SUPPLEMENTAL MATERIAL

Table S1. Baseline Characteristics and Outcomes of Excluded Patients with STEMI.

	Excluded*	Included	*P*-value
No. of patients	**582**	**5,243**	
Demographics			
Age, years	68 [57-76]	62 [53-72]	<.0001
Female	197 (33.8)	1081 (20.6)	<.0001
Body mass index, kg/m^2	23.4 [21.3-25.4]	23.9 [22.1-26]	<.0001
First medical contact			<.0001
Emergency medical service	54 (9.3)	1105 (21.1)	
Transferred from other hospital	366 (62.9)	2669 (50.9)	
Direct visit to emergency department	162 (27.8)	1469 (28)	
Process of care index			
Symptom-onset-to-balloon time, hours	47 [26.8-74.3]	3.2 [2.1-5.3]	<.0001
Symptom-onset-to-door time, hours	38.2 [24-72]	2 [1-4.2]	<.0001
Door-to-balloon time, minutes	74 [54-158]	58 [46-72]	<.0001
Symptom status			
Typical chest pain	485 (83.3)	4844 (92.4)	<.0001
Dyspnea	138 (23.7)	965 (18.4)	0.0023
Killip class			<.0001
1	419 (72)	4055 (77.4)	
2	68 (11.7)	406 (7.7)	
3	50 (8.6)	282 (5.4)	
4	45 (7.7)	498 (9.5)	
First 12-lead electrocardiography			
Anterior location	318 (54.6)	2713 (51.7)	0.1998
Q-wave	71 (12.2)	415 (7.9)	0.0005
ST-segment depression	70 (12)	935 (17.8)	0.0005
Left bundle branch block	5 (0.9)	38 (0.7)	0.9172
Atrial fibrillation	32 (5.5)	281 (5.4)	0.9649
AV block (2nd degree or complete)	11 (1.9)	69 (1.3)	0.3467
Wide QRS tachycardia	7 (1.2)	41 (0.8)	0.4102
Previous medical history			
Hypertension	312 (53.6)	2422 (46.2)	0.0008

Diabetes	184 (31.6)	1272 (24.3)	0.0001
treated with insulin	20 (3.4)	88 (1.7)	0.0048
Dyslipidemia	57 (9.8)	558 (10.6)	0.57
Previous myocardial Infarction	33 (5.7)	298 (5.7)	1
Previous angina pectoris	34 (5.8)	330 (6.3)	0.74
Heart failure	10 (1.7)	39 (0.7)	0.028
Previous symptomatic stroke	37 (6.4)	269 (5.1)	0.25
Current smoker	211 (36.3)	2374 (45.3)	<.0001
Familial history of ischemic heart disease	29 (5)	326 (6.2)	0.28
Anemia (hemoglobin < 11.0 g/dl)	64 (11)	319 (6.1)	<.0001
Chronic kidney disease (eGFR < 60ml/min/1.73m2)	156 (26.8)	1044 (19.9)	0.0001
Initial hemodynamics			
Systolic BP, mmHg	122.5 [110-140]	127 [109-144]	0.18
Diastolic BP, mmHg	77.5 [64.8-89]	80 [66-90]	0.08
Heart rate, per min	80 [68-96]	76 [64-88]	<.0001
LV ejection fraction, %	48 [42-55]	51 [45-57]	<.0001
Cardiogenic shock, %	39 (6.7)	386 (7.4)	0.62
Culprit vessel			0.0272
Left anterior descending artery	330 (56.7)	2639 (50.3)	
Left circumflex artery	53 (9.1)	494 (9.4)	
Right coronary artery	190 (32.6)	2025 (38.6)	
Left main coronary artery	9 (1.5)	85 (1.6)	
Multivessel disease	277 (47.6)	2259 (43.1)	0.0416
Procedural characteristics			
Trans-radial approach	158 (27.1)	1285 (24.5)	0.20
Glycoprotein IIb/IIIa inhibitor use	117 (20.1)	1165 (22.2)	0.26
Thrombus aspiration	171 (29.4)	2008 (38.3)	<.0001
Culprit vessel treated with			0.03
Bare metal stent	29 (5)	153 (2.9)	
1st generation drug-eluting stent	5 (0.9)	69 (1.3)	
2nd generation drug-eluting stent	502 (86.3)	4515 (86.1)	
Balloon angioplasty	31 (5.3)	299 (5.7)	
Use of IABP	29 (5)	264 (5)	1.0
Use of ECMO	8 (1.4)	88 (1.7)	0.71

Pre-PCI TIMI flow			0.008
0-1	414(71.2)	3,981 (75.9)	
2	72 (12.4)	539 (10.3)	
3	96 (16.5)	723 (13.8)	
Post-PCI TIMI flow			0.30
0-1	9 (1.6)	50 (1.0)	
2	24 (4.1)	188 (3.6)	
3	549 (94.3)	5005 (95.5)	
Discharge medications			
Dual antiplatelet agent	563 (96.7)	5057 (96.5)	0.85
Aspirin	569 (97.8)	5103 (97.3)	0.63
Clopidogrel	404 (69.4)	3332 (63.6)	0.006
Prasugrel	49 (8.4)	642 (12.2)	0.008
Ticagrelor	111 (19.1)	1098 (20.9)	0.32
Beta-blocker	449 (77.1)	4438 (84.6)	<.0001
ACEI/ARB	426 (73.2)	4126 (78.7)	0.003
Statin	521 (89.5)	4797 (91.5)	0.1271
Clinical Outcome			
In-hospital death	36 (6.2)	233 (4.4)	0.07
1-year mortality	58 (10)	374 (7.1)	0.02

* Patients who had PCI > 24 hours after symptom onset and who had PCI after 6 hours after admission were included

Table S2. Baseline Characteristics and Outcomes by Classifications of Door-to-Balloon Time.

