Post ESC 2012

«Lo mejor en Enfermedad Arterial Coronaria»

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SOCIEDAD ESPAÑOLA DE CARDIOLOGÍA

Estudios relevantes presentados en ESC2012 (orden alfabético)

- ATLAS 2 STEMI
- CARDIA
- CLARIFY
- CORE320
- DeFACTO
- Definición infarto
- FAME II
- FAST MI
- Guías STEMI
- IABP-SHOCK
- PROTECT
- TRA2P
- TRILOGY
- WOEST

Estudios de imagen aplicados a cardiopatía isquémica

- CORE320
- DeFACTO

Estudios relevantes a nivel epidemiológico

- FAST MI

FAST MI. Características

- **Objetivo**:
  - Valorar los cambios en la mortalidad a 30 días en pacientes con IAMEST a lo largo de 4 cortes temporales separados por 5 años en Francia y las características en relación con cambios en las características de los pacientes y su manejo precoz

- **Pacientes**:
  - IAMSEST/IAMEST <48h de evolución en los 4 cortes. 6707 IAMEST.

FAST MI. Resultados

Cambios en las características basales 1995-2010

	1995	2000	2005	2010	P value
Age (years)	66.2±14.0	64.5±14.6	64.0±14.7	63.3±14.5	<0.001
Sex (% W)	28.1	27.1	28.4	24.7	0.06
Risk factors					
Hypertension	43.8	43.6	49.2	47.0	0.006
Hypercholesterolemia	34.8	39.0	43.4	39.3	0.001
Diabetes mellitus	15.8	19.7	18.7	16.5	0.92
Current smoking	32.0	35.3	37.2	40.9	<0.001
Obesity	14.3	16.3	20.8	20.1	<0.001
Cardiovascular history					
Previous MI	14.6	15.0	11.2	10.9	<0.001
Previous PCI	-	7.5	8.7	10.2	<0.001
Previous CABG	-	2.7	2.1	5.6	<0.001
Stroke or TIA	6.2	4.2	5.6	4.0	<0.001
Peripheral artery disease	9.7	7.9	5.3	4.8	<0.001
History of heart failure	6.4	4.6	3.5	2.4	<0.001
Co-morbidities					
Chronic kidney disease	-	3.6	3.1	2.4	0.05

FAST MI. Resultados

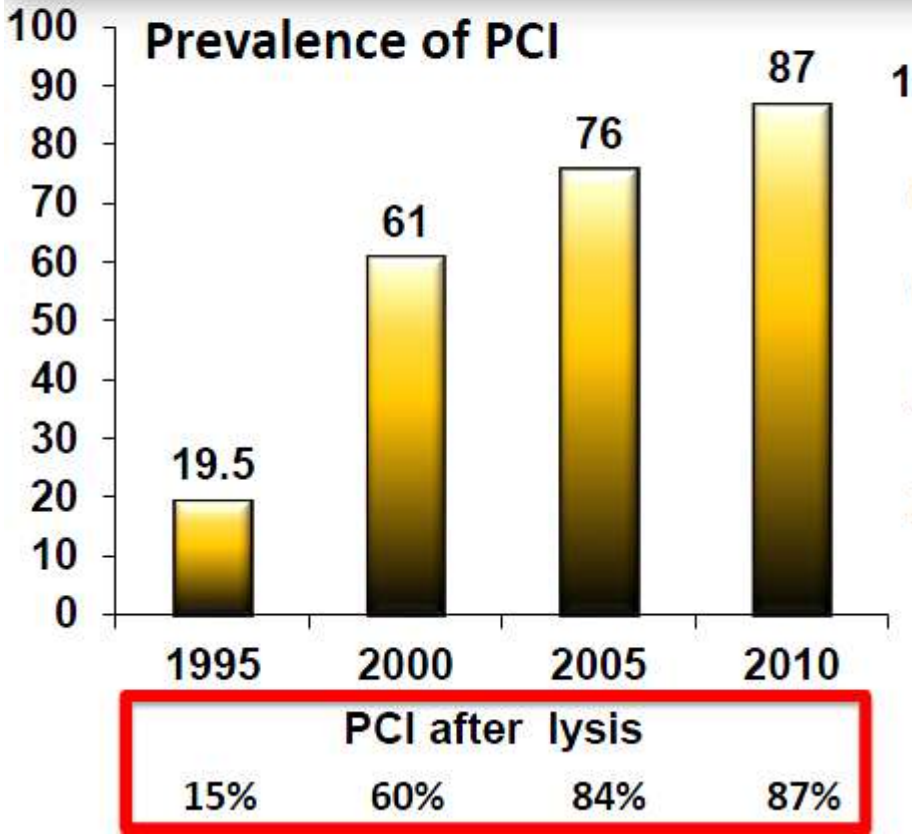
IAMEST. Cambios en la presentación clínica

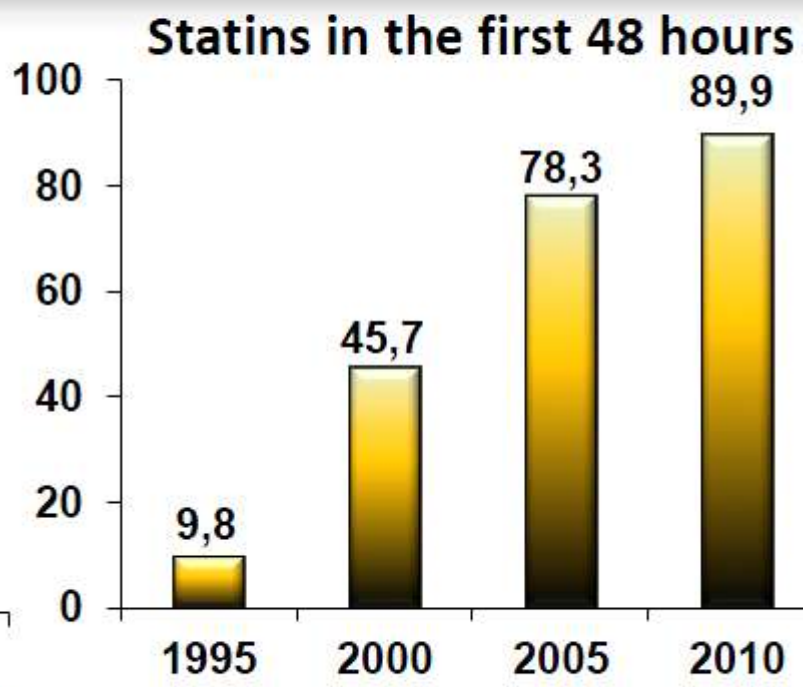
	1995	2000	2005	2010	P value
Location of STEMI					
• Anterior	636 (41)	746 (41)	647 (40)	657 (38)	0.07
Initial Killip class					
• I	-	79.7	81.9	84.6	
• II	-	13.1	11.5	9.9	0.001
• III	-	4.3	4.5	3.1	
• IV	-	2.8	2.1	2.3	
Admission heart rate	-	78 ± 19	78 ± 19	78 ± 21	0.90
Admission SBP	-	132 ± 27	135 ± 28	141 ± 28	<0.001
EMMACE risk score	-	0.188	0.176	0.156	<0.001
2010 risk score	0.053	0.048	0.048	0.045	<0.001

FAST MI. Resultados

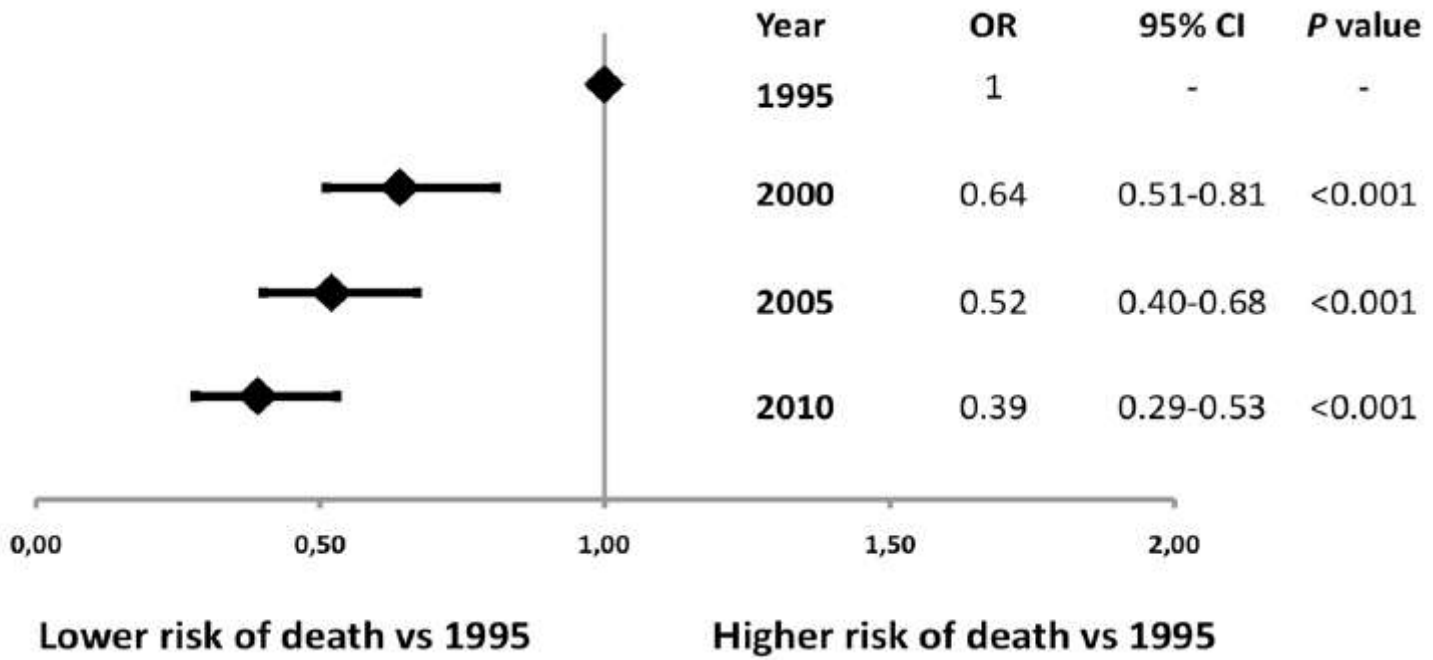
Disminución de la mortalidad independientemente de la estrategia inicial de reperfusión

	2000	2005	2010
Time to FMD (min)	120	90	74





FAST MI. Resultados
Mortalidad ajustada a 30 días

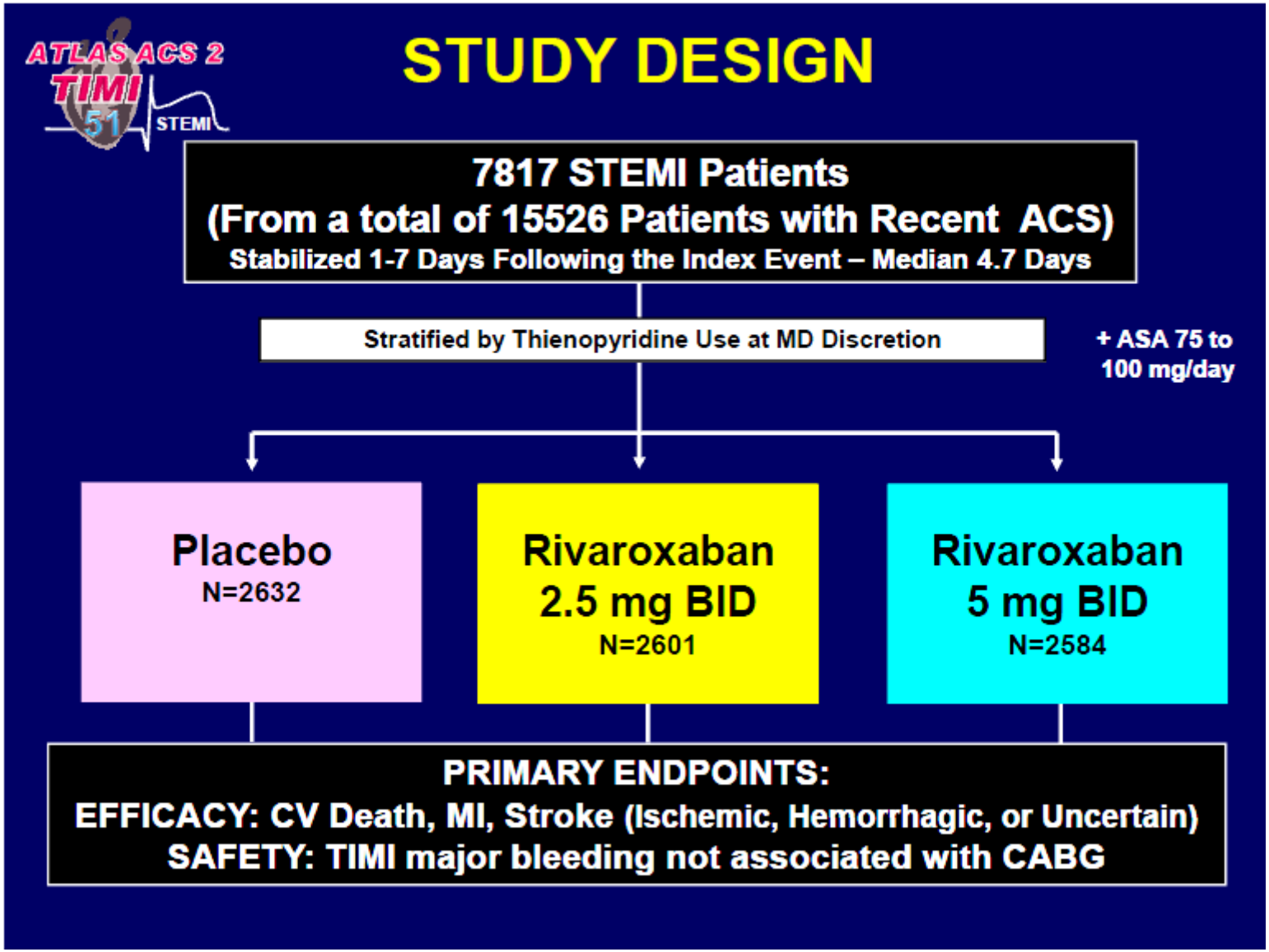


Ajustada por edad, sexo, IMC, factores de riesgo, antecedentes previos, uso y tipo de reperfusión. La reducción de mortalidad se consigue en todos los grupos de tratamiento (sin reperfusión, con fibrinolisis, con ICPP).

