Infarction Registry) Investigators

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Cholesterol
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ABSTRACT

Background: The present study compared the effects of two low-density lipoprotein cholesterol (LDL-C) goals for secondary prevention after acute myocardial infarction (AMI) in real-world practice.
Methods and results: Of 3091 consecutive patients with AMI who had baseline LDL-C levels ≥70 mg/dL and underwent successful percutaneous coronary intervention, 1305 eligible patients who received discharge statin prescriptions were analyzed. Patients were categorized into 2 groups according to the values of LDL-C at 1 year in two different manners using percent reduction from baseline (≥50% reduction, n = 428 versus <50% reduction, n = 877) and fixed levels (<70 mg/dL, n = 625 versus ≥70 mg/dL, n = 680). The primary outcome was defined by the composite of 2-year major cardiac events including cardiac death, non-fatal myocardial infarction, percutaneous coronary intervention, and coronary artery bypass grafting after hospital discharge. At 2 years, major cardiac events occurred in 139 patients (10.7%). Compared with <50% LDL-C reduction from baseline, patients with ≥50% LDL-C reduction had a 47% risk reduction in major cardiac events (adjusted hazard ratio, 0.53; 95% confidence interval, 0.36 to 0.79; P = 0.002). But, compared with LDL-C levels ≥70 mg/dL at 1 year, patients with LDL-C levels <70 mg/dL at 1 year had a similar risk of major cardiac events (adjusted hazard ratio, 0.96; 95% confidence interval, 0.68 to 1.34; P = 0.793).
Conclusions: Obtaining a ≥50% reduction in LDL-C was associated with better clinical outcomes after AMI in real-world practice, whereas achieving a <70 mg/dL was not.

KAMIR Investigators, Int J Cardiol 2015;187:478-485

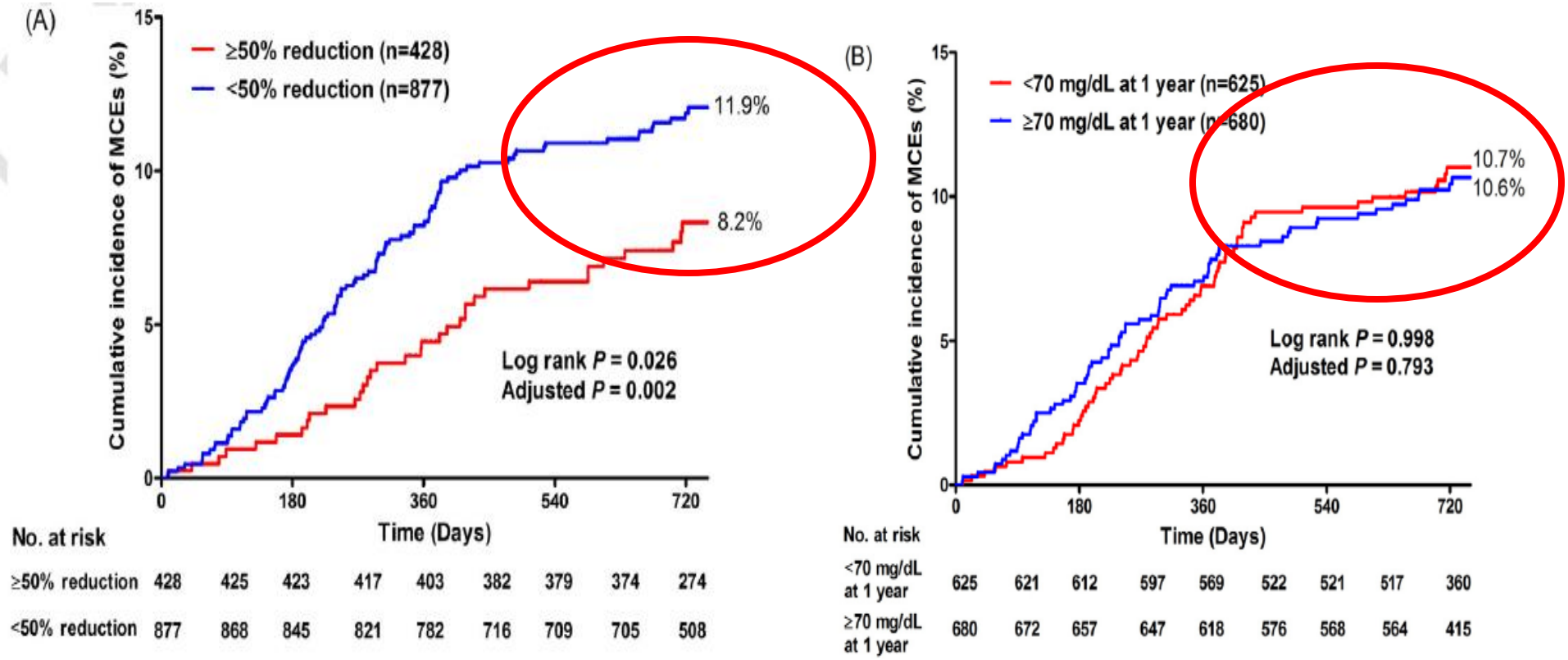

Fig. 2. Kaplan–Meier cumulative MCE curves through 24 months of follow-up. (A) Percent reduction goal setting in LDL-C (≥50% reduction from baseline versus <50% reduction). (B) Fixed goal setting in LDL-C (<70 mg/dL at 1 year versus ≥70 mg/dL at 1 year). LDL-C = low-density lipoprotein cholesterol; MCEs = major cardiac events.

KAMIR Investigators, Int J Cardiol 2015;187:478-485

G Model
JJCC-1178; No. of Pages 6

ARTICLE IN PRESS

Journal of Cardiology xxx (2015) xxx–xxx

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Original article

Benefit of statin therapy in patients with coronary spasm-induced acute myocardial infarction

Zhe Hao Piao (MD)[a,b], Myung Ho Jeong (MD, PhD, FACC, FAHA, FESC, FSCAI)[a,*], Ying Li (MD)[b], Li Jin (MD)[b], Hyun Kuk Kim (MD)[a], Keun-Ho Park (MD)[a], Doo Sun Sim (MD)[a], Kye Hun Kim (MD)[a], Young Joon Hong (MD)[a], HyungWook Park (MD)[a], Ju Han Kim (MD)[a], Youngkeun Ahn (MD)[a], Jeong Gwan Cho (MD)[a], Jong Chun Park (MD)[a], Young Jo Kim (MD)[c], Myeong Chan Cho (MD)[d], Chong Jin Kim (MD)[e], Hyo-Soo Kim (MD)[f] Other Korea Acute Myocardial Infarction Registry (KAMIR) Investigators

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Keywords:
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Myocardial infarction
Statin
Prognosis

ABSTRACT

Background: Coronary artery spasm is associated with vascular smooth muscle hyper-reactivity. Statins suppress coronary spasm by inhibiting the vascular smooth muscle contraction. However, it is unclear whether statin therapy benefits patients with coronary spasm-induced acute myocardial infarction (AMI).

Methods and results: We analyzed 501 (median age 57 years; male/female, 346/155) patients with coronary spasm-induced AMI with nonobstructive coronary arteries (stenosis severity <50%) from the Korea AMI Registry between November 2005 and October 2013. They were divided into two groups according to statin prescription at discharge (statin group $n = 292$; nonstatin group $n = 209$). The primary endpoint was the composite of 12-month major adverse cardiac events, including all causes of death, non-fatal myocardial infarction, and target vessel revascularization. The primary endpoint occurred in 17 patients during 12 months of follow-up. Statin therapy significantly reduced the risk of the composite primary endpoint [adjusted hazard ratio (HR): 0.30; 95% confidence interval (CI): 0.09–0.97; $p = 0.045$]. Statin therapy reduced the risk of myocardial infarction (HR: 0.19; 95% CI: 0.04–0.93; $p = 0.040$). However, we found no significant difference in the risk of the composite of all-cause death.

Conclusion: Statin therapy in patients with coronary spasm-induced AMI with nonobstructive coronary arteries was associated with improved clinical outcome, which was predominantly accounted for by reducing the incidence of myocardial infarction.

KAMIR Investigators, J Cardiol 2015 (in press)

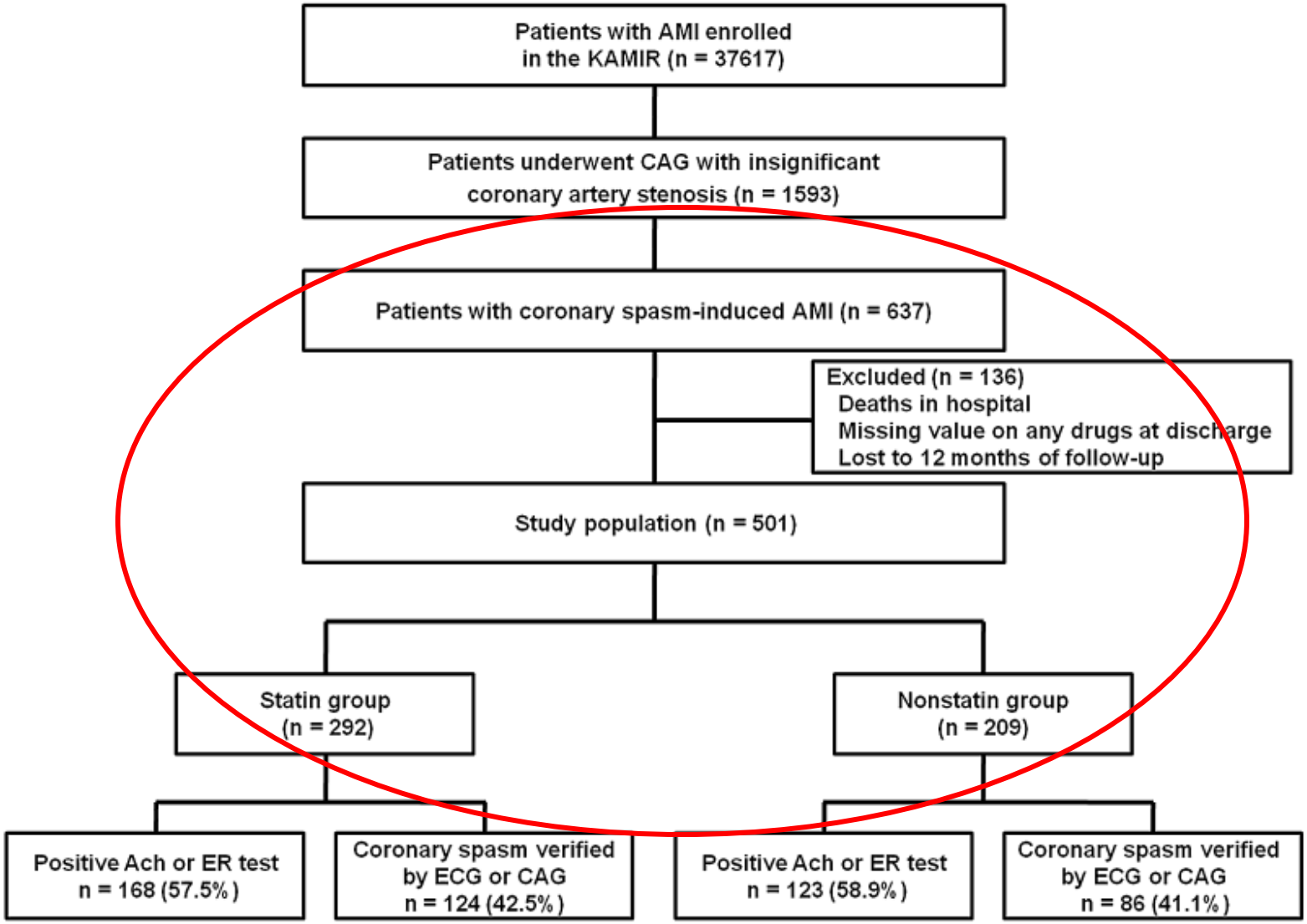
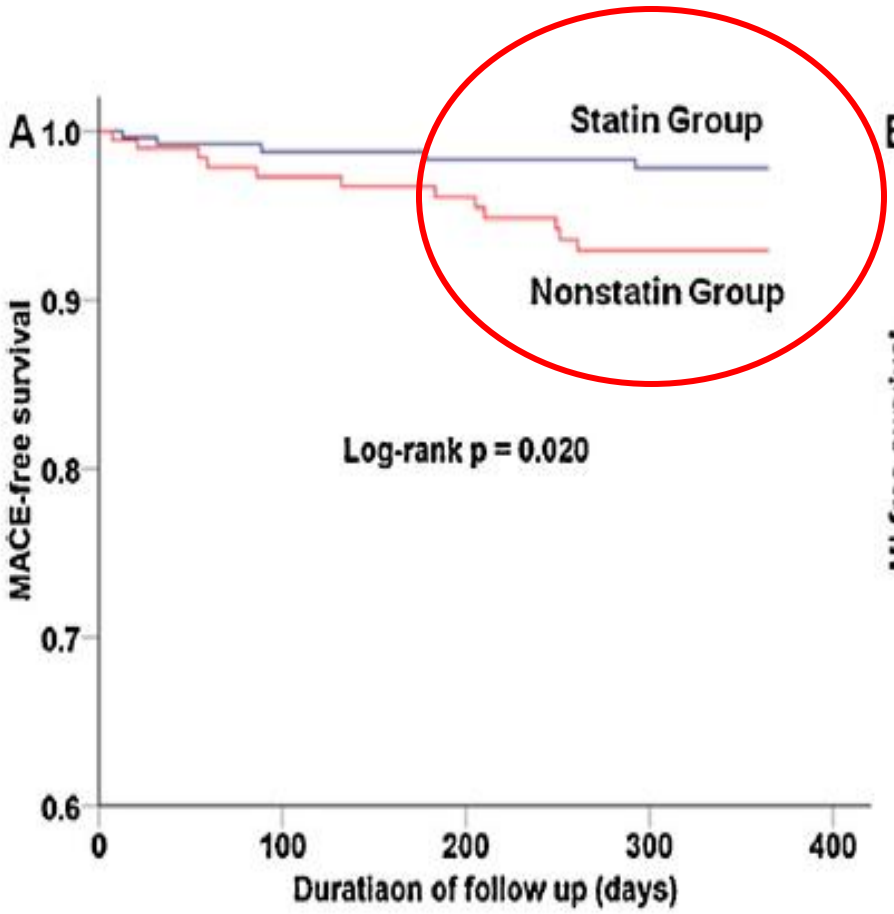
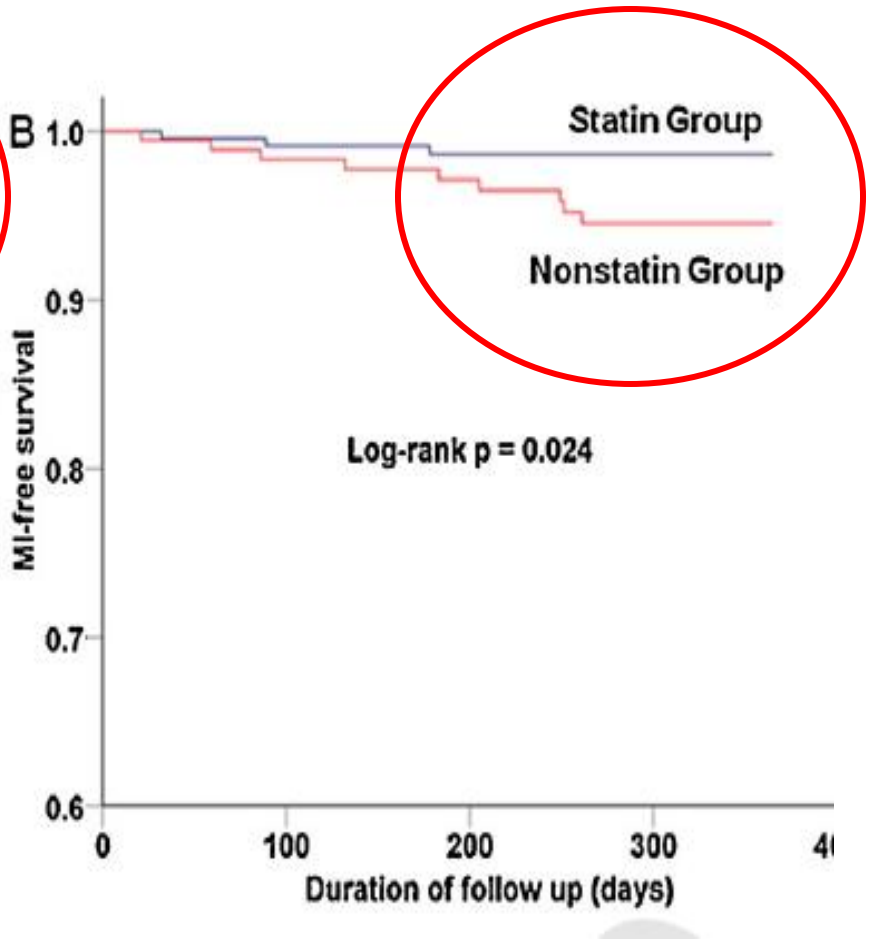


Fig. 1. Study flowchart. KAMIR, Korean Acute Myocardial Infarction Registry; AMI, acute myocardial infarction; CAG, coronary angiography; ECG, electrocardiogram; Ach, acetylcholine; ER, ergonovine.

