

2010년 순환기관련학회 춘계통합학술대회

Is Acute Myocardial Infarction in Korea Different From the West? - *KAMIR in Perspective*

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Three Phases of KAMIR Study

KAMIR-I
(Nov 2005-Dec 2006)

N=8,489

KAMIR-II
(Jan 2007-Jan 2008)

N=6,381 (14,870)

KORMI
(Feb 2008-)

N=11,656 (26,526)
(as of Mar 2010)

Korea Acute Myocardial Infarction Registry

- ◆ November 2005-January 2008
- ◆ 51 primary PCI centers in Korea
- ◆ **13,133 AMI Pts** with one-year clinical F/U
- ◆ 63 ± 13 years of age (9,268 men)

Baseline Clinical Characteristics: STEMI vs. NSTEMI

	STEMI(n=7,855)	NSTEMI(n=5,278)	p
Age (yrs)	62.0±12.8	64.3±12.3	<0.001
Age group, n (%)			
<55	<u>2,339(29.8)</u>	1,214(23.0)	<0.001
55-64	1,889(24.0)	1,214(23.0)	0.166
65-74	2,200(28.0)	1,692(32.1)	<0.001
≥75	<u>1,427(18.2)</u>	<u>1,158(21.9)</u>	<0.001
Men, n (%)	<u>5,800(73.6)</u>	3,468(65.4)	<0.001
Medical history, n (%)			
Ischemic heart disease	948(12.1)	1,206(22.9)	<0.001
Hypertension	<u>3,577(46.1)</u>	<u>2,855(54.4)</u>	<0.001
Diabetes	<u>1,947(25.2)</u>	<u>1,707(32.6)</u>	<0.001
Hypercholesterolemia	<u>622(9.1)</u>	<u>653(14.1)</u>	<0.001
Current smoking	<u>4,793(61.4)</u>	2,704(51.6)	<0.001
Family history	514(7.4)	335(7.0)	0.443
CVA history	469(5.9)	471(8.9)	<0.001
Heart failure	107(1.4)	213(4.0)	<0.001
Peripheral artery disease	61(0.8)	81(1.5)	<0.001
LVEF (%)	50.3±14.7	53.8±23.6	<0.001

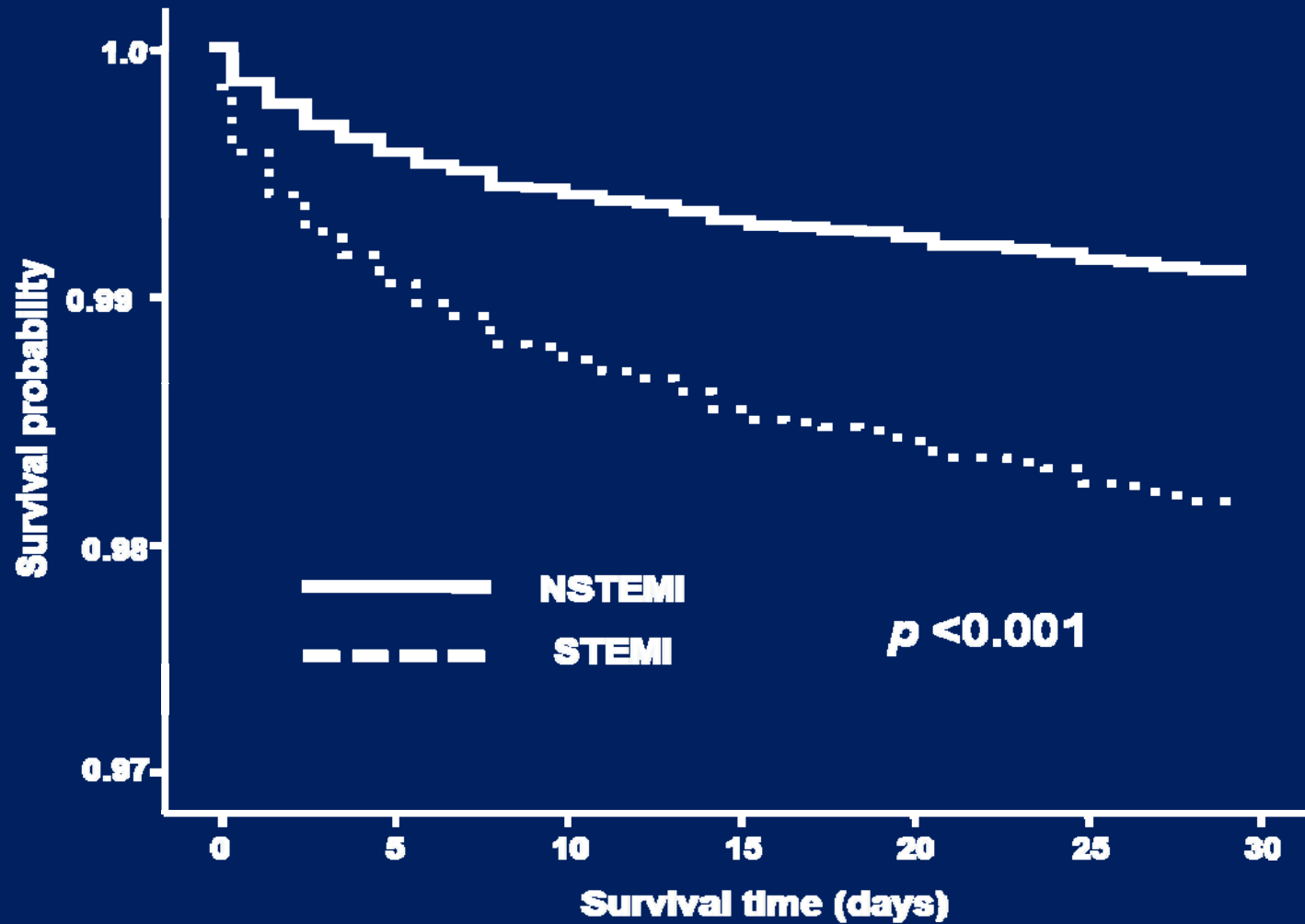
Coronary Angiographic Findings: STEMI vs. NSTEMI

	STEMI(n=7,290)	NSTEMI(n=4,385)	p
Number of involved vessels, n (%)			
1 vessel disease	3,355(45.7)	1,529(34.9)	<0.001
2 vessel disease	2,188(30.0)	1,363(31.1)	0.224
3 vessel disease	1,592(21.8)	1,305(29.8)	<0.001
Left main (complex)	150(2.1)	167(3.8)	<0.001
Left main (isolated)	25(0.3)	21(0.5)	0.256
Infarct related artery, n (%)			
Left main	115(1.6)	148(3.4)	<0.001
Left anterior descending	3,735(51.2)	1,784(41.0)	<0.001
Left circumflex	706(9.7)	1,218(28.0)	<0.001
Right coronary	2,742(37.6)	1,203(27.6)	<0.001
ACC/AHA lesion classification, n (%)			
Type A	307(4.5)	226(5.6)	0.01
Type B1	1,204(17.7)	752(18.7)	0.185
Type B2	1,809(26.6)	1,179(29.4)	0.002
Type C	3,470(51.1)	1,854(46.2)	0.001
TIMI flow n (%)			
TIMI 0	3,704(53.1)	1,183(28.8)	<0.001
TIMI 1	747(10.7)	537(13.1)	<0.001
TIMI 2	1,030(14.8)	754(18.4)	<0.001
TIMI 3	1,500(21.5)	1,631(39.7)	<0.001

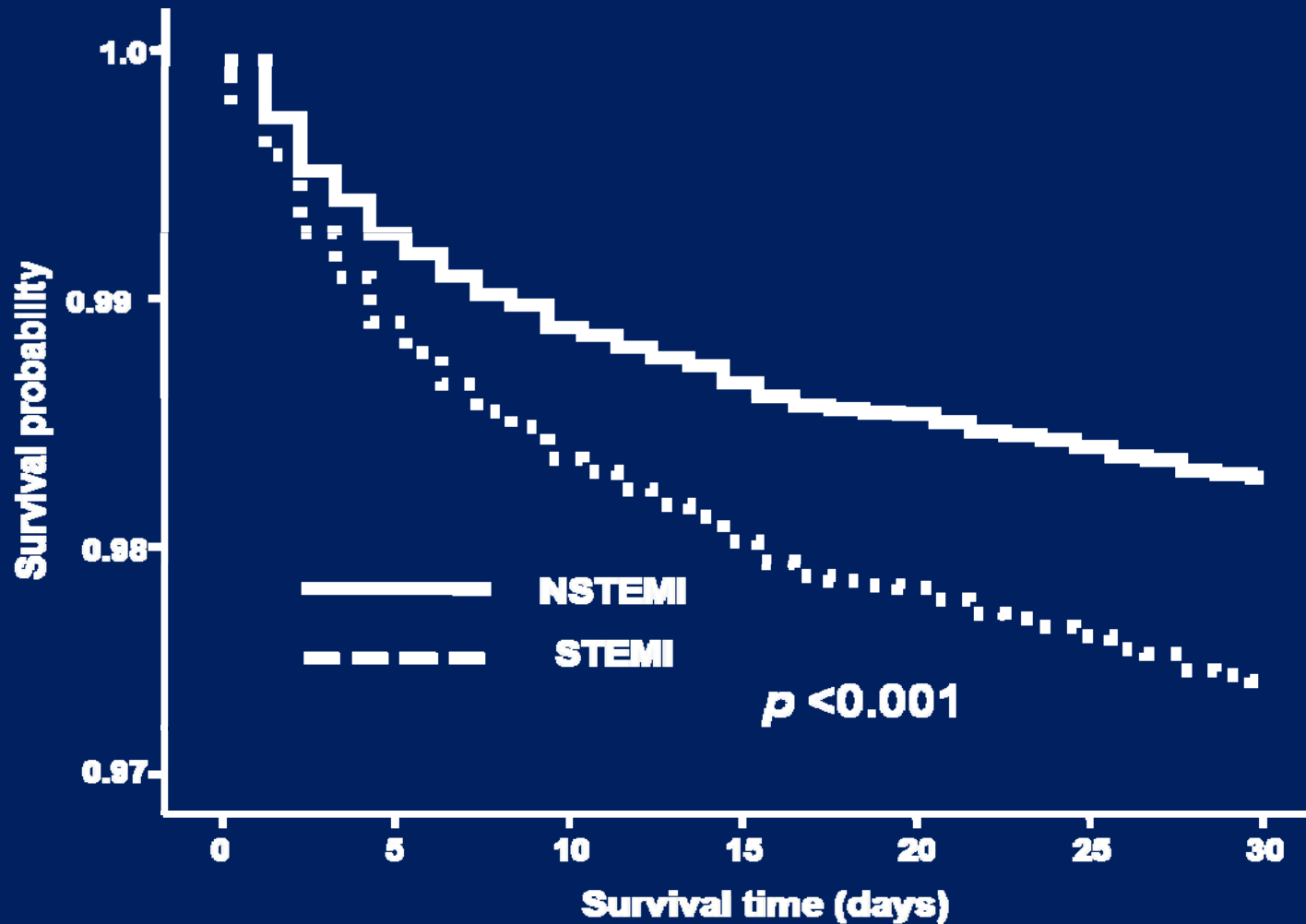
In-hospital and One-month MACE: STEMI vs. NSTEMI

	STEMI (N= 7,890)		NSTEMI (N= 5,103)		p value
In-hospital death, n (%)	<u>504</u>	<u>(6.4)</u>	<u>199</u>	<u>(3.8)</u>	<0.001
1-month MACE, n (%)					
Cardiac death	<u>571</u>	<u>(8.5)</u>	<u>255</u>	<u>(5.7)</u>	<0.001
Non-cardiac death	27	(0.4)	19	(0.4)	0.501
Myocardial infarction	30	(0.4)	33	(0.7)	0.821
Re-PCI	62	(1.0)	37	(0.9)	0.324
Target Vessel Revascularization	18	(0.2)	14	(0.2)	0.648
Non-TVR	41	(0.5)	22	(0.4)	0.303
Target Lesion Revascularization	16	(0.2)	10	(0.2)	0.973
CABG	16	(0.2)	20	(0.4)	0.254
Composite	<u>705</u>	<u>(10.4)</u>	<u>364</u>	<u>(8.2)</u>	0.003

In-hospital Survival Rate



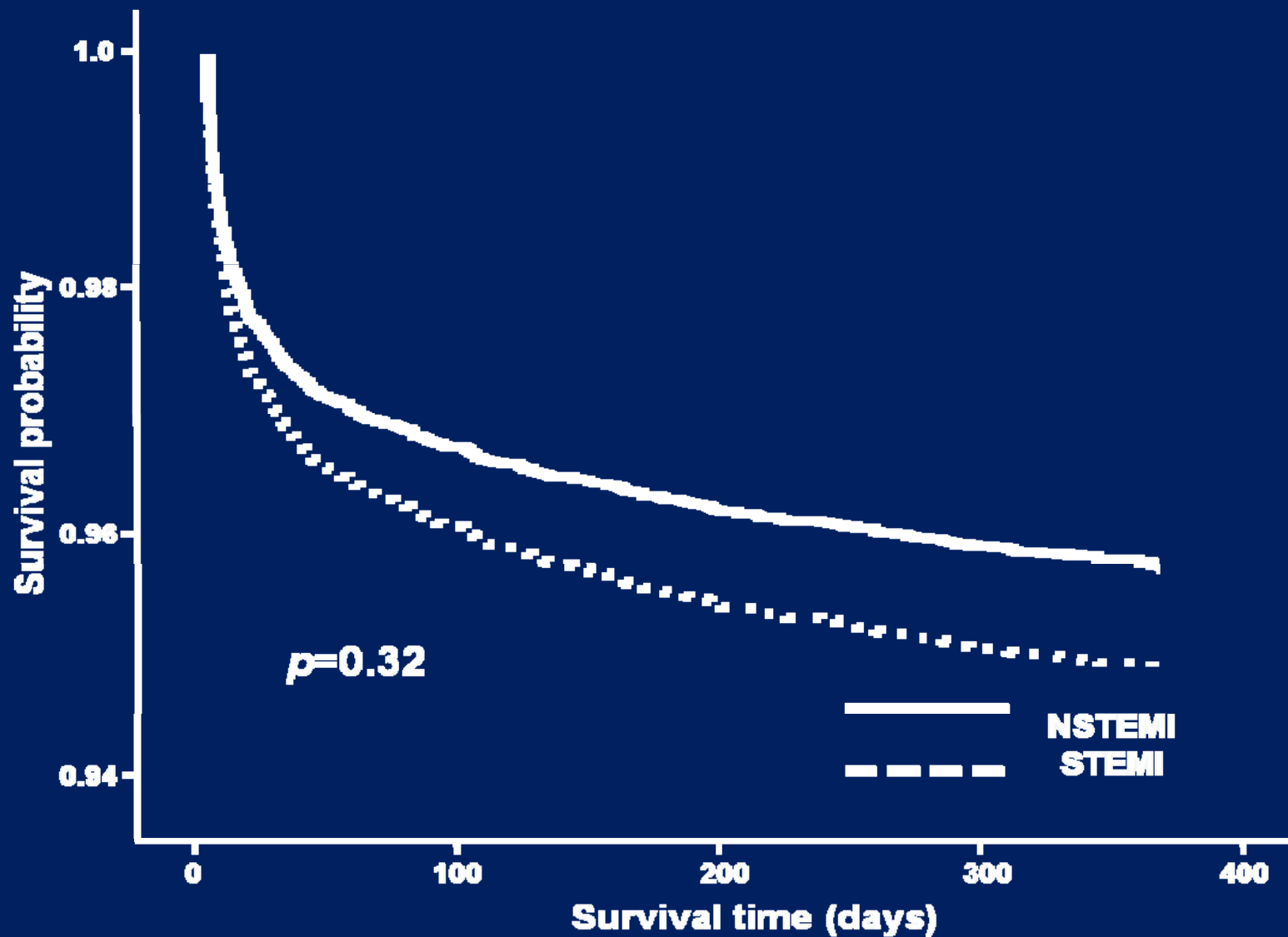
One-month Survival Rate



12-month MACE: STEMI vs. NSTEMI

	STEMI (N= 5,110)		NSTEMI (N= 3,315)		p value
12-month MACE, n (%)					
Cardiac death	630	(12.3)	315	(9.5)	0.009
Non-cardiac death	67	(1.3)	61	(1.8)	0.681
Myocardial infarction	51	(1.0)	63	(1.9)	0.072
Re-PCI	389	(7.6)	210	(6.3)	0.110
TVR	69	(1.5)	42	(1.4)	0.516
Non-TVR	190	(3.7)	94	(2.8)	0.227
TLR	138	(2.7)	79	(2.3)	0.574
CABG	25	(0.5)	27	(0.8)	0.132
Composite	1,162	(22.7)	676	(20.4)	0.121

12-month Survival Rate



Predictors of Mortality during 12-month Follow-up: All Patients

Variables	95% CI	Hazard ratio	p value
<u>Age</u>	1.061-1.166	1.112	<0.001
≤55			<0.001
≥75			<0.001
Medical history			
MI			0.899
PCI			0.131
Heart failure			0.345
In-hospital complications			
Heart failure			0.566
Shock			0.741
Major bleeding episode			0.741
<u>Ventricular tachycardia & fibrillation</u>	4.380-52.862	15.217	<0.001
<u>LVEF decrease</u>	1.074-1.152	1.112	<0.001
<u>Multi-vessel disease</u>	2.109-7.732	4.038	0.029



GRACE Study

(Global Registry of Acute Coronary Events)

- ◆ April 1999 - September 2002
- ◆ A total of 24,055 ACS pts
- ◆ 90 hospitals in 14 countries
 - Europe, North & South America, Australia, New Zealand
- ◆ 5,476 STEMI, 5,209 NSTEMI, 6,149 UAP Pts with a median F/U of 6.3 months



89 Active Core Study Sites: 17 Clusters in 14 Countries



Clinical Characteristics: STEMI vs. NSTEMI vs. UAP

	STEMI (n=5,476)	NSTEMI (n=5,209)	UAP (n=6,149)
Age(yrs)*	63.4	<u>68.1</u>	66.6
Men*	<u>72.5%</u>	66.9%	62.5%
Medical history			
Angina pectoris*	46.7%	62.6%	82.8%
DM*	20.6%	<u>26.9%</u>	25.2%
Hypertension*	49.4%	<u>61.2%</u>	65.1%
MI*	19.2%	32.6%	42.0%
PCI*	7.3%	14.0%	24.0%
TIA/stroke*	6.0%	10.0%	8.8%
Heart failure*	5.9%	13.2%	12.8%
CABG*	5.5%	13.9%	20.0%