	Classifications (door-to-balloon time)				
	0-45	**45-60**	**60-90**	**>90**	***P* value**
No. of patients	**1194**	**1655**	**1984**	**410**	
Demographics					
Age, y	61 (52-71)	62 (53-73)	63 (53-73)	61 (53-72)	0.167
Female	209 (17.5)	335 (20.2)	441 (22.2)	96 (23.4)	0.006
Body mass index, kg/m^2	24.2 (22.2-26.1)	23.9 (22.1-25.9)	23.9 (22.0-26.0)	24.0 (22.1-26.0)	0.111
Process of care index					
Symptom-onset-to-balloon time, hours	2.7 (1.6-4.3)	3.0 (2.0-5.0)	3.3 (2.2-5.6)	4.7 (3.2-7.5)	<0.001
Symptom-onset-to-door time, hours	2.0 (1.0-3.7)	2.1 (1.1-4.2)	2.0 (1-4.4)	1.9 (0.9-4.9)	0.216
Door-to-balloon time, minutes	37 (33-42)	52 (48-57)	70 (66-79)	127 (105-166)	<0.001
First medical contact					<0.001
Emergency medical service	208 (17.4)	331 (20.0)	447 (22.5)	119 (29.0)	
Transferred from other hospital	733 (61.4)	890 (53.8)	898 (45.3)	148 (36.1)	
Direct visit to emergency department	253 (21.2)	434 (26.2)	639 (32.2)	143 (34.9)	
Calendar time					0.063
First year (2012)	351 (29.4)	422 (25.5)	522 (26.3)	97 (23.7)	
Second year (2013)	305 (25.5)	451 (27.3)	527 (26.6)	104 (25.4)	
Third year (2014)	336 (28.1)	449 (27.1)	535 (27.0)	130 (31.7)	
Fourth year (2015)	202 (16.9)	333 (20.1)	400 (20.2)	79 (19.3)	
Symptom status					
Typical chest pain	1137 (95.2)	1542 (93.2)	1823 (91.9)	342 (83.4)	<0.001
Dyspnea	179 (15.0)	287 (17.3)	397 (20.0)	102 (24.9)	<0.001
Killip score					<0.001
Killip class 1	971 (81.4)	1292 (78.1)	1516 (76.4)	276 (67.3)	
Killip class 2	69 (5.8)	143 (8.7)	166 (8.4)	28 (6.8)	
Killip class 3	40 (3.4)	81 (4.9)	133 (6.7)	28 (6.8)	
Killip class 4	113 (9.5)	138 (8.3)	169 (8.5)	78 (19.0)	
First 12-lead ECG					
Anterior location	624 (52.3)	885 (53.5)	1012 (51.0)	192 (46.8)	0.089
Q-wave	135 (11.3)	127 (7.7)	112 (5.7)	41 (10.0)	<0.001
ST-segment depression	254 (21.3)	284 (17.2)	336 (16.9)	61 (14.9)	0.003
Left bundle branch block	4 (0.3)	6 (0.4)	20 (1.0)	8 (2.0)	0.001
Atrial fibrillation	57 (4.8)	89 (5.4)	106 (5.3)	29 (7.1)	0.364
AV block (2nd degree or complete)	21 (1.8)	19 (1.2)	25 (1.3)	4 (1.0)	0.601
Wide QRS tachycardia	11 (0.9)	9 (0.5)	14 (0.7)	7 (1.7)	0.103

Previous medical history					
Hypertension	498 (41.7)	751 (45.4)	971 (48.9)	202 (49.3)	0.001
Diabetes	279 (23.4)	390 (23.6)	483 (24.3)	120 (29.3)	0.087
treated with insulin	11 (0.9)	19 (1.2)	38 (2.0)	20 (4.88)	<0.001
Dyslipidemia	120 (10.1)	168 (10.2)	228 (11.5)	42 (10.2)	0.487
Previous myocardial Infarction	64 (5.4)	94 (5.7)	114 (5.8)	26 (6.3)	0.901
Previous angina pectoris	59 (4.9)	91 (5.5)	147 (7.4)	33 (8.1)	0.008
Heart failure	9 (0.8)	7 (0.4)	21 (1.1)	2 (0.5)	0.149
Previous symptomatic stroke	53 (4.4)	81 (4.9)	113 (5.7)	22 (5.4)	0.438
Current smoker	597 (50.0)	754 (45.6)	877 (44.2)	146 (35.6)	<0.001
Familial history of ischemic heart disease	60 (5.0)	106 (6.4)	131 (6.6)	29 (7.1)	0.258
Anemia (hemoglobin < 11.0 g/dl)	56 (4.7)	78 (4.7)	136 (6.9)	49 (12.0)	<0.001
Chronic kidney disease (eGFR < 60ml/min/1.73m2)	183 (15.3)	312 (18.9)	442 (22.3)	107 (26.1)	<0.001
Initial hemodynamics					
Systolic BP, mmHg	122 (107-140)	126 (110-145)	128 (110-145)	130 (109-147)	0.041
Diastolic BP, mmHg	80 (65-90)	80 (66-90)	80 (67-90)	80 (62-90)	0.035
Heart rate, per min	76 (64-86)	76 (64-88)	76 (64-88)	76 (64-90)	0.090
LV ejection fraction, %	51 (45-57)	51 (45-58)	51 (45-57)	51 (44-57)	0.301
Cardiogenic shock, %	139 (11.64)	184 (11.12)	230 (11.59)	95 (23.17)	<.001
Culprit vessel					0.003
Left anterior descending artery	564 (47.2)	847 (51.2)	1023 (51.6)	205 (50.0)	
Left circumflex artery	105 (8.8)	150 (9.1)	199 (10.0)	40 (9.8)	
Right coronary artery	512 (42.9)	631 (38.1)	729 (36.7)	153 (37.3)	
Left main coronary artery	13 (1.1)	27 (1.6)	33 (1.6)	12 (2.9)	
Multi-vessel disease	490 (41.0)	691 (41.8)	899 (45.3)	179 (43.7)	0.055
Complex lesion (Type B2 / C)	1083 (90.7)	1488 (89.91)	1727 (87.05)	360 (87.8)	0.005
Procedural characteristic					
Trans-radial approach	308 (25.8)	381 (23.0)	501 (25.3)	95 (23.2)	0.450
Glycoprotein IIb/IIIa inhibitor use	323 (27.1)	365 (22.1)	386 (19.5)	91 (22.2)	<0.001
Thrombus aspiration	472 (39.5)	671 (40.5)	729 (36.7)	136 (33.2)	0.012
Culprit vessel treated with					<0.001
Bare metal stent	38 (3.2)	50 (3.0)	52 (2.6)	13 (3.2)	
1st generation drug-eluting stent	15 (1.3)	13 (0.8)	38 (1.9)	3 (0.7)	
2nd generation drug-eluting stent	1042 (87.3)	1472 (88.9)	1652 (83.3)	349 (85.1)	
Balloon angioplasty	80 (6.7)	73 (4.4)	110 (5.5)	36 (8.8)	
Use of IABP	51 (4.3)	73 (4.4)	99 (5.0)	41 (10.0)	<0.001
Use of ECMO	6 (0.5)	17 (1.0)	32 (1.6)	33(8.1)	
Pre-PCI TIMI flow					<0.001