KAMIR Investigators, J Cardiol 2015 (in press)





KAMIR Investigators, J Cardiol 2015 (in press)

International Journal of Cardiology 170 (2014) 291–297

Contents lists available at ScienceDirect

International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Comparative assessment of angiotensin ii type 1 receptor blockers in the treatment of acute myocardial infarction: surmountable vs. insurmountable antagonist

Hae Chang Jeong [a,*], Myung Ho Jeong [a], Youngkeun Ahn [a], Shung Chull Chae [b], Seung Ho Hur [c], Taek Jong Hong [d], Young Jo Kim [e], In Whan Seong [f], Jei Keon Chae [g], Jay Young Rhew [h], In Ho Chae [i], Myeong Chan Cho [j], Jang Ho Bae [k], Seung Woon Rha [l], Chong Jin Kim [m], Donghoon Choi [n], Yang Soo Jang [n], Junghan Yoon [o], Wook Sung Chung [p], Jeong Gwan Cho [a], Ki Bae Seung [p], Seung Jung Park [q]The Korea Acute Myocardial Infarction Registry Investigators

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Keywords:
Angiotensin
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Prognosis

ABSTRACT

Background: The mechanisms of antagonism vary between the angiotensin II type 1 receptor blockers (ARBs): insurmountable antagonism and surmountable antagonism. Recent retrospective observational studies suggest that ARBs may not have equivalent benefits in various clinical situations. The aim of this study was to compare the effect of two categories of ARBs on the long-term clinical outcomes of patients with acute myocardial infarction (AMI).

Methods: We analyzed the large-scale, prospective, observational Korea Acute Myocardial Infarction Registry study, which enrolled 2740 AMI patients. They divided by the prescription of surmountable ARBs or insurmountable ARBs at discharge. Primary outcome was major adverse cardiac events (MACEs), defined as a composite of cardiac death, nonfatal MI, and re-percutaneous coronary intervention, coronary artery bypass graft surgery.

Results: In the overall population, the MACEs rate in 1 year was significantly higher in the surmountable ARB group (14.3% vs. 11.2%, $p = 0.025$), which was mainly due to increased cardiac death (3.3% vs. 1.9%, $p = 0.031$). Matching by propensity-score showed consistent results (MACEs rate: 14.9% vs. 11.4%, $p = 0.037$). In subgroup analysis, the insurmountable ARB treatment significantly reduced the incidence of MACEs in patients with left ventricular ejection fraction greater than 40%, with a low killip class, with ST segment elevation MI, and with normal renal function.

Conclusions: In our study, insurmountable ARBs were more effective on long-term clinical outcomes than surmountable ARBs in patients with AMI.

KAMIR Investigators. *Int J Cardiol 2014;170:291-7*

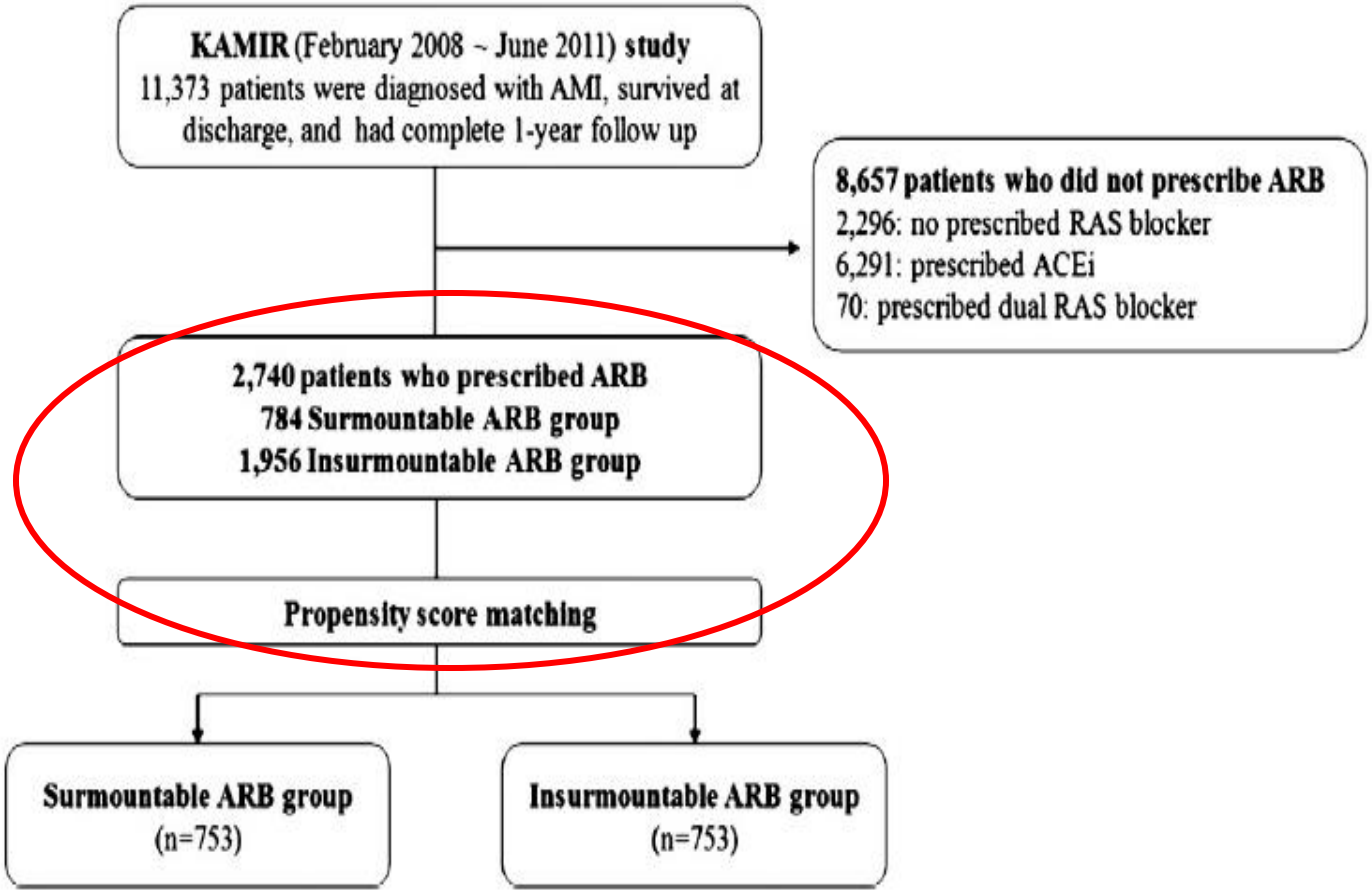
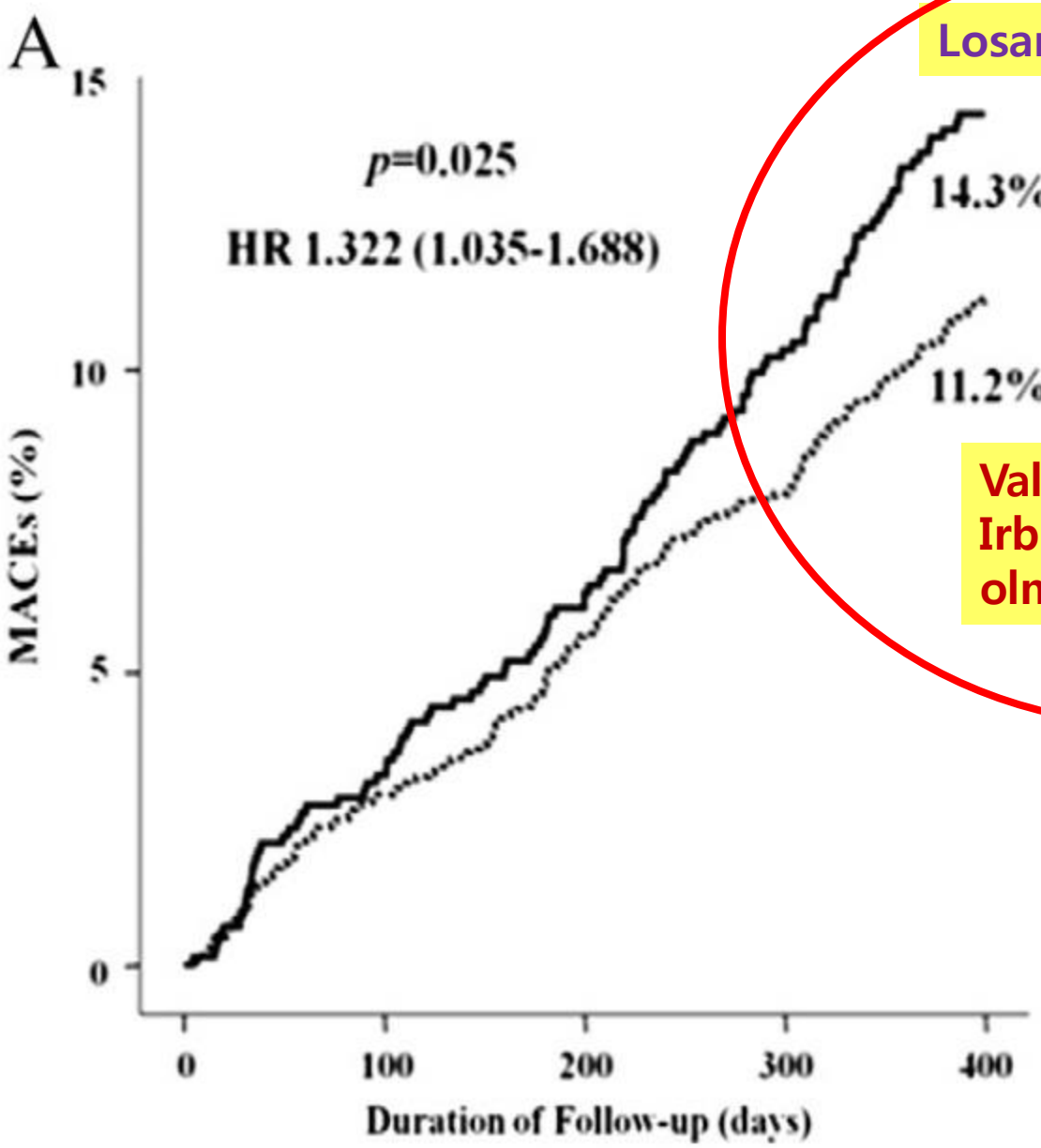


Fig. 1. Study flow chart. ACEI = angiotensin converting enzyme inhibitor; AMI = acute myocardial infarction; ARB = angiotensin receptor blocker; KAMIR = Korea Acute Myocardial Infarction Registry; PCI = percutaneous coronary intervention; RAS = renin–angiotensin system.

KAMIR Investigators. *Int J Cardiol 2014;170:291-7*



Losartan, eprosartan

Valsartan, candersatan. Irbesartan, telmisartan, olmesartan

KAMIR Investigators. *Int J Cardiol 2014;170:291-7*

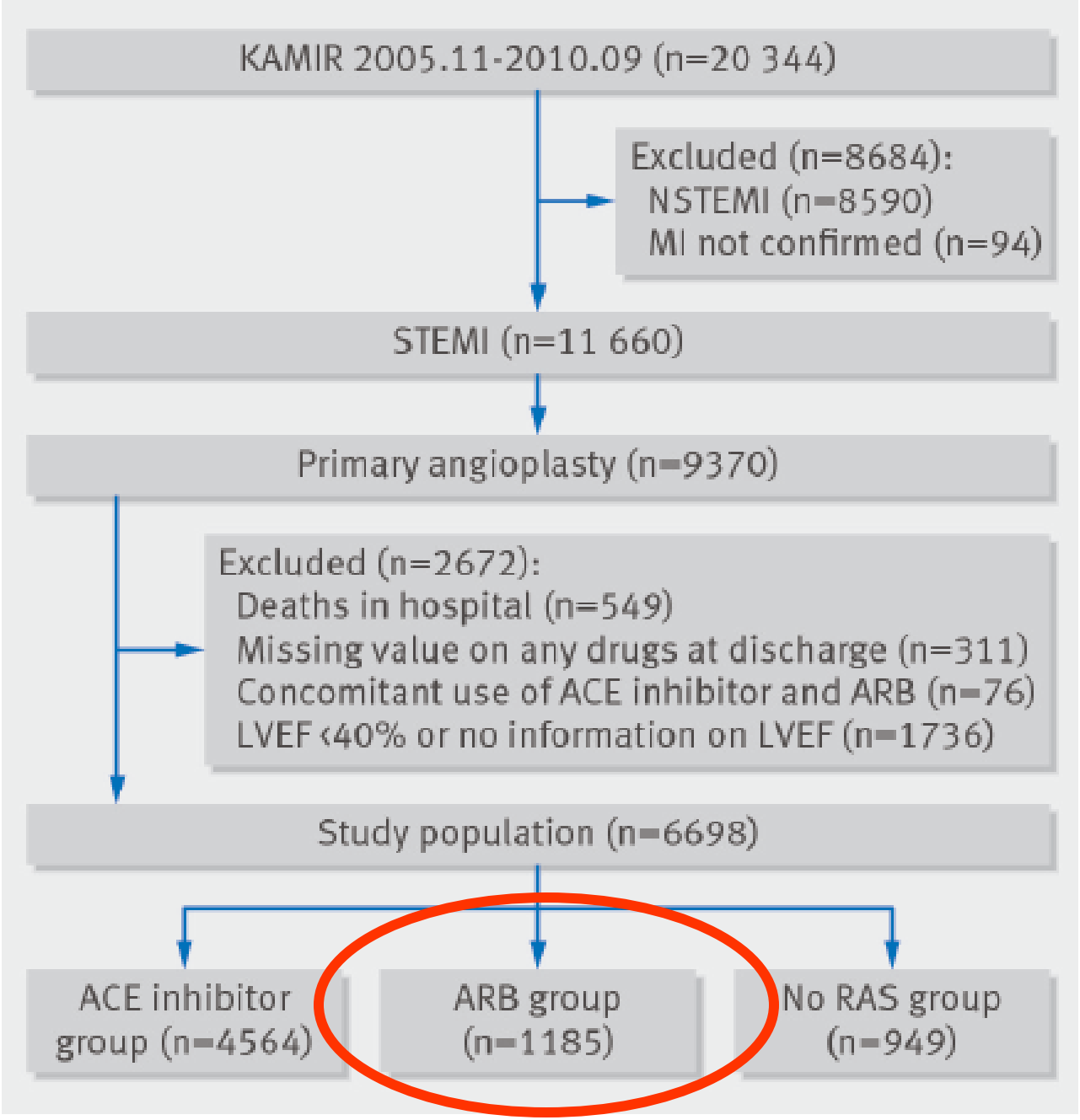
BMJ 2014;349:g6650 doi: 10.1136/bmj.g6650 (Published 14 November 2014)

RESEARCH

Angiotensin receptor blocker in patients with ST segment elevation myocardial infarction with preserved left ventricular systolic function: prospective cohort study