*p <0.001

Goldberg RJ, et al. *Am J Cardiol* 2004;93(3):288-93

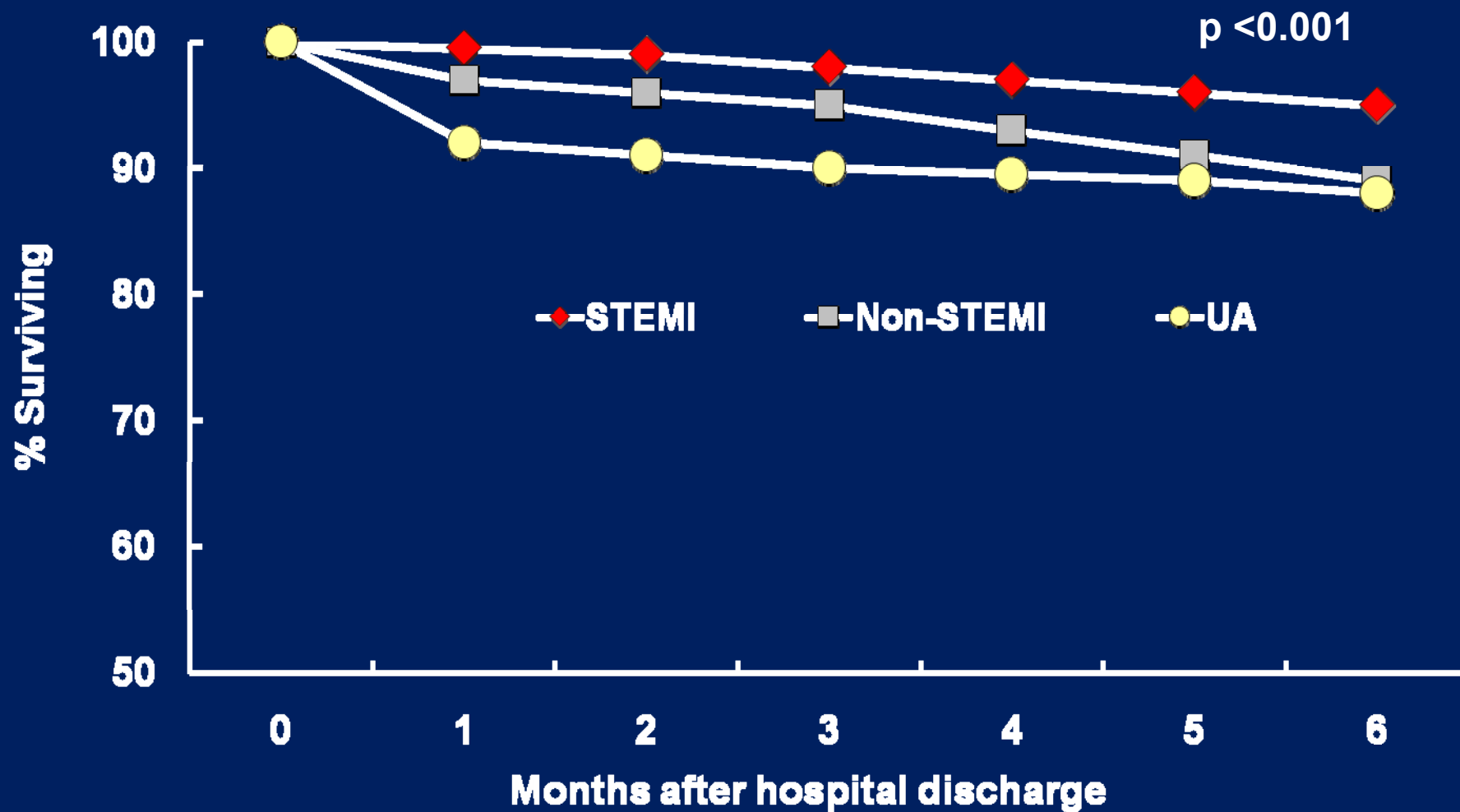
In-hospital Outcomes: STEMI vs. NSTEMI vs. UAP

	STEMI (n=5,476)	NSTEMI (n=5,209)	UAP (n=6,149)
Clinical complications			
Cardiogenic shock*	<u>3.1%</u>	1.8%	0.5%
Heart failure*	<u>18.4%</u>	17.9%	9.2%
Major bleeding episode*	4.0%	4.4%	2.1%
Stroke*	1.2%	1.1%	0.4%
Interventional procedures			
Cardiac catheterization*	<u>61.0%</u>	<u>57.6%</u>	44.1%
PCI*	<u>44.4%</u>	<u>30.8%</u>	19.8%
CABG*	5.0%	9.3%	5.2%

Six-month Outcomes after Hospital Discharge

	STEMI (n=5,476)	NSTEMI (n=5,209)	UAP (n=6,149)	p
End point				
Hospitalization for heart disease	<u>16.2%</u>	<u>19.3%</u>	18.5%	<0.001
Stroke	1.1%	1.5%	0.8%	<0.001
Cardiac catheterization	16.2%	14.7%	15.7%	0.1
PCI	<u>9.3%</u>	<u>8.0%</u>	8.3%	<0.05
CABG	5.0%	7.1%	6.1%	<0.001

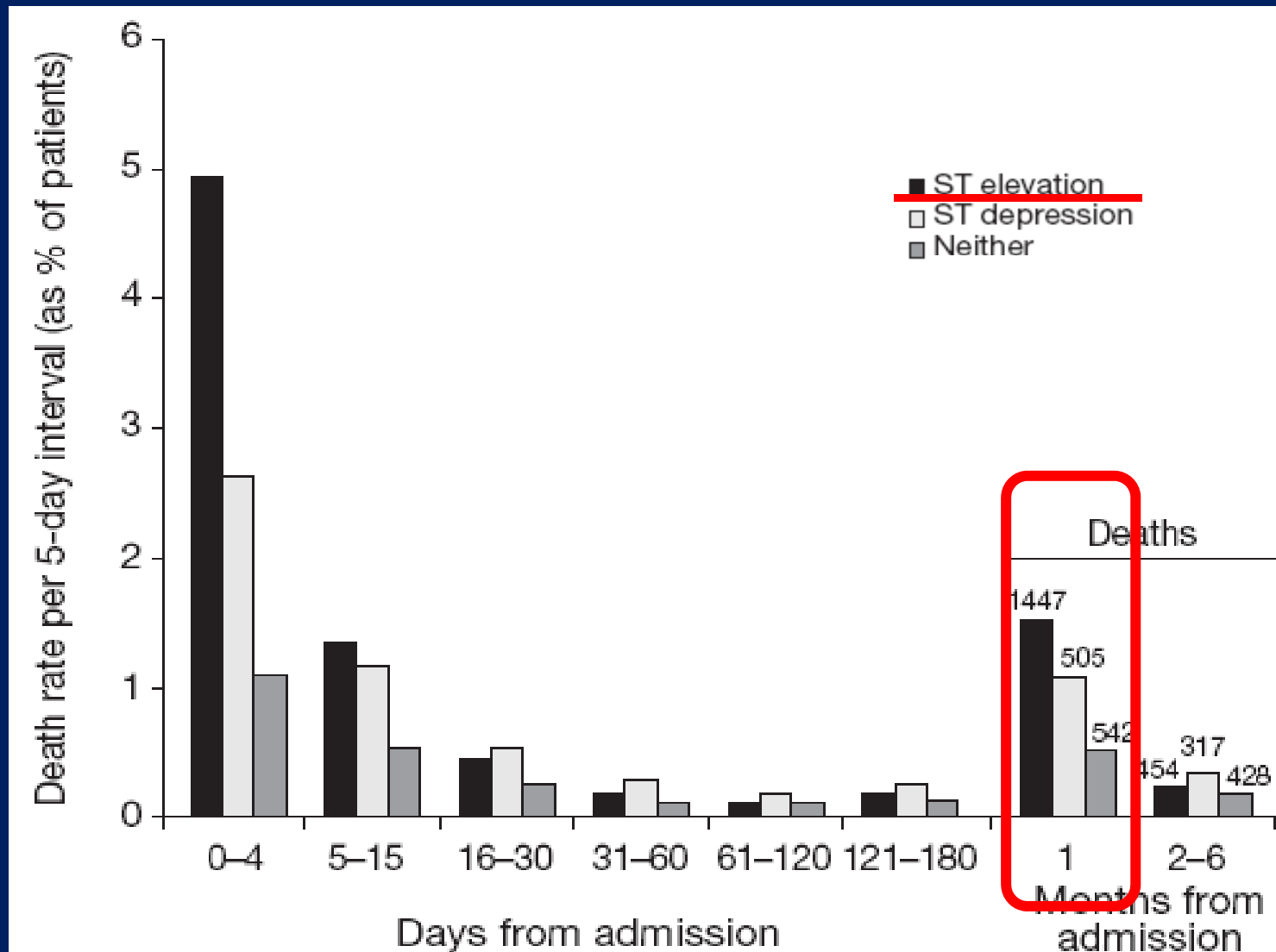
Six-month Survival after Hospital Discharge



Predictors of Post-discharge Death during Six-month F/U

	STEMI	NSTEMI	UAP
Characteristic	HR (95% CI)	HR (95% CI)	HR (95% CI)
Age (yrs)			
65–74	3.48 (2.00–6.06)	2.17 (1.27–3.72)	3.34 (1.81–6.19)
≥75	8.95 (5.28–15.20)	5.30 (3.19–8.80)	5.29 (2.88–9.72)
Medical history			
<u>Heart failure</u>	2.21 (1.61–3.04)	2.20 (1.71–2.84)	2.23 (1.61–3.08)
<u>MI</u>	1.69 (1.28–2.22)		1.44 (1.09–1.91)
PCI			0.52 (0.35–0.77)
TIA/stroke		1.37 (1.03–1.84)	
Hospital complications			
<u>Cardiogenic shock</u>	1.94 (1.20–3.15)		4.01 (1.73–9.28)
<u>Heart failure</u>	2.16 (1.65–2.83)	1.91 (1.49–2.44)	1.67 (1.17–2.37)
<u>Stroke</u>	2.51 (1.32–4.78)		

Mortality by Time Interval in Acute Coronary Syndrome



OPERA Registry

- ◆ October 2002 - September 2003
- ◆ 56 centers in France
- ◆ 2,151 AMI patients with 1-year F/U
- ◆ 64 ± 14 years of age (1,588 men)

Baseline Characteristics: STEMI vs. NSTEMI vs. UAP

	STEMI (n=1476)	NSTEMI (n=610)	P
Age for men, yrs	60±13	65±14	<0.0001
Age for women, yrs	71±14	73±12	0.2
Men (%)	1137 (77.0)	448 (73.4)	0.08
Stable angina	180 (12.2)	129 (21.2)	<0.0001
Unstable angina	149 (10.1)	108 (17.7)	<0.0001
Myocardial infarction	159 (10.8)	136 (22.3)	<0.0001
Heart failure	54 (3.7)	54 (8.9)	<0.0001
PCI	119 (8.1)	78 (12.8)	<0.01
CABG	40 (2.7)	45 (7.4)	<0.0001
Atrial fibrillation	66 (4.5)	55 (9.0)	<0.0001
Stroke	42 (2.9)	37 (6.1)	<0.01
Peripheral arterial disease	88 (6.0)	80 (13.1)	<0.0001
Type II DM	204 (13.8)	120 (19.7)	<0.001
Dyslipidemia	731 (49.5)	306 (50.3)	0.76
Hypertension	649 (44.0)	331 (54.3)	<0.001
Current smoker	583 (39.6)	179 (29.4)	<0.001
Family history	170 (11.6)	62 (10.2)	0.38

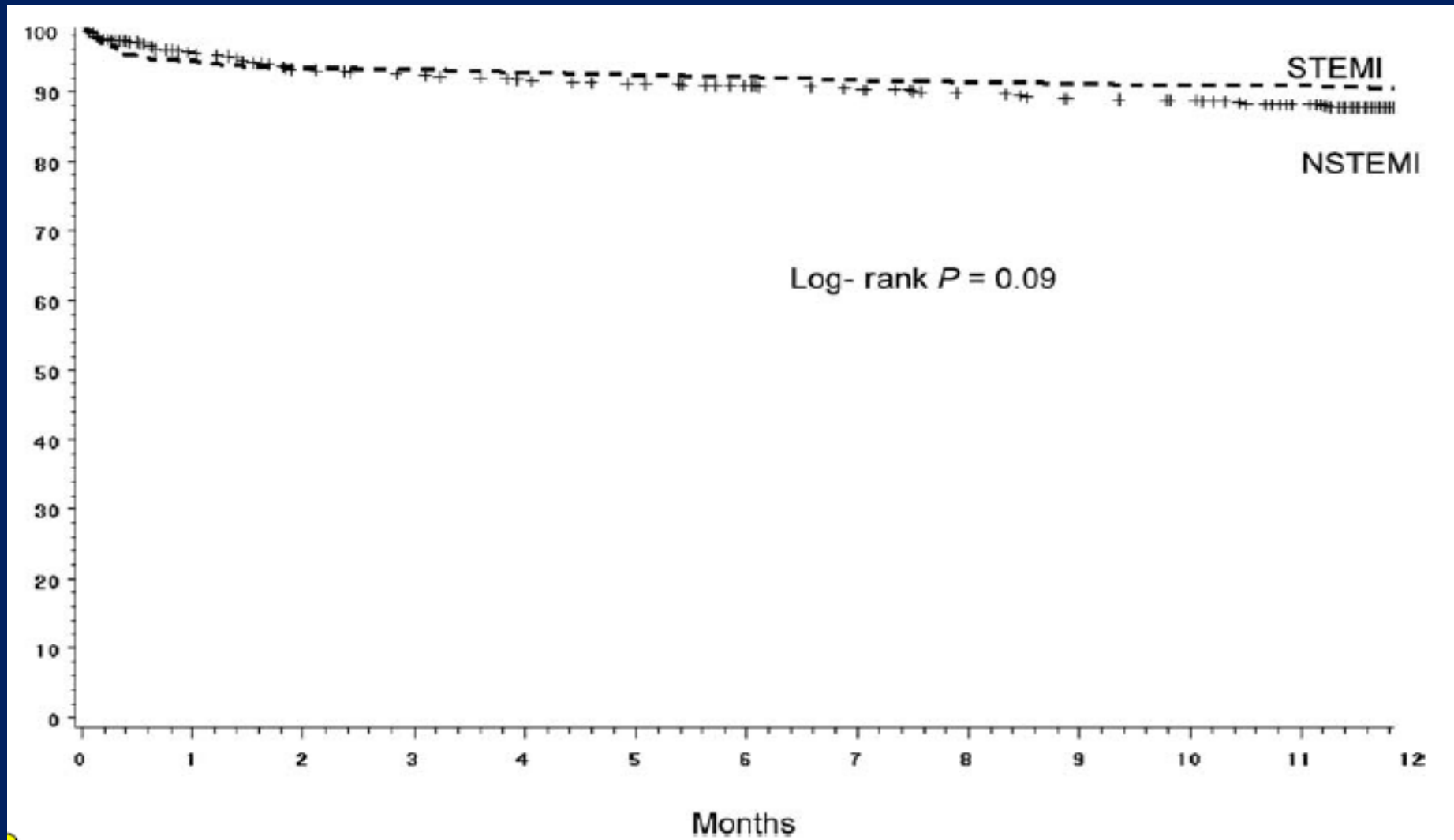
Invasive Procedures during Hospitalization

	STEMI (n=1476)	NSTEMI (n=610)	P
PCI	<u>1047 (71.0)</u>	315 (51.6)	<0.0001
IABP	<u>32 (2.2)</u>	5 (0.8)	<0.05
Pacemaker	43 (2.9)	8 (1.3)	<0.05
Mechanical ventilation	29 (2.0)	10 (1.6)	
CABG	45 (3.1)	30 (4.9)	<0.05

Clinical Outcomes In-hospital and at One-year

	Total (n=2090)	STEMI (n=1476)	NSTEMI (n=610)
In-hospital outcomes (n=2090)			
Death	<u>66 (3.2)</u>	<u>48 (3.2)</u>	<u>18 (2.9)</u>
Recurrent ischemia and/or QMI	69 (3.3)	50 (3.4)	18 (2.9)
Ischemic stroke	14 (0.7)	11 (0.7)	3 (0.5)
Hemorrhagic stroke	7 (0.3)	6 (0.4)	1 (0.2)
Resuscitated cardiac arrest	32 (1.5)	28 (1.9)	4 (0.7)
One-year outcome (n=1878)			
Death (post-discharge)	<u>112 (6.0)</u>	<u>66 (5.0)</u>	<u>46 (8.2)</u>
Death (cumulative)	<u>209 (9.7)</u>	<u>136 (9.0)</u>	<u>73(11.6)</u>
PCI	222 (12.7)	166 (13.5)	56 (10.9)
CABG	72 (4.1)	38 (3.1)	34 (6.6)

One-year Survival: STEMI vs. NSTEMI



Independent Predictors of In-hospital Mortality

Variable

OR (95% CI)

DL not treated w statin on adm. (reference: no DL)

3.38 (1.84-6.23)

Age (per 10 yr increase)

2.49 (1.90-3.26)

DM (reference: no DM)

2.29 (1.30-4.03)

Low SBP on admission (per 10 mmHg decrease)

1.29 (1.16-1.45)

DL treated w statin on adm. (reference: no DL)

0.04 (0.01-0.28)



Predictors of One-year Post-Discharge Mortality

	Total population (n=1878)	STEMI (n=1476)	NSTEMI (n=610)
HF (yes vs. no)	2.99 (1.83–4.86)	2.36 (1.17–4.75)	3.88 (1.97–7.67)
Age (per 10 year increase)	2.37 (2.00–2.80)	2.49 (2.02–3.08)	2.20 (1.67–2.91)
DL not treated w statin on adm. (reference: no DL)	2.07 (1.24–3.45)	2.75 (1.49–5.08)	—*
DM (reference: no DM)	1.77 (1.22–2.58)	1.85 (1.15–3.00)	—*
HR (per 10 bpm increase)	1.19 (1.10–1.28)	1.18 (1.07–1.30)	1.23 (1.09–1.39)
SBP (per 10 mmHg decrease)	1.18 (1.11–1.27)	1.17 (1.08–1.28)	1.21 (1.08–1.35)
DL treated with statin (reference: no DL)	0.60 (0.40–0.89)	0.61 (0.37–1.01)	—*