Estudios relevantes a nivel de tratamiento en SCA

- ATLAS 2 STEMI
- TRA2P en pacientes con IAM previo
- IABP-SHOCK
- TRILOGY

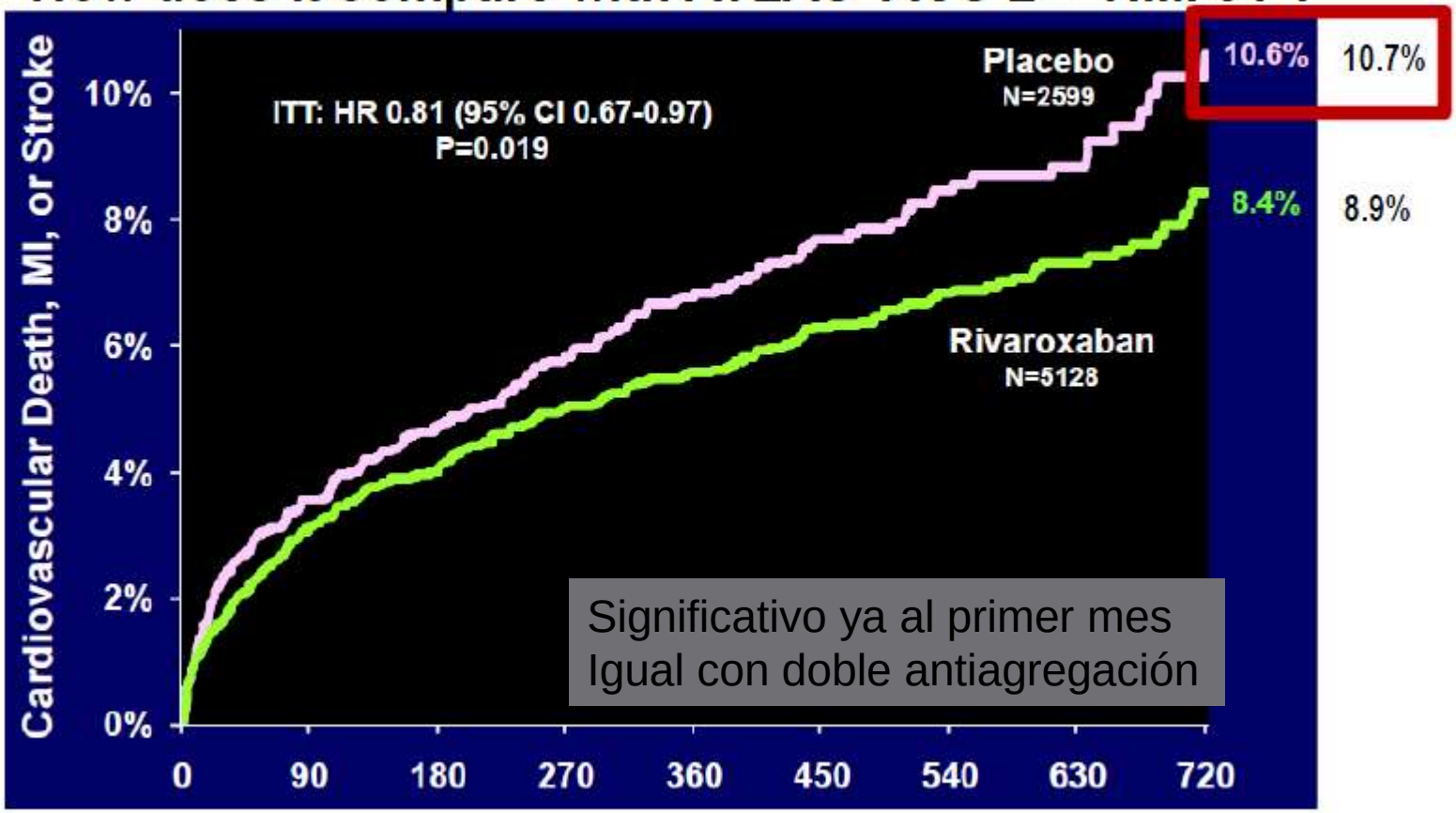
ATLAS 2 STEMI



ATLAS 2 STEMI. Resultados

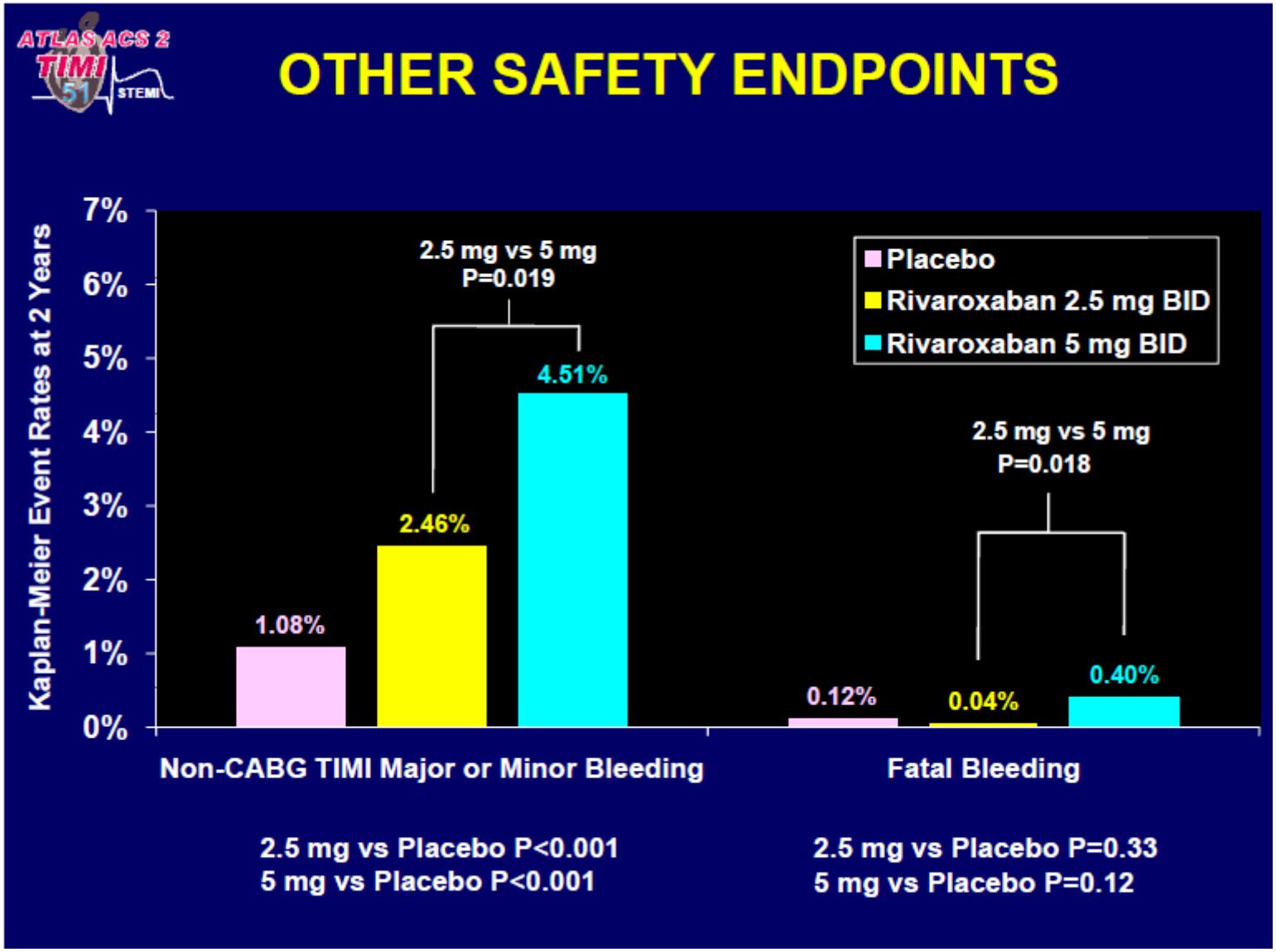
ATLAS ACS 2-TIMI 51: STEMI

How does it compare with ATLAS ACS 2 – TIMI 51 ?