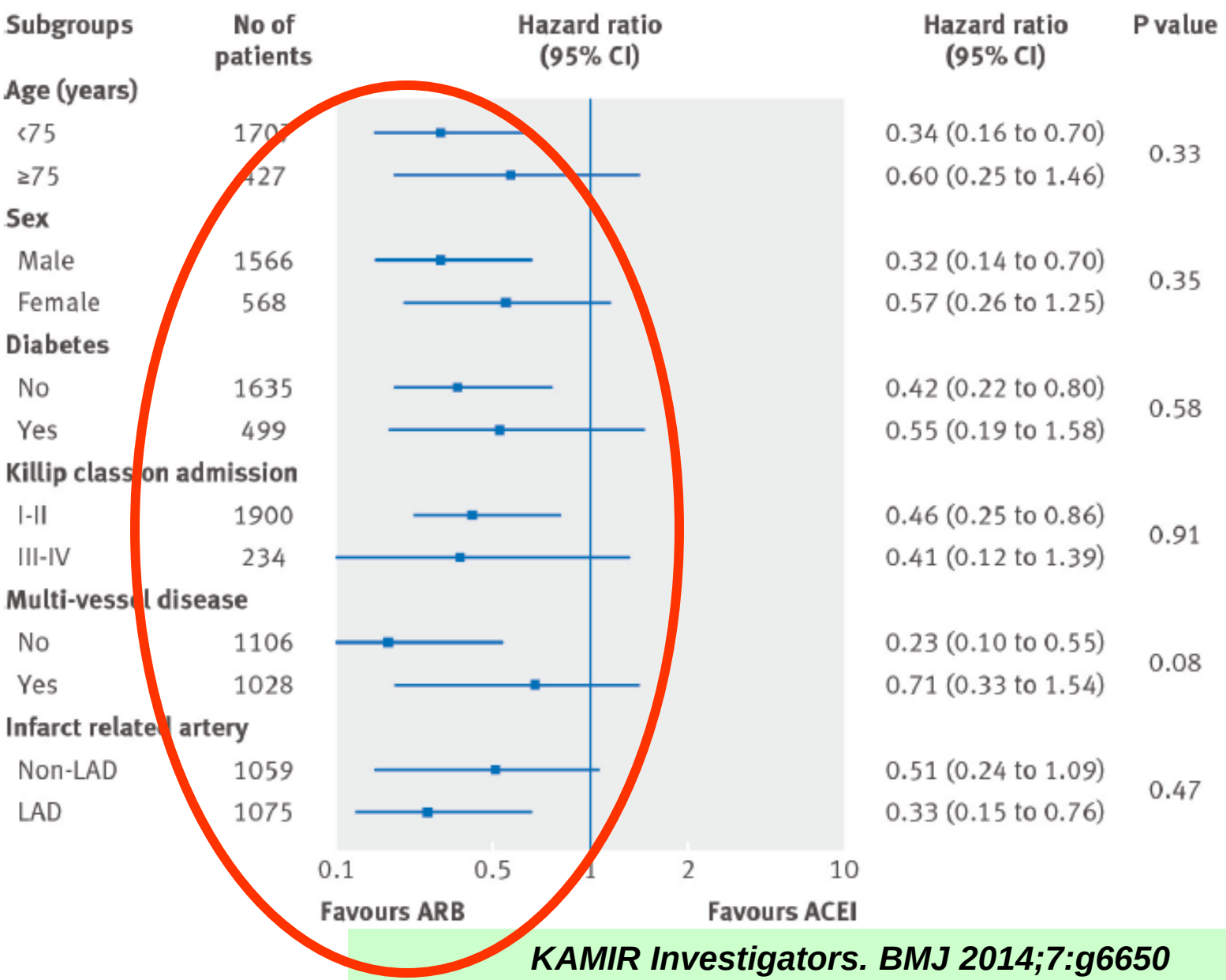
Jeong Hoon Yang *clinical assistant professor*[1 2], Joo-Yong Hahn *associate professor*[1], Young Bin Song *assistant professor*[1], Seung-Hyuk Choi *professor*[1], Jin-Ho Choi *associate professor*[1], Sang Hoon Lee *professor*[1], Myung-Ho Jeong *professor*[3], Dong-Joo Choi *professor*[4], Jong Seon Park *professor*[5], Hun Sik Park *professor*[6], Hyeon-Cheol Gwon *professor*[1]

KAMIR Investigators. BMJ 2014;7:g6650



KAMIR Investigators. BMJ 2014;7:g6650

ARB in STEMI with Preserved LV Function



KAMIR Investigators. BMJ 2014;7:g6650

CORONARY
Clinical Research

Association of Beta-Blocker Therapy at Discharge With Clinical Outcomes in Patients With ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

Jeong Hoon Yang, MD,*† Joo-Yong Hahn, MD,* Young Bin Song, MD,* Seung-Hyuk Choi, MD,* Jin-Ho Choi, MD,* Sang Hoon Lee, MD,* Joo Han Kim, MD,‡ Young-Keun Ahn, MD,‡ Myung-Ho Jeong, MD,‡ Dong-Joo Choi, MD,§ Jong Seon Park, MD,|| Young Jo Kim, MD,|| Hun Sik Park, MD,¶ Kyoo-Rok Han, MD,# Seung Woon Rha, MD,** Hyeon-Cheol Gwon, MD*

KAMIR Investigators, J Am Coll Cardiol Intv 2014;7:592-601

Beta-blocker in Primary PCI

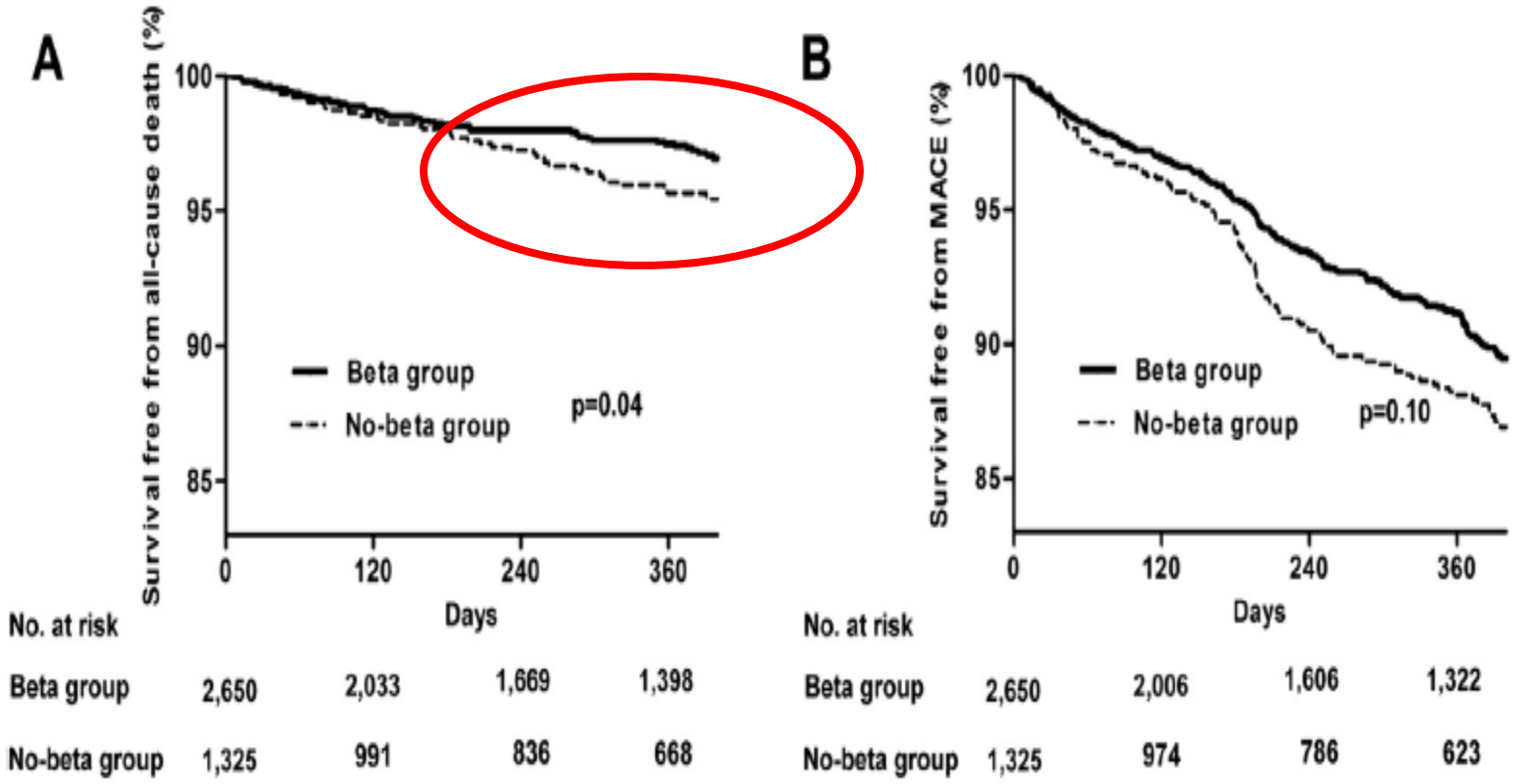


Figure 3. Kaplan-Meier Curves in Beta-Blocker Versus No–Beta-Blocker Groups in Propensity-Matched Populations

KAMIR Investigators, J Am Coll Cardiol Intv 2014;7:592-601

Revascularization in Multi-vessel Disease

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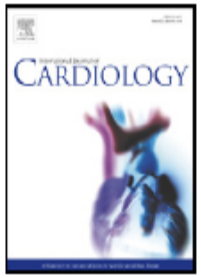


What is optimal revascularization strategy in patients with multivessel coronary artery disease in non-ST-elevation myocardial infarction? Multivessel or culprit-only revascularization

Min Chul Kim [a], Myung Ho Jeong [a,*], Youngkeun Ahn [a], Jong Hyun Kim [b], Shung Chull Chae [c], Young Jo Kim [d], Seung Ho Hur [e], In Whan Seong [f], Taek Jong Hong [g], Dong Hoon Choi [h], Myeong Chan Cho [i], Chong Jin Kim [j], Ki Bae Seung [k], Wook Sung Chung [k], Yang Soo Jang [l], Seung Yun Cho [l], Seung Woon Rha [m], Jang Ho Bae [n], Jeong Gwan Cho [a], Seung Jung Park [o]
and Korea Acute Myocardial Infarction Registry Investigators

KAMIR Investigators, Int J Cardiol 2011;153:148-53

Revascularization in Multi-vessel Disease

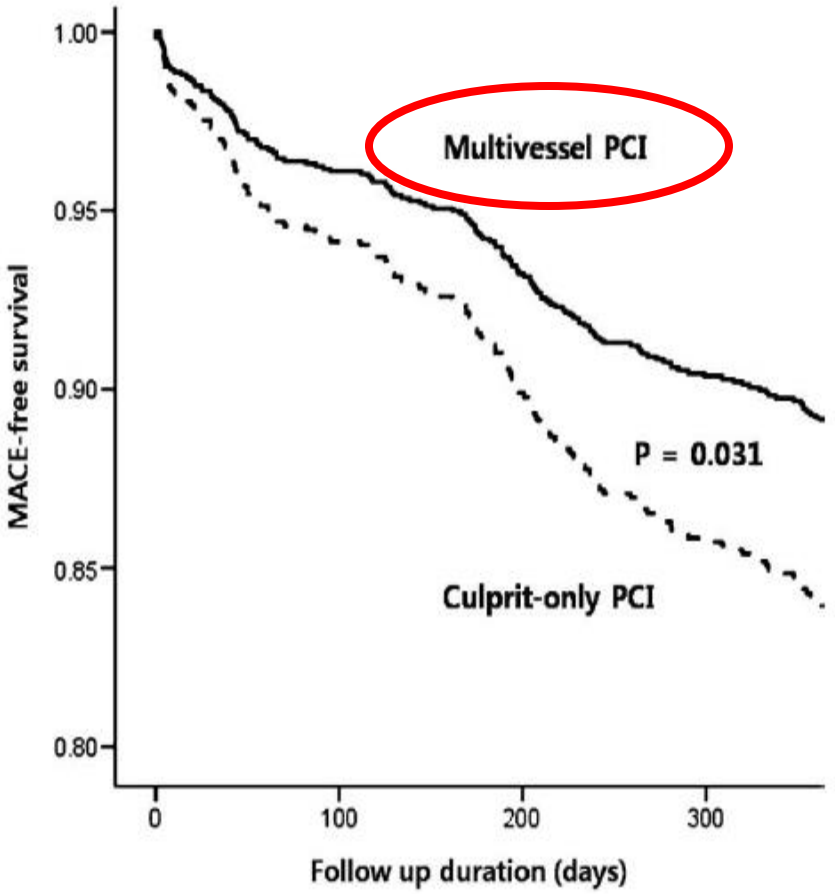


Fig. 1. One-year major adverse cardiac event (MACE)-free survival in multivessel and culprit-only PCI groups.

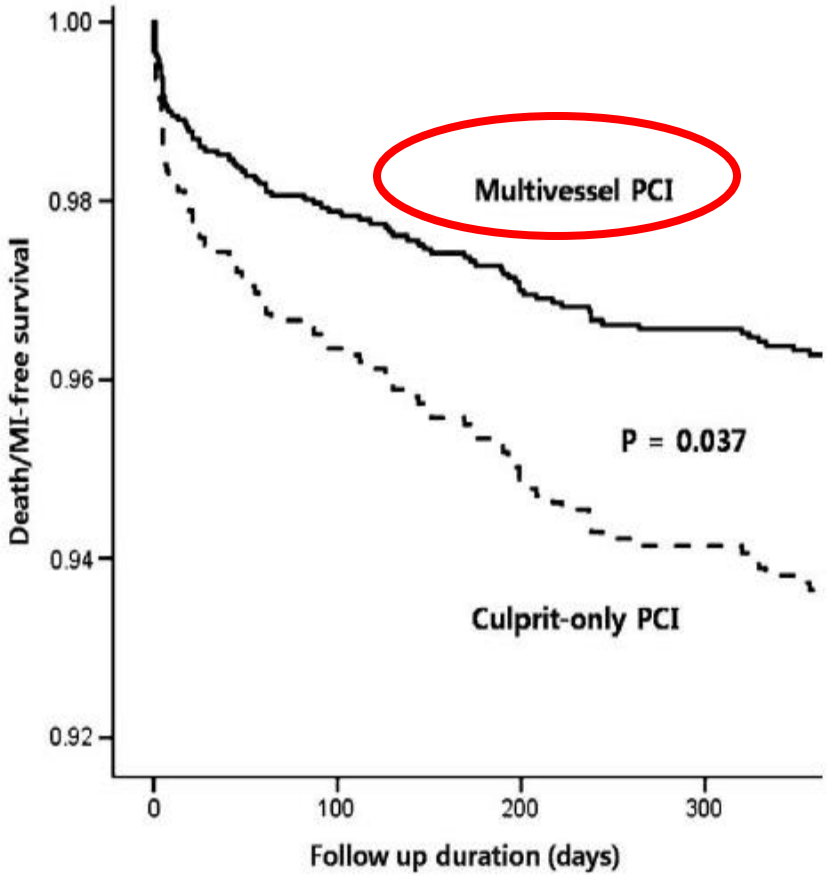


Fig. 2. One-year death or myocardial infarction (MI)-free survival in multivessel and culprit-only PCI groups.