* A variable with p-value ≥ 0.05

National Heart, Lung, and Blood Institute Dynamic Registry

- ◆ 1999-2004
- ◆ Multicenter prospective observational study of consecutive AMI Pts undergoing PCI
- ◆ 903 STEMI, 583 NSTEMI Pts with One-year F/U
- ◆ 62.3 years of age

Baseline Characteristics: STEMI vs. NSTEMI

	STEMI(n=903)	NSTEMI(n=583)	p
Mean age (yrs)	60.2	<u>62.3</u>	0.001
Age > 65 yrs	34.8%	42.8%	0.002
Women	35.4%	37.7%	0.37
Race/ethnicity			0.18
White	76.6%	71.8%	
Black	14.9%	18.6%	
Asian	2.4%	3.8%	
Hispanic	5.9%	5.7%	
BMI (kg/m ²)	28.9	28.9	0.69
Previous PCI	11.8%	16.8%	0.001
Previous MI	15.1%	18.7%	0.07
Cerebrovascular disease	5.2%	7.6%	0.06
Renal disease	3.1%	9.5%	<0.001
Peripheral vascular disease	4.2%	8.3%	0.001
Diabetes mellitus	21.6%	<u>27.1%</u>	0.02
Heart failure	4.7%	10.4%	<0.001
Hypertension	56.1%	<u>69.3%</u>	<0.001
Hypercholesterolemia	52.5%	<u>60.4%</u>	0.004
Smoker			0.06
Current	<u>42.6%</u>	36.4%	
Former	27.5%	29.1%	

Procedural and Angiographic Characteristics

	STEMI(n=903)	NSTEMI(n=583)	p
Ejection fraction (%)	47.4	51.0	<0.001
Vessel number			0.03
1	44.9%	42.4%	
2	34.7%	31.2%	
3	20.5%	26.4%	
Cardiogenic shock	8.6%	2.1%	<0.001
Thrombolytic therapy	37.5%	0.0%	<0.001
Glycoprotein IIb/IIIa inhibitor	58.0%	51.5%	0.013
Lesion location (%)			<0.001
Right	41.0%	31.9%	
Left main	0.2%	0.1%	
Left anterior descending	43.9%	36.3%	
Left circumflex	14.8%	31.7%	
Pre-PCI TIMI 0	33.8%	15.5%	<0.001
Pre-PCI TIMI 2/3	60.8%	80.9%	<0.001
Thrombus	52.3%	26.6%	<0.001
Calcified	20.1%	22.8%	0.16
Ulcerated	23.1%	16.3%	<0.001
Bifurcation	11.5%	12.7%	0.44

Procedural Results and In-hospital Outcomes

	STEMI	NSTEMI	p
No. of coronary lesions	1,146	799	
Stent use	85.3%	83.2%	0.23
Post-PCI TIMI 2/3	97.1%	98.2%	0.13
Perforation	0.3%	0.1%	0.34
Embolization	2.4%	1.3%	0.08
Side branch occlusion	2.3%	2.6%	0.61
Abrupt closure post-procedure	0.3%	0.3%	0.96
Angiographic success	95.5%	96.7%	0.16
No. of patients	903	583	
MI	1.7%	2.4%	0.31
CABG	1.7%	1.2%	0.47
Ventricular fibrillation	<u>9.2%</u>	<u>3.1%</u>	<0.001
Stroke	0.4%	0.2%	0.38
Entry site bleeding requiring transfusion	3.3%	2.1%	0.15
Death	<u>4.0%</u>	<u>1.4%</u>	0.004
Mean length of stay (days)*	<u>3.9</u>	<u>2.7</u>	<0.001

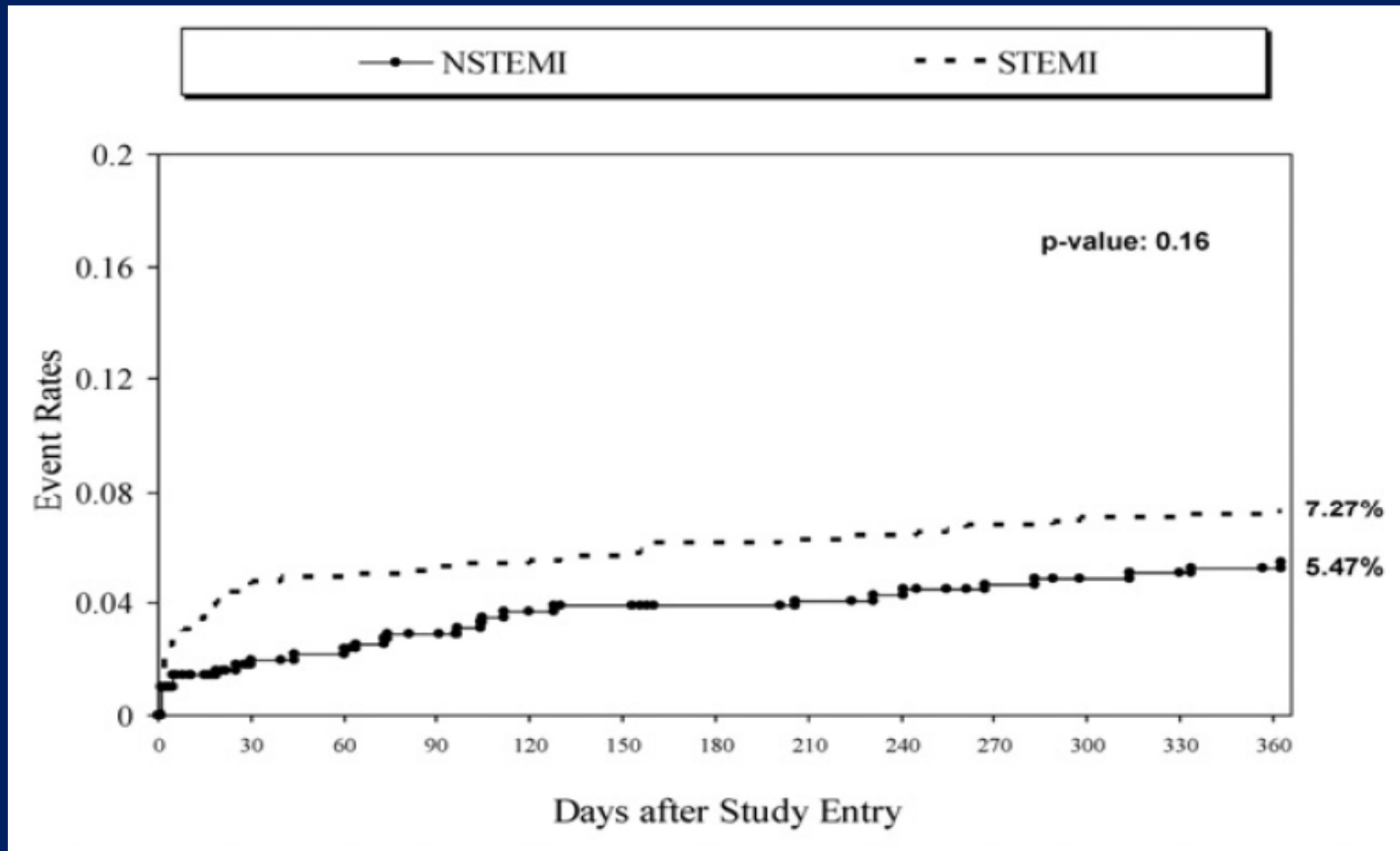
Predictors of In-hospital Death after PCI

Factors	OR	95% CI	p
STEMI (vs. NSTEMI)	4.1	1.41–11.78	0.009
Cardiogenic shock	26.7	11.43–62.32	<0.001
Renal disease	18.2	5.94–55.95	<0.001
No previous PCI	9.6	1.11–83.37	0.04
Cancer	3.2	1.12–9.45	0.03
Attempted ostial lesion	3.1	1.05–9.47	0.04
Total occlusion	2.7	1.18–6.25	0.02
Cerebrovascular disease	2.7	0.96–7.47	0.059
Age (yrs)	1.1	1.06–1.15	<0.001
Hypercholesterolemia	0.38	0.16–0.89	0.03

Cumulative One-year Event Rates by Kaplan-Meier Method

	STEMI (n=903)	NSTEMI (n=583)	p
Death	7.3%	5.5%	0.16
MI	4.5%	5.0%	0.64
CABG	5.1%	2.8%	0.05
Repeat PCI	9.3%	9.2%	0.92
Death/MI	11.3%	10.0%	0.45
Death/MI/Repeat PCI	21.9%	19.2%	0.21

One-year Mortality: STEMI vs. NSTEMI



Predictors of One-Year Adverse Events

	Adjusted RR	95% CI	p
Death/MI			
STEMI (vs. NSTEMI)	1.22	0.85–1.76	0.27
Cardiogenic shock	4.43	2.88–6.82	<0.001
Renal disease	3.27	2.05–5.21	<0.001
Peripheral vascular disease	2.03	1.24–3.31	0.005
Congestive heart failure	1.48	0.93–2.38	0.1
Age	1.03	1.02–1.05	<0.001
Repeat revascularization			
STEMI (vs. NSTEMI)	1.06	0.74–1.51	0.75
Multi-vessel disease	2.13	1.33–3.41	0.002
Cardiogenic shock	1.67	0.97–2.87	0.06
Emergency procedure	1.35	0.94–1.95	0.11
Total occlusion	1.32	0.95–1.82	0.1
No. of > 50% lesions	1.21	1.06–1.37	0.004

ACTION Registry-GWTG Results: July 1, 2008 – June 30, 2009

Prepared by:



Duke Clinical Research Institute
DUKE UNIVERSITY MEDICAL CENTER



Baseline Characteristics: STEMI vs NSTEMI

Variable	STEMI (n=22,025)	NSTEMI (n=32,741)
Mean age \pm SD (yrs)	62 \pm 14	67 \pm 14
Female sex	30%	39%
Diabetes mellitus	23%	35%
Prior MI	20%	29%
Prior CHF	5%	17%
Prior PCI	20%	25%
Prior CABG	7%	19%
Prior Stroke	5%	10%
Prior PAD	5%	12%

In-hospital Outcome: STEMI vs. NSTEMI

Variable	STEMI (n=22,025)	NSTEMI (n=32,741)
Death*	6.0%	4.0%
Re-infarction	1.1%	0.9%
CHF	6.9%	7.1%
Cardiogenic Shock	6.4%	2.8%
Stroke	0.8%	0.7%
RBC Transfusion**	6.0%	8.5%
Major Bleeding**	12.0%	10.4%

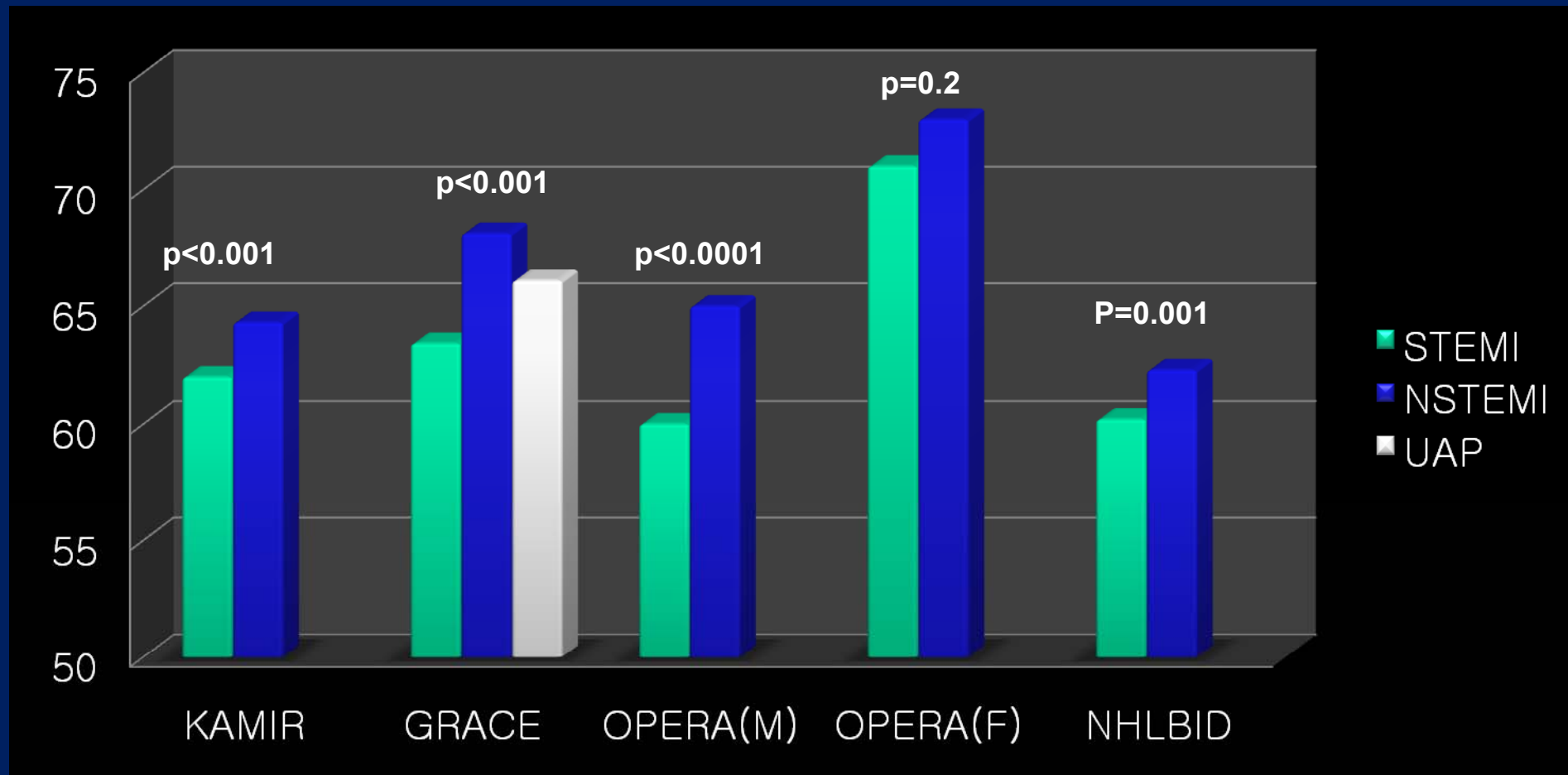
*Unadjusted mortality

** Among non-CABG pts

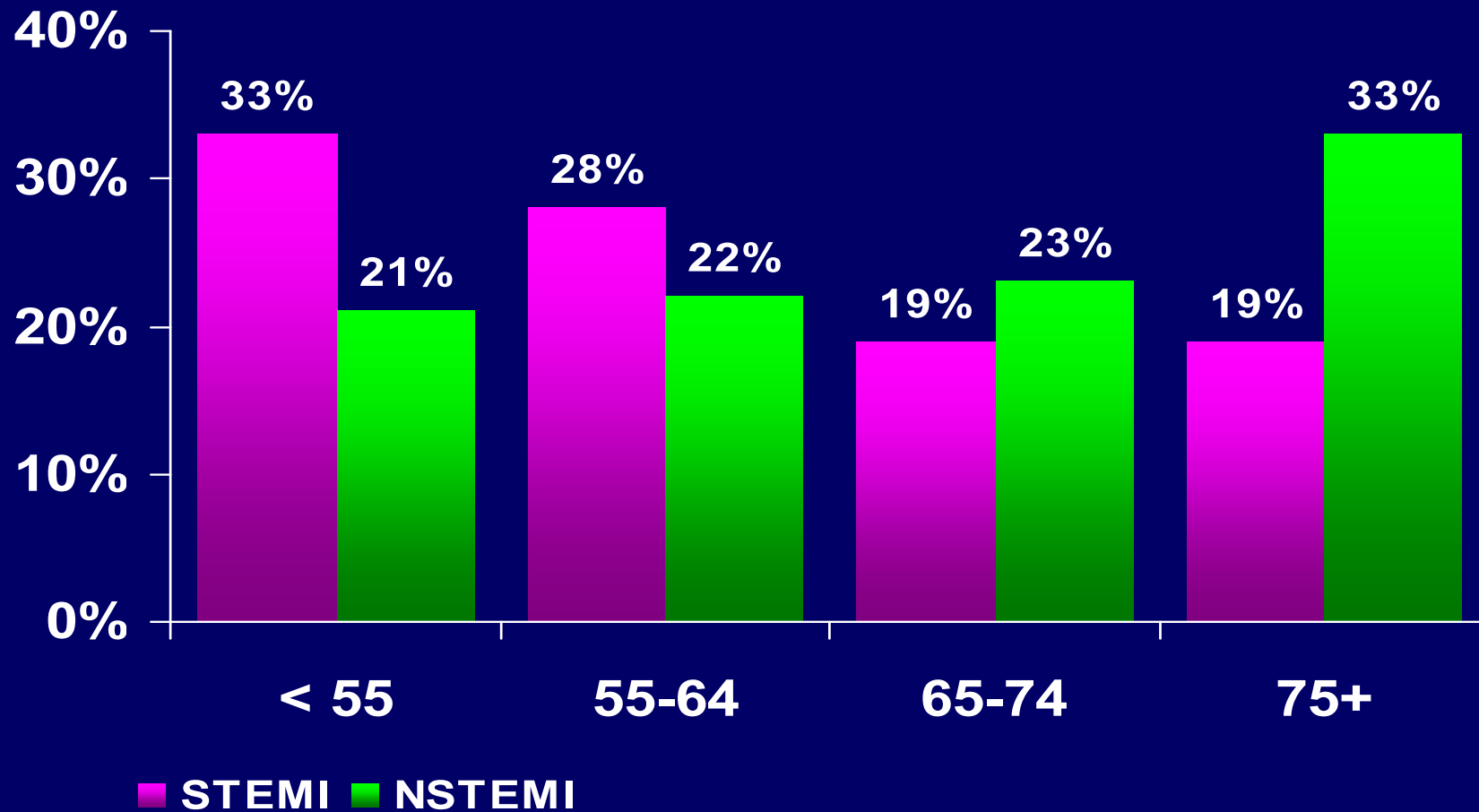
Comparisons Between Major AMI Registries

- ◆ **KAMIR**: AMI
- ◆ **GRACE**: ACS
- ◆ **OPERA**: AMI
- ◆ **NHLBID**: AMI undergoing PCI
- ◆ **ACTION Registry-GWTG**: AMI