0-1	953 (79.8)	1283 (77.5)	1444 (72.8)	301 (73.4)	
2	126 (10.6)	168 (10.2)	198 (10.0)	47 (11.5)	
3	115 (9.6)	204 (12.3)	342 (17.2)	62 (15.1)	
Post-PCI TIMI flow					0.002
0-1	9 (0.8)	8 (0.5)	23 (1.2)	10 (2.4)	
2	37 (3.1)	51 (3.1)	79 (4.0)	21 (5.1)	
3	1148 (96.2)	1596 (96.4)	1882 (94.9)	379 (92.4)	
Discharge medications					
Dual antiplatelet agent	1161 (97.2)	1605 (97.0)	1914 (96.5)	377 (92.0)	<0.001
Aspirin	1172 (98.2)	1619 (97.8)	1929 (97.2)	383 (93.4)	<0.001
Clopidogrel	758 (63.5)	1027 (62.1)	1289 (65.0)	258 (62.9)	0.335
Prasugrel	135 (11.3)	22.6 (13.7)	246 (12.4)	35 (8.5)	0.025
Ticagrelor	273 (22.9)	357 (21.6)	384(19.3)	84 (20.5)	0.105
Beta-blocker	1038 (86.9)	1422 (85.9)	1675 (84.4)	303 (73.9)	<0.001
ACEI/ARB	981 (82.2)	1350 (81.6)	1518 (76.5)	277 (67.6)	<0.001
Statin	1128 (94.5)	1529 (92.4)	1800 (90.7)	340 (82.9)	<0.001

Values are median (Q1, Q3) or n (%).

ACE-I/ARB, angiotensin converting enzyme inhibitor or angiotensin receptor blocker; BP, blood pressure; ECMO, extracorporeal membrane oxygenator; eGFR, estimated glomerular filtration rate; IABP, intra-aortic balloon pump; LV, left ventricular; PCI, percutaneous coronary intervention.

Table S3. Univariable Cox Regression Analysis with Categorical Classification of Door-to-Balloon Time for 1-year All-Cause Mortality in Patients with ST-Segment Elevation Myocardial Infarction Treated with Primary Percutaneous Coronary Intervention.

Covariables	Valid Cases	Deaths†	HR (95% CI)	Wald test	*P* value
Demographics					
Age, per 10-year increase	5243		2.01 (1.82-2.22)	192	<0.001
Female	5243	132	2.17 (1.75-2.67)	51.5	<0.001
Comorbid conditions					
Hypertension	5243	220	1.70 (1.38-2.08)	25.4	<0.001
Diabetes	5243	133	1.76 (1.42-2.17)	27.4	<0.001
Previous myocardial infarction	5243	26	1.24 (0.84-1.85)	7.73	0.276
Previous angina pectoris	5243	36	1.62 (1.15-2.29)	6.71	0.006
Previous congestive heart failure	5243	9	3.43 (1.82-6.48)	14.5	<0.001
Dyslipidemia	5243	26	0.61 (0.41-0.91)	5.86	0.015
Active or previous smoker	5243	185	0.50 (0.41-0.61)	45.7	<0.001
Delay to treatment, per 1h increase					
Symptom-onset-to-door time	**5243**				0.019
> 4 hours	1401	123	1 [Reference]	9.94	
2-4 hours	1387	101	0.82 (0.63-1.07)		0.142
1-2 hours	1153	75	0.73 (0.55-0.97)		0.031
< 1 hour	1302	75	0.65 (0.49-0.87)		0.003
Door-to-balloon time	**5243**				<0.001
D2B > 90 min	410	71	1 [Reference]	77.3	
D2B 60-90 min	1984	147	0.39 (0.30-0.53)		<0.001
D2B 45-60 min	1655	103	0.33 (0.24-0.45)		<0.001
D2B 0-45 min	1194	53	0.23 (0.16-0.33)		<0.001
First medical contact	**5243**				
Direct visit to PCI center	1469	68	1 [Reference]	18.8	<0.001
Emergency medical service (911)	1105	85	1.70 (1.23-2.33)		0.001
Transport from other hospital	2669	221	1.81 (1.38-2.38)		<0.001
Clinical characteristics					
Typical chest pain	**5243**	80	0.28 (0.22-0.36)	103	<0.001
Body mass index, per 1-unit increase	5063		0.85 (0.82-0.89)	54.2	<0.001
Systolic blood pressure, per 10mmHg	5227		0.82 (0.80-0.84)	248	<0.001
Diastolic blood pressure, per 10mmHg	5227		0.76 (0.73-0.79)	211	<0.001
Heart rate, per 10/ minute increase	5227		1.19 (1.11-1.27)	25.0	<0.001
Killip class	5241	374			

I	4055	137	1 [Reference]	417	
II	406	37	2.78 (1.94-3.99)	30.8	<0.001
III	282	53	6.08 (4.44-8.33)	127	<0.001
IV	498	147	10.5 (8.31-13.2)	397	<0.001
Cardiogenic shock	5,243	129	8.3 (6.7-10.3)	19.43	<0.001
Anterior infarct location	5243	221	1.36 (1.11-1.67)	8.7	0.003
Left bundle branch block	5243	10	4.30 (2.26-8.19)	19.8	<0.001
Atrial fibrillation	5243	42	2.33 (1.69-3.20)	27.0	<0.001
Culprit vessel Left main	5243	46	4.25 (3.12-5.80)	83.9	<0.001
Multivessel disease	5243	192	1.41 (1.15-1.73)	11.1	0.001

† Total number of deaths = 374

CI, confidence intervals; HR, hazard ratio; PCI, percutaneous coronary intervention.