IAMSEST/AI tienen el mismo riesgo que IAMCEST

ATLAS 2 STEMI. Resultados



Vorapaxar for Secondary Prevention in Patients with Prior Myocardial Infarction

NCT00526474; Trial funded by Merck

Benjamin M. Scirica, MD, MPH

On behalf of the TRA 2°P-TIMI 50 Steering Committee and Investigators

Clinical Trial Update
European Society of Cardiology
Munich, August 26, 2012

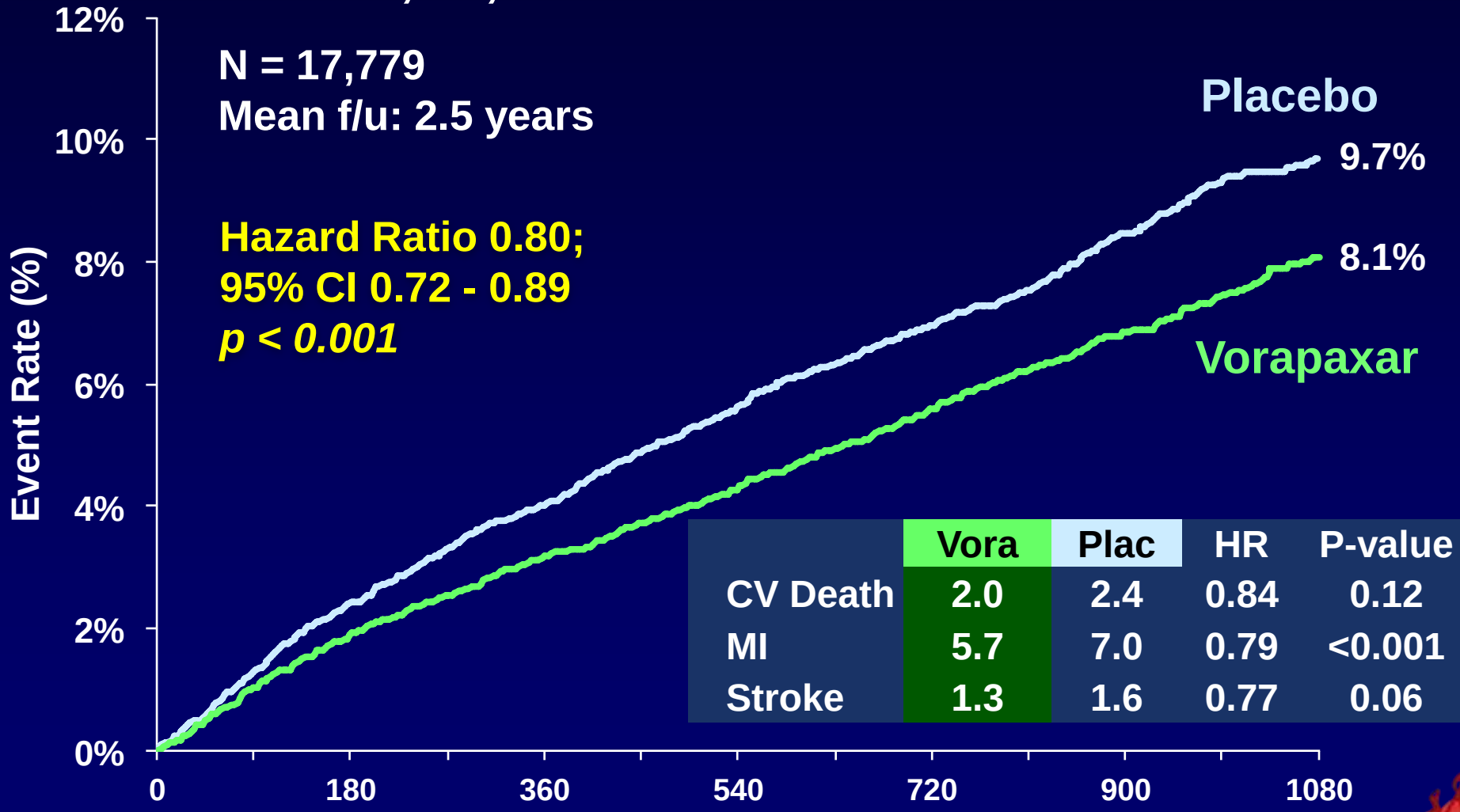
MI Cohort

TRA 2°P TIMI 50

Primary Efficacy Evaluation

Prior MI Cohort

CV Death, MI, or Stroke



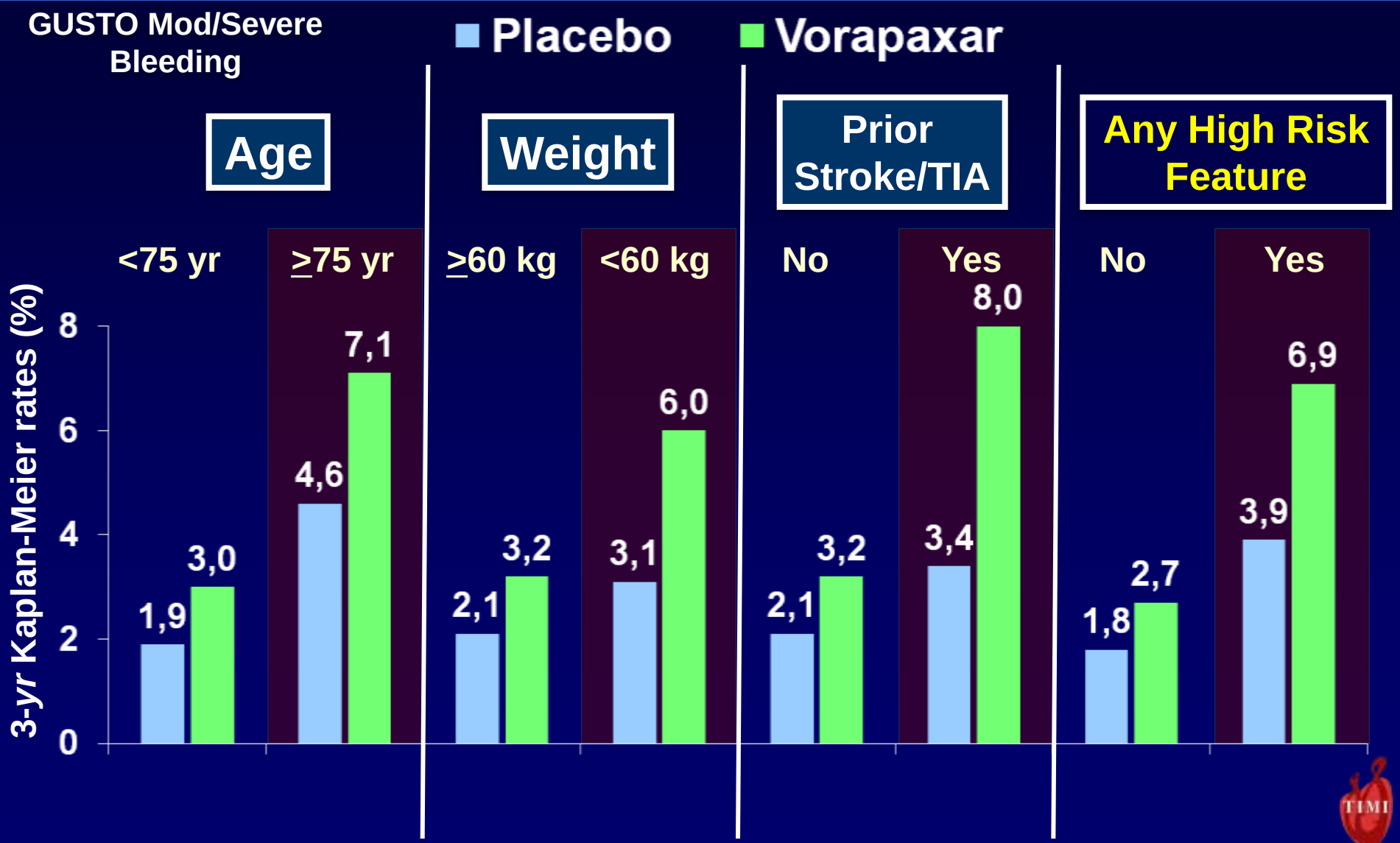
	Vora	Plac	HR	P-value
CV Death	2.0	2.4	0.84	0.12
MI	5.7	7.0	0.79	<0.001
Stroke	1.3	1.6	0.77	0.06

MI Cohort

TRA 2°P TIMI 50

Bleeding in Select Subgroups

Prior MI Cohort



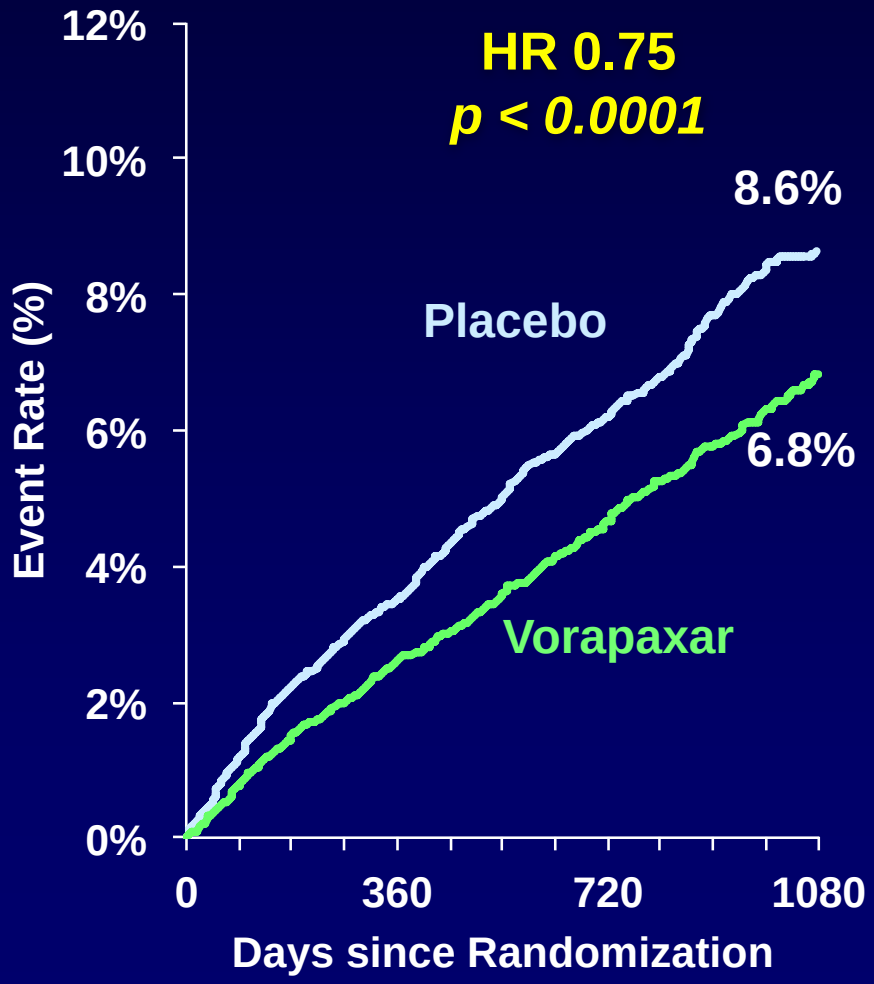
MI Cohort

TRA 2°P TIMI 50

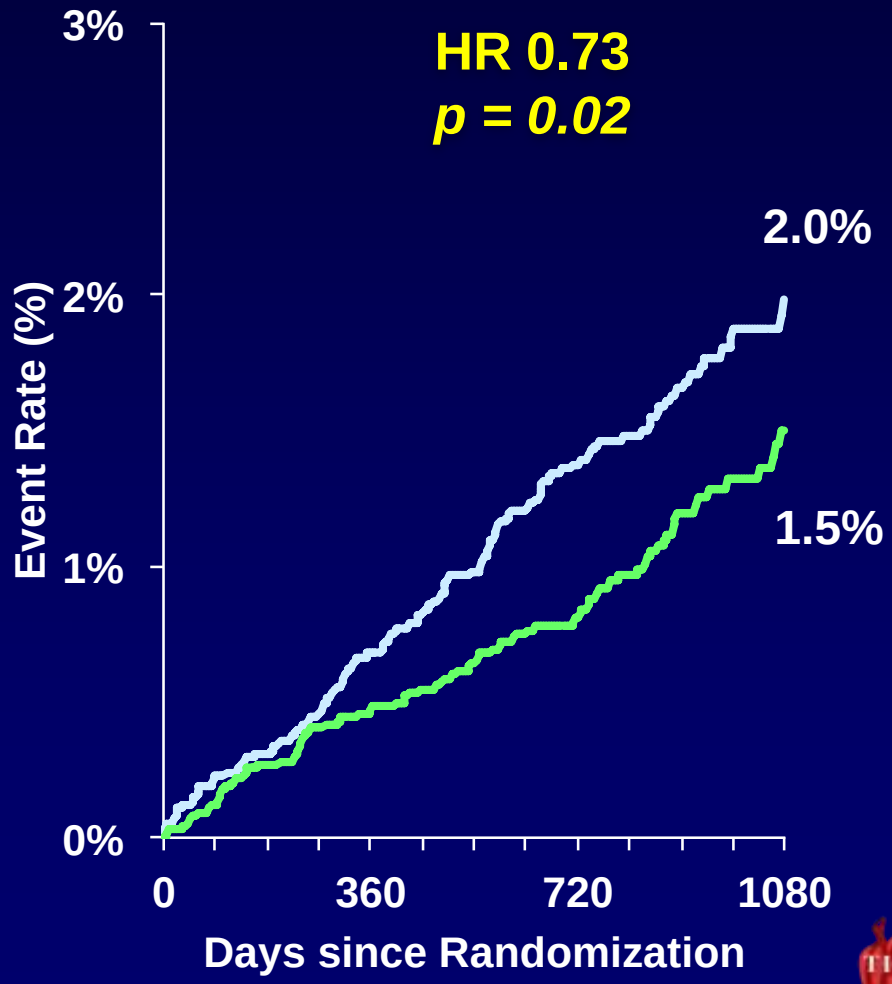
Efficacy Evaluation

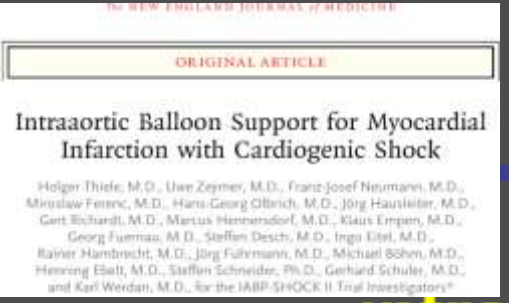
Low Bleeding Risk Cohort (N= 14,909)

CV Death, MI, or Stroke



CV Death




ORIGINAL ARTICLE

Intraaortic Balloon Support for Myocardial Infarction with Cardiogenic Shock

Randomized comparison of intraaortic balloon counterpulsation versus optimal medical therapy in addition to early revascularization in acute myocardial infarction complicated by cardiogenic shock

Holger Thiele, MD

Uwe Zeymer, MD; Franz-Josef Neumann, MD; Miroslaw Ferenc, MD; Hans-Georg Olbrich, MD; Jörg Hausleiter, MD; Gert Richardt, MD; Marcus Hennersdorf, MD; Klaus Empen, MD; Georg Fuernau, MD; Steffen Desch, MD; Ingo Eitel, MD; Rainer Hambrecht, MD; Jörg Fuhrmann, MD; Michael Böhm, MD; Henning Ebelt, MD; Steffen Schneider, PhD; Gerhard Schuler, MD; Karl Werdan, MD

on behalf of the **IABP-SHOCK II Trial** Investigators

University of Leipzig – Heart Center

Results

Patient Characteristics

IABP SHOCK II RANDOMIZED CLINICAL TRIAL

	IABP (n=301)	Control (n=299)
Age (years); median (IQR)	70 (58-78)	69 (58-76)
Male sex; n (%)	202 (67.1)	211 (70.6)
Current Smoking; n/total (%)	96/295 (32.5)	108/299 (36.1)
Hypertension; n/total (%)	213/296 (72.0)	199/299 (66.6)
Hypercholesterolemia; n/total (%)	122/295 (41.4)	105/299 (35.1)
Diabetes mellitus; n/total (%)	105/297 (35.4)	90/299 (30.1)
Prior myocardial infarction; n/total n (%)	71/300 (23.7)	61/299 (20.4)
Fibrinolysis < 24 h before randomization; n/total (%)	28/301 (9.3)	20/299 (6.7)
STEMI/LBBB; n/total (%)	200/300 (66.7)	212/298 (71.1)
NSTEMI; n/total (%)	96/300 (32.0)	81/298 (27.2)
Resuscitation before randomization; n/total (%)	127/301 (42.2%)	143/299 (47.8)
Signs of impaired organ perfusion; n/total (%)		
Altered mental status	215/300 (71.7)	232/299 (77.6)
Cold, clammy skin and extremities	257/300 (85.7)	245/299 (81.9)
Oliguria	90/300 (30.0)	99/299 (33.1)
Serum lactate >2.0 mmol/l	226/300 (75.3)	218/298 (73.2)
Creatinine clearance (ml/min); median (IQR)	60.7 (43.4-86.6)	56.8 (39.7-78.1)
Infarct related artery; n/total (%)		
LAD	132/293 (45.1)	121/293 (41.3)
LCX	55/293 (18.8)	57/293 (19.5)
RCA	73/293 (24.9)	79/293 (27.0)
Left main	26/293 (8.9)	28/293 (9.6)
Bypass graft	7/293 (2.4)	8/293 (2.7)
Multivessel disease; n/total (%)	235/296 (79.4)	228/293 (77.9)
Left ventricular ejection fraction (%); median (IQR)	35 (25-45)	35 (25-45)