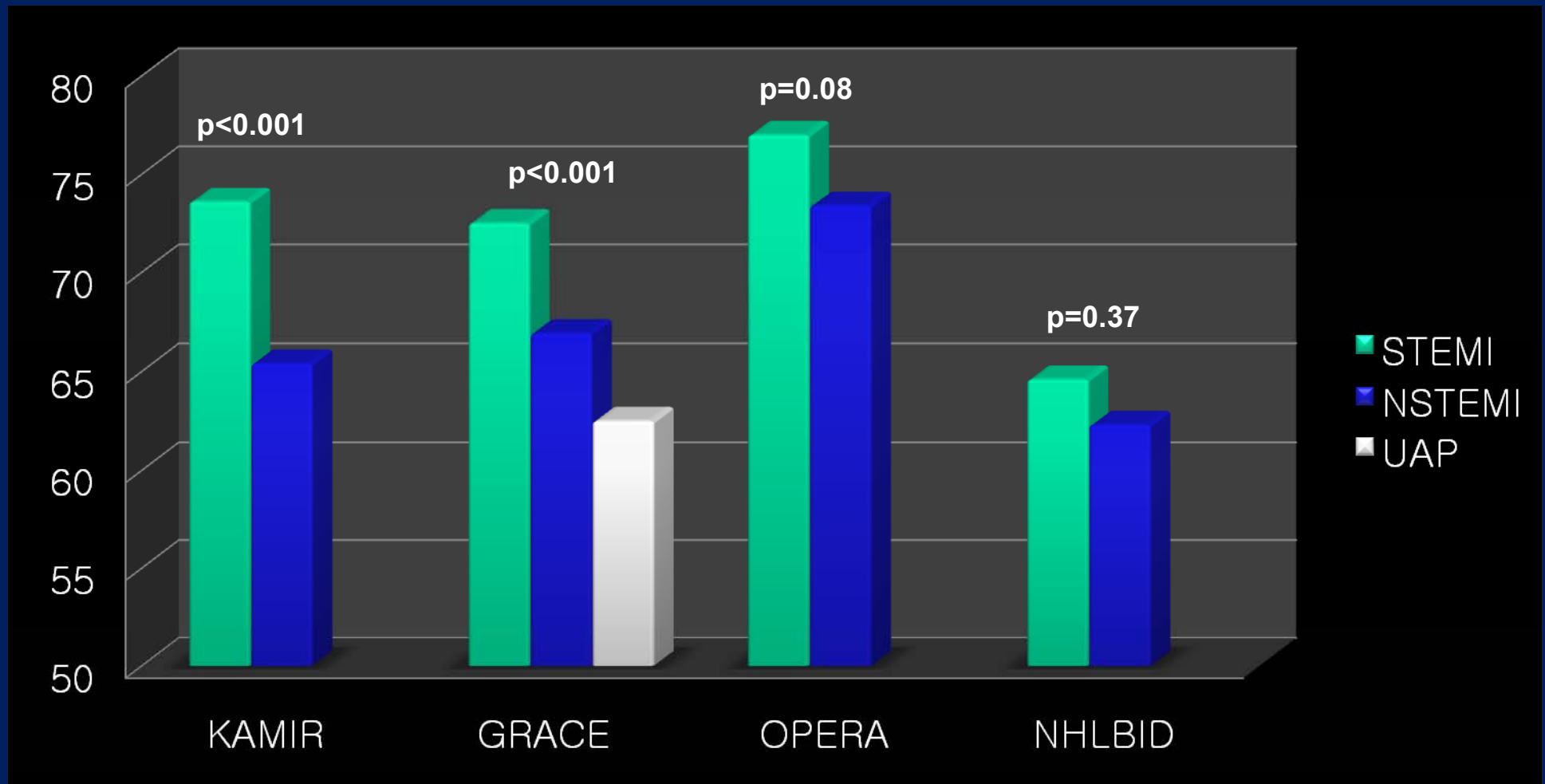
Age



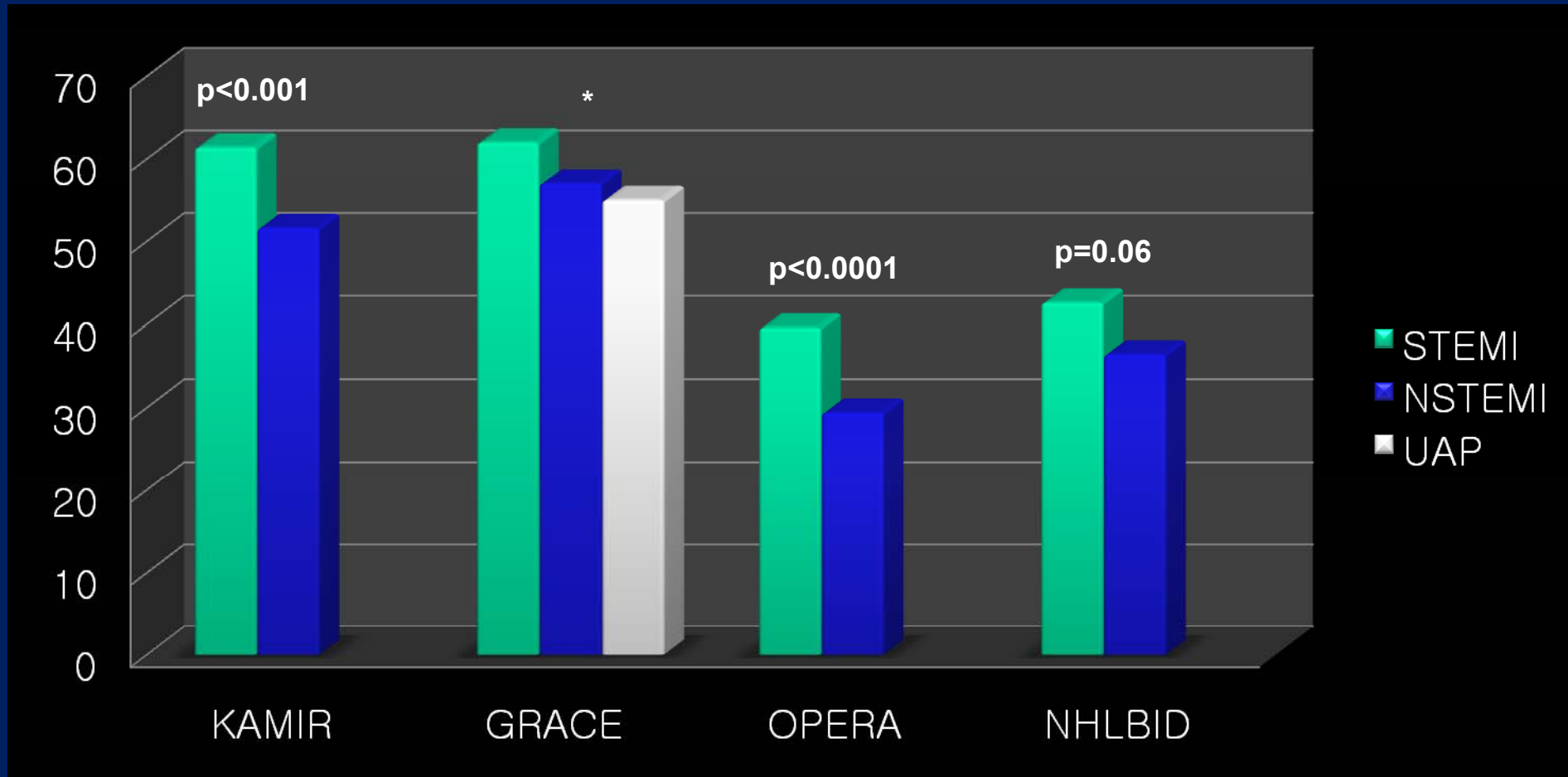
Age Distribution: STEMI vs. NSTEMI



Gender (Male)