KAMIR Investigators, Int J Cardiol 2011;153:148-53

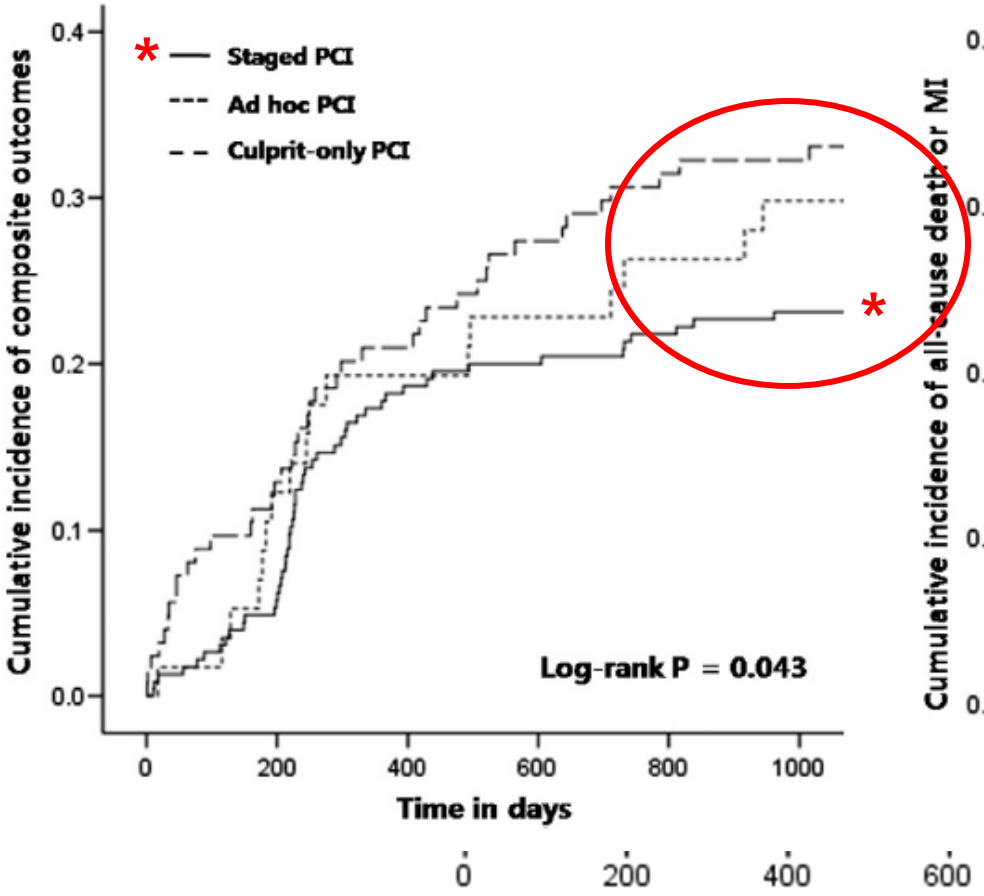
Three-year clinical outcomes of staged, ad hoc and culprit-only percutaneous coronary intervention in patients with ST-segment elevation myocardial infarction and multivessel disease

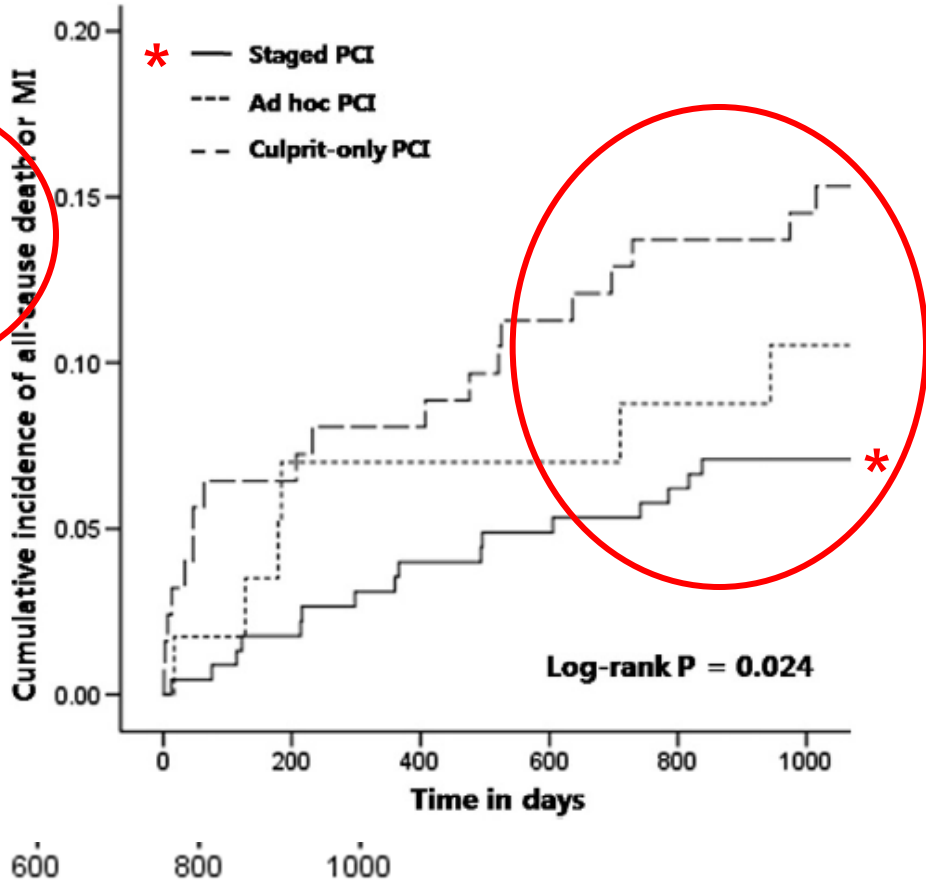
Min Chul Kim, Myung Ho Jeong *, Keun Ho Park, Doo Sun Sim, Nam Sik Yoon, Hyun Joo Yoon, Kye Hun Kim, Young Joon Hong, Hyung Wook Park, Ju Han Kim, Youngkeun Ahn, Jeong Gwan Cho, Jong Chun Park

	Staged PCI (n = 252)	Ad hoc PCI (n = 67)	CVR (n = 154)	p value
1-month composite outcomes, n (%)	9 (3.6)	3 (4.5)	12 (7.8)	0.066
Cardiac death, n (%)	1 (0.4)	2 (3.0)	5 (3.2)	0.026
Non-cardiac death, n (%)	1 (0.4)	0	1 (0.6)	0.747
Myocardial infarction, n (%)	1 (0.4)	0	2 (1.3)	0.300
Repeat PCI, n (%)	6 (2.4)	1 (1.5)	4 (2.6)	0.930
6-month composite outcomes, n (%)	38 (15.3)	10 (14.9)	24 (15.9)	0.875
Cardiac death, n (%)	3 (1.2)	2 (3.0)	6 (4.0)	0.073
Non-cardiac death, n (%)	3 (1.2)	1 (1.5)	1 (0.7)	0.636
Myocardial infarction, n (%)	1 (0.4)	0	2 (1.3)	0.296
Repeat PCI, n (%)	31 (12.4)	7 (10.4)	15 (9.9)	0.430
1-year composite outcomes, n (%)	45 (18.2)	12 (17.9)	31 (22.1)	0.371
Cardiac death, n (%)	3 (1.2)	2 (3.0)	8 (5.7)	0.011
Non-cardiac death, n (%)	5 (2.0)	1 (1.5)	2 (1.4)	0.656
Myocardial infarction, n (%)	2 (0.8)	0	2 (1.4)	0.596
Repeat PCI, n (%)	35 (14.2)	9 (13.4)	19 (13.6)	0.861
2-year composite outcomes, n (%)	48 (20.3)	15 (24.2)	39 (30.2)	0.035
Cardiac death, n (%)	4 (1.7)	2 (3.2)	11 (8.5)	0.002
Non-cardiac death, n (%)	5 (2.1)	2 (3.2)	3 (2.3)	0.856
Myocardial infarction, n (%)	3 (1.3)	1 (1.6)	3 (2.3)	0.453
Repeat PCI, n (%)	36 (15.3)	10 (16.1)	22 (17.1)	0.652
3-year composite outcomes, n (%)	55 (24.4)	18 (31.6)	43 (34.7)	0.038
Cardiac death, n (%)	6 (2.7)	3 (5.3)	11 (8.9)	0.011
Non-cardiac death, n (%)	5 (2.2)	2 (3.5)	4 (3.2)	0.553
Myocardial infarction, n (%)	6 (2.7)	1 (1.8)	6 (4.8)	0.308
Repeat PCI, n (%)	40 (17.8)	12 (21.1)	23 (18.5)	0.813
TLR	19 (8.4)	8 (14.0)	16 (12.9)	0.165
TVR	5 (2.2)	1 (1.8)	2 (1.6)	0.687
Non-TVR	18 (8.0)	3 (5.3)	6 (4.8)	0.239
Stent thrombosis, n (%)	11 (6.1)	3 (7.7)	5 (5.0)	0.738

CNUH data, Int J Cardiol 2014;176:505-7

Three-year Clinical Outcomes of Staged, ad hoc and Culprit-only PCI in STEMI (2006-2009)





0 200 400 600 800 1000

Time in days

CNUH data, Int J Cardiol 2014;176:505-7

Original Investigation

Extent, Location, and Clinical Significance of Non–Infarct-Related Coronary Artery Disease Among Patients With ST-Elevation Myocardial Infarction

Duk-Woo Park, MD; Robert M. Clare, MS; Phillip J. Schulte, PhD; Karen S. Pieper, MS; Linda K. Shaw, MS; Robert M. Califf, MD; E. Magnus Ohman, MD; Frans Van de Werf, MD; Sameer Hirji, MD; Robert A. Harrington, MD; Paul W. Armstrong, MD; Christopher B. Granger, MD; Myung-Ho Jeong, MD; Manesh R. Patel, MD

IMPORTANCE Little information exists about the anatomical characteristics and clinical relevance of non–infarct-related artery (IRA) disease among patients with ST-segment elevation myocardial infarction (STEMI).

OBJECTIVES To investigate the incidence, extent, and location of obstructive non-IRA disease and compare 30-day mortality according to the presence of non-IRA disease in patients with STEMI.

DESIGN, SETTING, AND PARTICIPANTS Retrospective study of patients pooled from a convenience sample of 8 independent, international, randomized STEMI clinical trials published between 1993 and 2007. Follow-up varied from 1 month to 1 year. Among 68 765 patients enrolled in the trials, 28 282 patients with valid angiographic information were included in this analysis. Obstructive coronary artery disease was defined as stenosis of 50% or more of the diameter of a major epicardial artery. To assess the generalizability of trial-based results, external validation was performed using observational data for patients with STEMI from the Korea Acute Myocardial Infarction Registry (KAMIR) (between November 1, 2005, and December 31, 2013; n = 18 217) and the Duke Cardiovascular Databank (between January 1, 2005, and December 31, 2012; n = 1812).

Supplemental content at Jama.com

KAMIR and Duke Data, JAMA 2014;312:2018-27

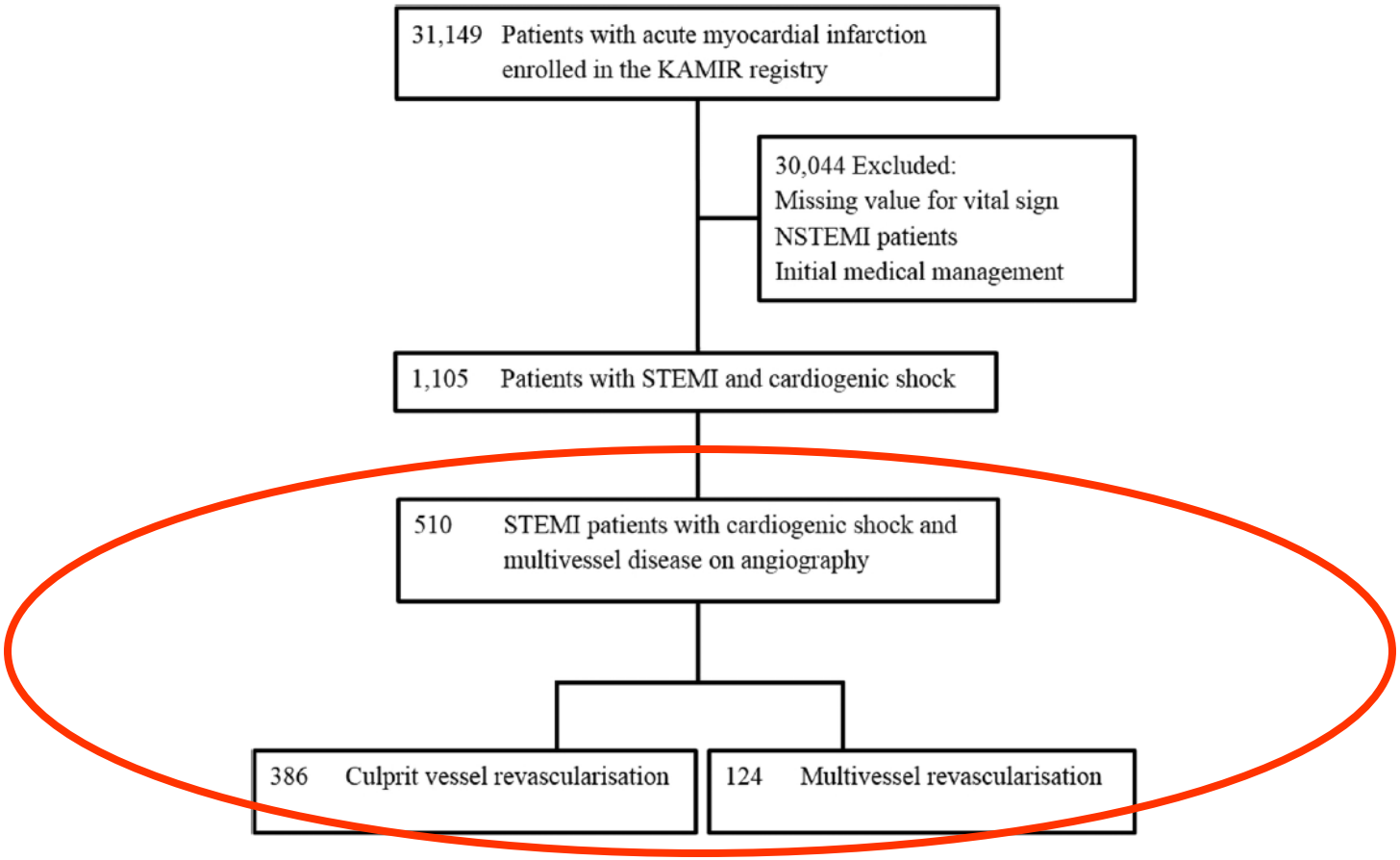
RESULTS Overall, 52.8% (14 929 patients) had obstructive non-IRA disease; 29.6% involved 1 vessel and 18.8% involved 2 vessels. There was no substantial difference in the extent and distribution of non-IRA disease according to the IRA territory. Unadjusted and adjusted rates of 30-day mortality were significantly higher in patients with non-IRA disease than in those without non-IRA disease (unadjusted, 4.3% vs 1.7%, respectively; risk difference, 2.7% [95% CI, 2.3% to 3.0%], $P < .001$; and adjusted, 3.3% vs 1.9%, respectively; risk difference, 1.4% [95% CI, 1.0% to 1.8%], $P < .001$). The overall prevalence and association of non-IRA disease with 30-day mortality was consistent with findings from the KAMIR registry (adjusted, 3.6% for patients with non-IRA disease vs 2.5% in those without it; risk difference, 1.1% [95% CI, 0.6% to 1.7%]; $P < .001$), but not with the Duke database (adjusted, 4.7% with non-IRA disease vs 4.3% without it; risk difference, 0.4% [95% CI, −1.4% to 2.2%], $P = .65$).

CONCLUSIONS AND RELEVANCE In a retrospective pooled analysis of 8 clinical trials, obstructive non-IRA disease was common among patients presenting with STEMI, and was associated with a modest statistically significant increase in 30-day mortality. These findings require confirmation in prospectively designed studies, but raise questions about the appropriateness and timing of non-IRA revascularization in patients with STEMI.