Results

Treatment + Process of Care Outcomes

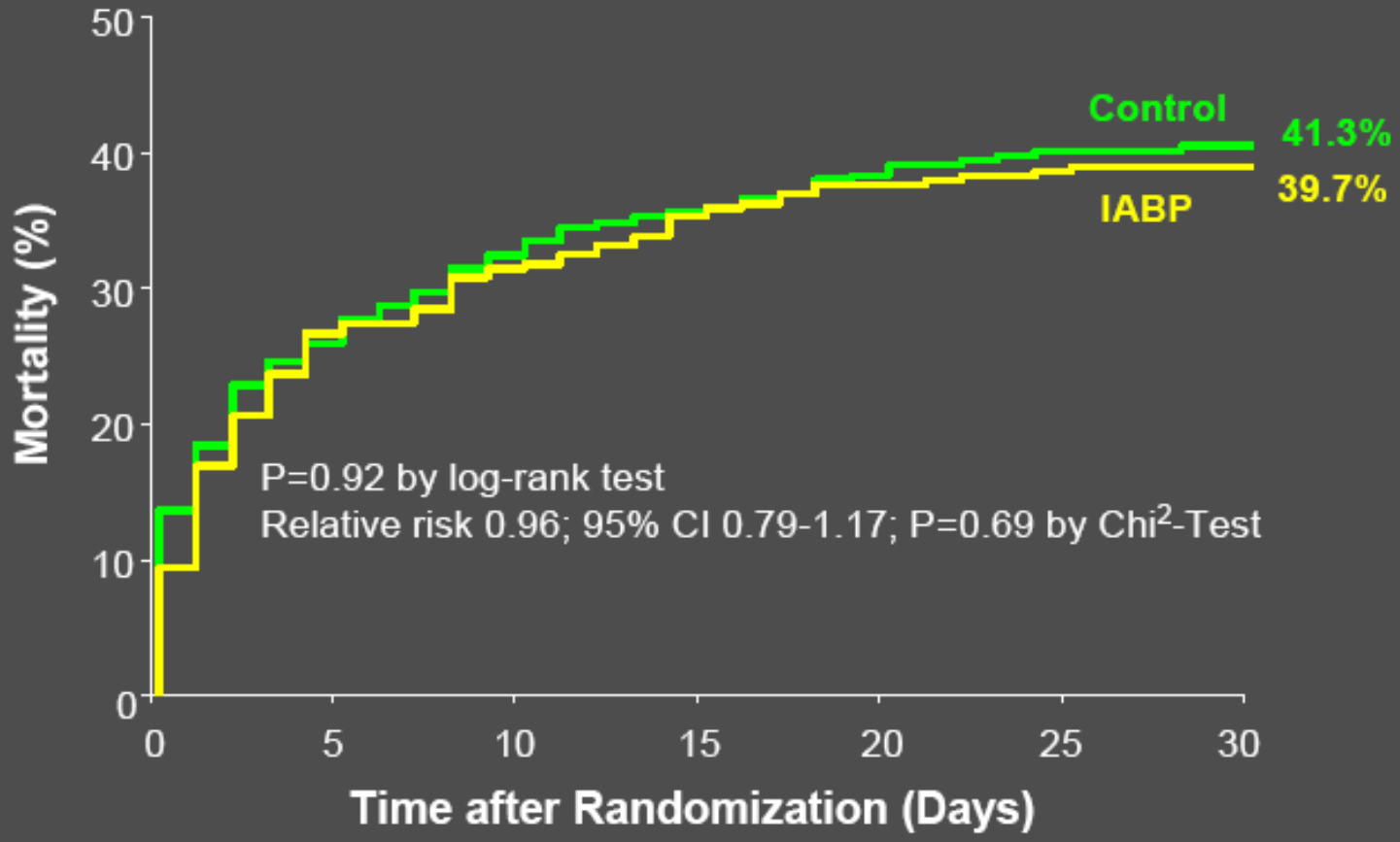
Variable	IABP (n=301)	Control (n=299)	p
Primary PCI; n/total (%)	287/301 (95.3)	288/299 (96.3)	0.55
Stent implanted; n/total (%)	273/301 (90.7)	266/299 (89.0)	0.48
Drug-eluting stent; n/total (%)	126/301 (41.9)	123/299 (41.1)	0.86
Immediate PCI of non-culprit lesions; n/total (%)	90/301 (29.9)	81/299 (27.1)	0.45
Immediate bypass surgery; n/total (%)	8/301 (2.7)	10/299 (3.3)	0.62
Staged bypass surgery; n/total (%)	3/301 (1.0)	4/299 (1.3)	0.72
Active left ventricular assist device; n/total (%)	11/301 (3.7)	22/299 (7.4)	0.053
Mild hypothermia; n/total (%)	106/301 (35.2)	120/299 (40.1)	0.21
Mechanical ventilation; n/total (%)	240/301 (79.7)	252/299 (84.3)	0.15
Mechanical ventilation duration (days); median (IQR)	3.0 (1.0-8.0)	3.0 (1.0-8.0)	0.44
ICU treatment (days); median (IQR)	6.0 (3.0-12.0)	6.0 (3.0-13.0)	0.34
Renal replacement therapy; n/total (%)	62/301 (20.6)	47/299 (15.7)	0.12
Catecholamines (µg/kg per minute); median (IQR)			
Dopamine	4.1 (2.9-7.7)	4.2 (3.6-8.3)	0.76
Norepinephrine	0.3 (0.1-1.2)	0.4 (0.1-1.1)	0.73
Epinephrine	0.3 (0.1-1.3)	0.3 (0.2-1.4)	0.59
Dobutamine	10.2 (4.9-20.6)	9.0 (4.8-17.6)	0.25
Duration of catecholamines (days), median (IQR)	3.0 (1.0-5.0)	3.0 (1.0-6.0)	0.81
Time - hemodynamic stabilization (days); median (IQR)	3.0 (1.0-5.0)	3.0 (1.0-6.0)	0.50

Results

Simplified Acute Physiology Score-II

Results

Primary Study Endpoint (30-Day Mortality)



ORIGINAL ARTICLE

Prasugrel versus Clopidogrel for Acute Coronary Syndromes without Revascularization

Matthew T. Roe, M.D., M.H.S., Paul W. Armstrong, M.D., Keith A.A. Fox, M.B., Ch.B., Harvey D. White, M.B., Ch.B., D.Sc., Dorairaj Prabhakaran, M.D., D.M., M.Sc., Shaun G. Goodman, M.D., M.Sc., Jan H. Cornel, M.D., Ph.D., Deepak L. Bhatt, M.D., M.P.H., Peter Clemmensen, M.D., D.M.Sc., Felipe Martinez, M.D., Diego Ardissino, M.D., Jose C. Nicolau, M.D., Ph.D., William E. Boden, M.D., Paul A. Gurbel, M.D., Witold Ruzyllo, M.D., Anthony J. Dalby, M.D., Darren K. McGuire, M.D., M.H.Sc., Jose L. Leiva-Pons, M.D., Alexander Parkhomenko, M.D., Ph.D., Shmuel Gottlieb, M.D., Gracita O. Topacio, M.D., Christian Hamm, M.D., Gregory Pavlides, M.D., Assen R. Goudev, M.D., Ali Oto, M.D., Chuen-Den Tseng, M.D., Ph.D., Bela Merkely, M.D., Ph.D., D.Sc., Vladimir Gasparovic, M.D., Ph.D., Ramon Corbalan, M.D., Mircea Cinteză, M.D., Ph.D., R. Craig McLendon, R.N., Kenneth J. Winters, M.D., Eileen B. Brown, Ph.D., Yuliya Lokhnygina, Ph.D., Philip E. Aylward, B.M., B.Ch., Ph.D., Kurt Huber, M.D., Judith S. Hochman, M.D., and E. Magnus Ohman, M.B., Ch.B., for the TRILOGY ACS Investigators*

www.nejm.org - 8.26.12

TRILOGY ACS Study Design

Medically Managed UA/NSTEMI Patients

Randomization Stratified by:
Age, Country, Prior Clopidogrel Treatment
(Primary analysis cohort — Age < 75 years)

Median Time to Enrollment = 4.5 Days

Medical Management Decision ≤72 hrs
(No prior clopidogrel given) — 4% of total

- **Clopidogrel**[1]: 300 mg LD + 75 mg MD
- **Prasugrel**[1]: 30 mg LD + 5 or 10 mg MD

Medical Management Decision ≤ 10 days
(Clopidogrel started ≤ 72 hrs in-hospital OR on chronic clopidogrel) — 96% of total

- **Clopidogrel**[1]: 75 mg MD
- **Prasugrel**[1]: 5 or 10 mg MD

Minimum Rx Duration: 6 months; Maximum Rx Duration: 30 months

Primary Efficacy Endpoint: CV Death, MI, Stroke

1. All patients were on aspirin and low-dose aspirin (< 100 mg) was strongly recommended. For patients <60 kg or ≥75 years, 5 mg MD of prasugrel was given. Adapted from Chin CT et al. *Am Heart J* 2010;160:16-22.e1.

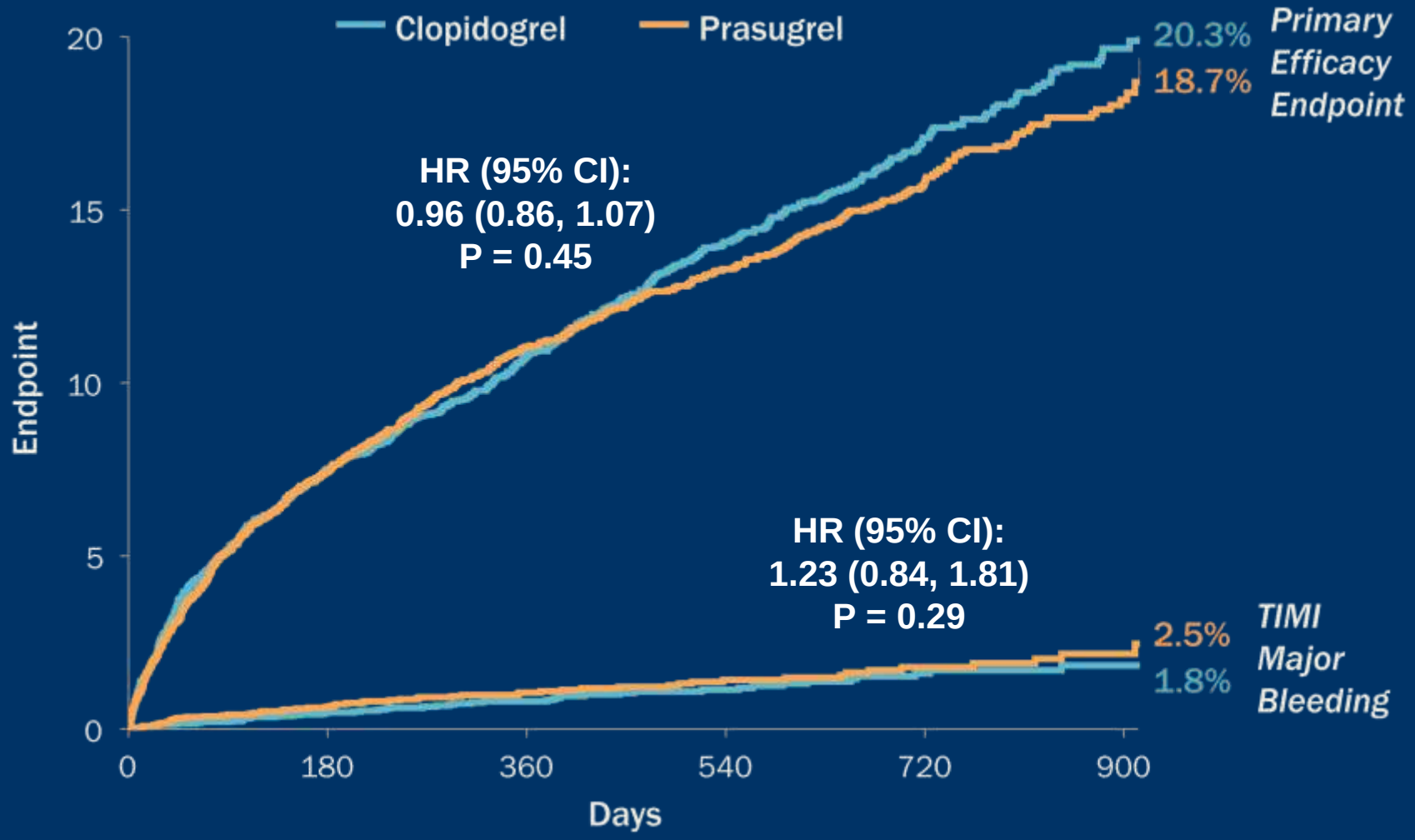
Baseline Characteristics

	Age < 75 Years (N = 7243)		**Overall Population** (N = 9326)	
	Prasugrel (N = 3620)	**Clopidogrel** (N = 3623)	**Prasugrel** (N = 4663)	**Clopidogrel** (N = 4663)
Age—yr	62 (56–68)	62 (56–68)	66 (58–74)	66 (59–73)
Female sex—%	36.2	35.6	39.2	39.1
Body weight < 60 kg—%	13.1	12.8	15.2	14.9
Disease classification—%				
NSTEMI	67.8	67.2	70.4	69.4
Unstable angina	32.2	32.8	29.6	30.6
Medical History—%				
Diabetes mellitus	38.5	39.3	37.7	38.3
Current/recent smoking	23.3	23.6	19.7	20.2
Prior myocardial infarction	43.3	44.8	42.9	43.3
Prior PCI	27.0	29.1	25.6	26.7
Prior CABG	14.6	16.3	15.2	16.1
Baseline risk assessment				
GRACE risk score	114 (101–128)	115 (102–128)	122 (105–140)	121 (106–138)
Creatinine clearance—mL/min	81 (63–104)	81 (63–102)	73 (54–97)	73 (54–96)
Angiography performed pre-randomization—%	42.1	43.1	41.2	41.4