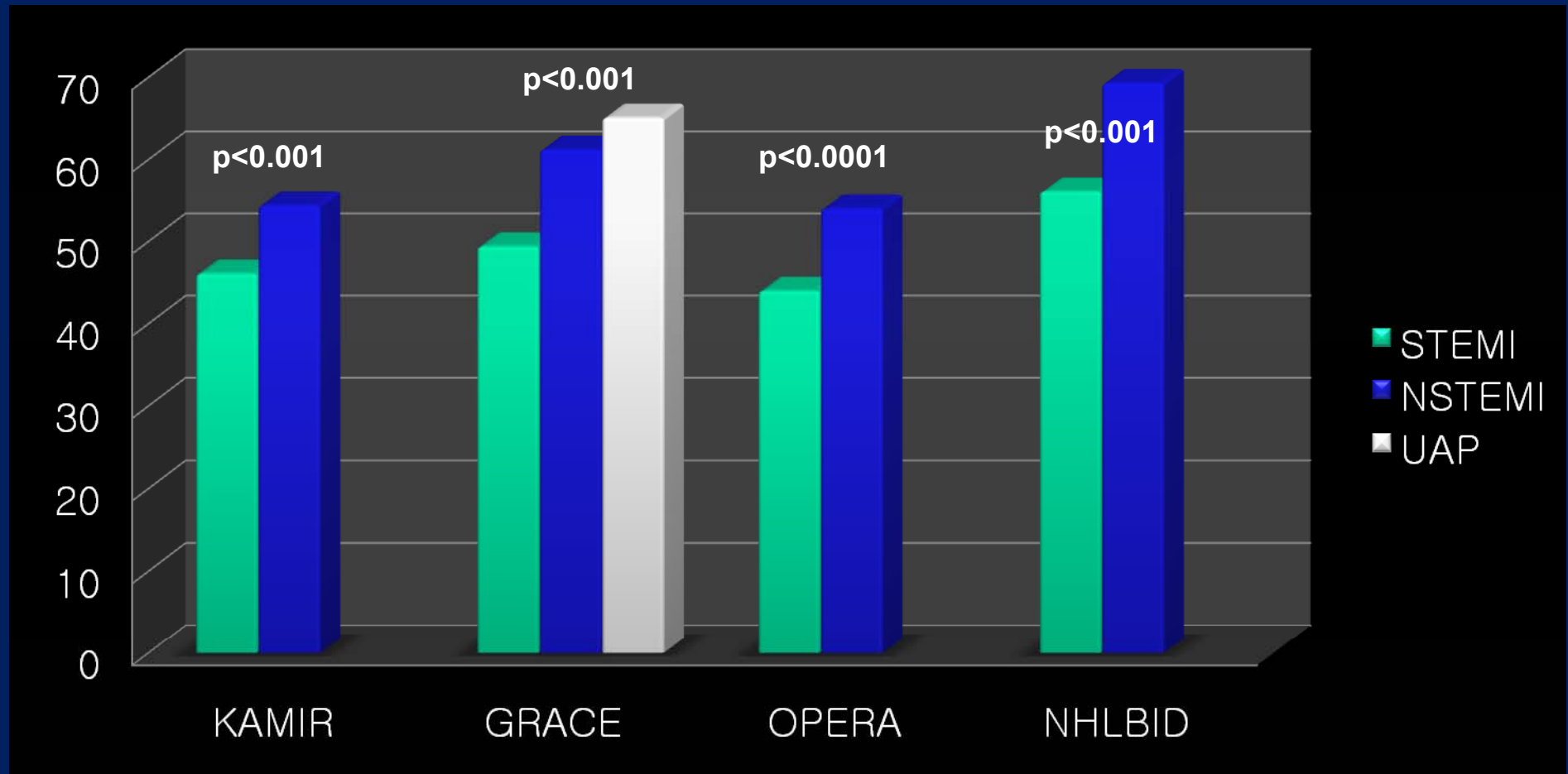


Smoking

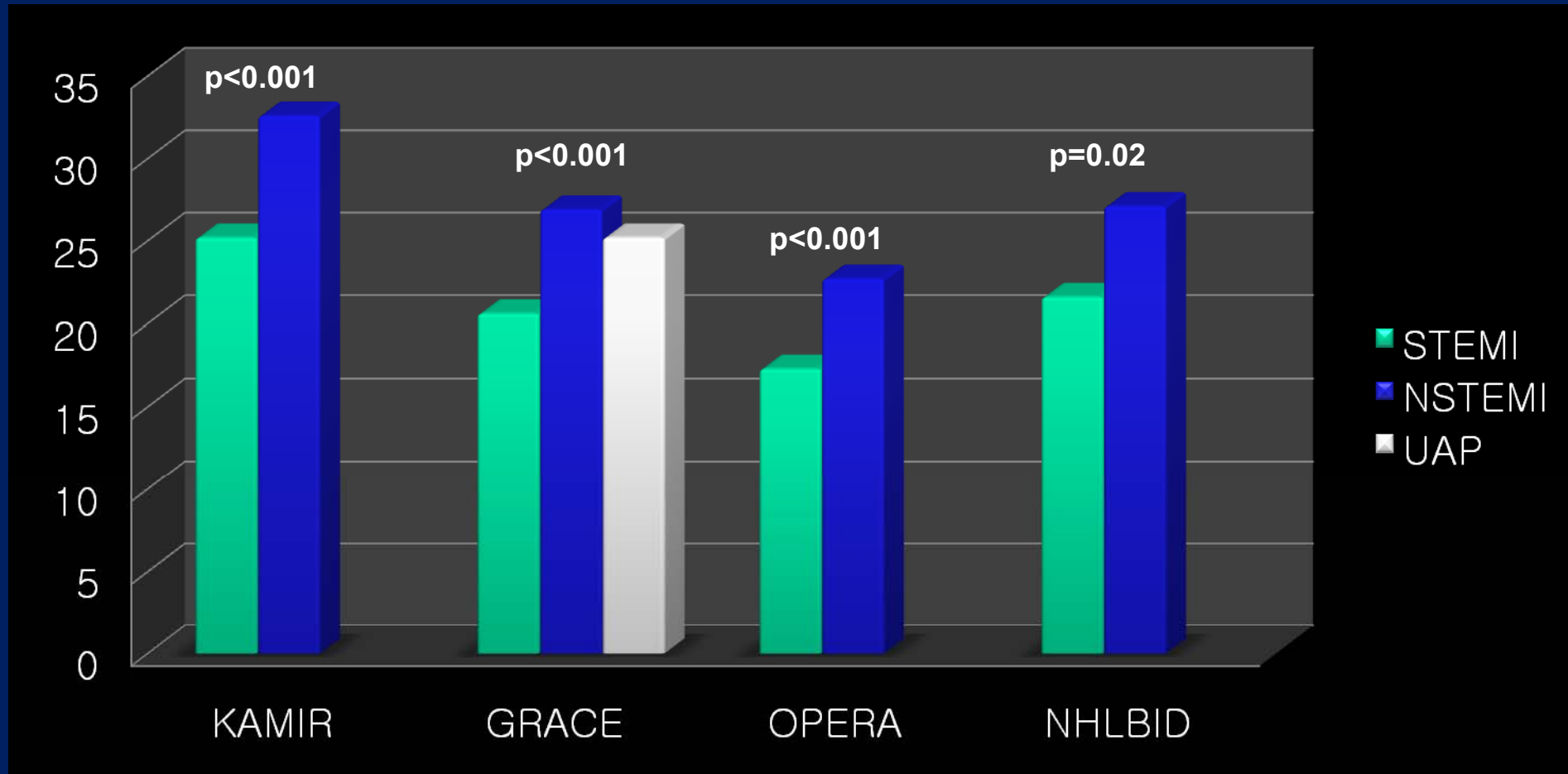


* p-value not mentioned

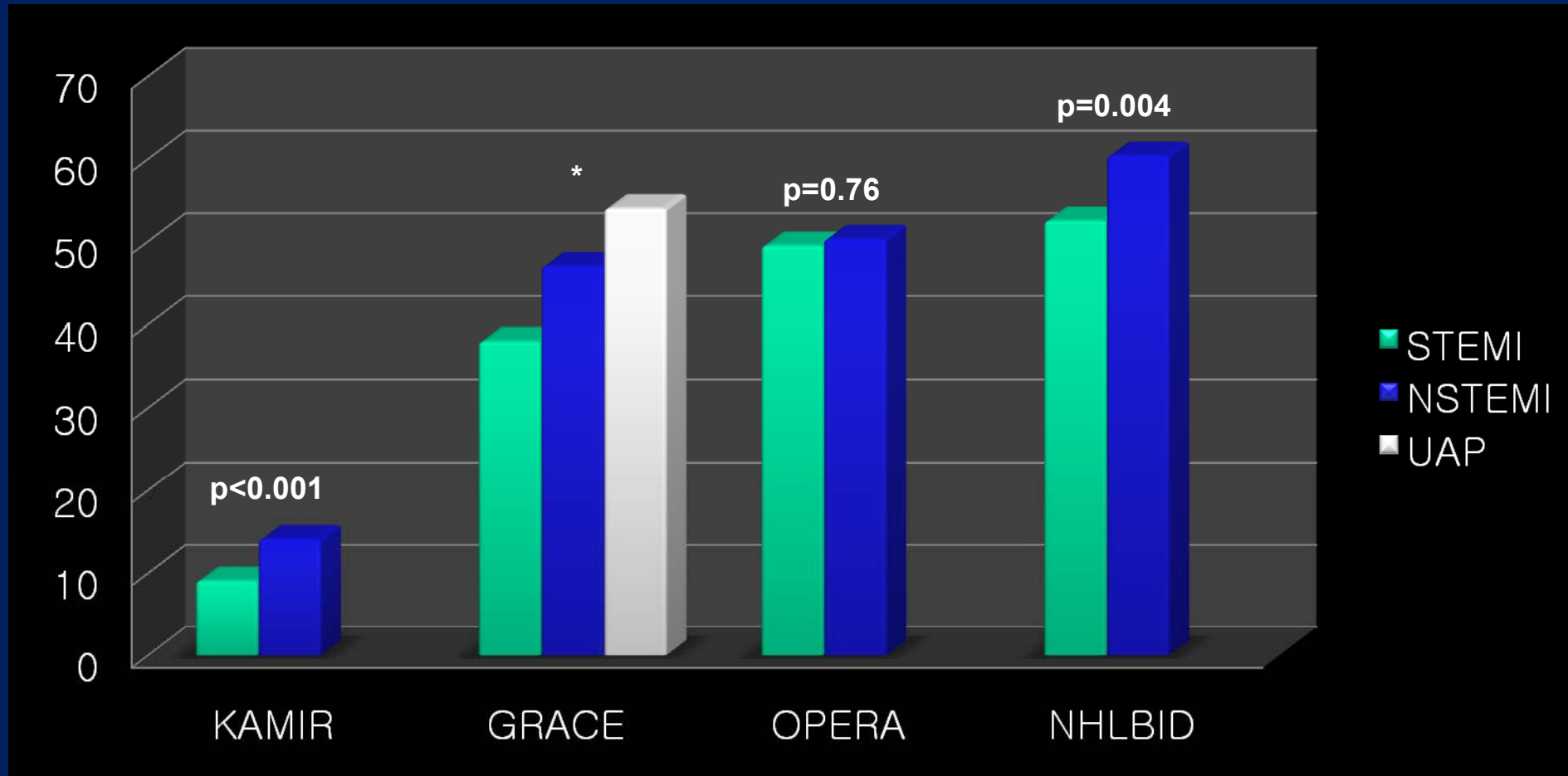
Hypertension



DM

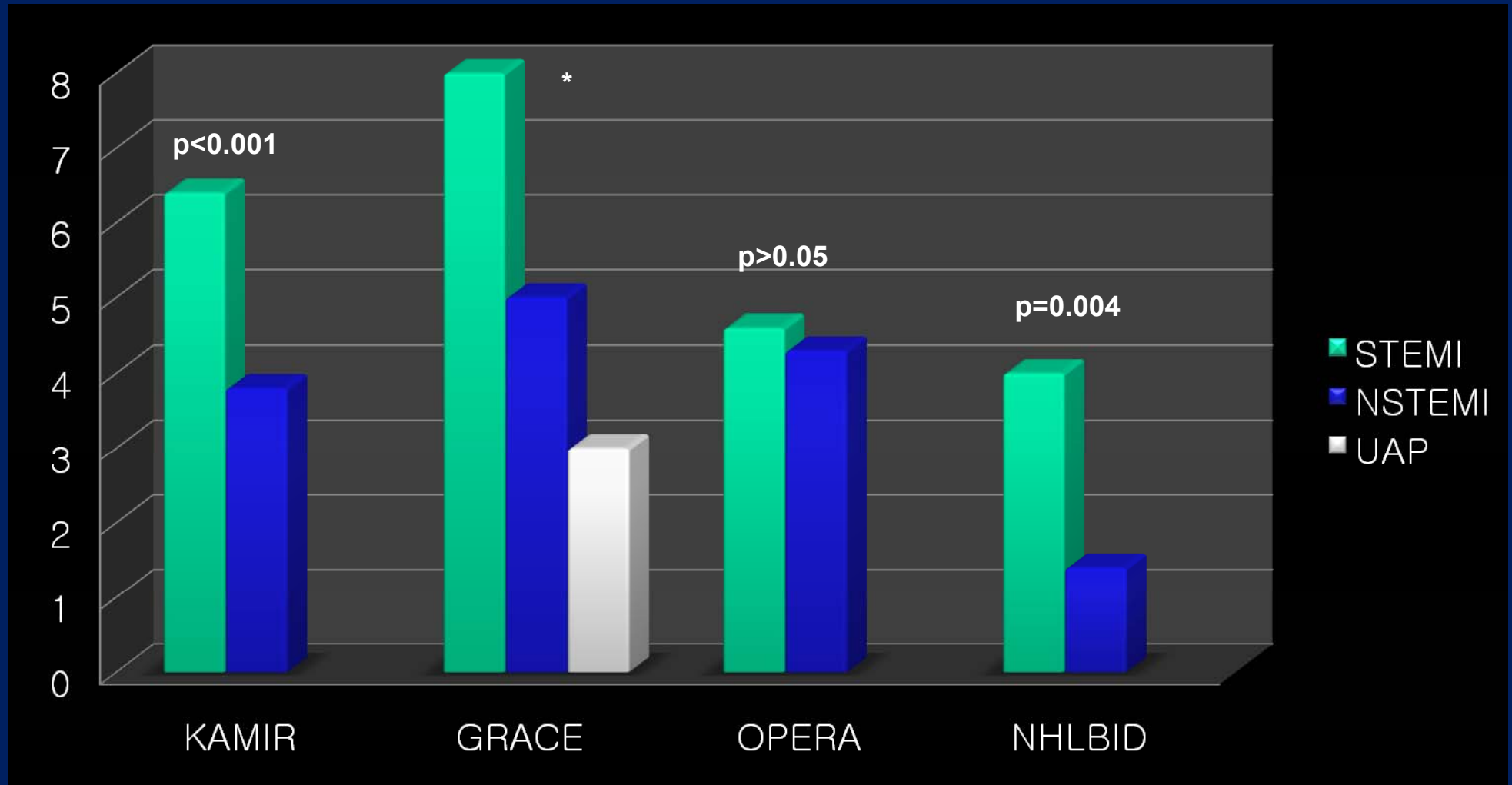


Dyslipidemia



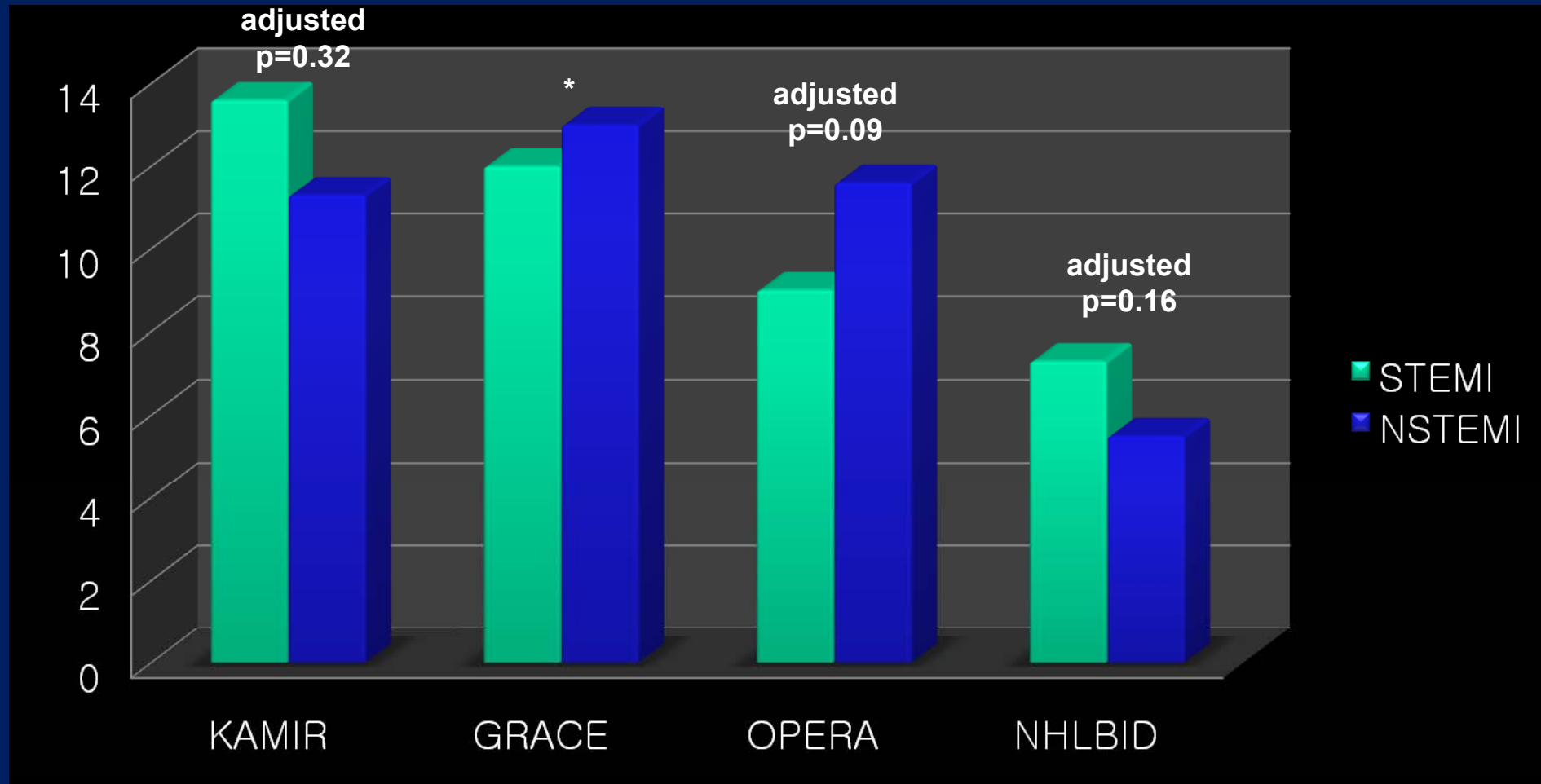
* p-value not mentioned

In-hospital Mortality



* p-value not mentioned

One-Year Mortality

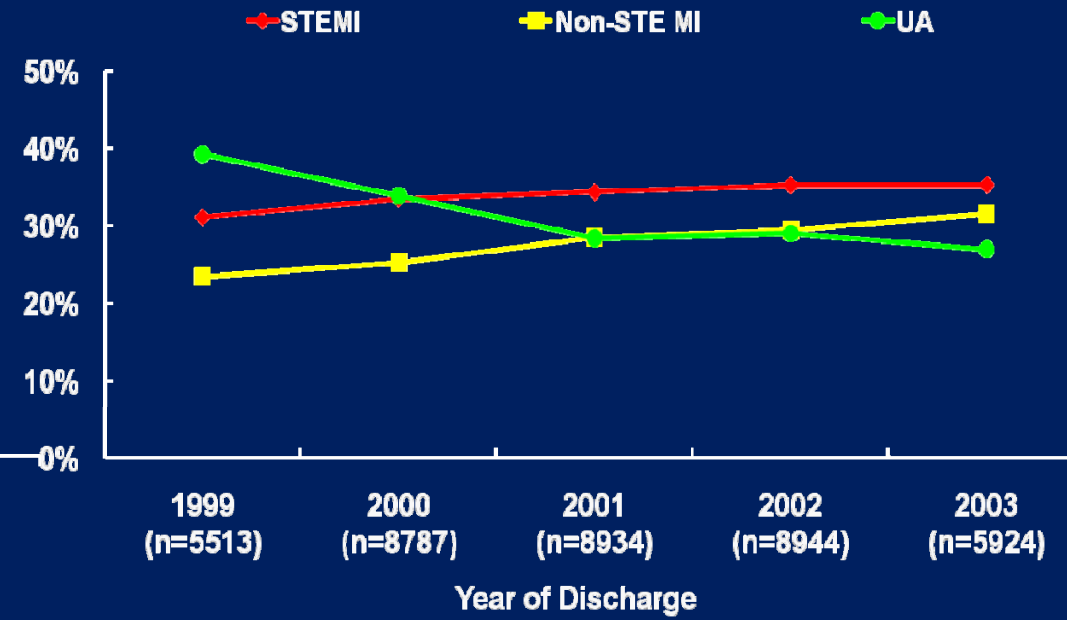
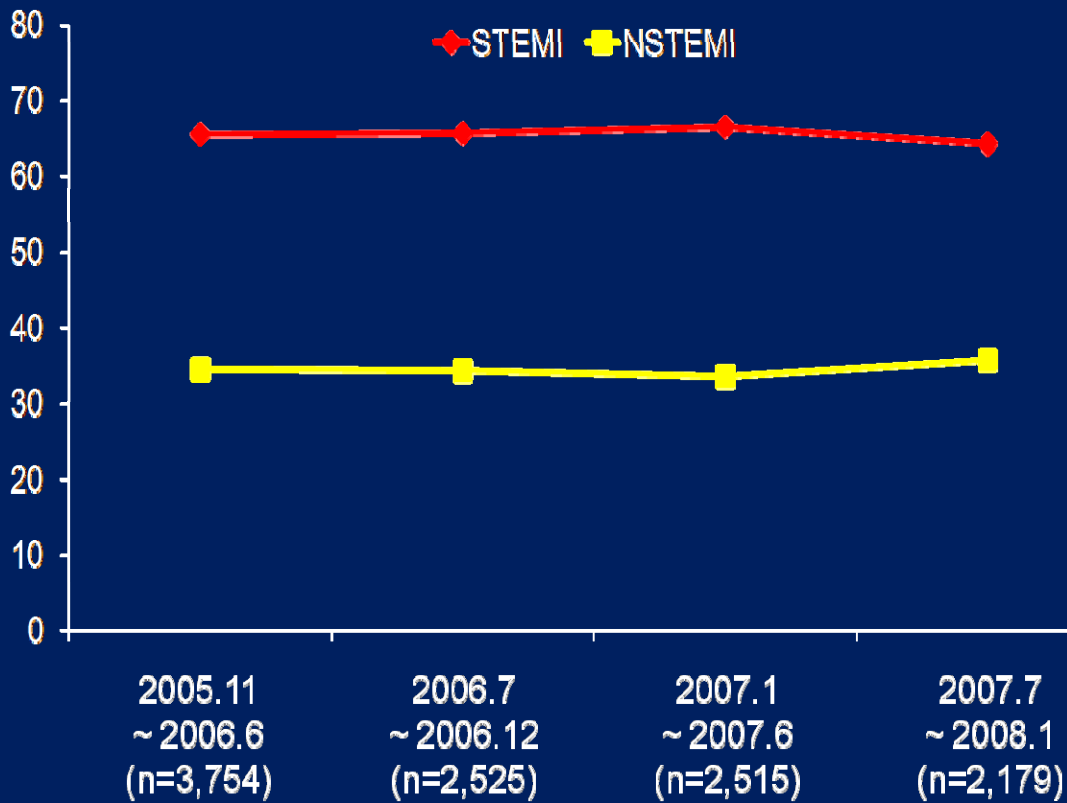


* p-value not mentioned

Temporal Trends in ACS Diagnostic Categories

KAMIR

GRACE™
GLOBAL REGISTRY OF ACUTE CORONARY EVENTS



Invasive Reperfusion in Korea vs. Latin America

KAMIR

Nov 2005-Jan 2008

GRACE
GLOBAL REGISTRY OF ACUTE CORONARY EVENTS

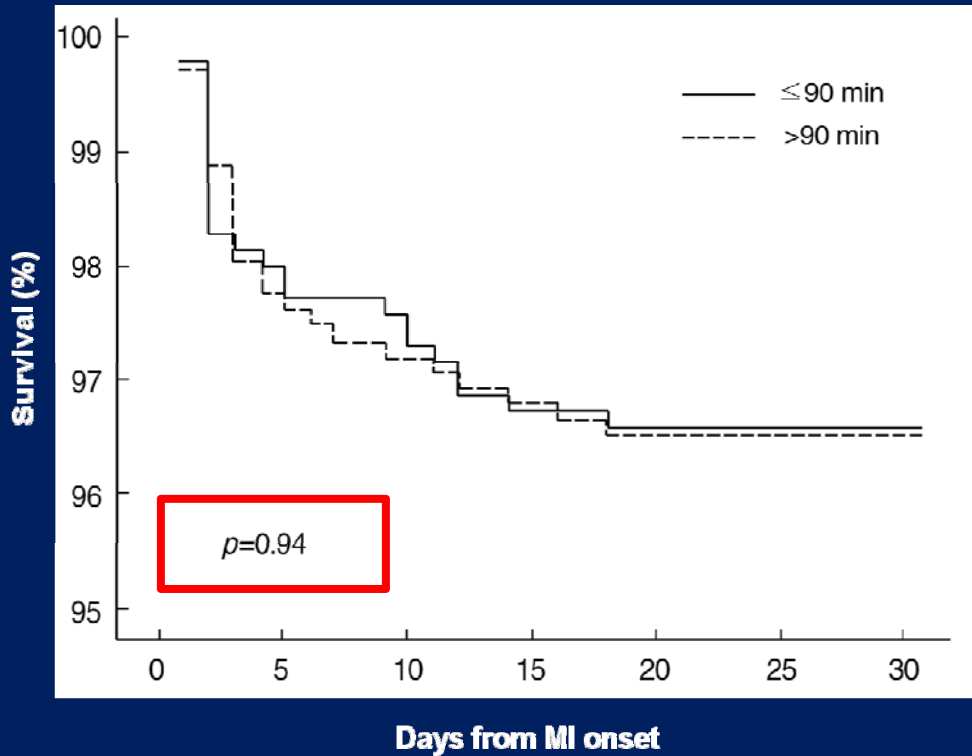
Apr 1999-Sept 2002

*p <0.001

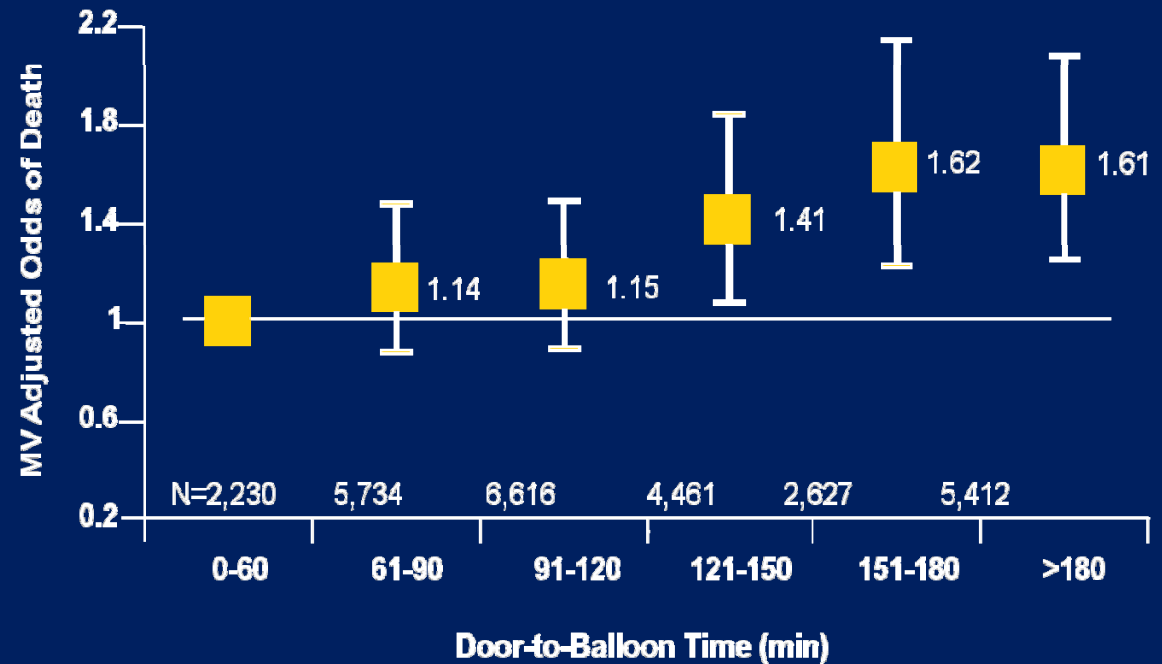
PCI		STEMI (n=8,063)	NSTEMI (n=5,176)	STEMI (n=5,476)	NSTEMI (n=5,209)
Treatment Received		7,197 (89.6%)	3,777 (73%)*	1,248 (44%)	618 (31%)*
Arrival-to-Tx	Mean, min	1,276	3,305*		
	Median, min	190	1,790*	235	3,497*
	0-12 hrs	4,831 (72%)	868 (24.5%)*	643 (62%)	129 (25%)*
	12-24 hrs	518 (7.7%)	618 (17.4%)*	45 (4%)	41 (8%)*
	24-48 hrs	453 (6.8%)	738 (20.8%)*	47 (5%)	60 (12%)*
	>48hrs	906 (13.5%)	1,325 (37.3%)*	308 (30%)	276 (55%)*
GPI (+)		628 (8.7%)	191 (5.1%)*	291 (24%)	178 (29%)*
GPI (-)		6,569 (91.3%)	3,586 (94.9%)*	946 (76%)	437 (71%)*