Table S4. Multivariable Cox Regression Analysis with Categorical Classification of Door-to-Balloon Time for 1-year All-Cause Mortality in Patients with ST-Segment Elevation Myocardial Infarction Treated with Primary Percutaneous Coronary Intervention.

Covariables	HR (95% CI)	*P* value
Demographics		
Age, per 10-year increase	1.92 (1.49-2.46)	<0.001
Comorbid conditions		
Previous angina pectoris	1.44 (1.00-2.09)	0.05
Chronic Kidney disease	1.99 (1.56-2.54)	<.0001
Delay to treatment		
Door-to-balloon time (group)		<0.001
D2B > 90 min	1 [Reference])	
D2B 60-90 min	0.41 (0.30-0.57)	<0.001
D2B 45-60 min	0.33 (0.24-0.47)	<0.001
D2B 0-45 min†	0.27 (0.18-0.41)	<0.001
First medical contact		
Direct visit to PCI center	1 [Reference]	
Emergency medical service (911)	1.01 (0.72-1.42)	0.95
Transport from other hospital	1.40 (1.03-1.89)	0.03
Clinical characteristics		
Body mass index, kg/m^2	0.93 (0.90-0.97)	<.0001
Typical chest pain	0.69 (0.52-0.91)	0.01
Systolic blood pressure, per 10mmHg	0.89 (0.86-0.93)	<0.001
Heart rate, per 10-minute increase	1.15 (1.11-1.20)	<0.001
Killip class II-IV	1.66 (1.23-2.22)	0.001
Cardiogenic shock	2.38 (1.76-3.24)	<.0001
Procedural Characteristics		
Anterior infarct location	1.43 (1.15-1.79)	0.002
Culprit vessel Left main	2.82 (1.96-4.06)	<0.001
Multi-vessel disease	1.41 (1.11-1.78)	0.004

Harrell's c-index of prediction model was 0.866 (0.848-0.883).
† When using D2B 60-90 minutes group as reference, D2B 0-45 minutes group also showed further decreased risk of 1-year mortality (HR 0.66, 95% CI 0.46-0.93, *P* = 0.018).
CI, confidence intervals; HR, hazard ratio.

Table S5. Prehospital and In-hospital Delays in Patient Subgroups according to the Route of Visit to Primary PCI Centers.

Delay	Direct visit	EMS	Transferred	*P*-value
Onset-to-Door, min	99 [52-235]	60 [35-120]	175 [102-310]	<0.0001
Door-to-Balloon, min	62 [49-77]	61 [48-76]	55 [44-68]	<0.0001
Onset-to-Balloon, min	171 [113-309]	135 [100-193]	230 [155-375]	<0.0001

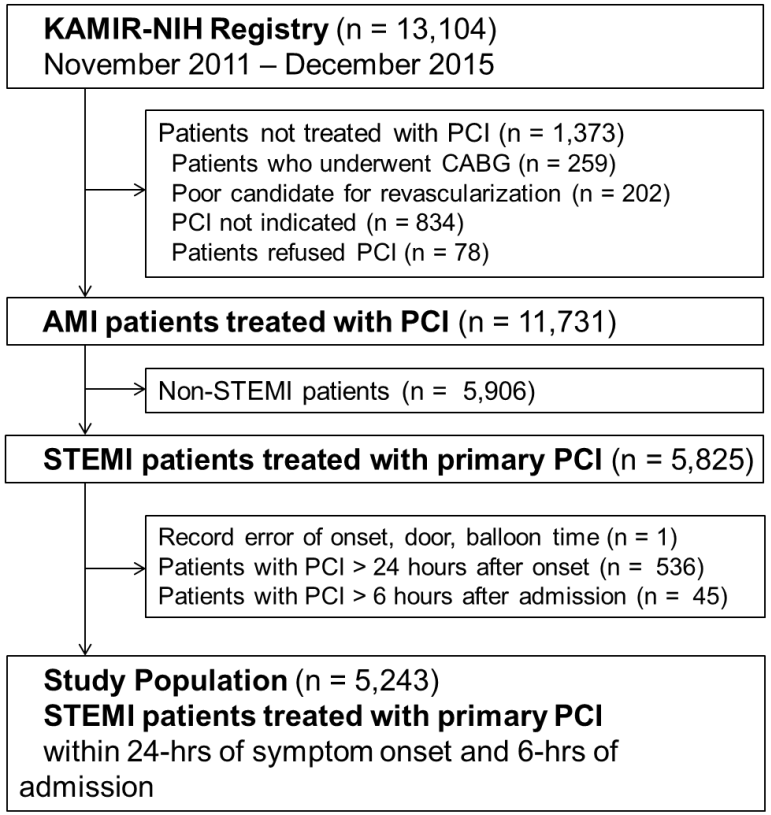
Values are median [Q1, Q3]
EMS, emergency medical service.

Table S6. Comparison of KAMIR-NIH study to Other Studies on Door-to-Balloon Time of Patients with STEMI.