Post-randomization revascularization performed in 7.5% of patients

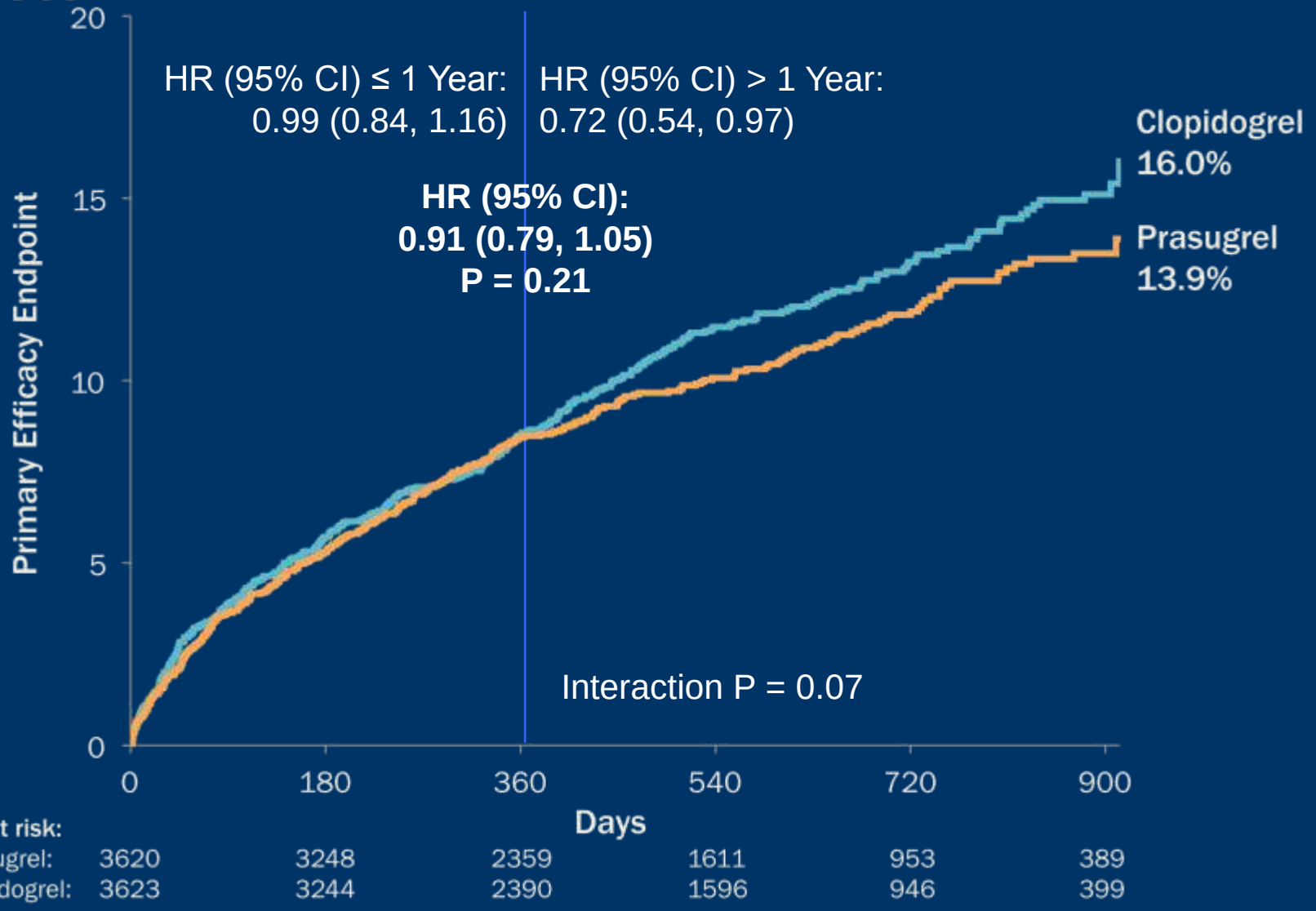
Primary Efficacy Endpoint and TIMI Major Bleeding Through 30 Months

(Overall population)



Primary Efficacy Endpoint to 30 Months

(Age < 75 years)



Evaluation of All Ischemic Events Over Time*
(Age < 75 years)

- Lower risk multiple recurrent ischemic events suggested with prasugrel using the pre-specified Andersen-Gill model (HR = 0.85, 95% CI: 0.72–1.00, P=0.04)
- Significant interaction with treatment and time (HR for > 12 mos = 0.64, 95% CI: 0.48–0.86, Interaction P=0.02)

	Prasugrel	Clopidogrel
≥ 1 event	364	397
≥ 2 events	77	109
3–7 events	18	24

* Pre-specified evaluation of all CV death, MI, or stroke events by treatment

Estudios relevantes en cardiopatía isquémica crónica

- CLARIFY
- CARDIA
- FAME 2
- WOEST

Clarify

European Heart Journal
doi:10.1093/eurheartj/ehs289

FASTTRACK
CLINICAL TRIAL & REGISTRY UPDATE

Women and men with stable coronary artery disease have similar clinical outcomes: insights from the international prospective CLARIFY registry

Ph Gabriel Steg[1,2,3*], Nicola Greenlaw[4], Jean-Claude Tardif[5], Michal Tendera[6], Ian Ford[4], Stefan Kääb[7], Hélène Abergel[1,2,3], Kim M. Fox[8], and Roberto Ferrari[9], on behalf of the CLARIFY Registry Investigators

[1]INSERM U698, Paris, France; [2]Université Paris Diderot, Paris, France; [3]AP-HP, Hôpital Bichat, 46 rue Henri Huchard, 75877 Paris Cedex 18, France; [4]University of Glasgow, Glasgow, UK; [5]Montreal Heart Institute, Université de Montreal, Montreal, Canada; [6]Medical University of Silesia, Katowice, Poland; [7]Department of Medicine I, Klinikum Grosshadern, Ludwig-Maximilians University, Munich Heart Alliance, Munich, Germany; [8]NHLI Imperial College, ICMS, Royal Brompton Hospital, London, UK; and [9]Department of Cardiology and LTTA Centre, University of Ferrara and Salvatore Maugeri Foundation, IRCCS, Lumezzane, Italy

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Clarify. Criterios de entrada

- Pacientes elegibles tenían enfermedad arterial coronaria estable definida como al menos uno de los siguientes:
  - IM documentado >3 meses antes del estudio
  - Prueba angiográfica de estenosis coronaria >50%
  - Dolor torácico con evidencias de isquemia miocárdica (prueba de esfuerzo ECG)
  - CRC o ICP >3 meses antes del estudio
  - Estos criterios no eran mutuamente excluyentes

- Criterios de exclusión:
  - Ingreso hospitalario de causa CV (incluyendo revascularización) en los últimos 3 meses
  - Revascularización planeada
  - Problemas que impidieran su participación o seguimiento de 5 años (cooperación limitada, capacidad legal limitada, patologías no CV graves o patologías que disminuyan la calidad de vida (cáncer, drogadicción) u otras patologías CV graves(ICC avanzada, valvulopatía grave, antecedentes de substitución o reparación valvular)

Clarify. Objetivos del análisis

- Explorar las diferencias a 1 año entre hombres y mujeres con cardiopatía isquémica estable

- Explorar la consistencia de los resultados por subgrupos de pacientes post-IAM o post-revascularización

Clarify. Características basales

	Men (N= 23 975)	Women (N=7 002)	P value
Age, years	63.4 (10.5)	66.5 (9.9)	<0.0001
BMI, kg/m^2	27.3 [24.9, 30.1]	27.3 [24.2, 31.1]	0.87
Ethnicity			<0.0001
Caucasian	66.0	66.2	
Black/African	8.1	7.4	
Chinese	8.3	8.8	
Hispanic	3.2	3.8	
Japanese/Korean	4.1	5.1	
South Asian	0.9	1.3	
Unknown	9.4	7.4	

Clarify. Factores de riesgo

	Men (N= 23 975)	Women (N=7 002)	P value
Family history of premature CAD, %	28	31	<0.0001
Treated hypertension, %	69	78	<0.0001
Diabetes, %	28	33	<0.0001
Dyslipidemia, %	75	75	0.98
Current smoking, %	14	7	<0.0001
Physical activity, %			<0.0001
None	14	23	
Light physical activity most weeks	51	56	
≥ 20 minutes vigorous physical activity 1–2 times/week	18	12	
≥ 20 minutes vigorous physical activity ≥3 times/week	17	10	

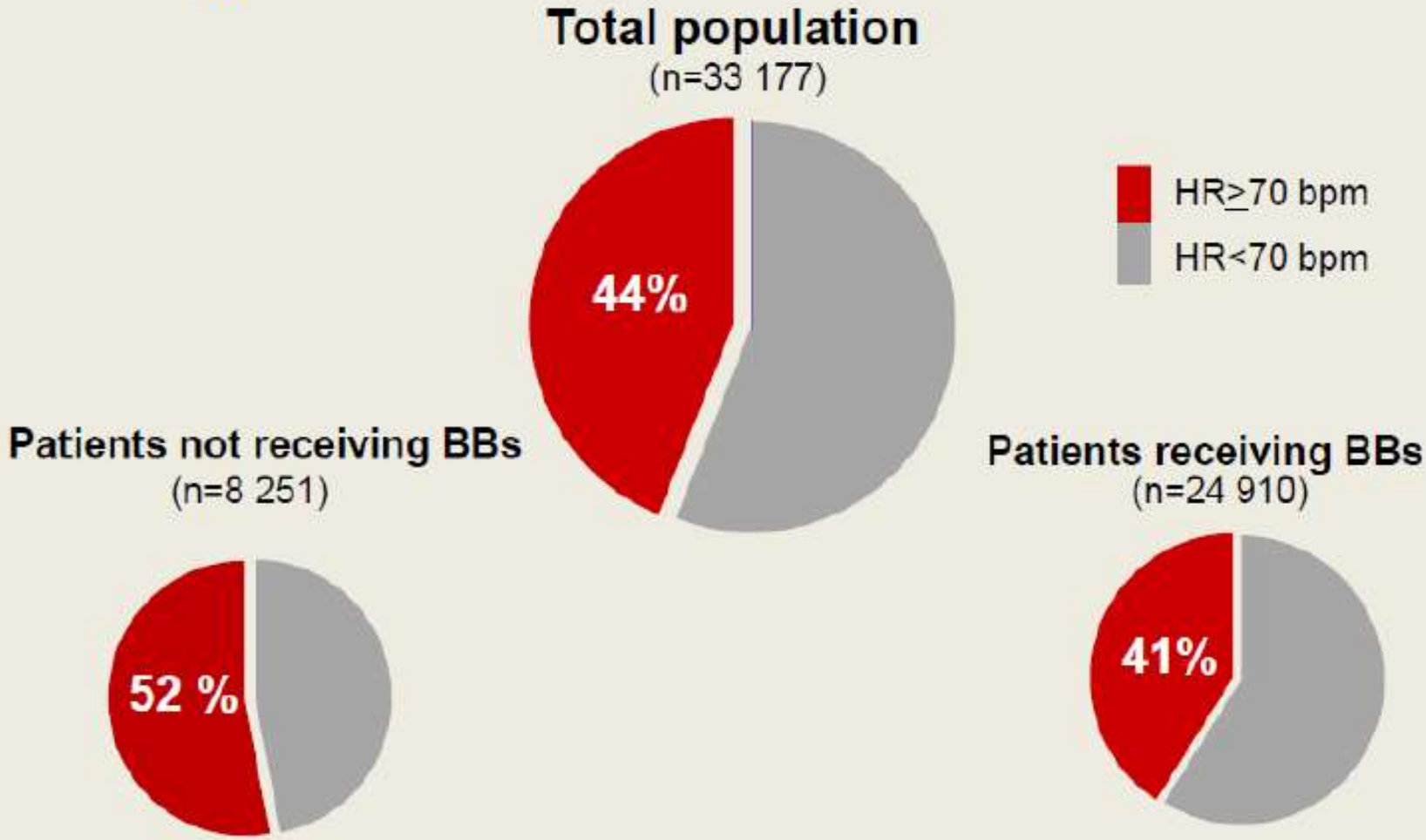
Clarify. Antecedentes

	Men (N= 23 975)	Women (N=7 002)	P value
Time since diagnosis of CAD, years	5 [2, 10]	4 [2, 8]	<0.0001
Myocardial infarction, %	62	51	<0.0001
Coronary angiography performed, n (%)	20 747 (86)	5573 (80)	<0.0001
Non-invasive test for myocardial ischaemia, n (%)	15 003 (63)	4063 (58)	<0.0001
Evidence for myocardial ischaemia, n (%)	3851 (16)	1231 (18)	0.0025
PCI, %	59	55	<0.0001
CABG, %	25	17	<0.0001
Peripheral arterial disease, %	10	8	<0.0001
Asthma/COPD, %	7	9	<0.0001
Hospital admission for heart failure, %	4	5	0.014
Stroke, %	4	4	0.24
Transient ischaemic attack, %	3	4	0.0033

Clarify. Síntomas CV

	Men (N= 23 975)	Women (N=7 002)	P value
Any angina %	21	29	<0.0001
CCS class, if angina (N= 7003)			
Angina CCS Class I	30	25	0.0018
Angina CCS Class II	53	54	
Angina CCS Class III	17	19	
Angina CCS Class IV	1	1	
CHF symptoms, %			<0.0001
No CHF	85	82	
CHF NYHA Class II	12	15	
CHF NYHA Class III	2	3	