Primary PCI Door-to-Balloon Time: Mortality

KAMIR



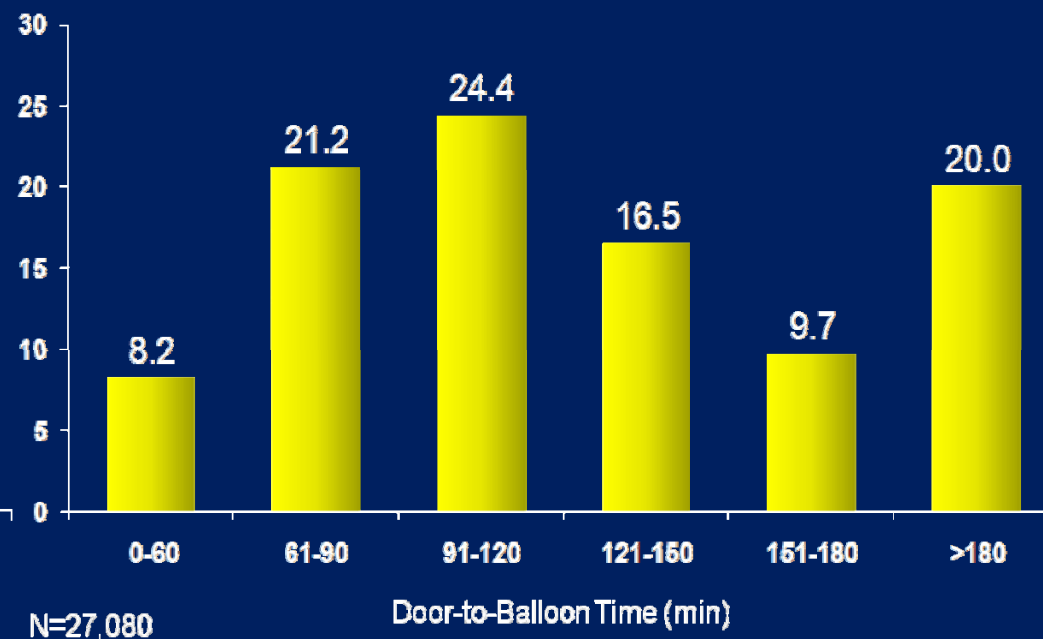
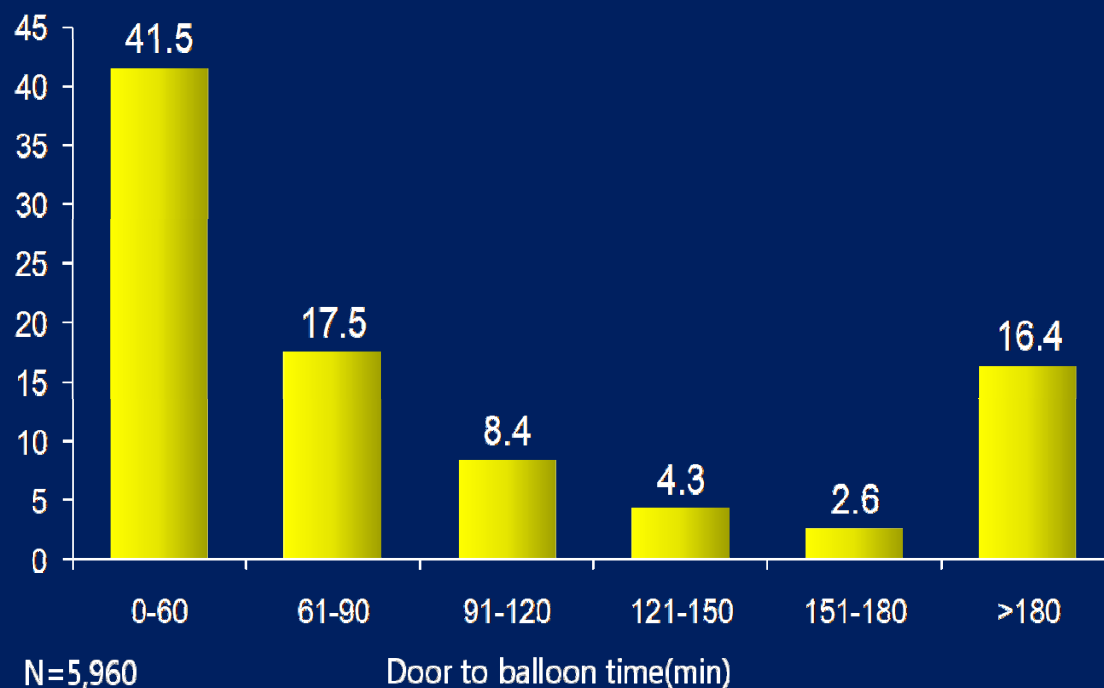
NRMI-2



Primary PCI Distribution of Door-to-Balloon Time

KAMIR

NRMI-2



77% visit hospital <3h of symptom onset & No difference in S2FMCT or Tx delay in this group!

Park HE, et al. Circ J, In Press

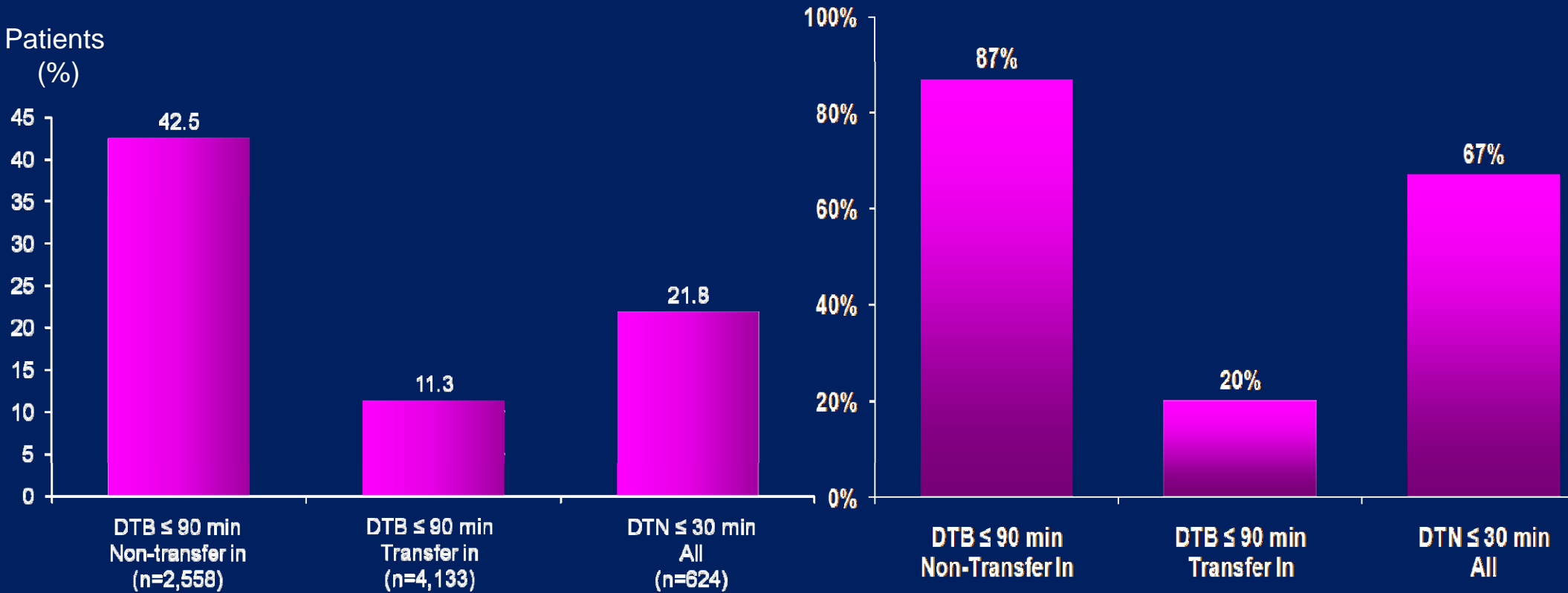
Cannon CP. Presented at ACC 2000

STEMI: Door-to-Balloon and Door-to-Needle Times

KAMIR

ACTION Registry-GWTG[®]

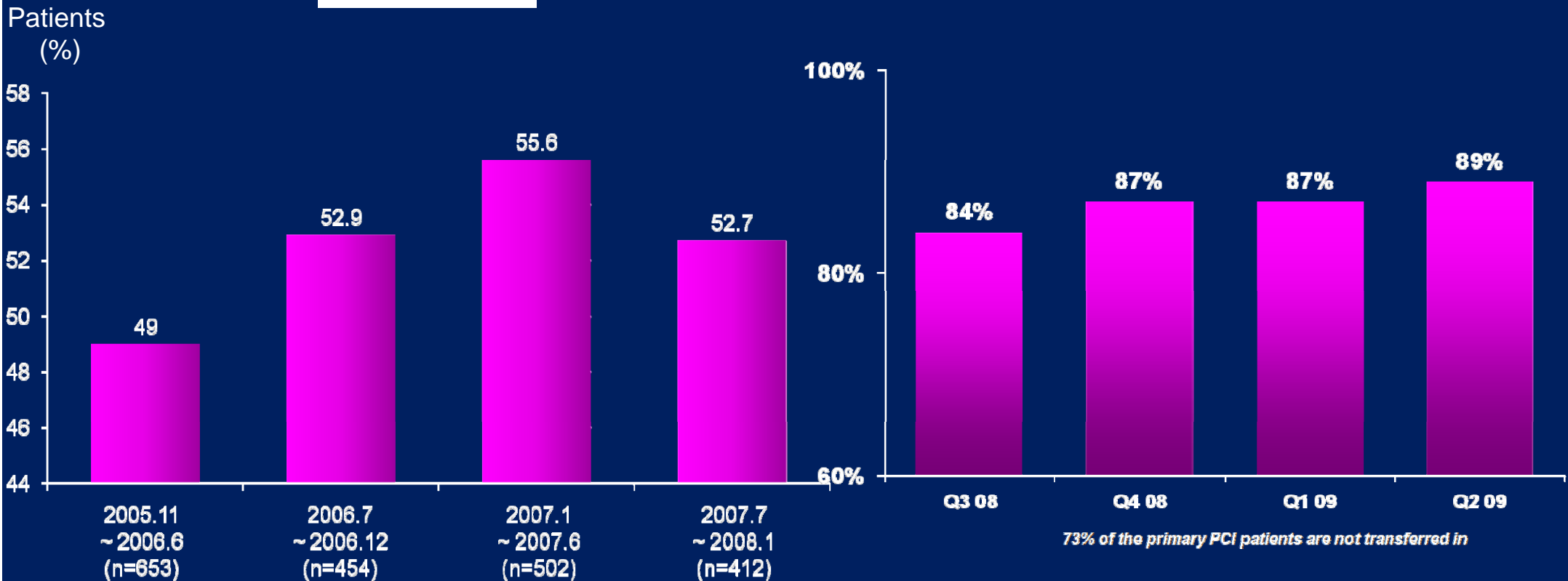
Patients
(%)



STEMI Primary PCI Results: Non-Transfer Patients with DTB \leq 90 min

KAMIR

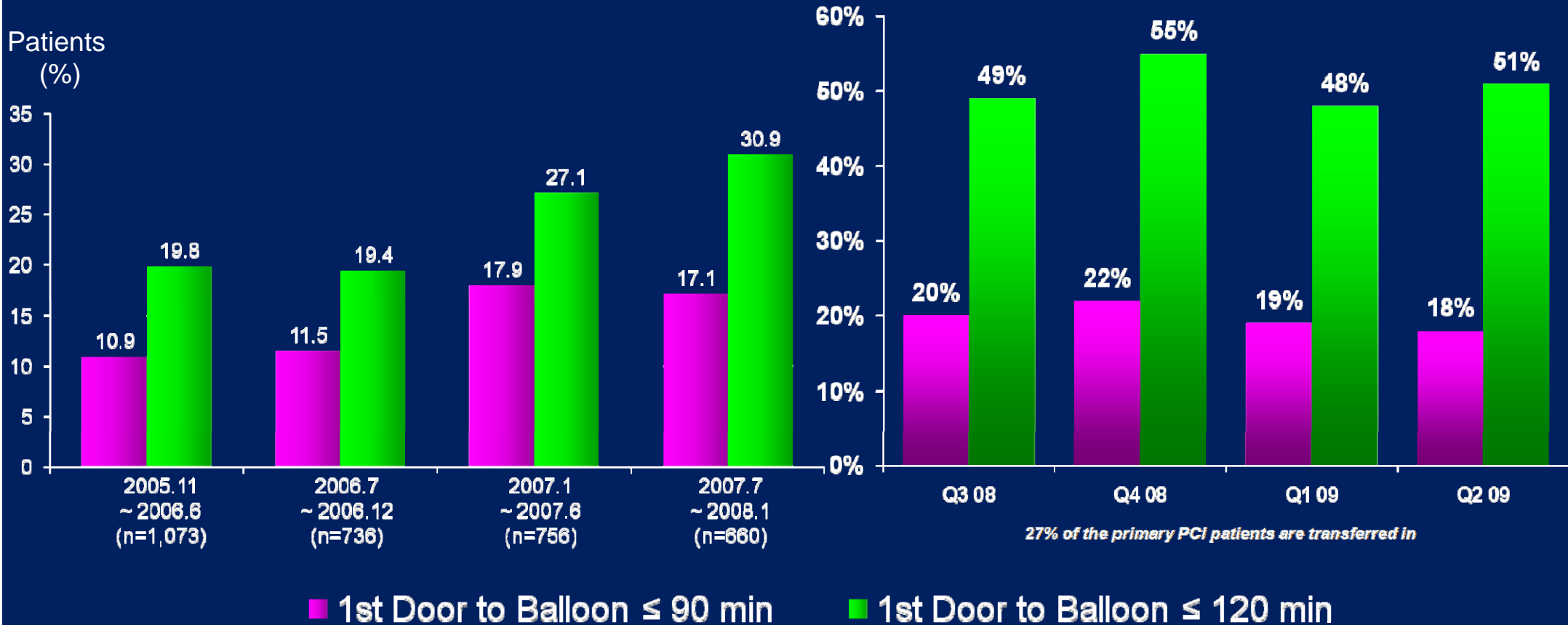
ACTION Registry-GWTG



STEMI Primary PCI Results: DTB Time for Transfer-In Patients

KAMIR

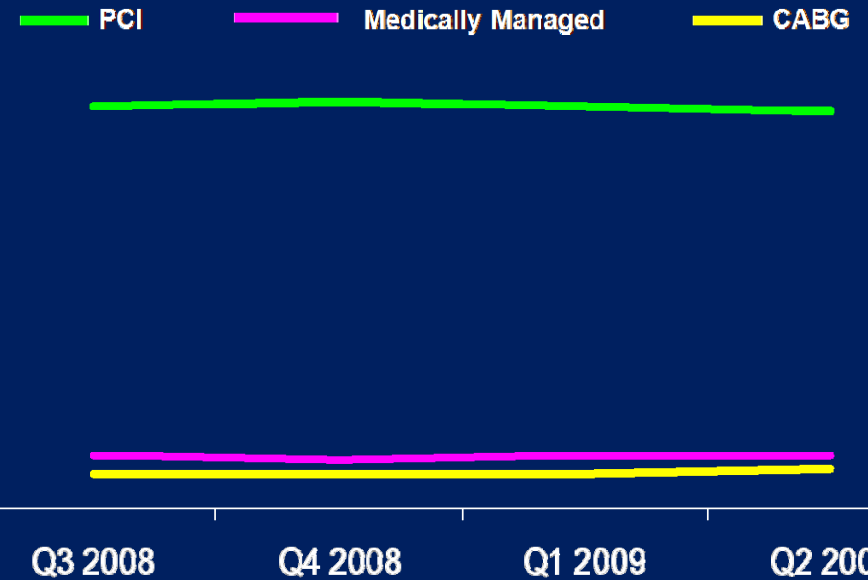
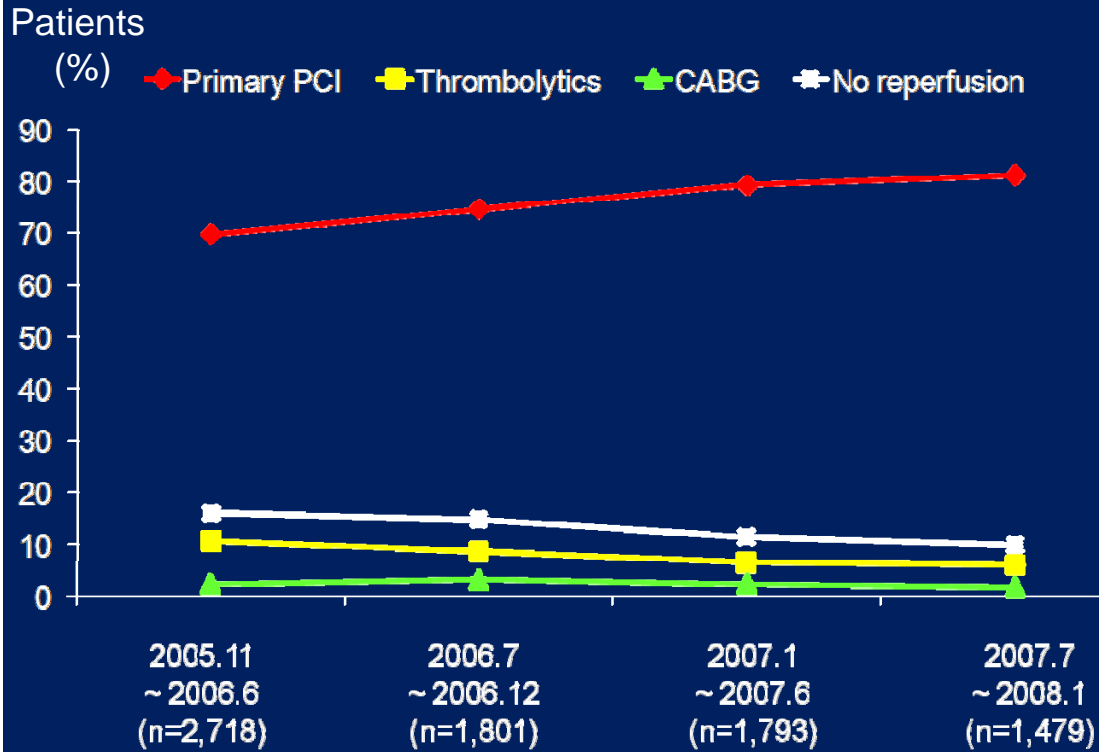
ACTION Registry-GWTG