Study Name	KAMIR-NIH D2B	Nallamothu et al.	Menees et al.	Flynn et al.	Gibson et al.
Registry	KAMIR-NIH	NCDR CathPCI	NCDR CathPCI	BMC2 consortium	NRMI
Region	South Korea	USA	USA	USA	USA
Time period	Nov. 2011 ~ Oct. 2015	Jan. 2005 ~ Dec. 2011	Jul. 2005 ~ Jun. 2009	Jan. 2003 ~ Dec. 2008	1990 ~ 2006
Study participant no.	5,243	150,116	96,738	8,771	774,279
D2B effect on outcome at	Patient-level	Patient-level & population-level	Population-level	Population-level	Population-level
D2B time by year	2012: 63 min 2013: 62 min 2014: 64 min 2015: 66 min	2005: 86 min 2007: 72 min 2009: 66 min 2011: 63 min	2005: 83 min 2006: 76 min 2007: 70 min 2008: 67 min	2003: 113 min 2004: 104 min 2006: 89 min 2008: 76 min	1994: 107 min 1998: 104 min 2002: 101 min 2006: 79 min
O2D time	Reported	Reported in category	Not reported	Reported	Reported
Primary outcome	1-year mortality	In-hospital mortality & 6-month mortality	30-day mortality	In-hospital mortality	In-hospital mortality
Statistical method	Cox regression model	Multilevel logistic regression model	Hierarchial logistic regression model	Standardized mortality ratio	Logistic regression
Clinical and procedural factors in the model	Age, sex, heart rate, BMI, SBP, atypical chest pain, route of visit, prior hypertension, diabetes, anemia, chronic kidney disease, dyslipidemia, heart failure, angina, smoking, Killip classification, cardiogenic shock, anterior location, lesion complexity, multi-vessel ds., LM ds., LBBB, A.fib	Age, BMI, DM, ESRD, cerebrovascular ds., peripheral vascular ds., chronic lung ds., prior CHF, heart valve ds., prior heart valve op., prior PCI, NYHA class., cardiogenic shock, IABP placement, PCI status of 'salvage', lesion location, SCAI lesion classification, pre-procedure TIMI flow, LVEF(%), GFR.	Age, BMI, DM, ESRD, cerebrovascular ds., peripheral vascular ds., chronic lung ds., prior CHF, heart valve ds., prior heart valve op., prior PCI, NYHA class., cardiogenic shock, IABP placement, PCI status of 'salvage', lesion location, SCAI lesion classification, pre-procedure TIMI flow, LVEF(%), GFR, subacute thrombosis.	Age, sex, prior CHF, prior extracardiac vascular ds., prior valve ds., emergency PCI, baseline MI, cardiac arrest, cardiogenic shock, anemia, serum creatinine level, LVEF(%).	Age, sex, race, payer, hospital location, angina, prior CABG, prior CAD, prior CHF, prior dyslipidemia, prior HTN, prior MI, prior PCI, smoker, prior cerebrovascular ds., O2D time, Killip class, HR, SBP, anterior MI.

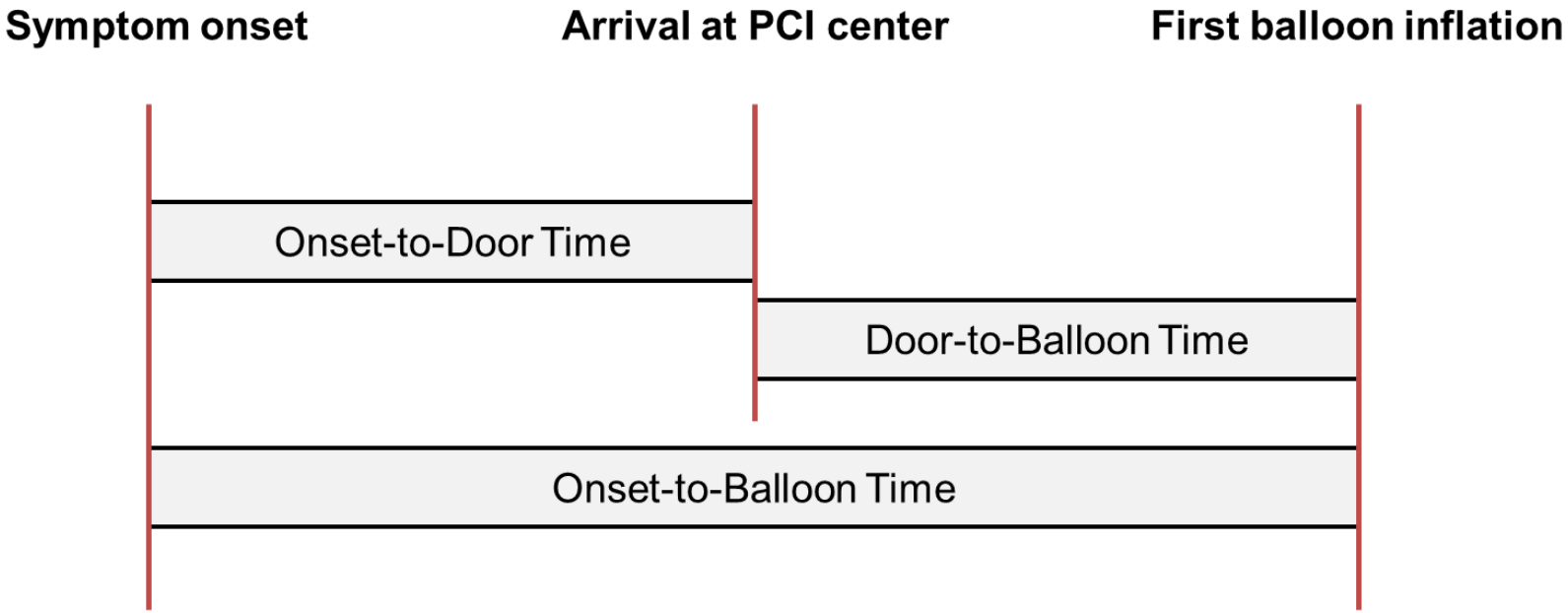
Study Name	KAMIR-NIH D2B	Shiomi et al.	Terkelsen et al.	Rathore et al.	McNamara et al.
Registry	KAMIR-NIH	CREDO-Kyoto	Denmark Heart Registry	NCDR	NRMI-3, 4
Region	South Korea	Japan	Denmark	USA	USA
Time period	Nov. 2011 ~ Oct. 2015	Jan. 2005 ~ Dec. 2007	Jan. 2001 ~ Dec. 2008	Jan. 2005 ~ Dec. 2006	Jan. 1999 ~ Dec. 2002
Study participant no.	5,243	3,391	6,209	43,801	29,222
D2B effect on	Patient-level	Patient-level	Patient-level	Patient-level	Patient-level
D2B time by year	2012: 63 min 2013: 62 min 2014: 64 min 2015: 66 min	Overall: 60 min	Field triaged: 39 min Transferred: 29 min	Overall: 83 min	1999: 105 min 2000: 102 min 2001: 100 min 2002: 102 min
O2D time	Reported	Reported	Reported	Reported in category	Reported in category
Primary outcome	1-year mortality	Death + CHF at 30 days and 3-years	Long-term (> 6y) mortality	In-hospital mortality	In-hospital mortality
Statistical model	Cox regression	Cox regression	Cox regression	Logistic regression	Logistic regression
Clinical and procedural factors for adjustment	Age, sex, heart rate, BMI, SBP, atypical chest pain, route of visit, prior hypertension, diabetes, anemia, chronic kidney disease, dyslipidemia, heart failure, angina, smoking, Killip classification, cardiogenic shock, anterior location, lesion complexity, multi-vessel ds., LM ds., LBBB, A.fib	Age, sex, BMI, HTN, DM on insulin, smoking, CHF, severe MR, prior MI, prior stroke, peripheral vascular ds., GFR, ESRD on HD, A. fib., anemia, thrombocytopenia, COPD, liver cirrhosis, malignancy, Killip class 4, multi-vessel disease, proximal LAD ds., left main ds., CTO, bifurcation, DES, thrombectomy, distal protection, cilostazole, statin, beta-blockers, ACEI/ARB, nitrates, CCB, Nncorandil, warfarin, PPI, H2-blockers	Age, sex, BMI, prior MI, HTN, DM, CHF, smoking, systolic BP, Killip class, Anterior location, Bundle-branch block, multivessel disease.	- Patient level: age, sex, race, cardiogenic shock, renal failure, O2D category, prior DM, chronic lung ds., LVEF(%), IABP use, use of thrombin inhibitor, time of day, week-end procedure, left main ds., proximal LAD ds. - Hospital level: annual primary PCI volume, teaching status, ownership, rural location	Age, sex, smoking, prior CKD, DM, dyslipidemia, FHx of CAD, prior PCI, CABG, stroke, chest pain at presentation, SBP, HR, presentation with sign of heart failure, anterior location on ECG, number of ST segment elevation, left bundle branch block, Q-wave on ECG.