KAMIR and Duke Data, JAMA 2014;312:2018-27

ORIGINAL ARTICLE

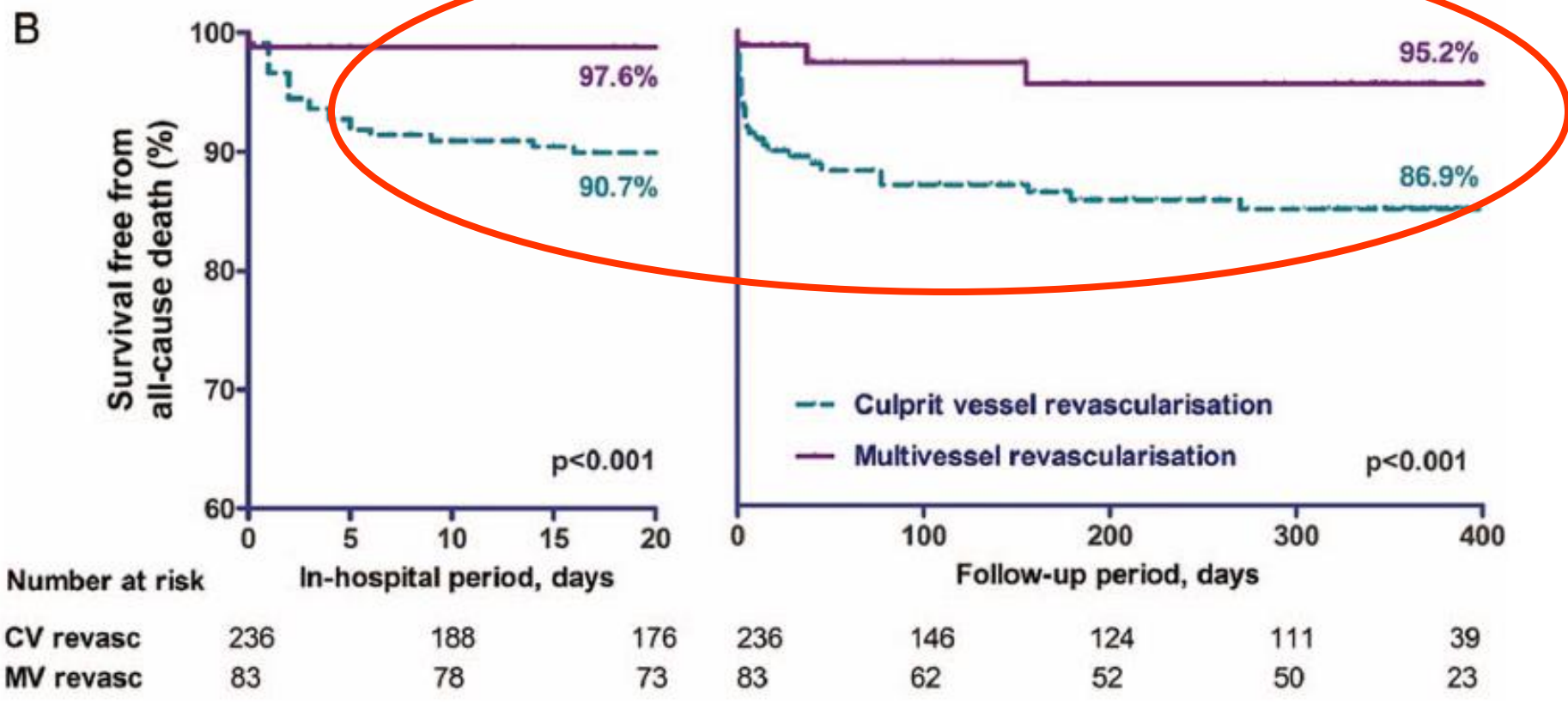
Culprit or multivessel revascularisation in ST-elevation myocardial infarction with cardiogenic shock



KAMIR Investigators. *Heart 2015 ;101:1225-32*

ORIGINAL ARTICLE

Culprit or multivessel revascularisation in ST-elevation myocardial infarction with cardiogenic shock



KAMIR Investigators. *Heart 2015 ;101:1225-32*

DES in Korean AMI Pts

International Journal of Cardiology 163 (2013) 1–4

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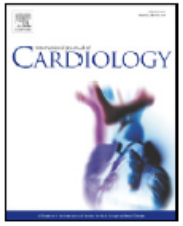

Editorial

The efficacy and safety of drug-eluting stents in patients with acute myocardial infarction: Results from Korea Acute Myocardial Infarction (KAMIR)

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ABSTRACT

There are controversies about the use of drug-eluting stent (DES) in patients with acute myocardial infarction (AMI). Recent trials of DES in patients with AMI have shown the relative safety of DES. However, some physicians hesitate to use DES in AMI patients because of increased risk of stent thrombosis and death. We summarized in this article about the efficacy and safety of DES in AMI patients who were enrolled in Korea Acute Myocardial Infarction Registry (KAMIR).

KAMIR Investigators. *Int J Cardiol 2013;163:1-4*

DES in Korean AMI Pts

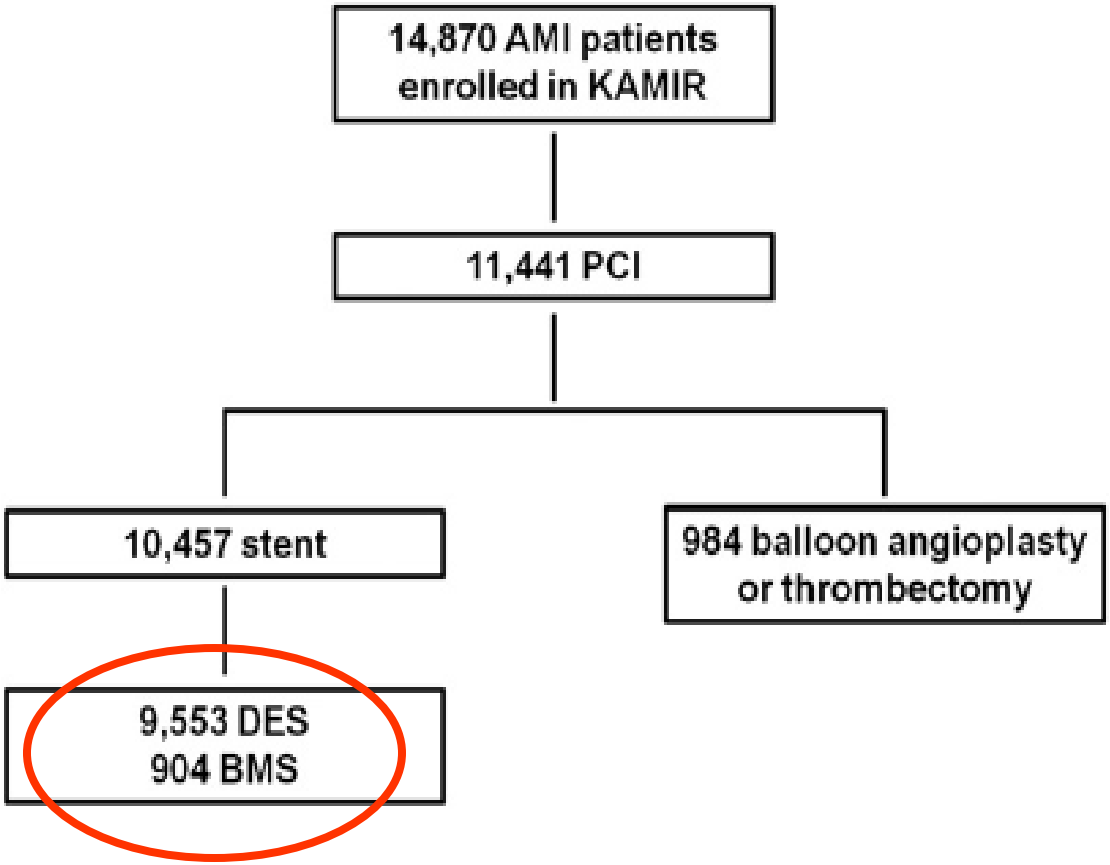

Fig. 1. Study population diagram. AMI: acute myocardial infarction, KAMIR: Korea Acute Myocardial Infarction Registry, PCI: percutaneous coronary intervention, DES: drug-eluting stent, BMS: bare-metal stent.

KAMIR Investigators. ***Int J Cardiol 2013;163:1-4***

DES in Korean AMI Pts

5. Conclusions

According to the KAMIR data, DES penetration rate is more than 90%. As compared with BMS, the event rates are lower after DES implantation in patients with AMI. There were no significant differences in the incidences of overall MACE according to the DES types except for the lower need for repeat revascularization in SES compared with PES or ZES. According to KAMIR data, DES can be used safely and effectively to treat AMI patients by reducing the need for repeat revascularizations and by not increasing the risks of mortality, MI, and stent thrombosis.

KAMIR Investigators. ***Int J Cardiol 2013;163:1-4***

Journal of Cardiology 64 (2014) 273–278

Contents lists available at ScienceDirect

Journal of Cardiology

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Original article

Comparison of zotarolimus- and everolimus-eluting stents in patients with ST-elevation myocardial infarction and chronic kidney disease undergoing primary percutaneous coronary intervention

Khurshid Ahmed (MD)[a,b], Myung Ho Jeong (MD, PhD, FACC, FAHA, FESC, FSCAI, FAPSIC)[a,*], Rabin Chakraborty (MD)[b], Sumera Ahmed (MHM)[b], Young Joon Hong (MD)[a], Doo Sun Sim (MD)[a], Keun Ho Park (MD)[a], Ju Han Kim (MD)[a], Youngkeun Ahn (MD)[a], Jung Chaee Kang (MD)[a], Myeong Chan Cho (MD)[c], Chong Jin Kim (MD)[d], Young Jo Kim (MD)[e], other Korea Acute Myocardial Infarction Registry Investigators

KAMIR Investigators. *J Cardiol 2014;64:273-88*

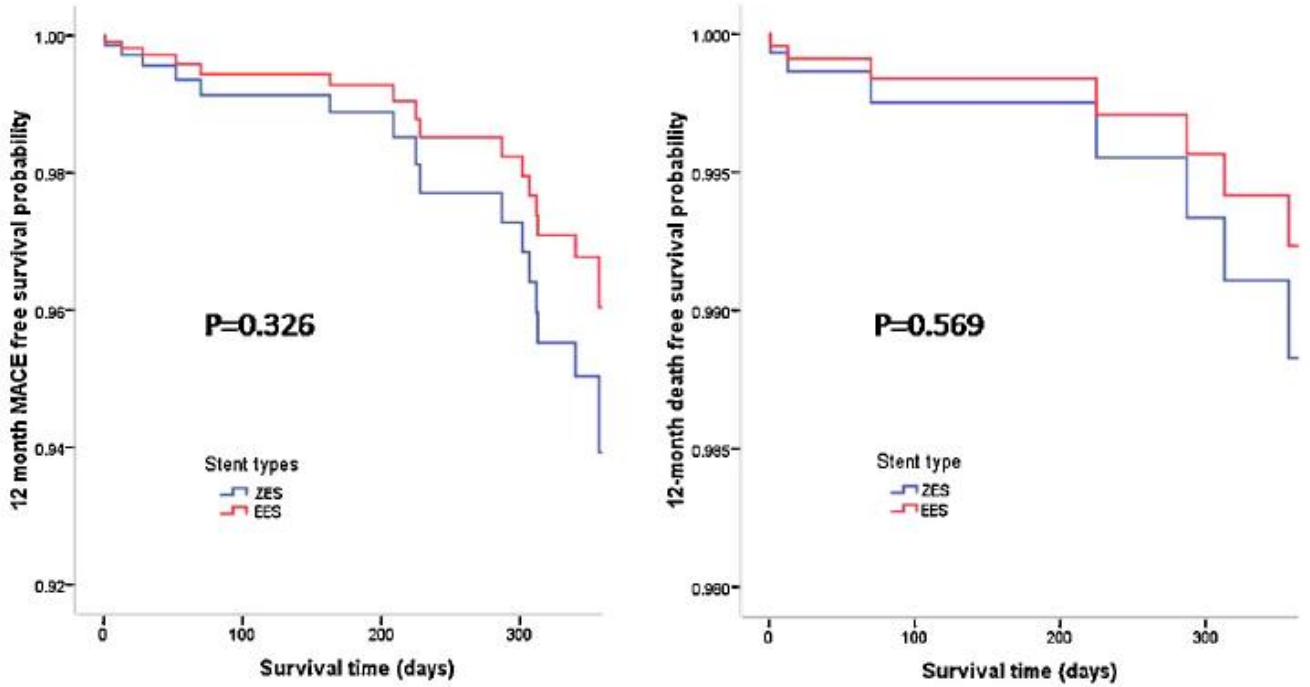


Fig. 2. Propensity adjusted 12-month MACE and death-free survival between the two commonly used stent types in patients with acute myocardial infarction and chronic kidney disease undergoing primary percutaneous coronary intervention. MACE, major adverse cardiac event.

KAMIR Investigators. *J Cardiol 2014;64:273-88*

Journal of Cardiology xxx (2013) xxx–xxx

Contents lists available at SciVerse ScienceDirect

Journal of Cardiology

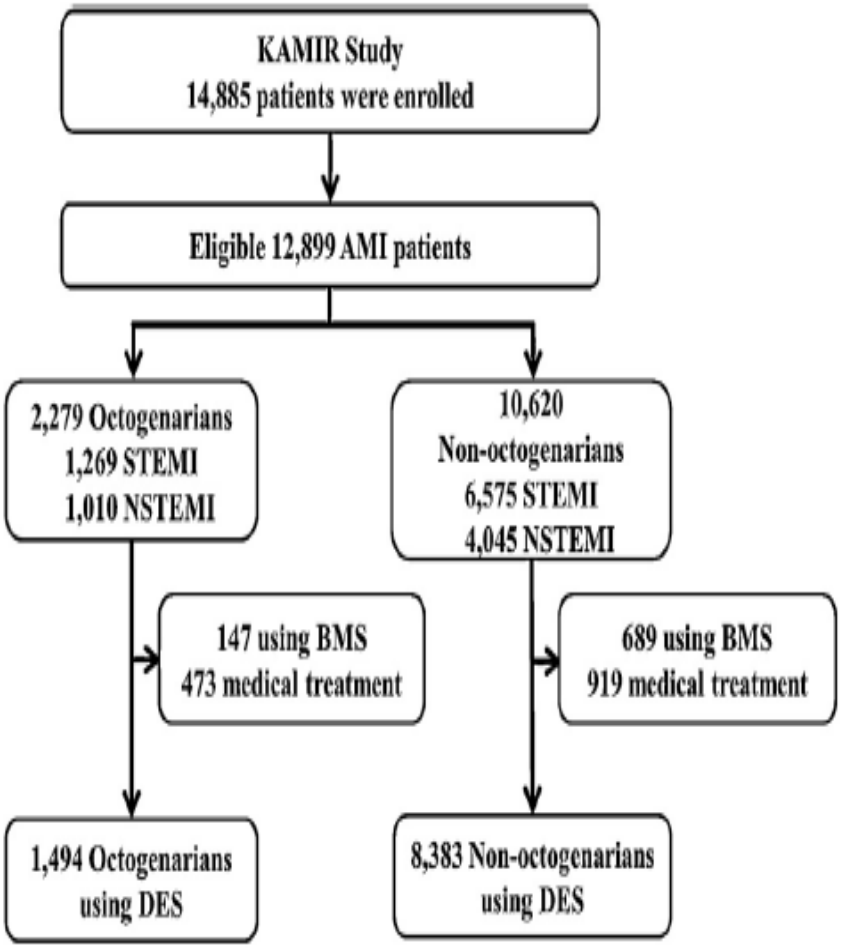
journal homepage: www.elsevier.com/locate/jjcc

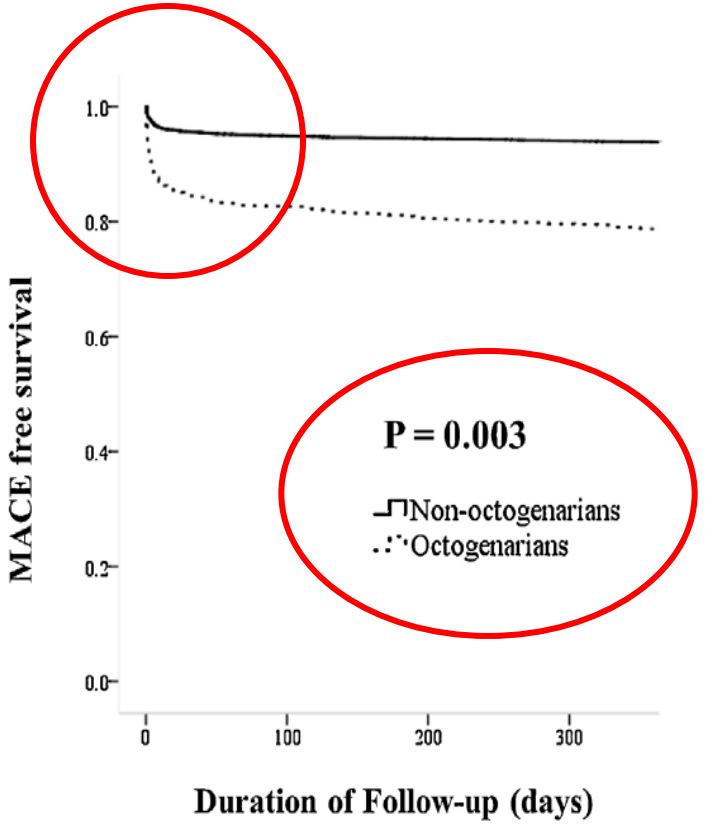
Original article

Comparison of clinical outcomes between octogenarians and non-octogenarians with acute myocardial infarction in the drug-eluting stent era: Analysis of the Korean Acute Myocardial Infarction Registry

Futoshi Yamanaka (MD)[a,b], Myung Ho Jeong (MD, PhD, FACC, FAHA, FESC)[a,*], Shigeru Saito (MD, FJCC)[b], Youngkeun Ahn (MD)[a], Shung Chull Chae (MD)[c], Seung Ho Hur (MD)[d], Taek Jong Hong (MD)[e], Young Jo Kim (MD)[f], In Whan Seong (MD)[g], Jei Keon Chae (MD)[h], Jay Young Rhew (MD)[i], In Ho Chae (MD)[j], Myeong Chan Cho (MD)[k], Jang Ho Bae (MD)[l], Seung Woon Rha (MD)[m], Chong Jin Kim (MD)[n], Donghoon Choi (MD)[o], Yang Soo Jang (MD)[o], Junghan Yoon (MD)[p], Wook Sung Chung (MD)[q], Jeong Gwan Cho (MD)[a], Ki Bae Seung (MD)[q], Seung Jung Park (MD)[r], From the Korea Acute Myocardial Infarction Registry

KAMIR Investigators. *J Cardiol 2013;62:210-6*





No. at risk

Octogenarians	1494	789	618
Non-octogenarians	8383	5067	4138

Conclusions: Octogenarian AMI patients have higher rates of mortality and MACE even in the DES era. According to KAMIR subgroup analysis, the TLR/TVR rates in octogenarians were comparable to those in non-octogenarian AMI patients.