CLARIFY Proportion of patients with HR ≥70 bpm



Steg et al. *PLOS One* 2012;7(5):e36284

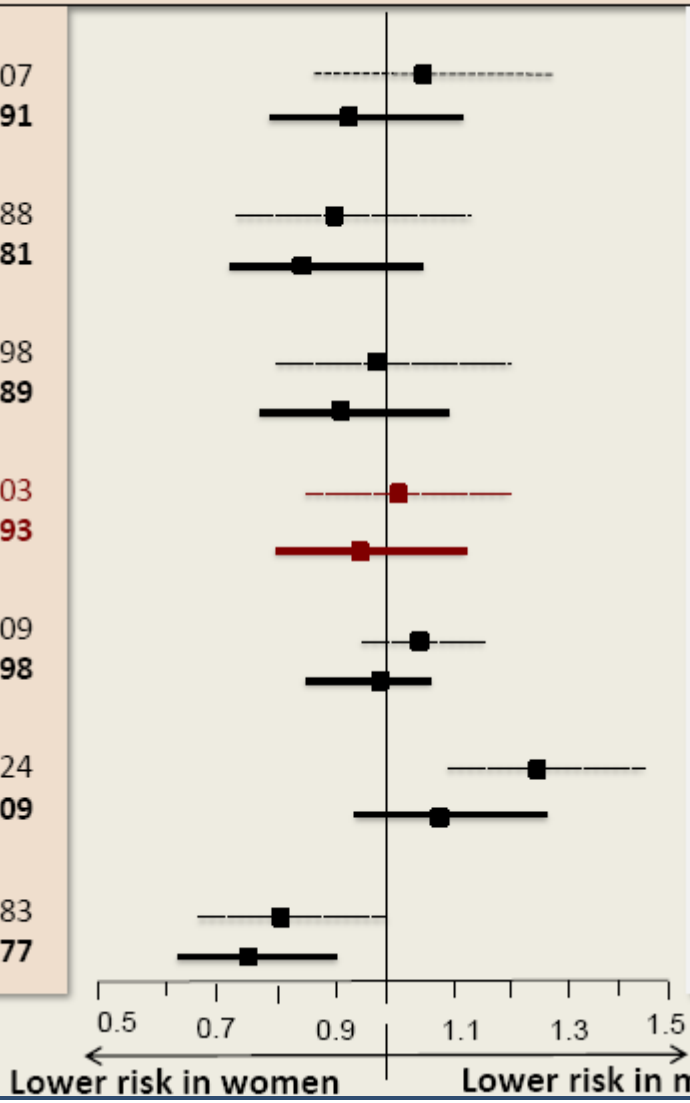
Clarify. Parámetros cardiacos y hallazgos angiográficos

	Men (N= 23 975)	Women (N=7 002)	P value
Heart rate, palpation, bpm	67.9 (10.6)	69.6 (10.5)	<0.0001
ECG heart rate, bpm	66.7 (11.4)	69.0 (11.5)	<0.0001
ECG sinus rhythm, %	95	96	0.10
Atrial fibrillation/flutter	3	3	
SBP, mm Hg	130.4	133.3	<0.0001
DBP, mm Hg	77.3	77.0	0.0042
LV ejection fraction, % (N=21 283)	55.6	58.0	<0.0001
Angiographic findings, % (N= 26 282)			<0.0001
No diseased vessel	2.9	6.4	
One-vessel disease	39.8	46.4	
Two or more vessel disease	57.3	47.3	

Clarify. Evolución a 1 año

Event	Men	Women	OR	P
All cause death	1.5%	1.6%		
Unadjusted			1.07	0.52
Adjusted			**0.91**	0.39
Fatal or non-fatal MI	1.0%	0.9%		
Unadjusted			0.88	0.36
Adjusted			**0.81**	0.15
CV death or non-fatal MI	1.4%	1.4%		
Unadjusted			0.98	0.87
Adjusted			**0.89**	0.33
CV death, non-fatal MI or non-fatal stroke	1.7%	1.8%		
Unadjusted			1.03	0.78
Adjusted			**0.93**	0.5
All coronary events*	5.8%	6.2%		
Unadjusted			1.09	0.14
Adjusted			**0.98**	0.67
Unstable angina	3.8%	4.7%		
Unadjusted			1.24	0.001
Adjusted			**1.09**	0.23
Revascularization (PCI or CABG)	2.6%	2.1%		
Unadjusted			0.83	0.04
Adjusted			**0.77**	0.007

*: MI, revascularization or unstable angina



Clarify. Conclusiones

- Existen **importantes diferencias** en las características basales y en el riesgo entre hombres y mujeres; menos mujeres se sometieron a revascularización

- Sin embargo, las **tasas de mortalidad** a un año crudas y ajustadas de mortalidad y de sucesos cardiovasculares fueron **similares** entre sexos con AE

- El **seguimiento** más prolongado de esta población aportará más conocimiento sobre las diferencias entre sexos en pacientes con AE

- Se requiere **más investigación** para diseñar estrategias para minimizar el sesgo en el manejo y tratamiento de las mujeres

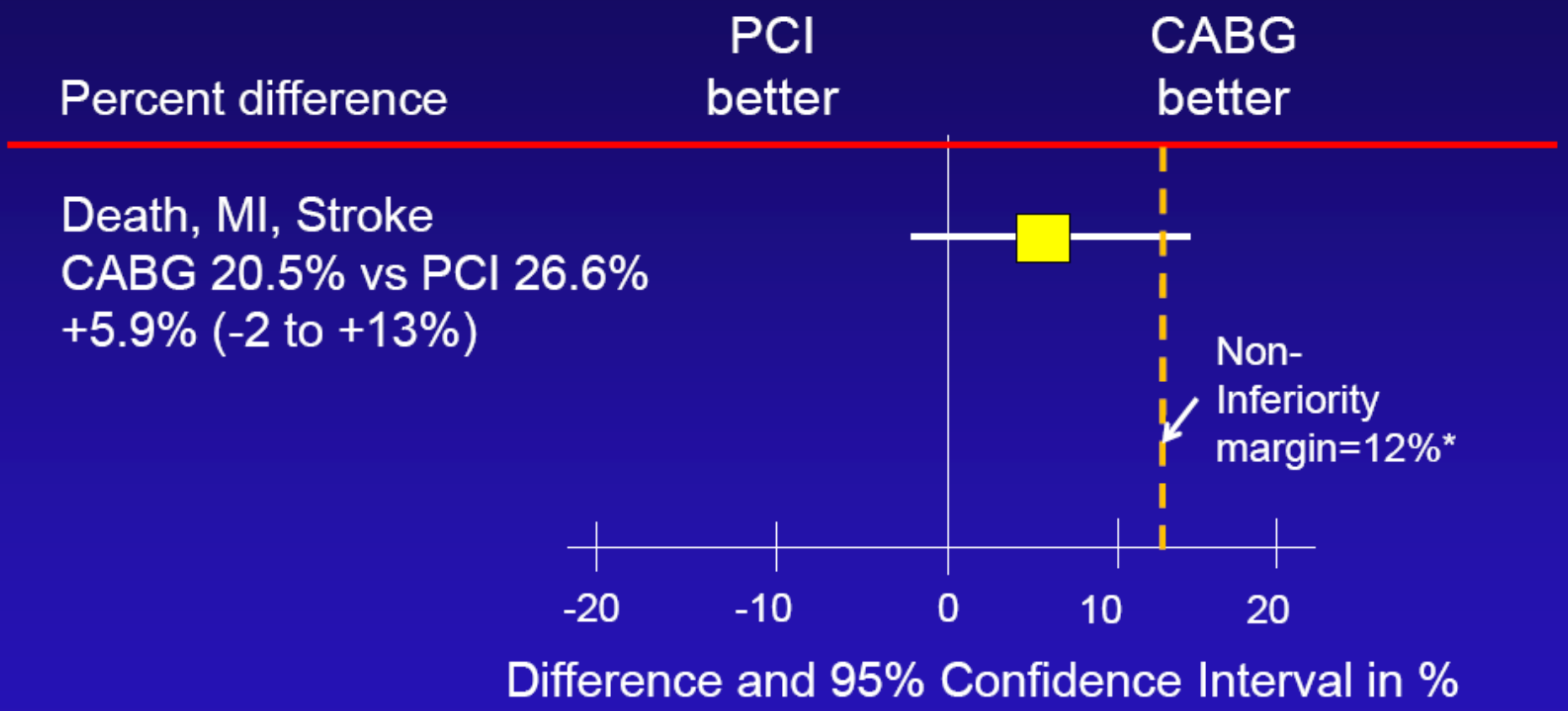
ESC Clinical trial and Registry update
Munich 27th August 2012

Coronary Artery Revascularisation in Diabetes Trial

Presented by Roger Hall
On behalf of the CARDia Investigators

5 year follow up data

Primary analysis for non inferiority



*Non inferiority method based on PARTNER Trial NEJM 2011;364:2187-98.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Fractional Flow Reserve–Guided PCI versus Medical Therapy in Stable Coronary Disease

Bernard De Bruyne, M.D., Ph.D., Nico H.J. Pijls, M.D., Ph.D., Bindu Kalesan, M.P.H., Emanuele Barbato, M.D., Ph.D., Pim A.L. Tonino, M.D., Ph.D., Zsolt Piroth, M.D., Nikola Jagic, M.D., Sven Mobius-Winckler, M.D., Gilles Rioufol, M.D., Ph.D., Nils Witt, M.D., Ph.D., Petr Kala, M.D., Philip MacCarthy, M.D., Thomas Engström, M.D., Keith G. Oldroyd, M.D., Kreton Mavromatis, M.D., Ganesh Manoharan, M.D., Peter Verlee, M.D., Ole Frobert, M.D., Nick Curzen, B.M., Ph.D., Jane B. Johnson, R.N., M.Sc., Peter Jüni, M.D., and William F. Fearon, M.D., for the FAME 2 Trial Investigators*

Available on-line on Aug 28, 2012 on www.nejm.org

Objetivo

Comparar objetivos clínicos entre ICP guiado por FFR junto con tratamiento médico óptimo (TMO) respecto TMO en pacientes con enfermedad coronaria estable.

Criterios de inclusión

Referidos a ICP por

- **Angina estable (CCS 1, 2, 3)**
- **Angina establilizada CCS 4**
- **Dolor atípico o no dolor con isquemia documentada**