Figure S1. Study Flow.



Study population was derived from a nationwide, multicenter, prospective registry of acute myocardial infarction, the Korea Acute Myocardial Infarction Registry-National Institute of Health (KAMIR-NIH) registry.

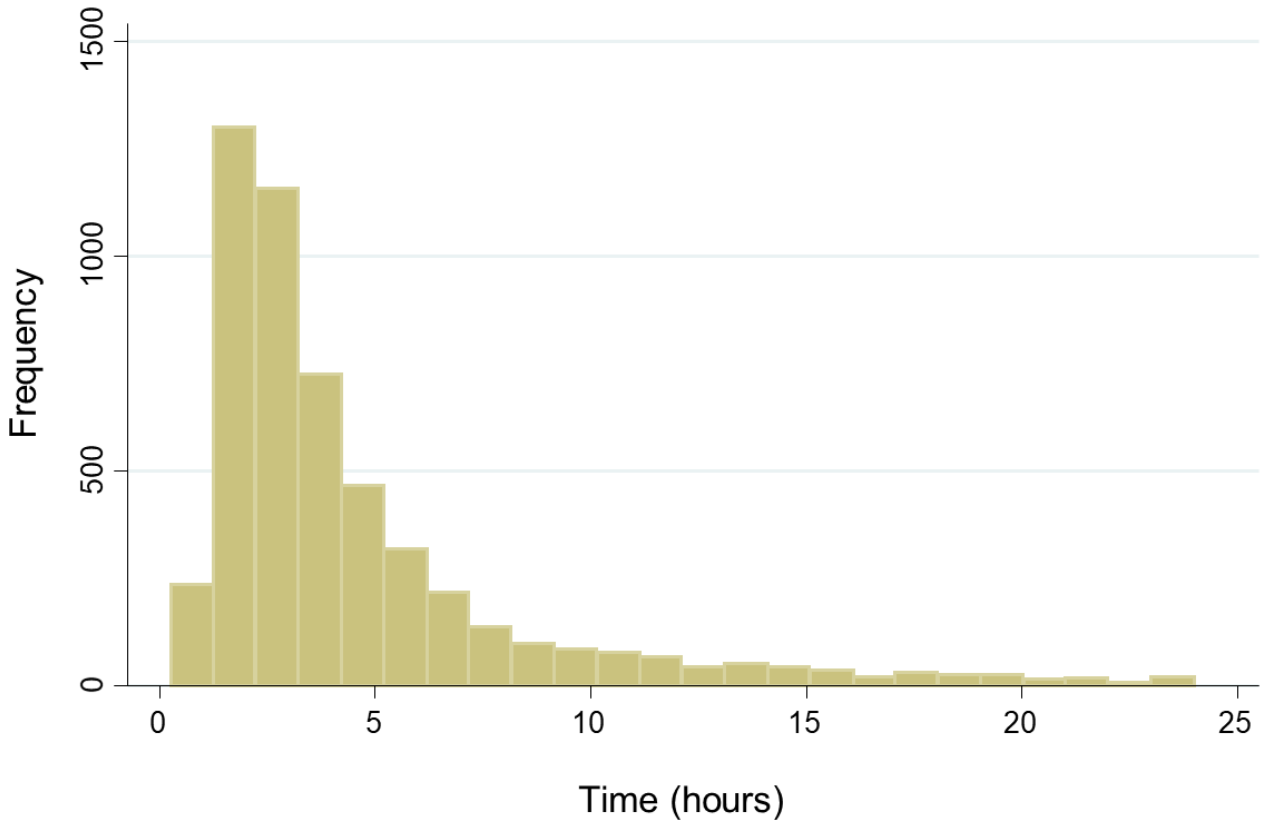
Figure S2. Delays from Symptom Onset to Primary Percutaneous Coronary Intervention in Patients with ST-Segment Elevation Myocardial Infarction.