KAMIR Investigators. *J Cardiol 2013;62:210-6*

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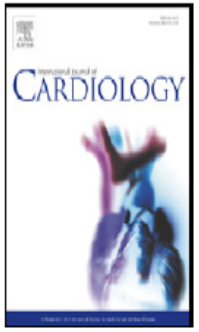

Clinical impact of early intervention in octogenarians with non-ST-elevation myocardial infarction ☆

Zhe Hao Piao [a,b], Myung Ho Jeong [a,*], Li Jin [b], Da Wei Qian [b], Soo Young Jang [a], Jae Yeong Cho [a], Hae Chang Jeong [a], Ki Hong Lee [a], Keun-Ho Park [a], Doo Sun Sim [a], Kye Hun Kim [a], Young Joon Hong [a], Hyung Wook Park [a], Ju Han Kim [a], Youngkeun Ahn [a], Jeong Gwan Cho [a], Sang Hyung Kim [a], Jong Chun Park [a], Young Jo Kim [c], Myeong Chan Cho [d], Chong Jin Kim [e], Hyo Soo Kim [f], Other Korea Acute Myocardial Infarction Registry (KAMIR) Investigator

KAMIR Investigators. ***Int J Cardiol 2014;172:462-4***

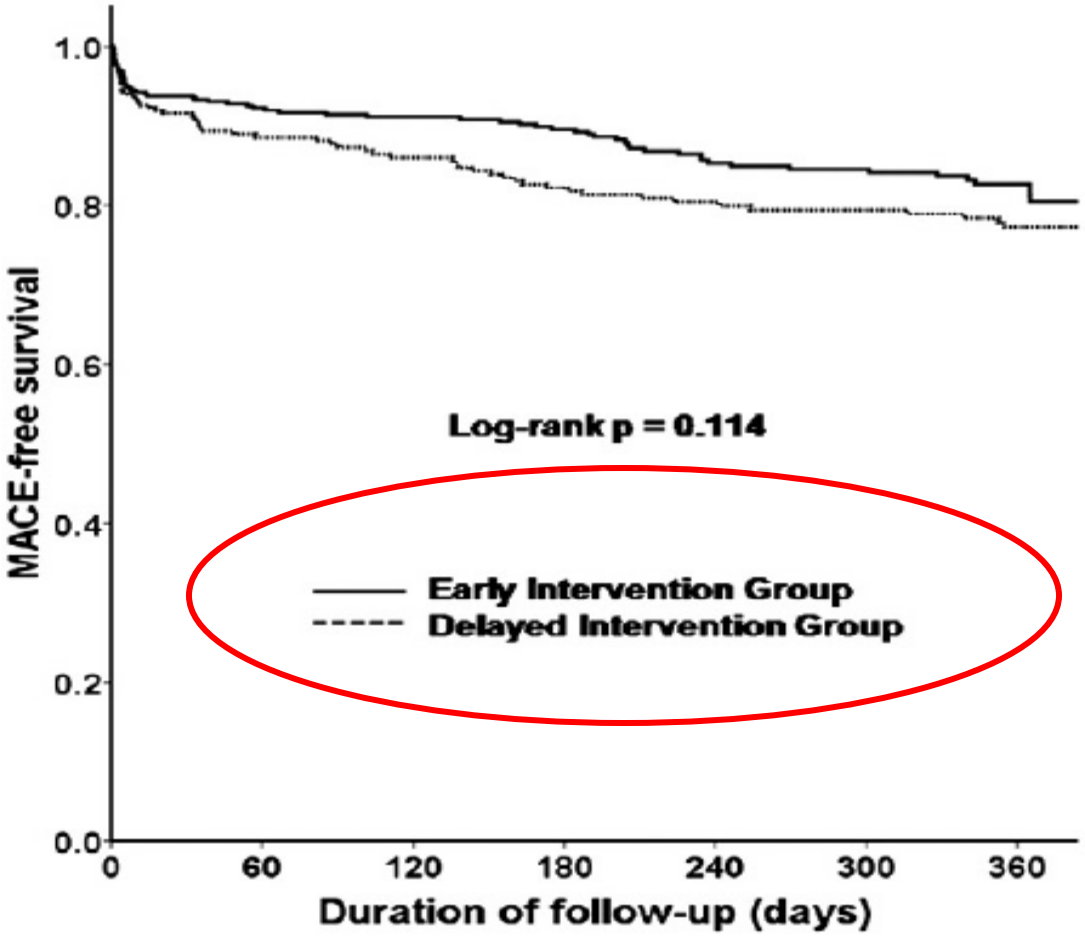

Fig. 1. Kaplan–Meier curves for the 12-month probability of MACE-free survival in patients with early intervention and delayed intervention group. HR = hazard ratio; CI = confidence interval; MACE = major adverse cardiac events.

KAMIR Investigators. ***Int J Cardiol 2014;172:462-4***

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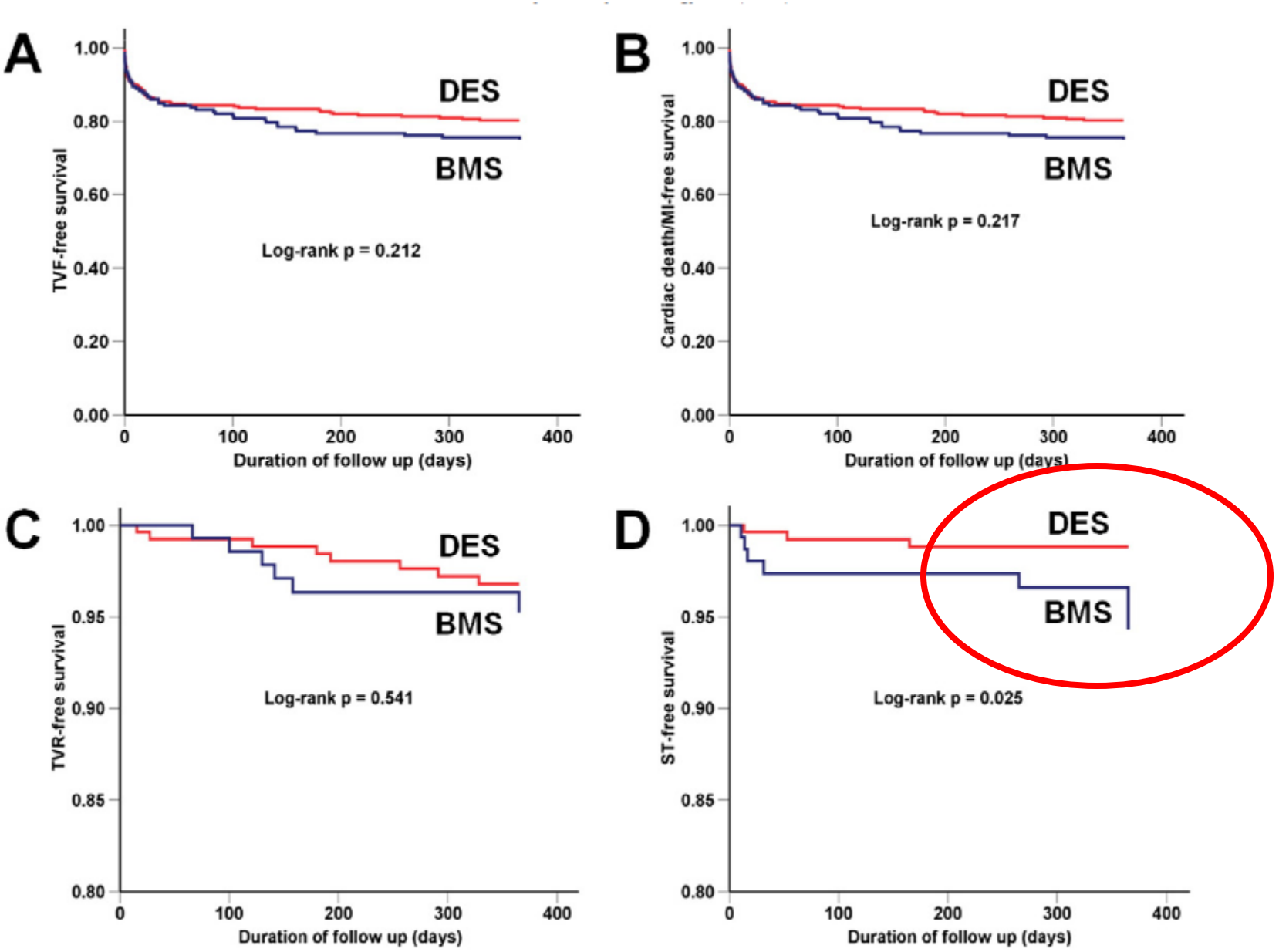
International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Comparison of second-generation drug-eluting versus bare-metal stents in octogenarian patients with ST-segment elevation myocardial infarction

Zhe Hao Piao [a,b], Myung Ho Jeong [a,*], Ying Li [b], Min Chul Kim [a], Kyung Hoon Cho [a], Keun-Ho Park [a], Doo Sun Sim [a], Kye Hun Kim [a], Young Joon Hong [a], Hyung Wook Park [a], Ju Han Kim [a], Youngkeun Ahn [a], Jeong Gwan Cho [a], Jong Chun Park [a], Young Jo Kim [c], Myeong Chan Cho [d], Chong Jin Kim [e], Hyo Soo Kim [f], Other Korea Acute Myocardial Infarction Registry (KAMIR) Investigators

KAMIR Investigators. *Int J Cardiol 2014;177:1081-4*



KAMIR Investigators. *Int J Cardiol 2014;177:1081-4*

International Journal of Cardiology 199 (2015) 53–62

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International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Comparison of Resolute zotarolimus-eluting stents versus everolimus-eluting stents in patients with metabolic syndrome and acute myocardial infarction
Propensity score-matched analysis

Mi Seon Ji [a,1], Myung Ho Jeong [a,*], Young Keun Ahn [a], Sang Hyung Kim [a], Young Jo Kim [b], Shung Chull Chae [c], Taek Jong Hong [d], In Whan Seong [e], Jei Keon Chae [f], Chong Jin Kim [g], Myeong Chan Cho [h], Seung-Woon Rha [i], Jang Ho Bae [j], Ki Bae Seung [k], Seung Jung Park [l], Seung Ho Hur [m], and other Korea Acute Myocardial Infarction Registry Investigators

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Metabolic cardiovascular syndrome
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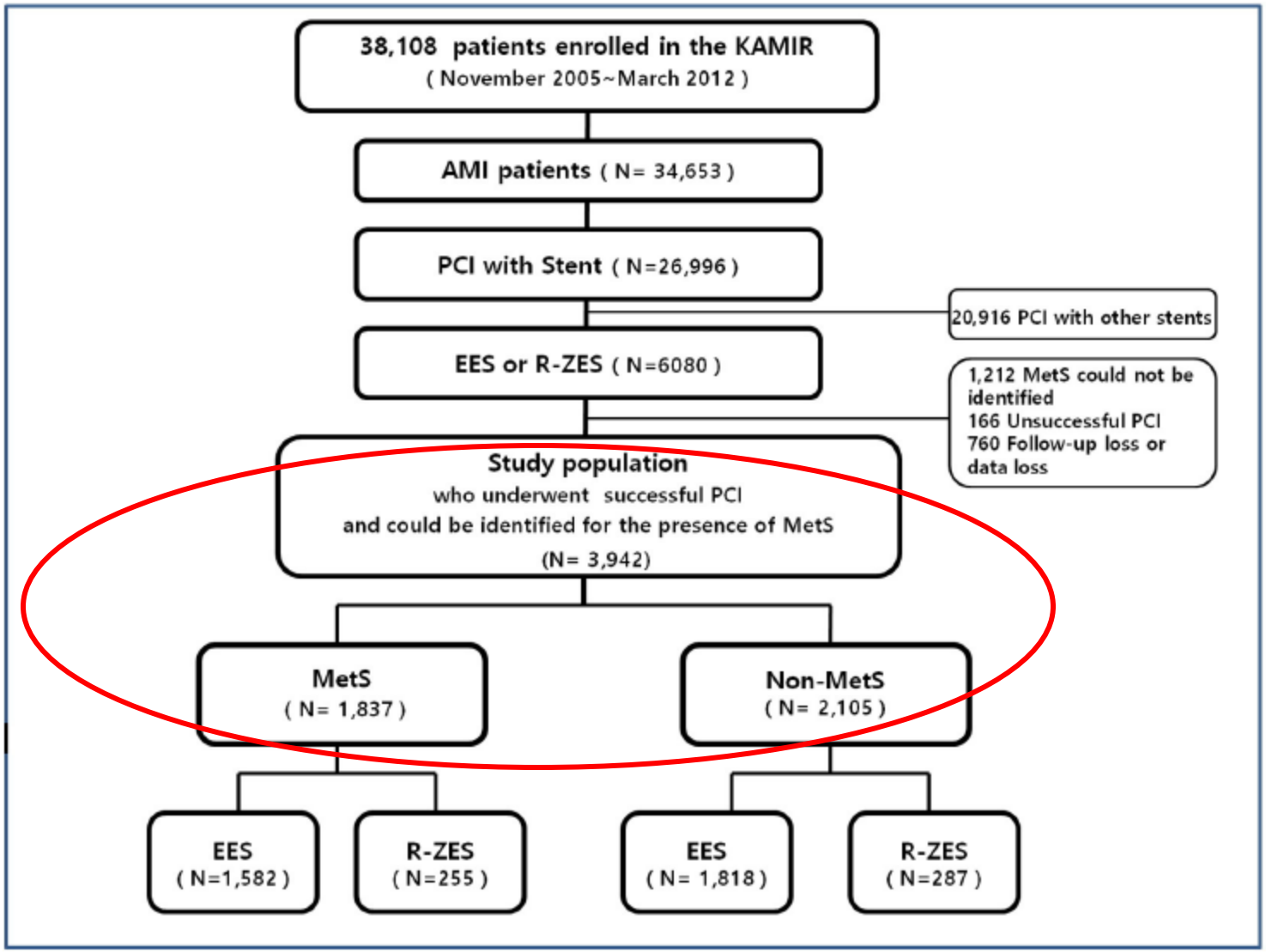
ABSTRACT

Background: Despite common use of second-generation drug-eluting stents in treating patients with coronary artery disease, there is lack of data comparing these stents exclusively in patients with acute myocardial infarction (AMI), especially with metabolic syndrome (MetS), which is highly prevalent in AMI and potential to worsen clinical outcomes. The aim of this study was to compare clinical outcomes of everolimus-eluting stent (EES) and Resolute-zotarolimus-eluting stent (R-ZES) in AMI patients with MetS, in terms of stent-related and patient-related outcomes.

Methods: A total of 3942 AMI patients in the KAMIR (Korea Acute Myocardial Infarction Registry) were grouped according to the presence of MetS and stent type: EES (N = 1582) and R-ZES (N = 255) in MetS (1837). Target lesion failure (TLF) and patient-oriented composite events (POCE) at 1 year were evaluated.