Temporal Trends of STEMI: Reperfusion

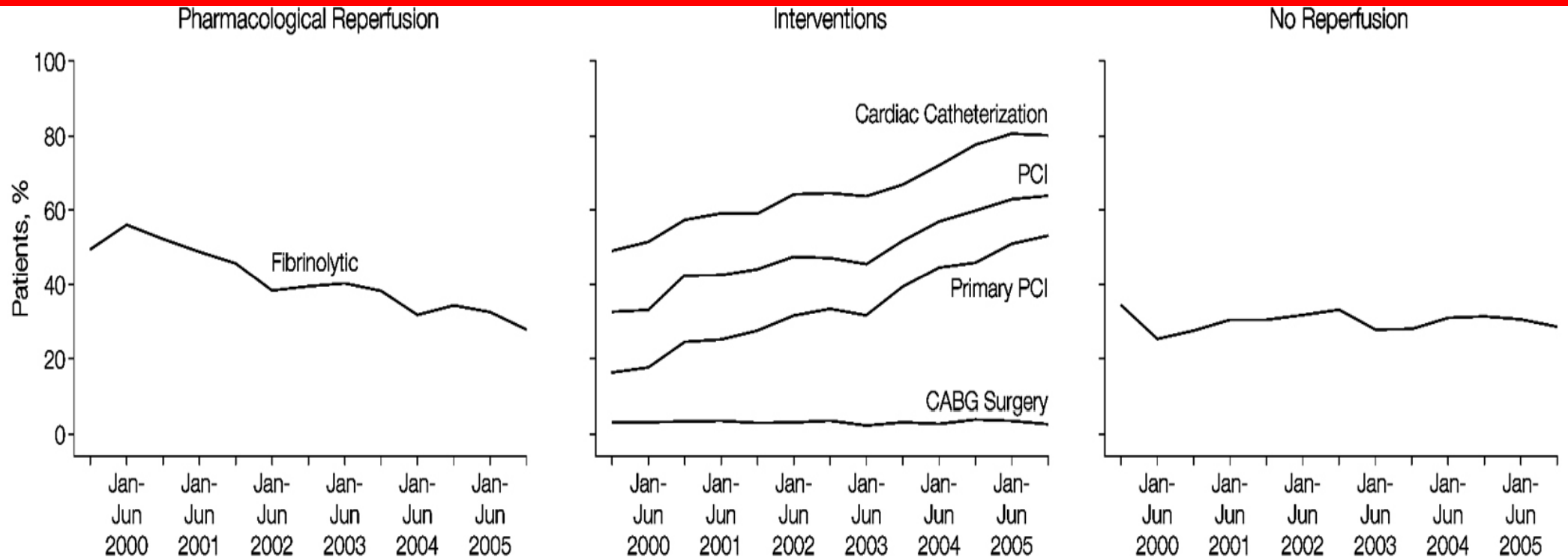
KAMIR

ACTION Registry-GWTG



Reperfusion Therapy Evolution

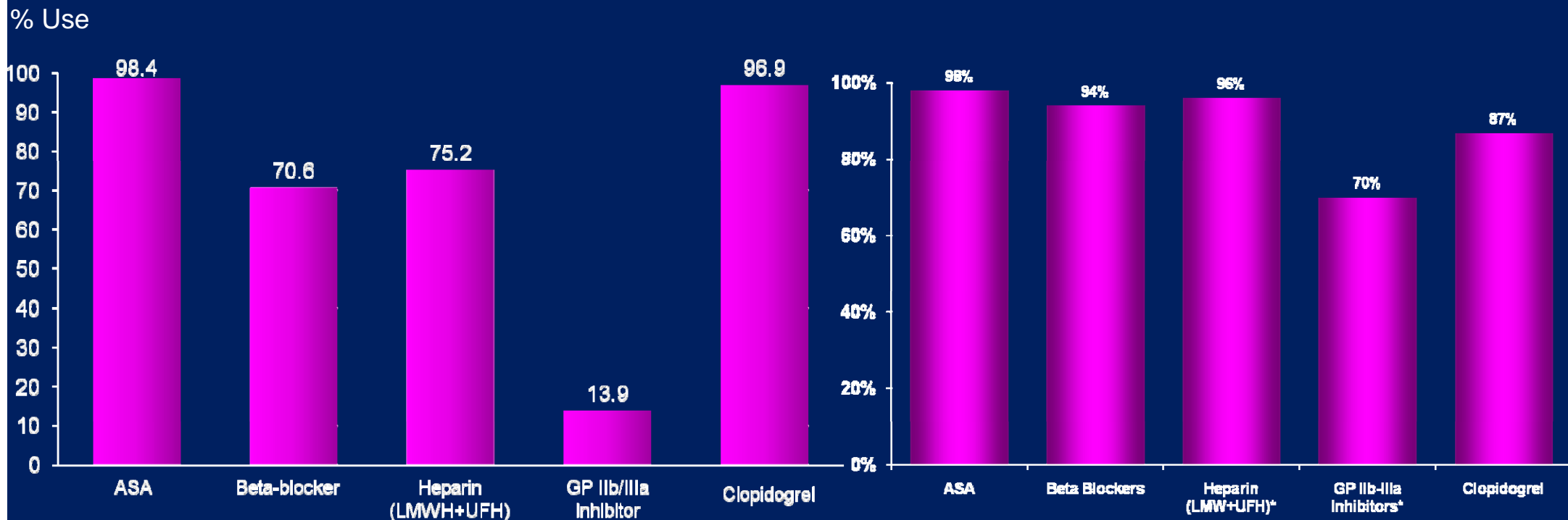
July 1999 / December 2005 – GRACE Registry



STEMI: Acute Medications

KAMIR

ACTION Registry-GWTG[®]

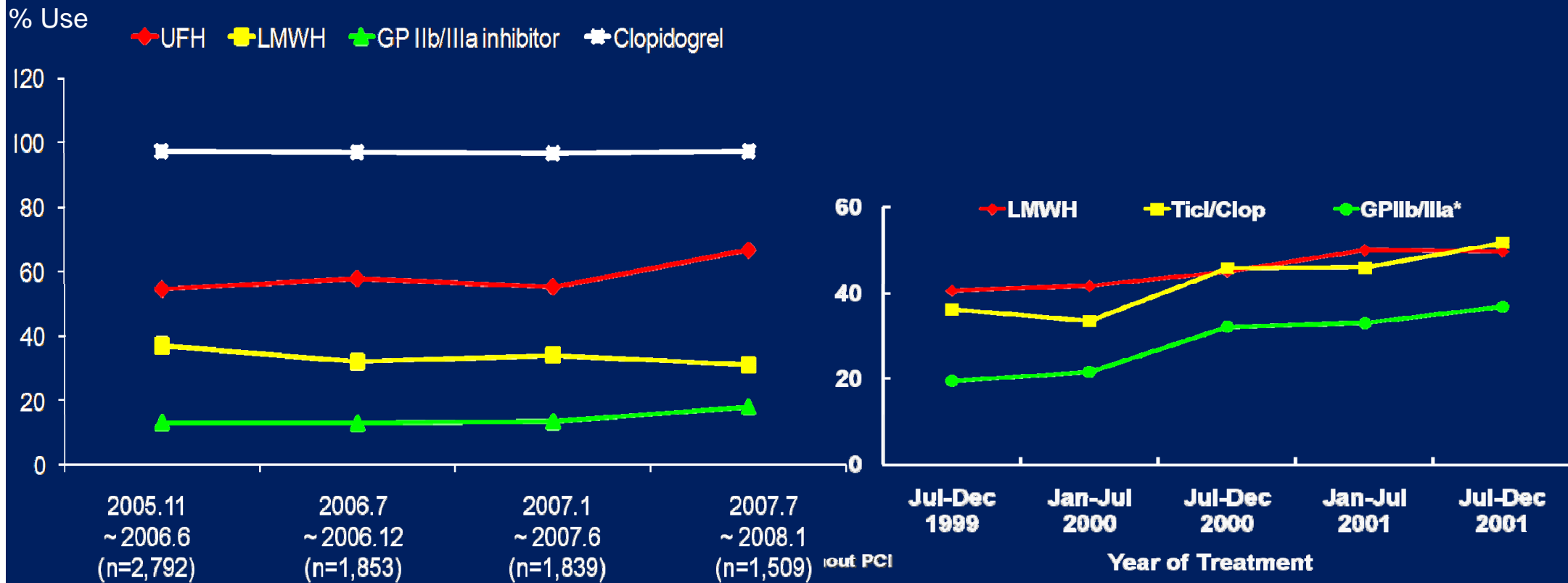


* Heparin and GP IIb-IIIa administered any time during hospitalization

Temporal Trends of STEMI: In-hospital Therapies

KAMIR

GRACE™
GLOBAL REGISTRY OF ACUTE CORONARY EVENTS

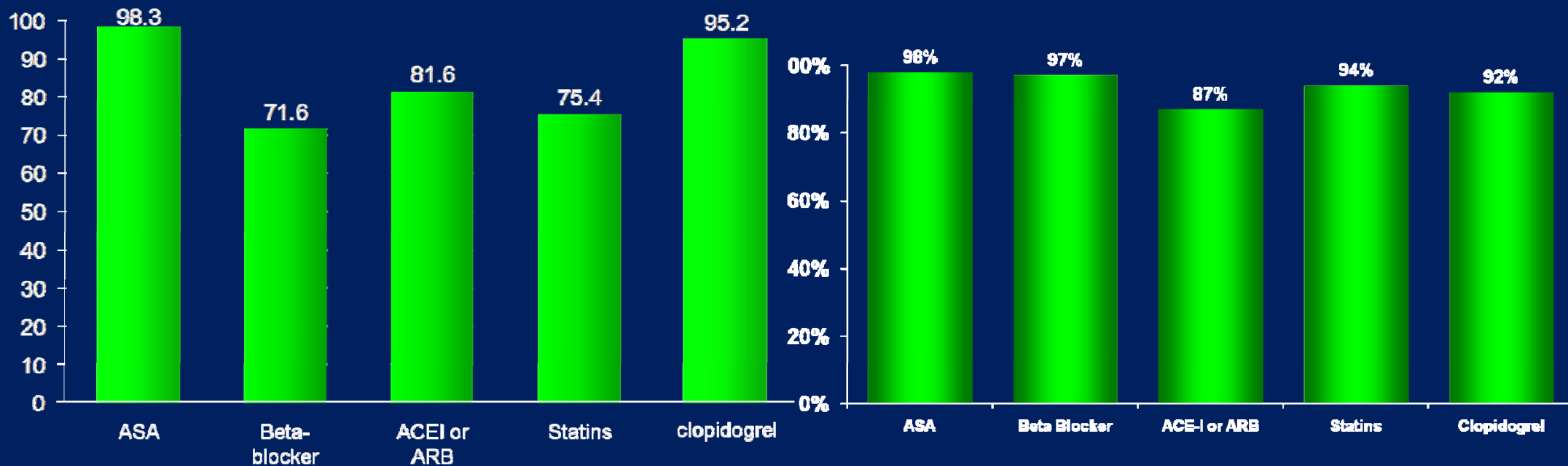


STEMI: Discharge Medications

KAMIR

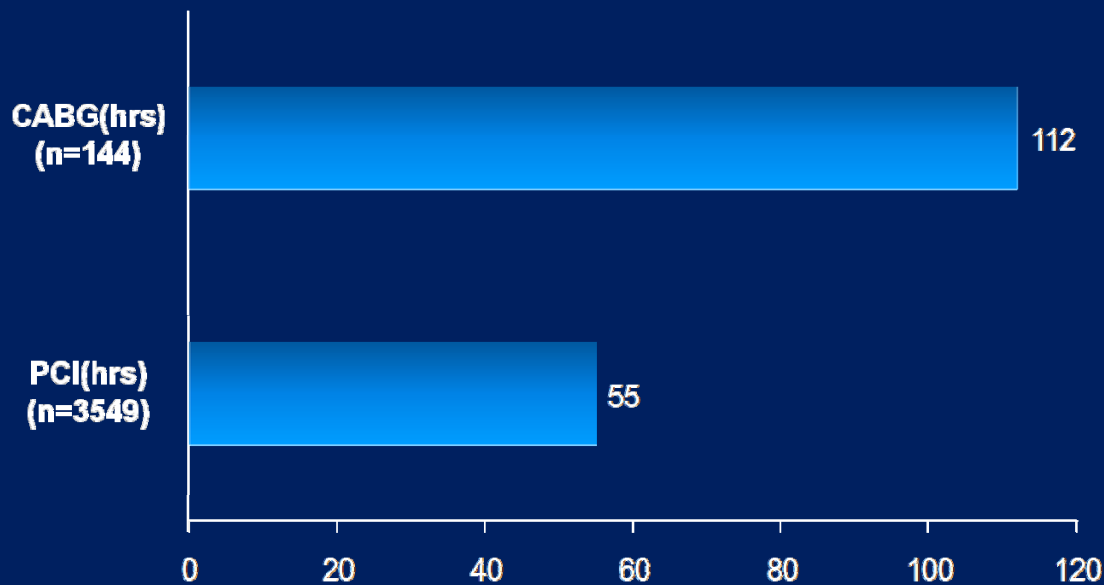
ACTION Registry- GWTG[®]

% Use

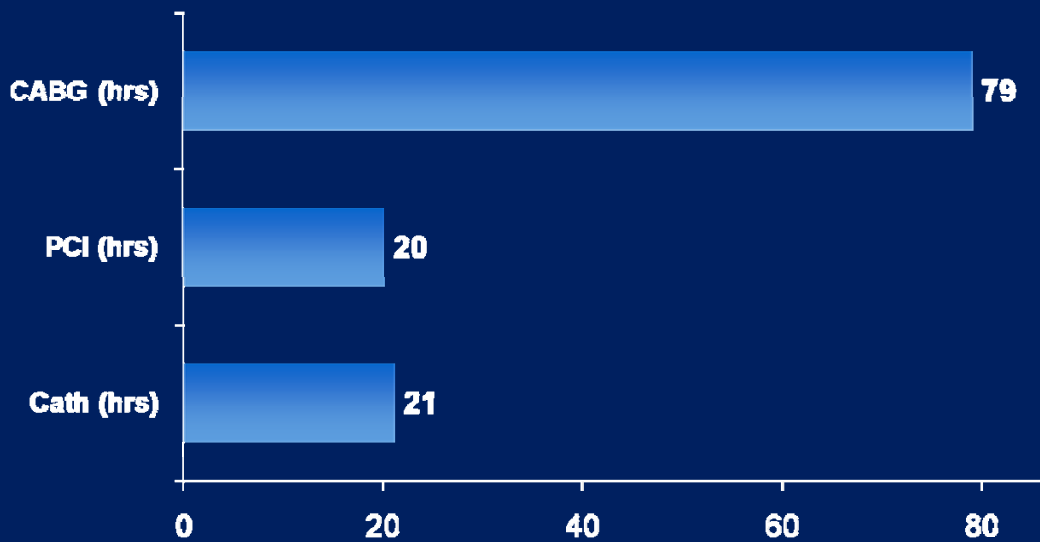


NSTEMI: Time from Presentation to Procedure

KAMIR



ACTION Registry-GWTG[®]