Delays from symptom onset to primary PCI are presented. Time intervals for symptom onset-to-door time, door-to-balloon time, and symptom onset-to-balloon time were calculated from the corresponding time entries.

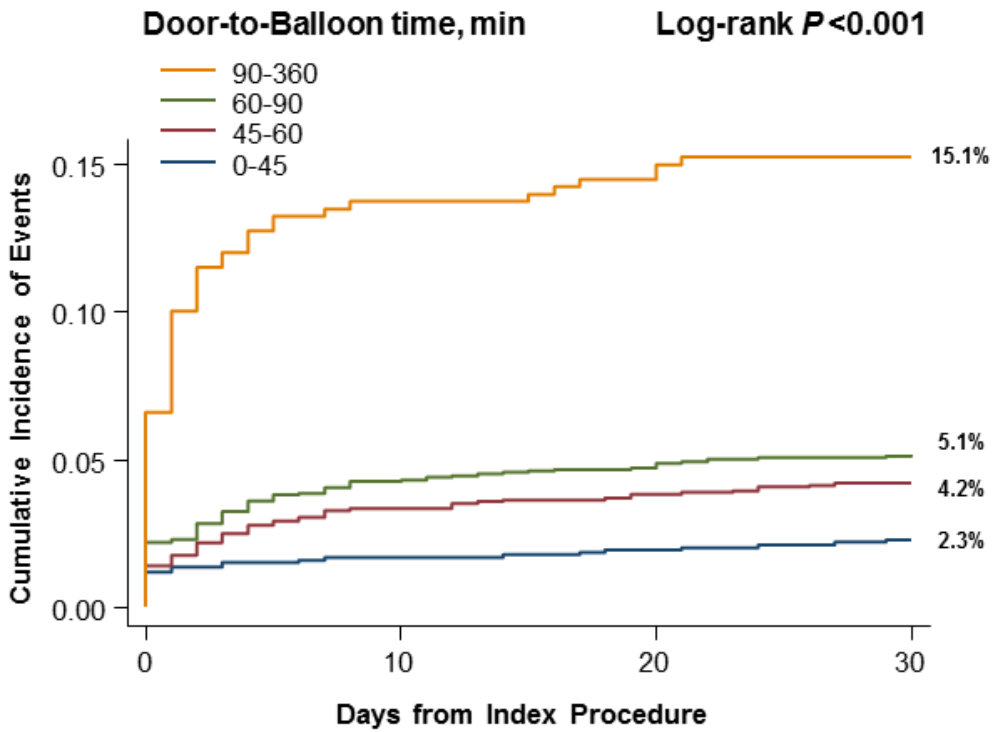
PCI, percutaneous coronary intervention.

Figure S3. Distribution of Symptom Onset-to-Balloon Time.



Distribution of symptom onset-to-balloon time of the study population.

Figure S4. Comparison of 30-day Mortality According to Door-to-Balloon Time.

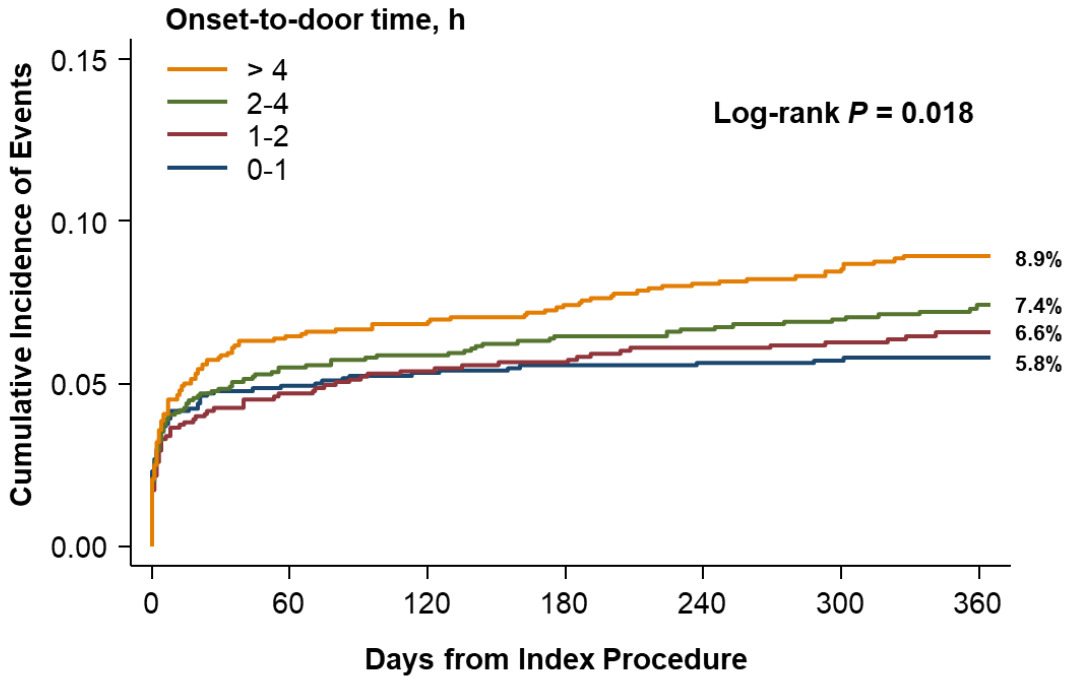


Number at risk

90-360	410	347	344	340
60-90	1984	1881	1866	1857
45-60	1655	1580	1571	1563
0-45	1194	1154	1149	1145

Comparison of all-cause mortality at 30-day among classifications by D2B time.

Figure S5. Comparison of Clinical Outcome According to Onset-to-Door Time.