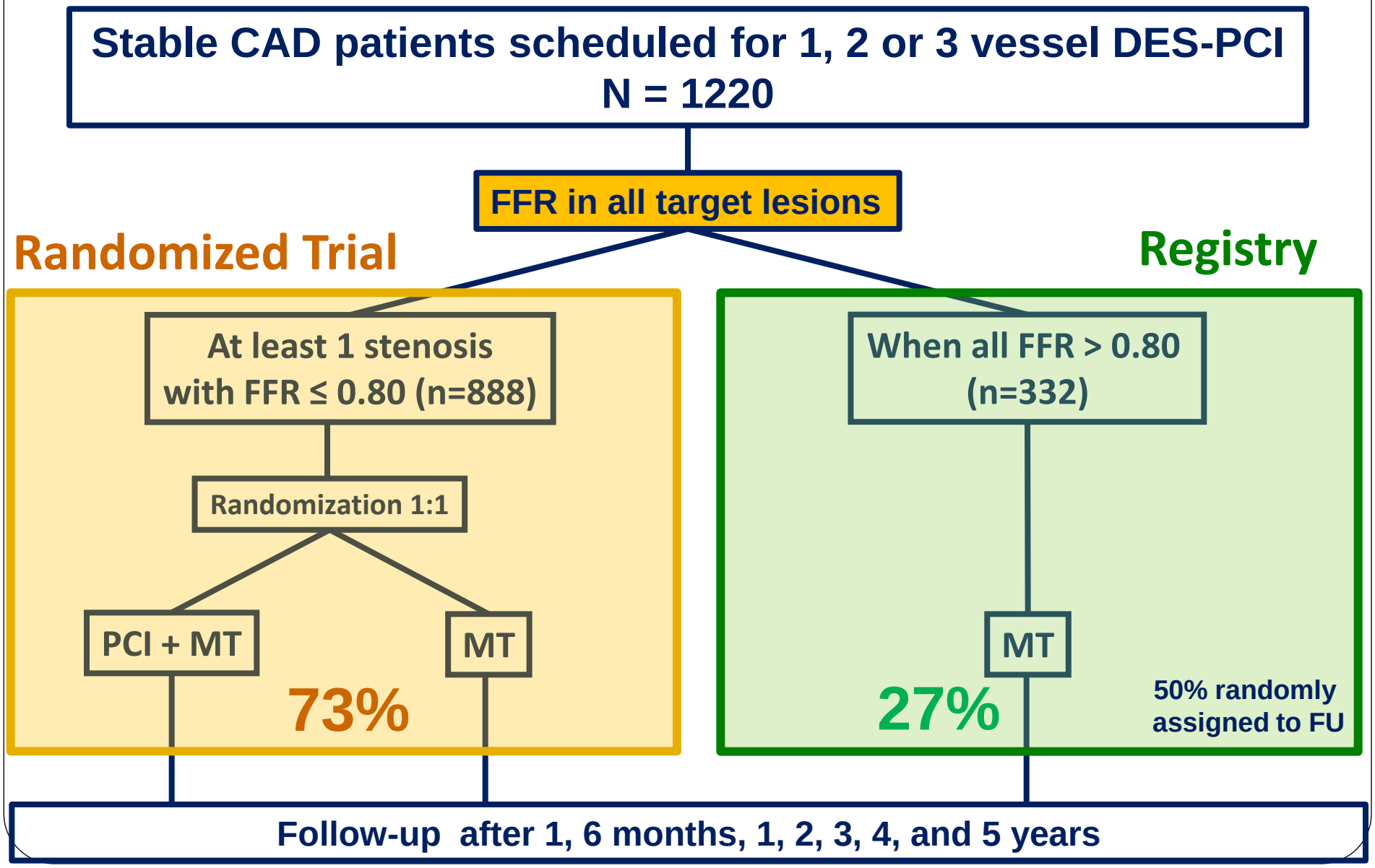
Y

Lesiones angiográficas de 1, 2, o 3 vasos

Criterios de exclusión

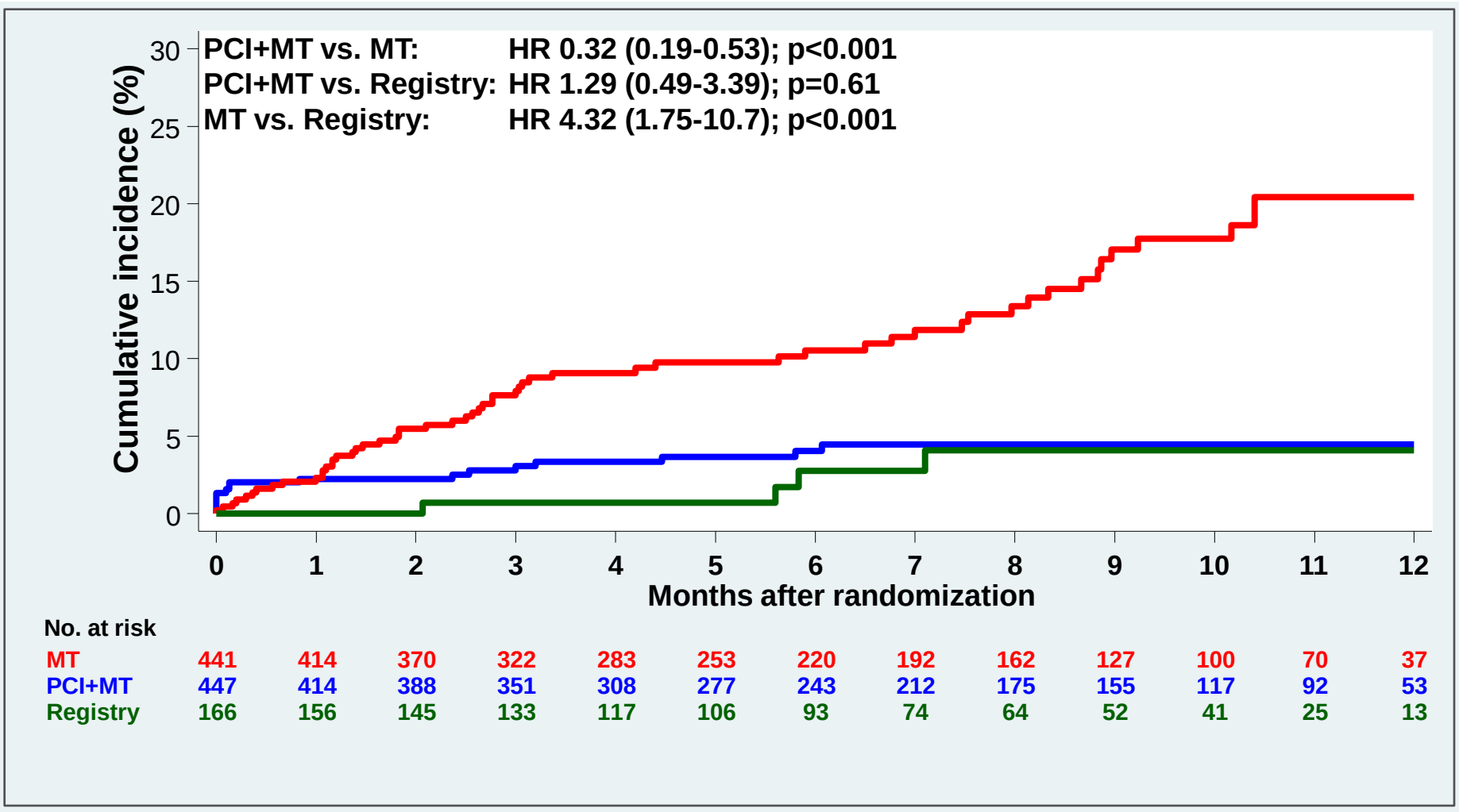
- **Cirugía coronaria previa**
- **FEVI <30%**
- **Enfermedad de tronco común**

Flow Chart

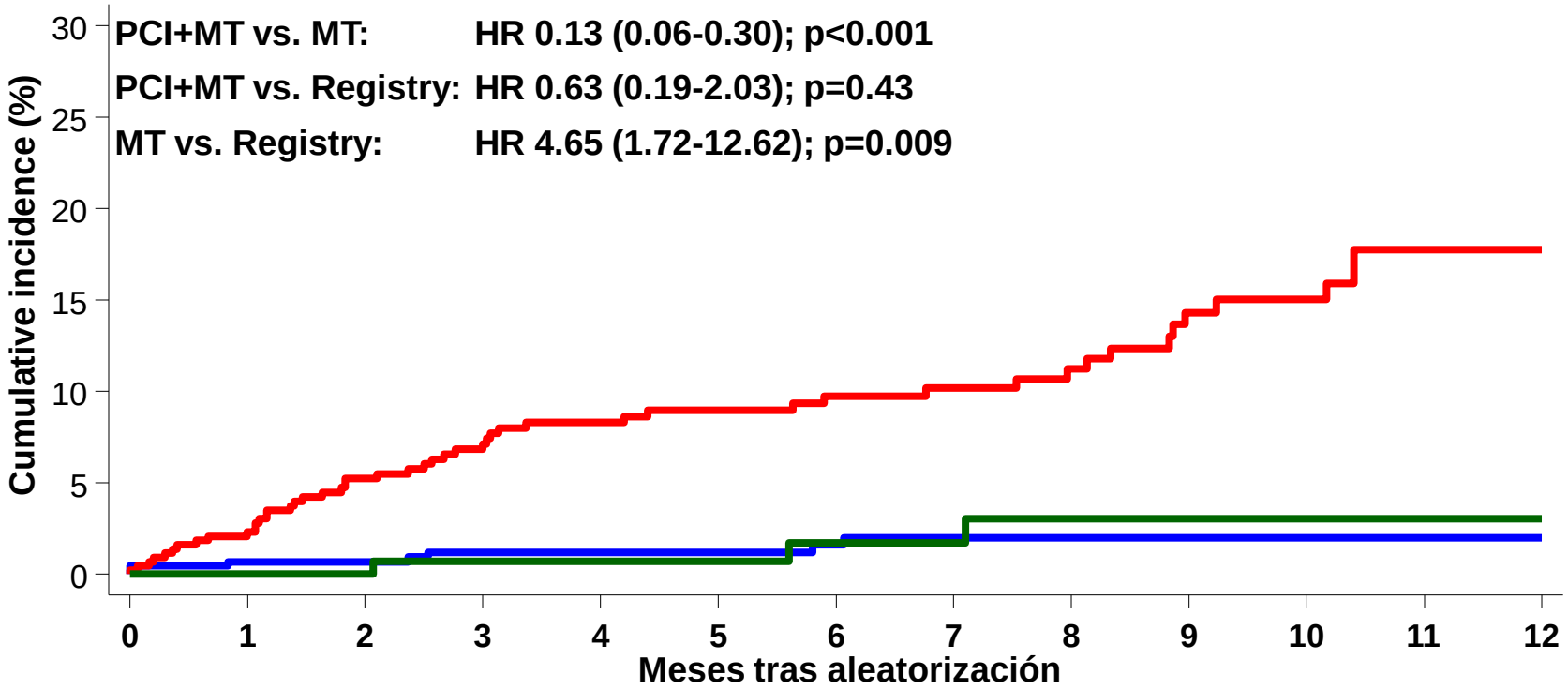

Stable CAD patients scheduled for 1, 2 or 3 vessel DES-PCI
N = 1220
FFR in all target lesions
Randomized Trial
Registry
At least 1 stenosis with FFR ≤ 0.80 (n=888)
Randomization 1:1
PCI + MT
MT
73%
When all FFR > 0.80 (n=332)
MT
27%
50% randomly assigned to FU
Follow-up after 1, 6 months, 1, 2, 3, 4, and 5 years

Variable principal

(mortalidad global, infarto de miocardio, ingreso no previsto por revascularización urgente)



Revascularización urgente



No. at risk

MT	441	414	371	325	286	256	223	195	164	129	101	71	38
PCI+MT	447	421	395	356	315	285	248	217	180	160	119	93	53
Registry	166	156	145	133	117	106	94	75	65	53	42	26	13

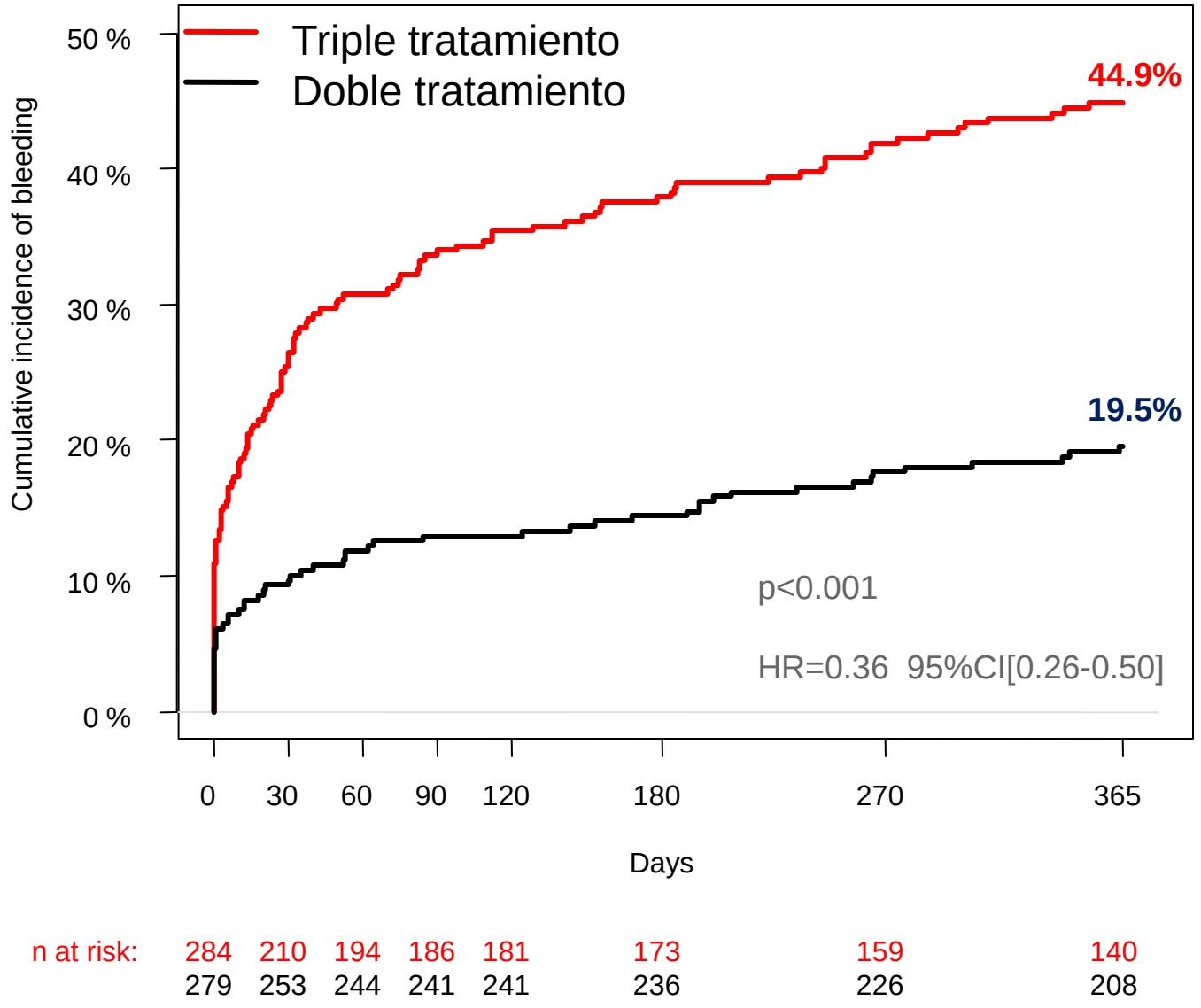
The WOEST Trial: First randomised trial comparing two regimens with and without aspirin in patients on oral anticoagulant therapy undergoing coronary stenting

Willem Dewilde, Tom Oirbans, Freek Verheugt, Johannes Kelder, Bart De Smet, Jean-Paul Herrman, Tom Adriaenssens, Mathias Vrolix, Antonius Heestermans, Marije Vis, Saman Rasoul, Kaioum Sheikjoesoef, Tom Vandendriessche, Carlos Van Mieghem, Kristoff Cornelis, Jeroen Vos, Guus Brueren, Nicolien Breet and Jurriën ten Berg

The WOEST Trial= **W**hat is the **O**ptimal antiplat**E**let and anticoagulant therapy in patients with oral anticoagulation and coronary **S**ten**T**ing (clinicaltrials.gov NCT00769938)