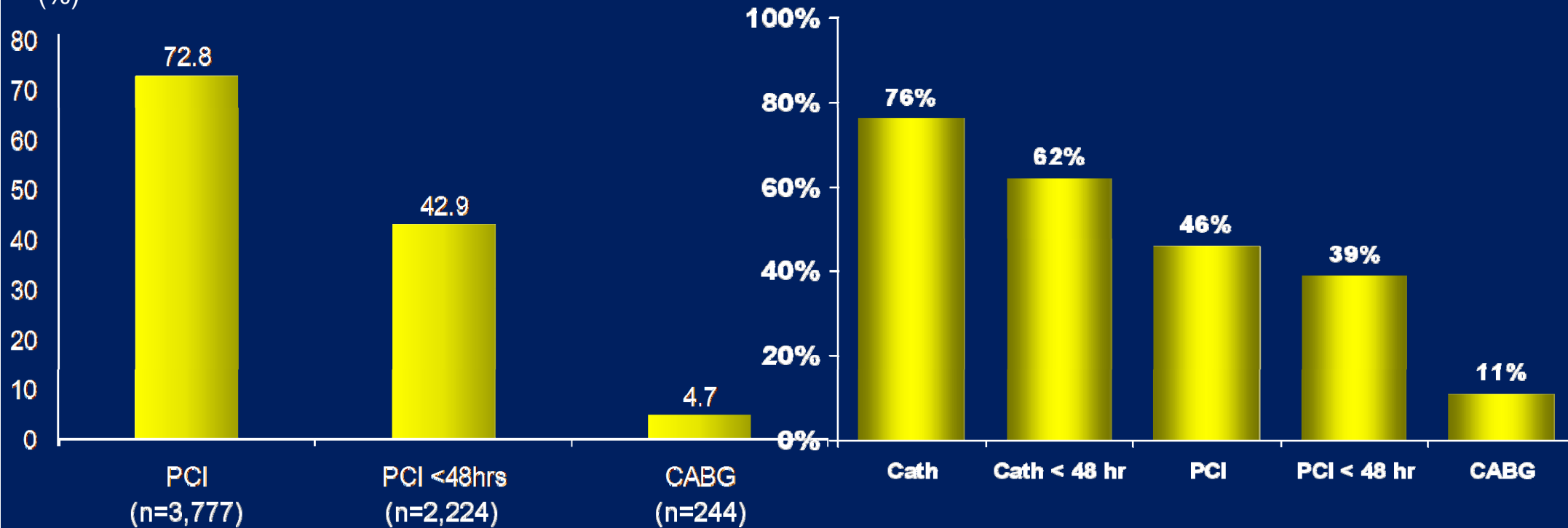


NSTEMI: Invasive Procedures

KAMIR

ACTION Registry-GWTG™

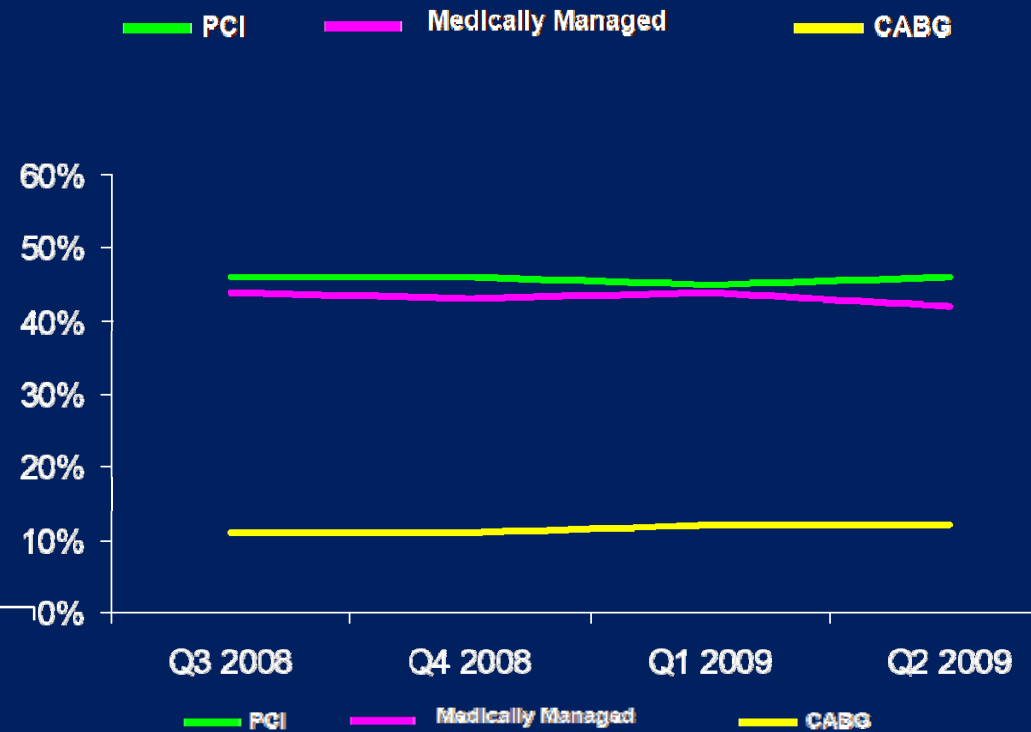
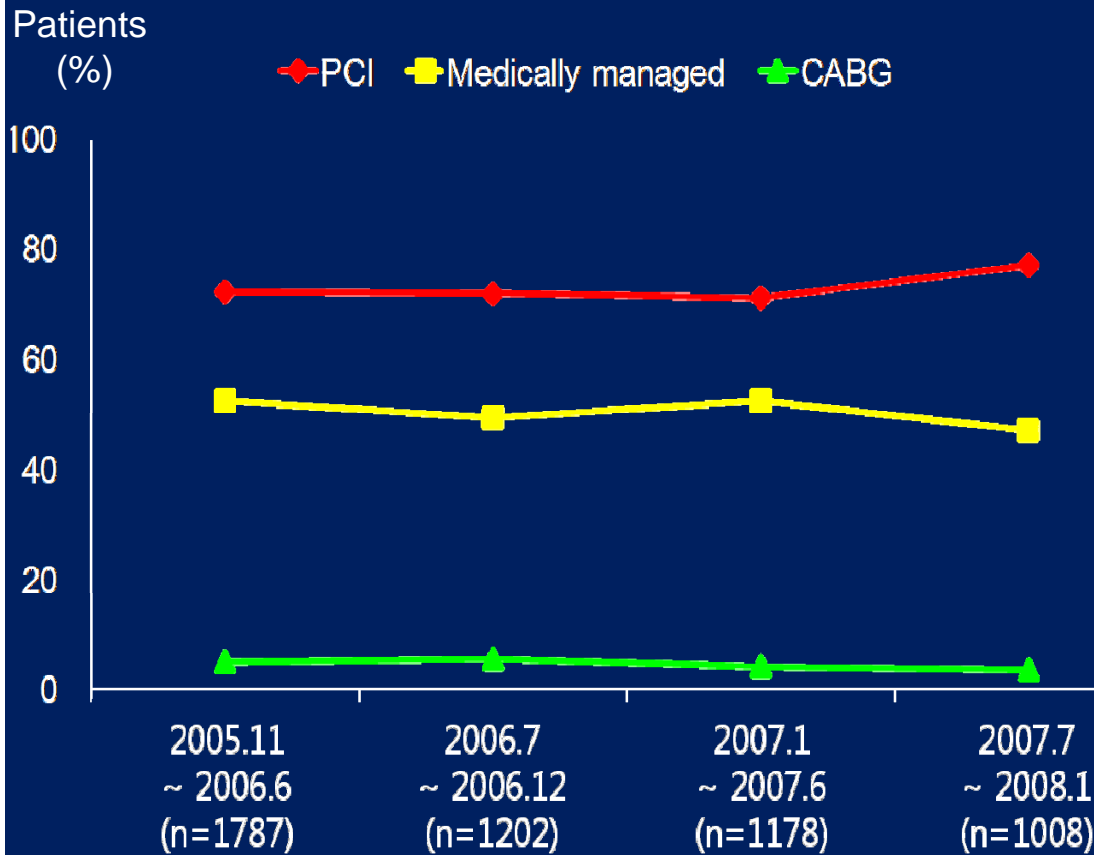
Patients (%)



NSTEMI: Revascularization Strategy Trends

KAMIR

ACTION Registry-GWTG™

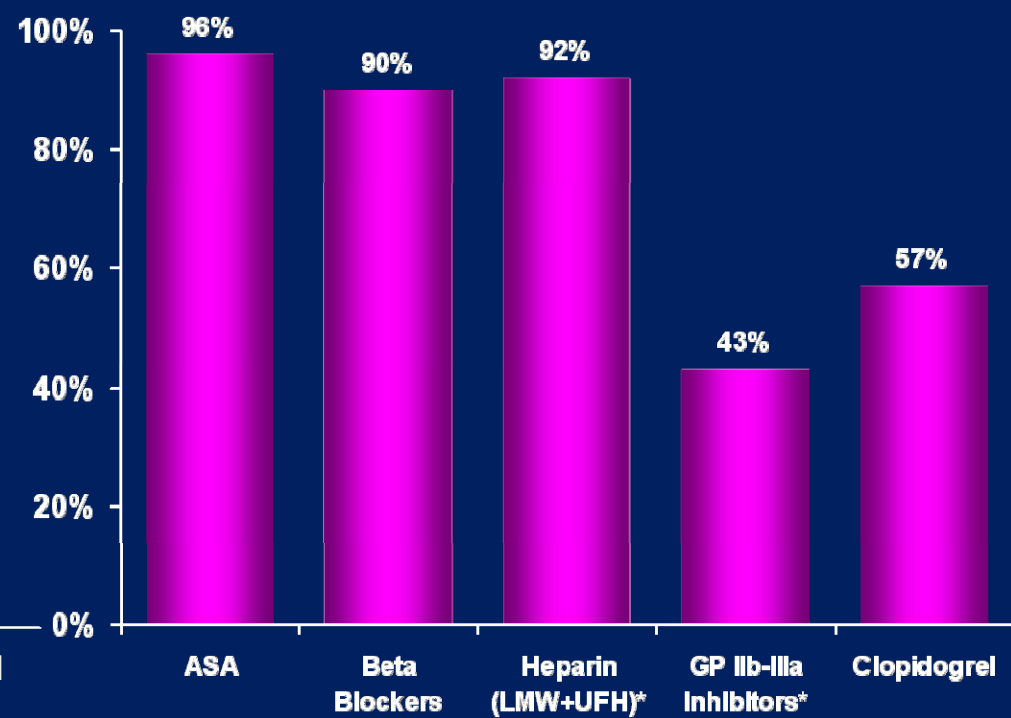
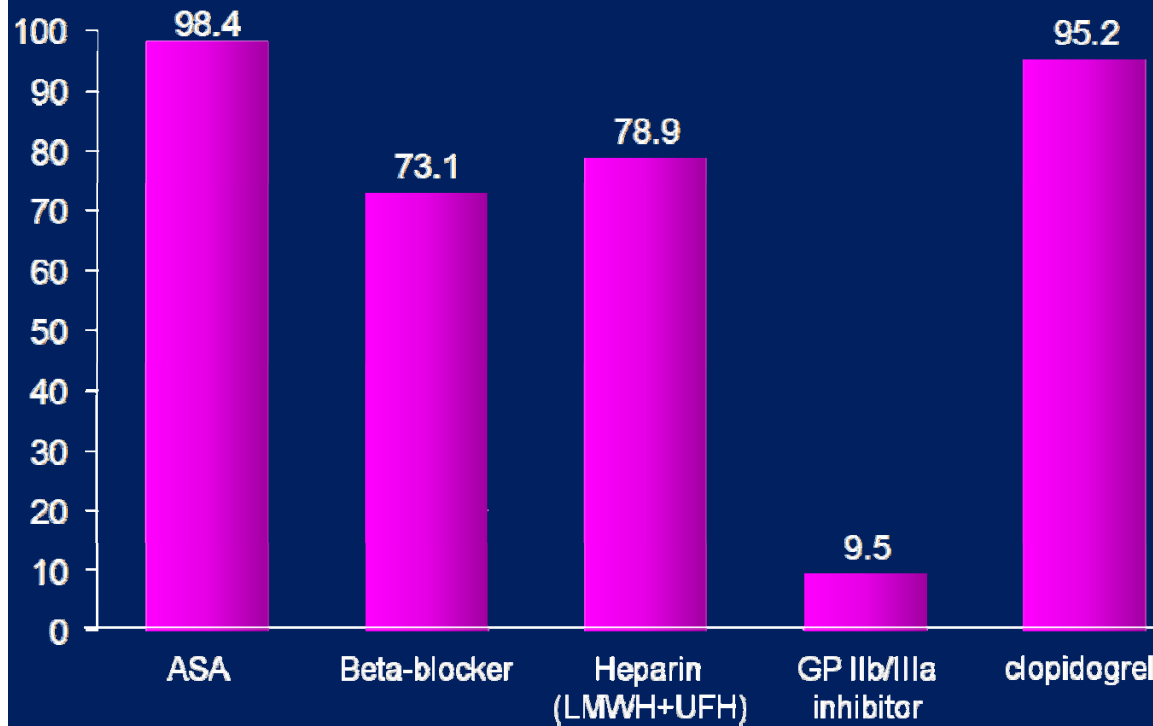


NSTEMI: Acute Medications

KAMIR

ACTION Registry- GWTG[®]

% Use

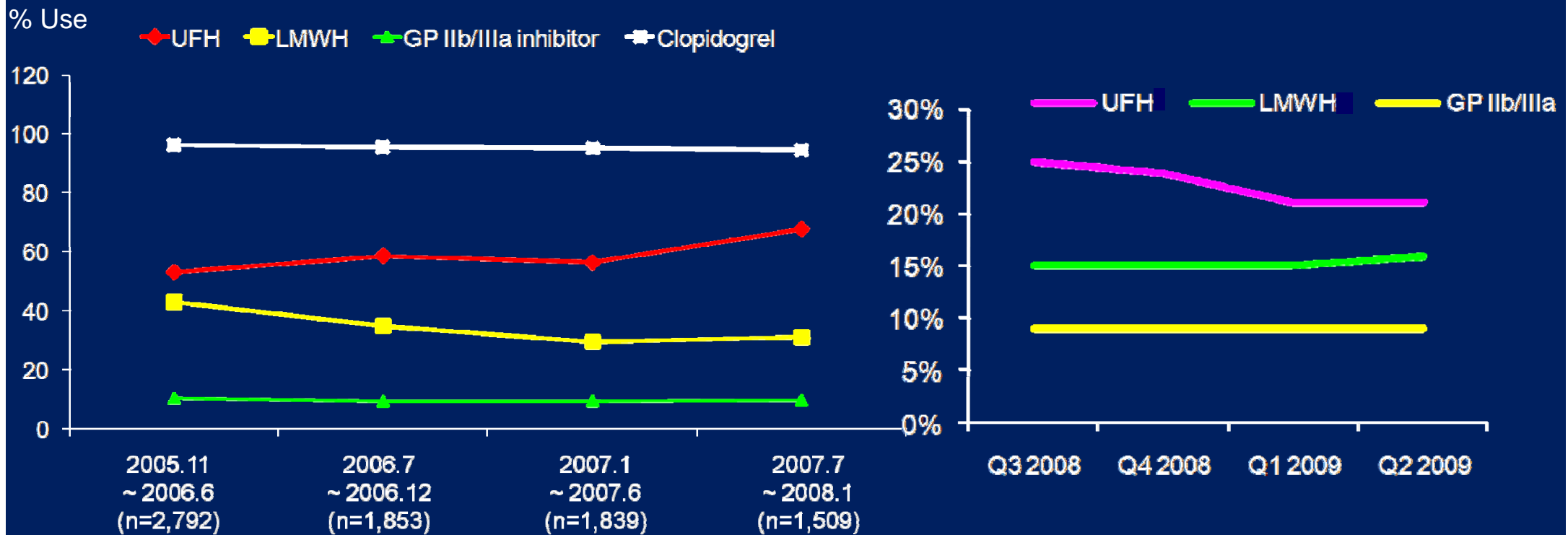


* Heparin and GP IIb-IIIa administered any time during hospitalization

Temporal Trends NSTEMI: In-hospital Therapies

KAMIR

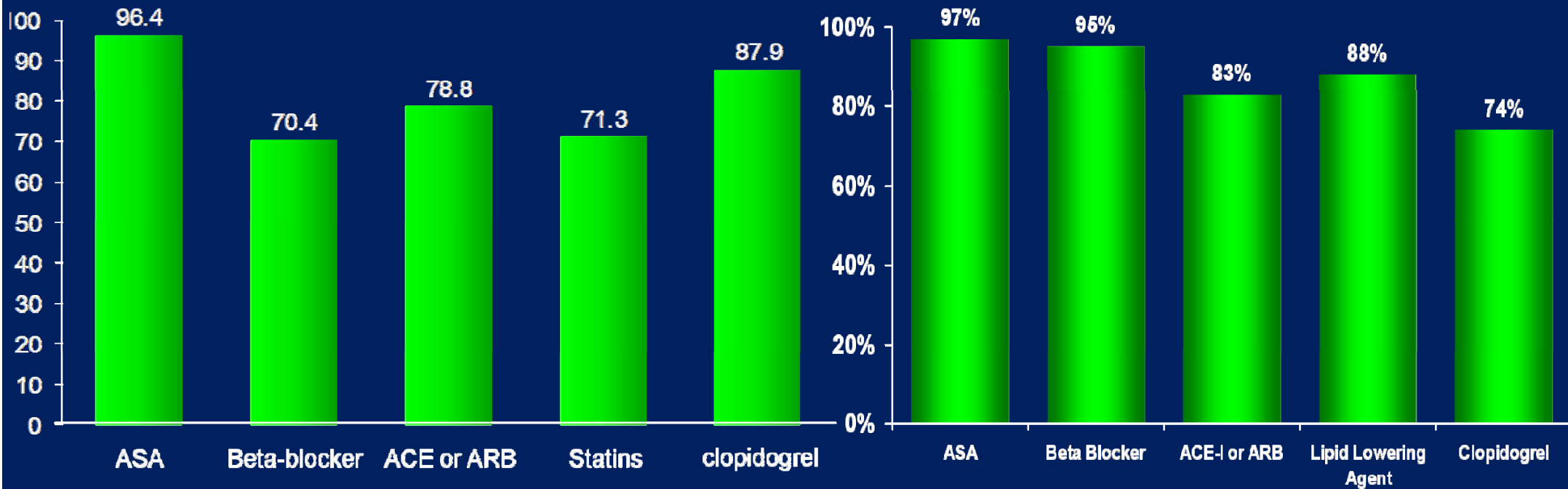
ACTION Registry-GWGTG



NSTEMI: Discharge Medications

KAMIR

ACTION Registry-GWTG™



Summary and Conclusion

- ◆ **Acute MI in Korea**, compared to the West
 - Similar clinical characteristics, prognoses, and predictors of outcome
- ◆ **NSTEMI**, compared to STEMI
 - Increasing in incidence
 - Worse outcome after discharge
 - Greater attention during F/U to prevent complications
 - Aggressive risk factor modification
- ◆ **STEMI system of care**
 - Transfer protocols, critical pathways, quality improvement program
 - Prospective AMI registry (KAMIR, KorMI)

Celebrating for 100th Anniversary of Chonnam National University Hospital

INVITATION

2ND GWANGJU-BOSTON JOINT CARDIOLOGY SYMPOSIUM

New Paradigm of Cardiovascular Therapeutics

Date : April 23 (Fri), 2010

Place : Myung-Hak Hall, Chonnam National University Medical
School, Hak-Dong, Gwangju, South Korea

Course Directors : Youngkeun Ahn, MD
Anthony Rosenzweig, MD

Organized by : Heart Center, Chonnam National University Hospital
The Honam Circulation Society of Korea

Supported by : National Research Foundation
Ministry for Health, Welfare and Family Affairs
Brain Korea 21 Project at CNUMS
CNUH Research Institute of Clinical Medicine
University Industry Liaison Office of CNU
Foundation of Circulation Research

경청해 주셔서 감사합니다.