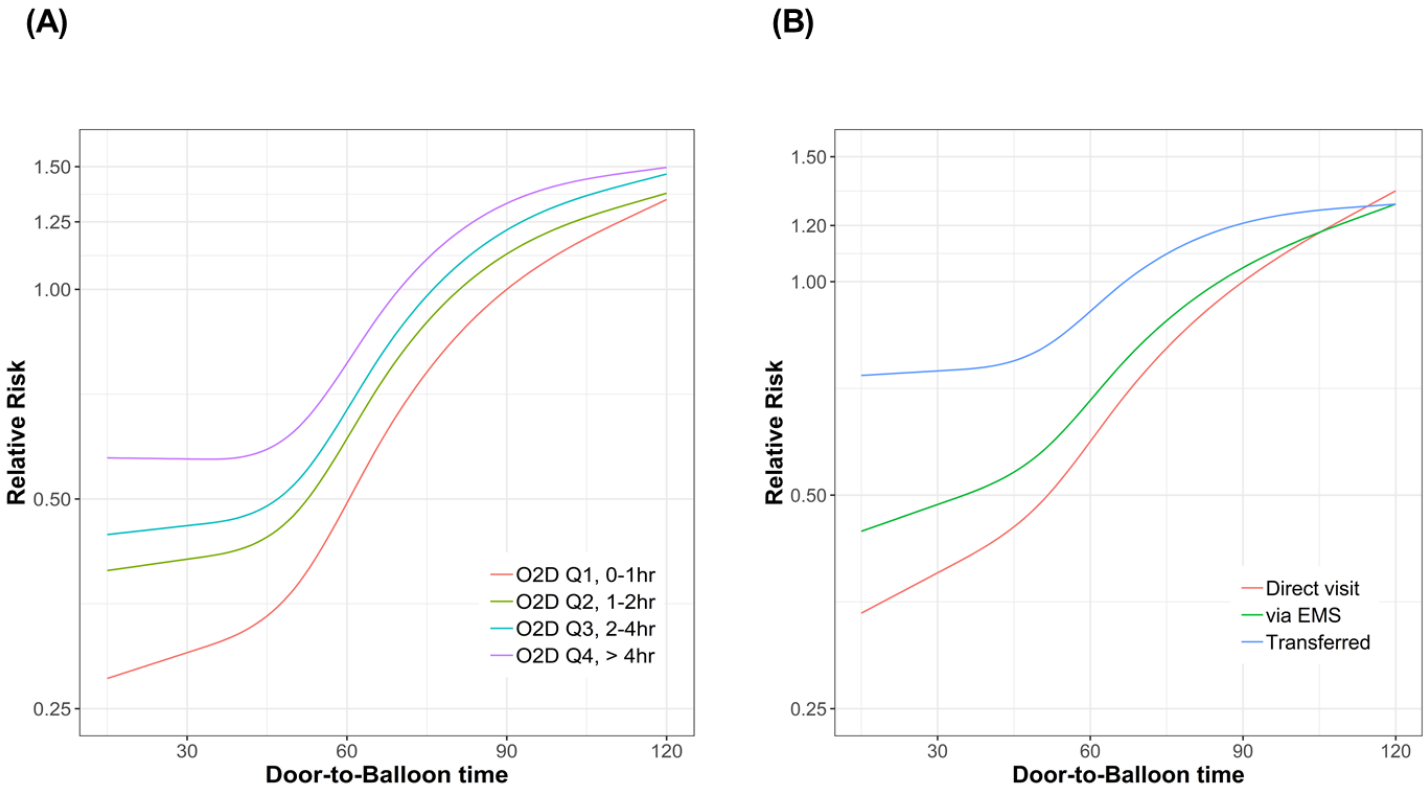


Number at risk

> 4h	1401	1285	1275	1258	1232	1200	807
2-4h	1387	1292	1283	1272	1257	1234	844
1-2h	1153	1088	1080	1071	1054	1032	714
0-1h	1302	1214	1208	1201	1188	1149	785

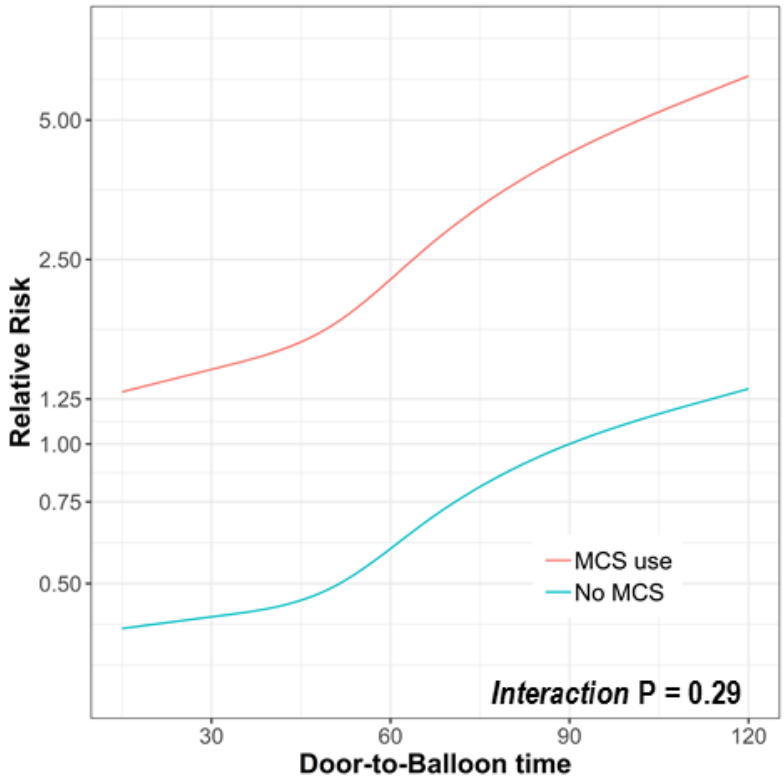
Comparison of all-cause mortality at 1-year among classifications by O2D time.

Figure S6. Association between D2B time and 1-year mortality by Onset-to-Door Time Group and Route of Visit.



The association between relative all-cause mortality rates and D2B time in patients grouped by (A) O2D time quartile and (B) route of visit to primary PCI centers.

Figure S7. Association between D2B time and 1-year mortality by Requirement of Mechanical Circulation Support Devices.



The association between relative all-cause mortality rates and D2B time in patients with or without cardiogenic shock or mechanical circulatory supports.