Results: In MetS patients, TLF (3.7% vs. 2.7%, p = 0.592) and POCE (7.9% vs. 6.7%, p = 0.764) were similar between EES and R-ZES. Also in Non-MetS patients, TLF (3.9% vs. 3.1%, p = 0.307) and POCE (6.4% vs. 7.3%, p = 0.866) were

KAMIR Investigators. *Int J Cardiol 2015;199:53-62*



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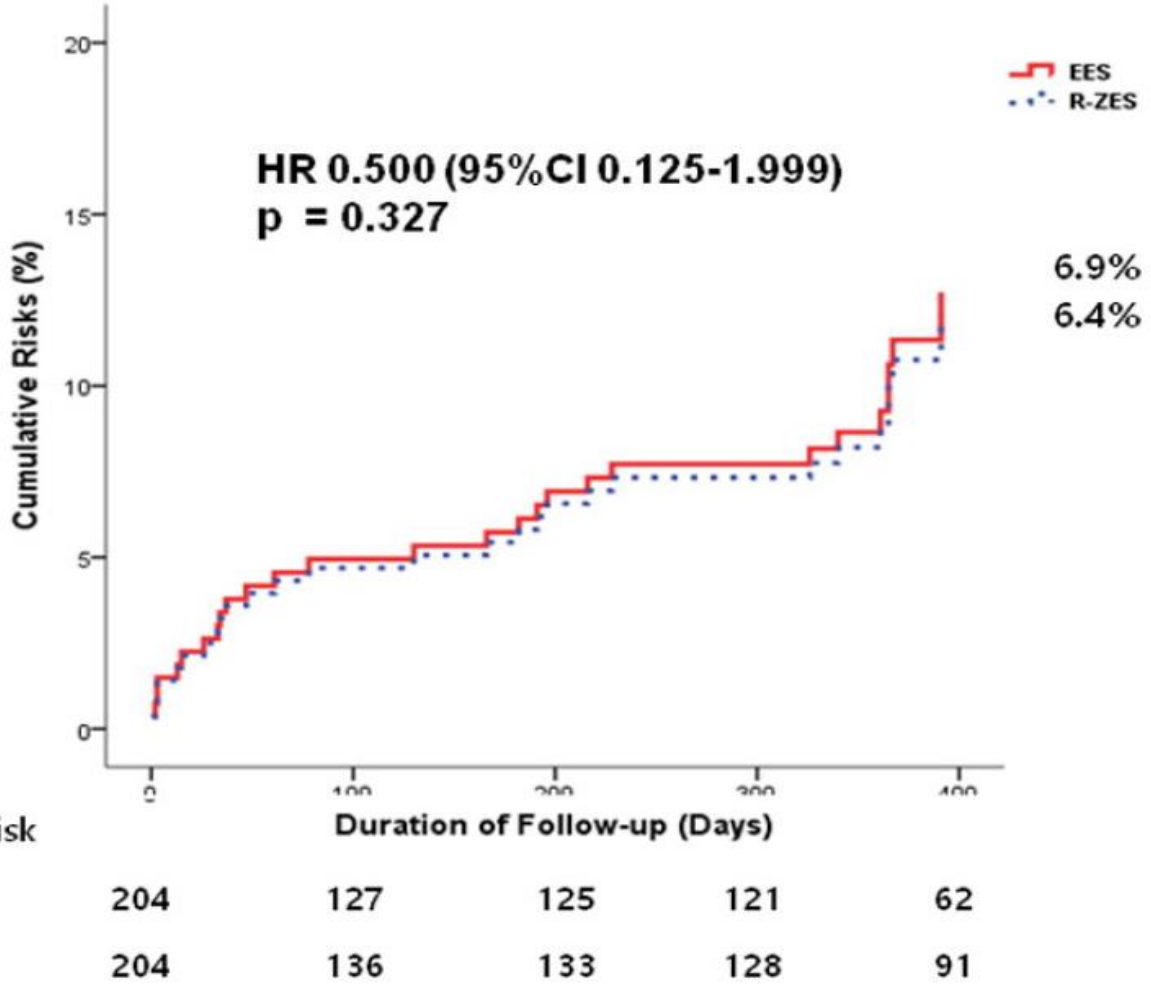

Fig. 2. Twelve-month clinical outcomes in MetS patients with AMI. (A) TLF in the entire patient population, (B) POCE in the entire patient population, (C) TLF in propensity score matched population, (D) POCE in propensity score matched population. There were no significant differences in 12-month TLF or POCE rates between 2 stent groups in MetS patients with AMI.

KAMIR Investigators. ***Int J Cardiol 2015;199:53-62***

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Original article

Clinical outcomes of the intra-aortic balloon pump for resuscitated patients with acute myocardial infarction complicated by cardiac arrest

Hyun Kuk Kim (MD)[a], Myung Ho Jeong (MD, PhD, FACC, FAHA, FESC, FSCAI)[a,*], Youngkeun Ahn (MD)[a], Doo Sun Sim (MD)[a], Shung Chull Chae (MD)[b], Young Jo Kim (MD)[c], Seung Ho Hur (MD)[d], In Whan Seong (MD)[e], Taek Jong Hong (MD)[f], Dong Hoon Choi (MD)[g], Myeong Chan Cho (MD)[h], Chong Jin Kim (MD)[i], Ki Bae Seung (MD)[j], Yang Soo Jang (MD)[g], Seung Woon Rha (MD)[k], Jang Ho Bae (MD)[l], Jeong Gwan Cho (MD)[a], Seung Jung Park (MD)[m] and other Korea Acute Myocardial Infarction Registry Investigators[1]

KAMIR Investigators. *J Cardiol 2015 May 14 [Epub ahead of print]*

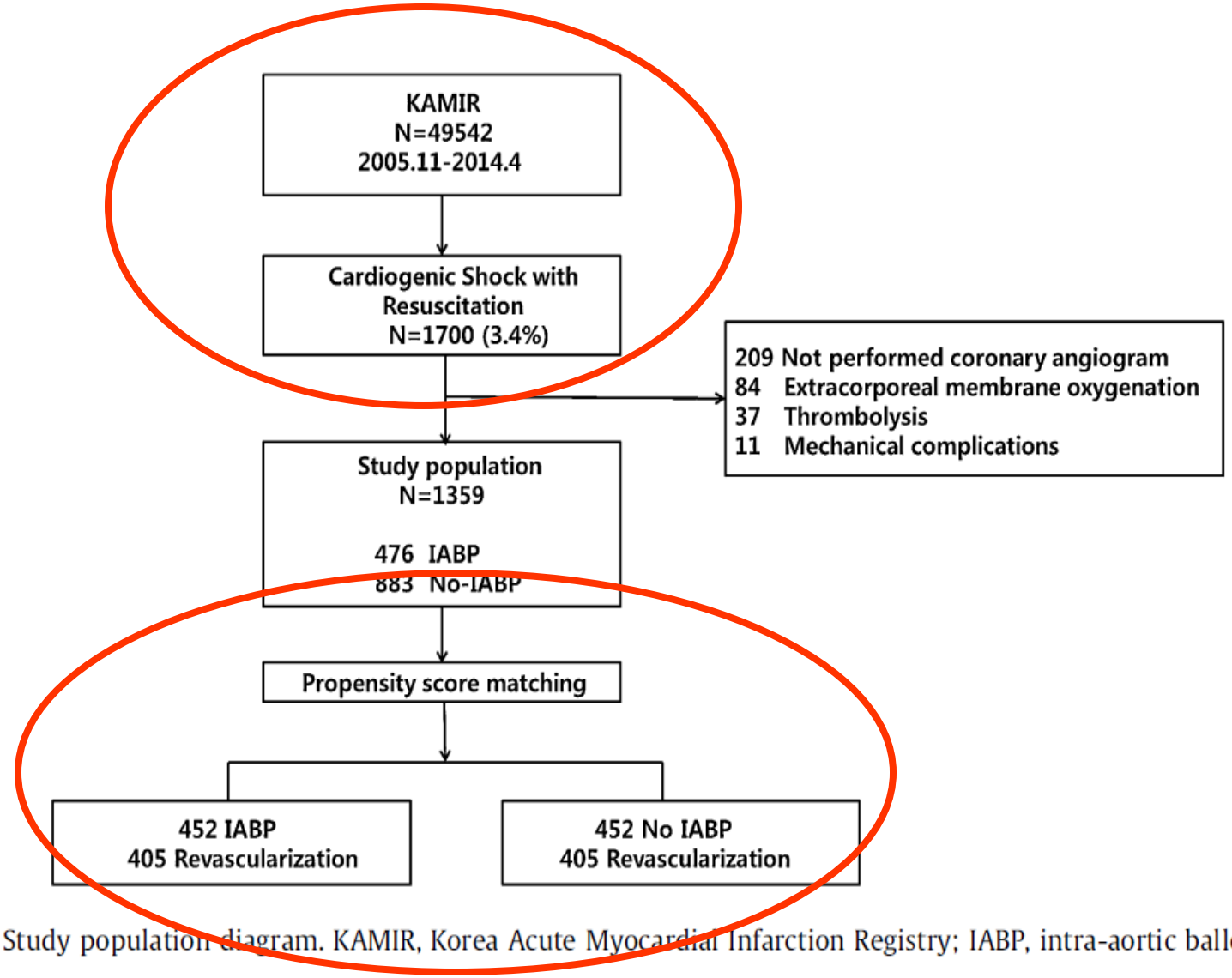

Fig. 1. Study population diagram. KAMIR, Korea Acute Myocardial Infarction Registry; IABP, intra-aortic balloon pump.

KAMIR Investigators. *J Cardiol 2015 May 14 [Epub ahead of print]*

Table 3
Cumulative 1-month clinical outcomes in patients receiving IABP.

	IABP	No IABP	Unadjusted HR (95% CI)	*p*-Value	Adjusted HR[a] (95% CI)	*p*-Value
Total ($n = 1359$)						
All-cause mortality	285 (59.9%)	464 (52.5%)	1.26 (1.08–1.46)	0.003	1.22 (1.02–1.47)	0.034
Revascularization	242 (56.9%)	387 (49.0%)	1.29 (1.10–1.51)	0.002	1.25 (1.02–1.54)	0.032
[b]No revascularization	43 (84.3%)	77 (81.9%)	1.08 (0.74–1.57)	0.693	1.14 (0.67–1.95)	0.629
Recurrent MI	6 (1.3%)	21 (2.4%)	0.59 (0.23–1.47)	0.258	0.69 (0.26–1.84)	0.465
Stroke	11 (2.3%)	29 (3.3%)	0.82 (0.41–1.64)	0.568	0.79 (0.35–1.80)	0.580
Major bleeding	21 (4.4%)	36 (4.1%)	1.24 (0.72–2.12)	0.435	0.95 (0.49–1.80)	0.863
Propensity matched ($n = 904$)						
All-cause mortality	268 (59.3%)	247 (54.6%)	1.16 (0.98–1.38)	0.091	1.21 (0.93–1.57)	0.158
Revascularization	229 (56.5%)	207 (51.1%)	1.19 (0.99–1.44)	0.067	1.25 (0.94–1.64)	0.121
[b]No revascularization	39 (83.0%)	40 (85.1%)	0.97 (0.63–1.52)	0.907	1.02 (0.54–1.94)	0.951
Recurrent MI	6 (1.3%)	13 (2.9%)	0.50 (0.19–1.32)	0.160	0.59 (0.21–1.65)	0.313
Stroke	11 (2.4%)	9 (2.0%)	1.33 (0.55–3.21)	0.528	1.19 (0.45–3.19)	0.727
Major bleeding	19 (4.2%)	17 (3.8%)	1.22 (0.63–2.35)	0.554	1.12 (0.53–2.35)	0.775

IABP, intra-aortic balloon pump; HR, hazard ratio; CI, confidential interval; MI, myocardial infarction; PCI, percutaneous coronary intervention; CABG, coronary artery bypass graft; TIMI, thrombolysis in myocardial infarction.
[a] Adjusted covariates included age, gender, dyslipidemia, current smoking, prior stroke, ST-segment elevation myocardial infarction, right coronary artery culprit, one-vessel disease, three-vessel disease, CABG, no revascularization, serum creatinine, maximal troponin I.
[b] Planned medical treatment without revascularization or failed PCI (TIMI flow 0 or I).

KAMIR Investigators. *J Cardiol 2015 May 14 [Epub ahead of print]*

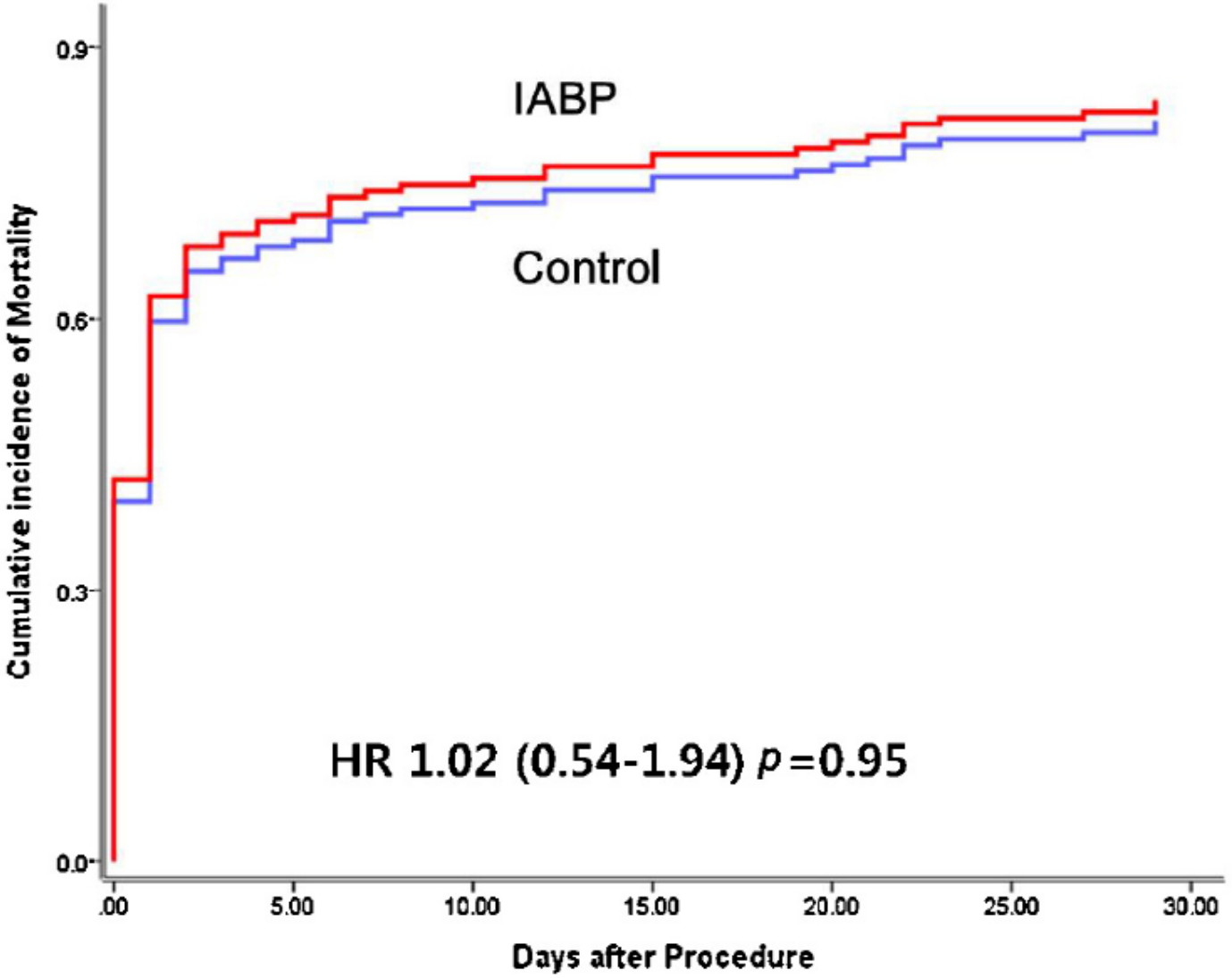

Fig. 3. Adjusted cumulative incidence of all causes of death at 1 month in propensity score matched patients without revascularization. HR, hazard ratio; IABP, intra-aortic balloon pump.

KAMIR Investigators. ***J Cardiol 2015 May 14 [Epub ahead of print]***

Role of Intravascular Ultrasound in Patients with Acute Myocardial Infarction Undergoing Percutaneous Coronary Intervention

Khurshid Ahmed, MD[a,b], Myung Ho Jeong, MD, PhD[a,*], Rabin Chakraborty, MD[b], Youngkeun Ahn, MD, PhD[a], Doo Sun Sim, MD[a], Keunho Park, MD[a], Young Joon Hong, MD[a], Ju Han Kim, MD[a], Kyung Hoon Cho, MD[a], Min Chol Kim, MD[a], Daisuke Hachinohe, MD[a], Seung Hwan Hwang, MD[a], Min Goo Lee, MD[a], Myeong Chan Cho, MD[c], Chong Jin Kim, MD[d], Young Jo Kim, MD[e], Jong Chun Park, MD[a], Jung Chaee Kang, MD[a], and Other Korea Acute Myocardial Infarction Registry Investigators

Stent thrombosis and restenosis remain drawbacks of drug-eluting stents in patients with acute myocardial infarction (AMI). Intravascular ultrasound (IVUS) guidance for stent deployment helps optimize its results in stable patients. The aim of this study was to examine the utility of routine IVUS guidance in patients with AMI undergoing percutaneous coronary intervention (PCI). Employing data from Korea Acute Myocardial Infarction Registry (KAMIR), we analyzed 14,329 patients with AMI from April 2006 through September 2010. Patients with cardiogenic shock and rescue PCI after thrombolysis were excluded. Clinical outcomes of 2,127 patients who underwent IVUS-guided PCI were compared to those of 8,235 patients who did not. Mean age was 63.6 ± 13.5 years and 72.3% were men. Patients undergoing IVUS-guided PCI were younger, more often men, more hyperlipemic, and had increased body mass index and left ventricular ejection fraction. Number of treated vessels and stents used, stent length, and stent diameter were increased in the IVUS-guided group. Multivessel involvement was less frequent and American College of Cardiology/American Heart Association type C lesion was more frequent in the IVUS-guided group. Drug-eluting stents were more frequently used compared to bare-metal stents in the IVUS group. There was no significant relation of stent thrombosis between the 2 groups. Twelve-month all-cause death was lower in the IVUS group. After multivariate analysis and propensity score adjustment, IVUS guidance was not an independent predictor for 12-month all-cause death (hazard ratio 0.212, 0.026 to 1.73, p = 0.148). In conclusion, this study does not support routine use of IVUS guidance for stent deployment in patients who present with AMI and undergo PCI. (Am J Cardiol 2011;108:8–14)

KAMIR Investigators, Am J Cardiol 2011;108:8-14

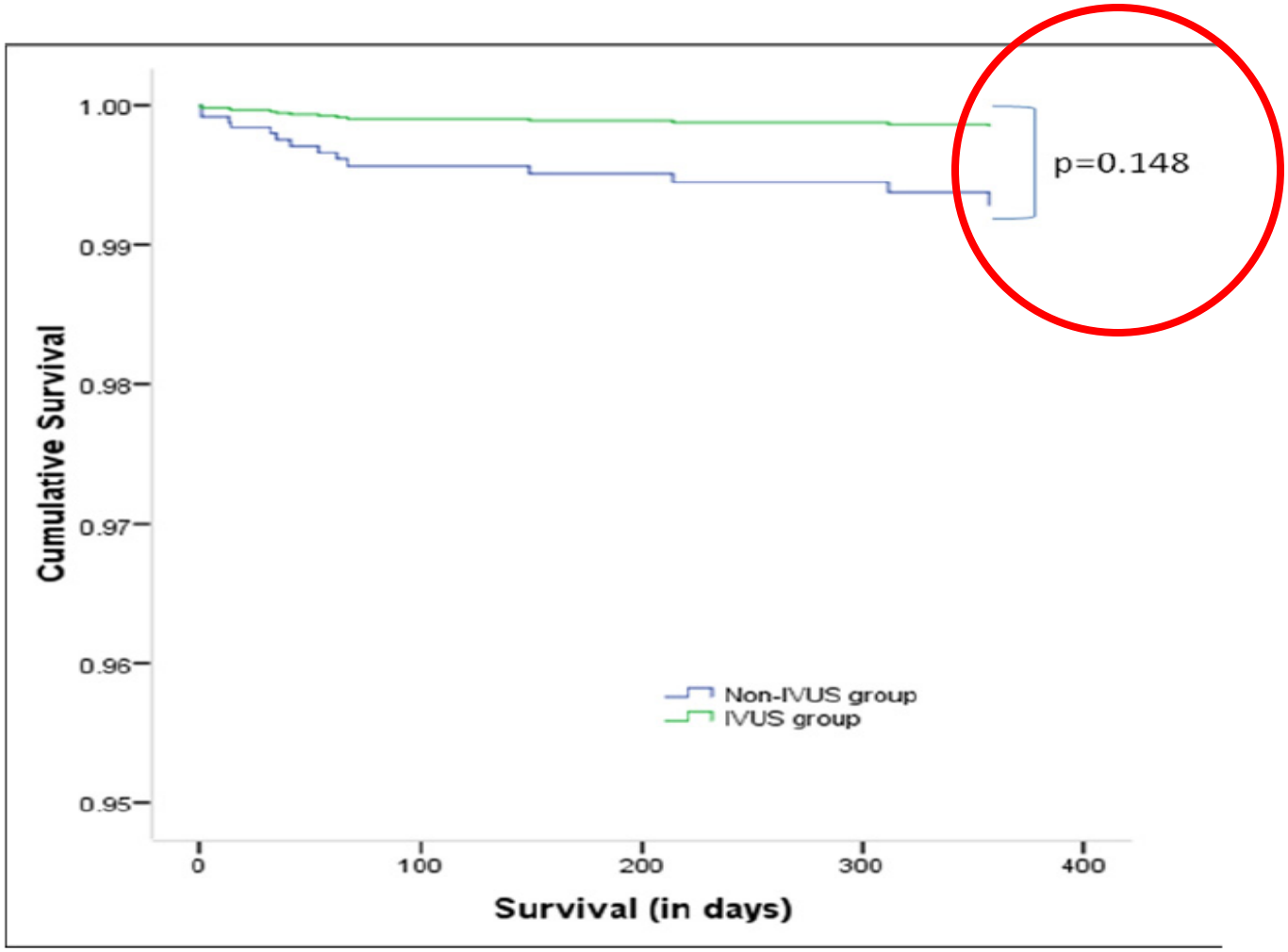

Figure 2. Propensity-adjusted survival curves illustrating independence of intravascular ultrasound use for 12-month all-cause death (p = 0.148).

KAMIR Investigators, Am J Cardiol 2011;108:8-14

Journal of Cardiology (2012) 59, 249–257

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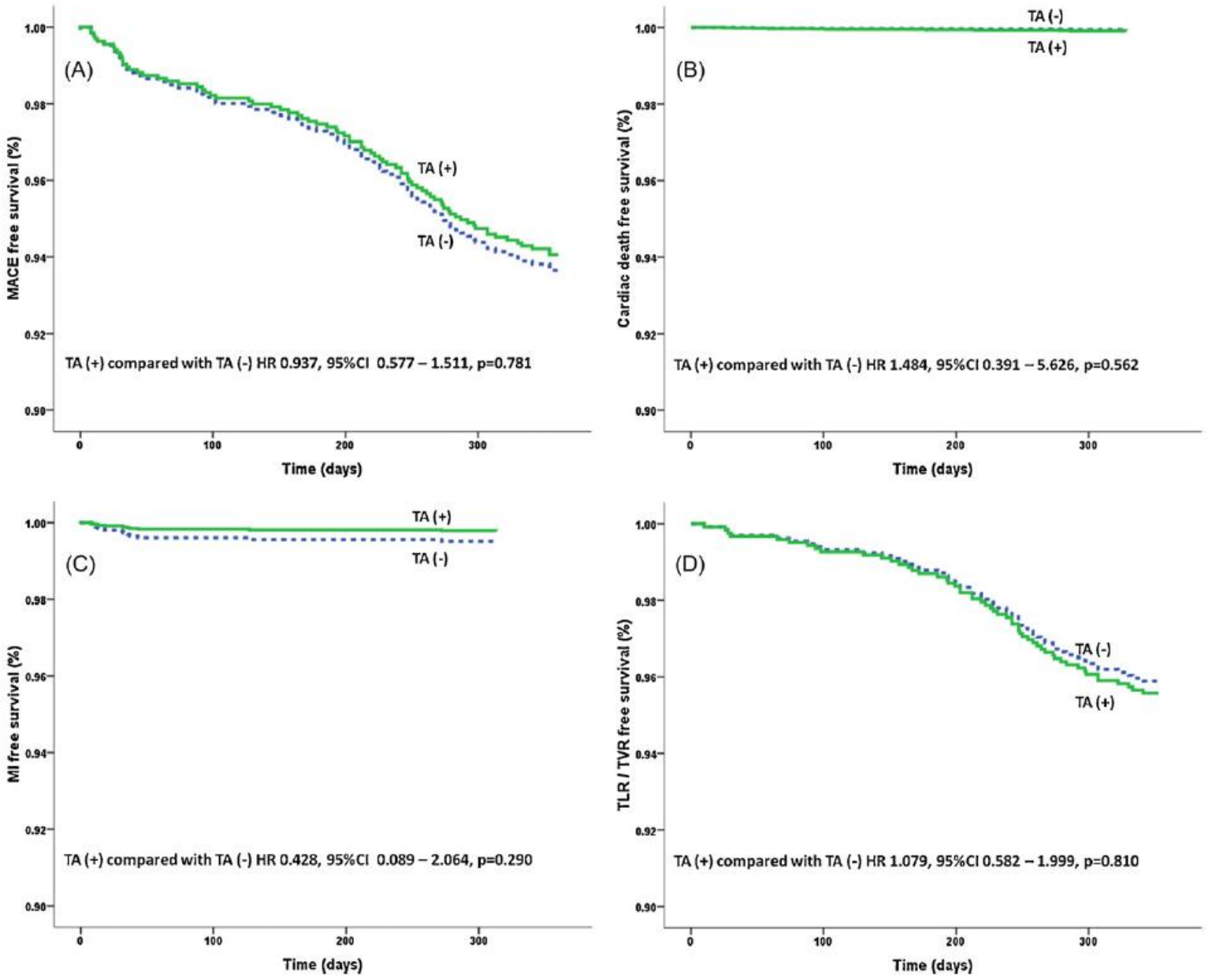
Original article

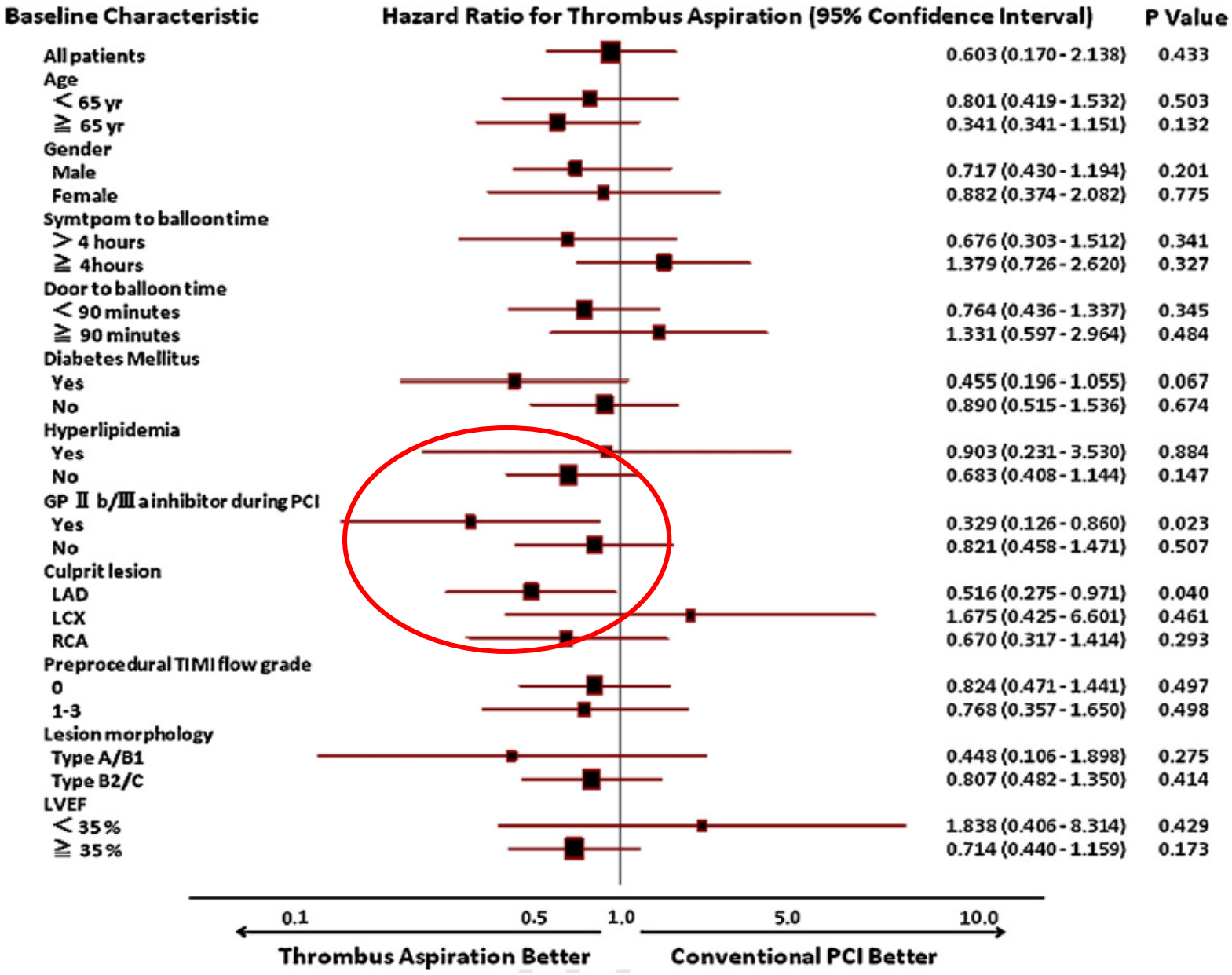
Clinical impact of thrombus aspiration during primary percutaneous coronary intervention: Results from Korea Acute Myocardial Infarction Registry

Daisuke Hachinohe (MD)[a,b], Myung Ho Jeong (MD)[a,*], Shigeru Saito (MD)[b], Min Chol Kim (MD)[a], Kyung Hoon Cho (MD)[a], Khurshid Ahmed (MD)[a], Seung Hwan Hwang (MD)[a], Min Goo Lee (MD)[a], Doo Sun Sim (MD)[a], Keun-Ho Park (MD)[a], Ju Han Kim (MD)[a], Young Joon Hong (MD)[a], Youngkeun Ahn (MD)[a], Jung Chaee Kang (MD)[a], Jong Hyun Kim (MD)[c], Shung Chull Chae (MD)[d], Young Jo Kim (MD)[e], Seung Ho Hur (MD)[f], In Whan Seong (MD)[g], Taek Jong Hong (MD)[h], Donghoon Choi (MD)[i], Myeong Chan Cho (MD)[j], Chong Jin Kim (MD)[k], Ki Bae Seung (MD)[l], Wook Sung Chung (MD)[l], Yang Soo Jang (MD)[i], Seung Woon Rha (MD)[m], Jang Ho Bae (MD)[n], Seung Jung Park (MD)[o], other Korea Acute Myocardial Infarction Registry Investigators

KAMIR Investigators. *J Cardiol 2012; 59: 249-57*



KAMIR Investigators. ***J Cardiol 2012; 59: 249-57***



KAMIR Investigators. *J Cardiol 2012; 59: 249-57*

Summary of Recent Update of KAMIR Study

1. NSTEMI is more common than STEMI
2. PCI rates for STEMI and NSTEMI are 96.3 % and 81.7%
3. Smoking is an important predictor of MACE in female AMI patients
4. Moderate levels of BP and BG are associated with good clinical outcomes
5. KAMIR and ACEF scores are proposed

Summary of Recent Update of KAMIR Study

6. Low dose prasugrel, ARB, esp. insurmountable and statin will be beneficial
7. Multi-vessel PCI in NSTEMI and staged PCI in STEMI can be recommended
8. DES is safer and more effective than BMS
9. Octogenarian can be treated by elective PCI using 2nd generation DES
10. Thrombus aspiration/IVUS-guided/IABP aided PCI can be recommended in selective AMI patients

I Hope 2015 JCR Will Be Successful !