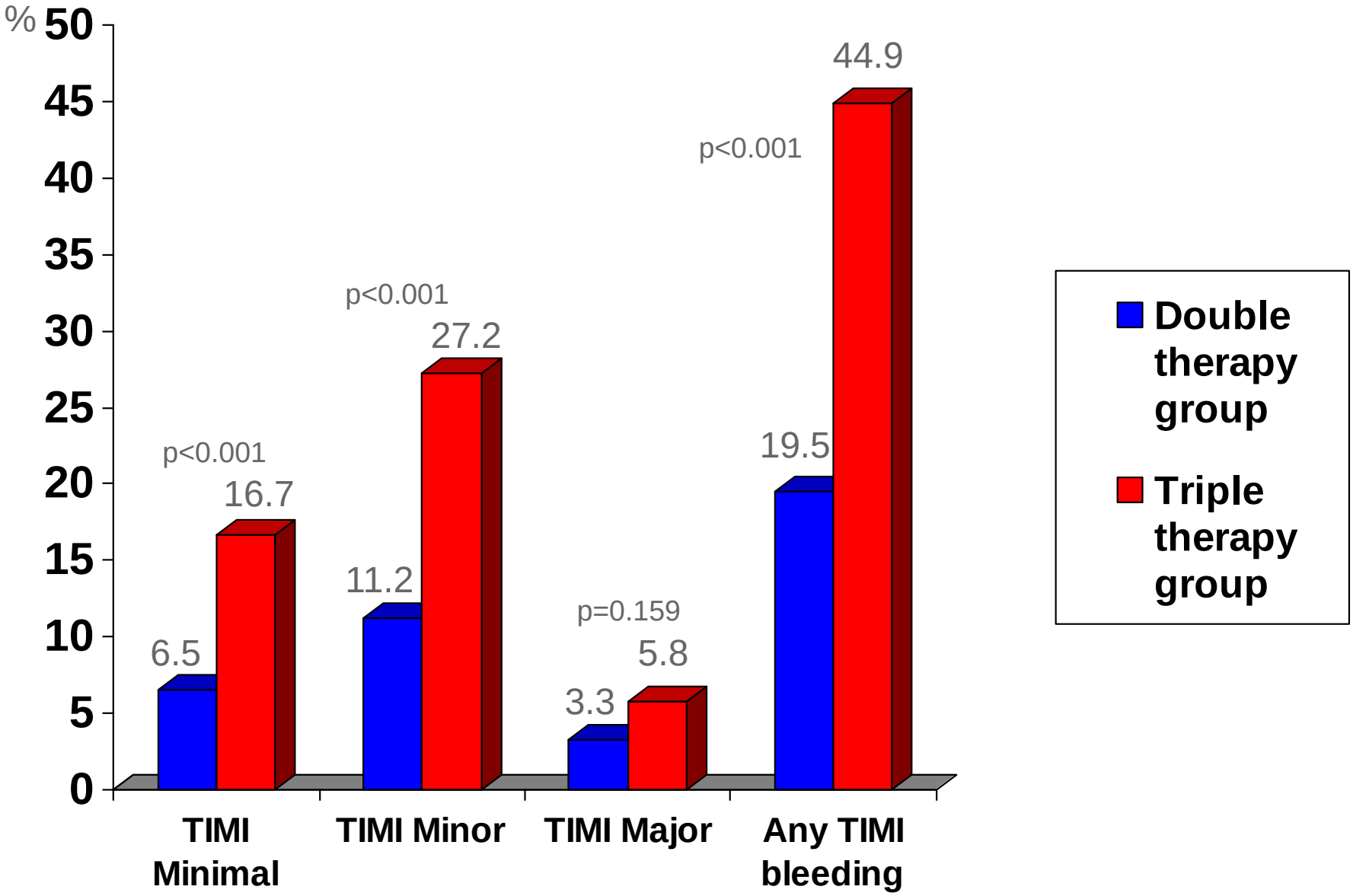
WOEST

Objetivo principal: Número total de hemorragias TIMI



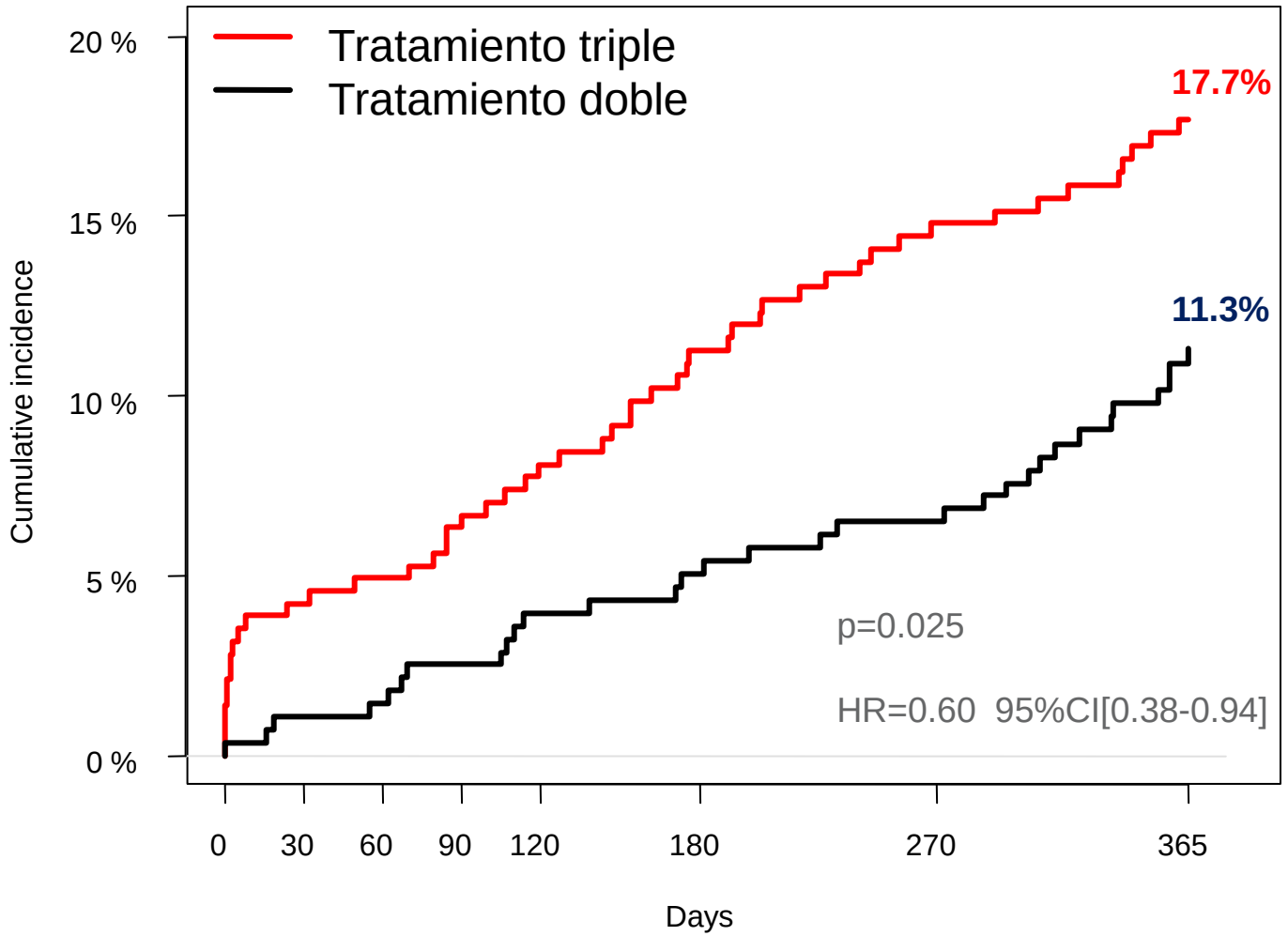
WOEST

Objetivo principal: Clasificación de hemorragias TIMI



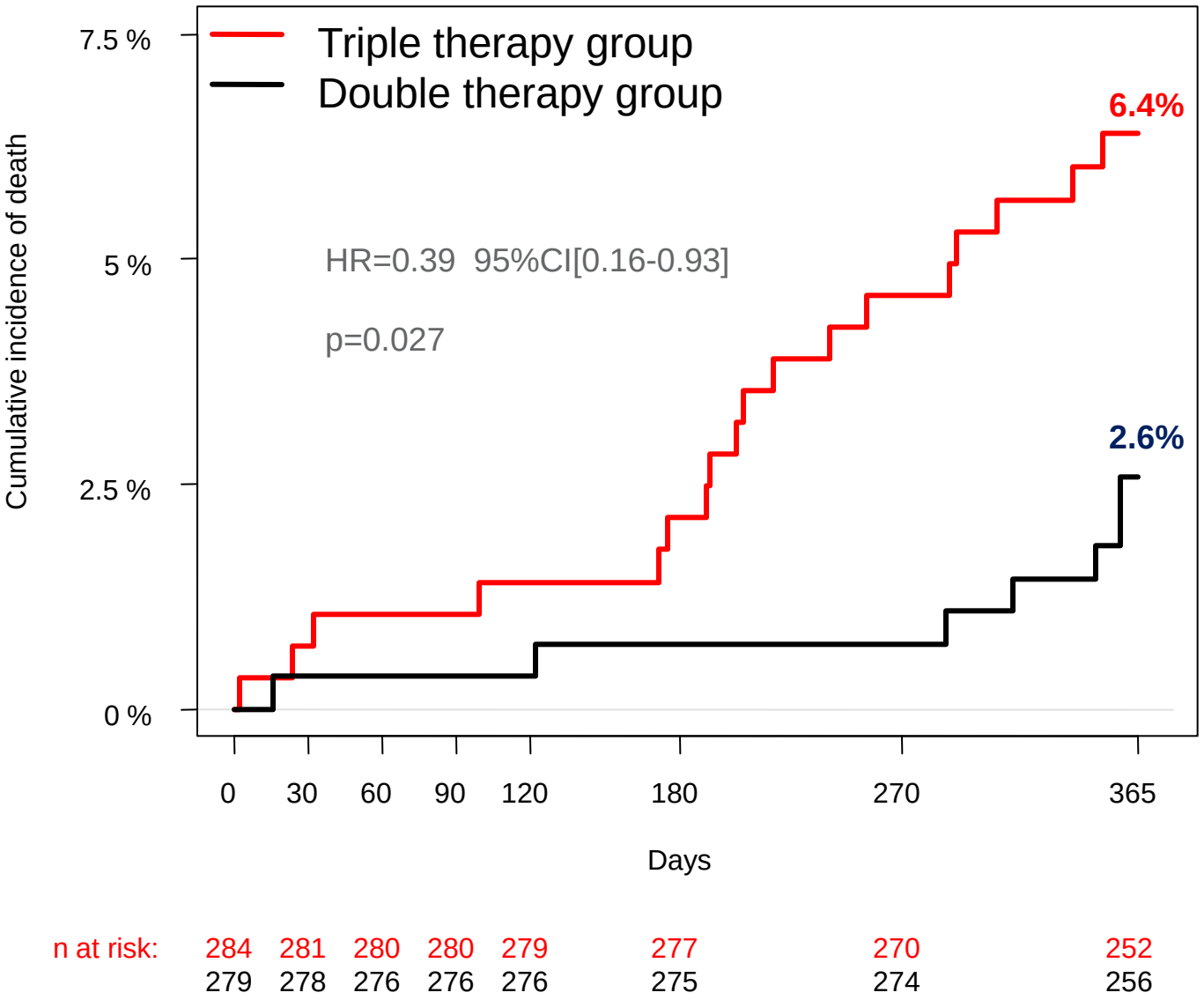
WOEST

Objetivo secundario (muerte, IM,TVR, AVC, Tromb stent)



WOEST

Mortalidad de cualquier causa



Nuevos documentos oficiales de la ESC

- Definición infarto
- Guía STEMI

Tercera definición de IAM

Puntos principales:

1. La necrosis miocárdica puede ser el resultado de mecanismos no isquémicos (ICC, etc). No se debe clasificar como infarto, sino como lesión miocárdica

2. Los biomarcadores preferidos para la detección de IAM son las troponinas. Se define como troponina incrementada aquella por encima del percentil 99 de la población normal de referencia

3. Se establecen 5 tipos de infarto en función de su fisiopatología

4. TAVI puede causar lesión miocárdica. En razonable aplicar los criterios de IM tipo 5

5. cRMN con realce tardío puede diferenciar cardiopatía isquémica y otras alteraciones miocárdicas

Table 2 **Universal classification of myocardial infarction**

Type 1: Spontaneous myocardial infarction
Spontaneous myocardial infarction related to atherosclerotic plaque rupture, ulceration, fissuring, erosion, or dissection with resulting intraluminal thrombus in one or more of the coronary arteries leading to decreased myocardial blood flow or distal platelet emboli with ensuing myocyte necrosis. The patient may have underlying severe CAD but on occasion non-obstructive or no CAD.
Type 2: Myocardial infarction secondary to an ischaemic imbalance
In instances of myocardial injury with necrosis where a condition other than CAD contributes to an imbalance between myocardial oxygen supply and/or demand, e.g. coronary endothelial dysfunction, coronary artery spasm, coronary embolism, tachy-/brady-arrhythmias, anaemia, respiratory failure, hypotension, and hypertension with or without LVH.
Type 3: Myocardial infarction resulting in death when biomarker values are unavailable
Cardiac death with symptoms suggestive of myocardial ischaemia and presumed new ischaemic ECG changes or new LBBB, but death occurring before blood samples could be obtained, before cardiac biomarker could rise, or in rare cases cardiac biomarkers were not collected.
Type 4a: Myocardial infarction related to percutaneous coronary intervention (PCI)
Myocardial infarction associated with PCI is arbitrarily defined by elevation of cTn values >5 x 99th percentile URL in patients with normal baseline values (≤99th percentile URL) or a rise of cTn values >20% if the baseline values are elevated and are stable or falling. In addition, either (i) symptoms suggestive of myocardial ischaemia, or (ii) new ischaemic ECG changes or new LBBB, or (iii) angiographic loss of patency of a major coronary artery or a side branch or persistent slow- or no-flow or embolization, or (iv) imaging demonstration of new loss of viable myocardium or new regional wall motion abnormality are required.
Type 4b: Myocardial infarction related to stent thrombosis
Myocardial infarction associated with stent thrombosis is detected by coronary angiography or autopsy in the setting of myocardial ischaemia and with a rise and/or fall of cardiac biomarkers values with at least one value above the 99th percentile URL.
Type 5: Myocardial infarction related to coronary artery bypass grafting (CABG)
Myocardial infarction associated with CABG is arbitrarily defined by elevation of cardiac biomarker values >10 x 99th percentile URL in patients with normal baseline cTn values (≤99th percentile URL). In addition, either (i) new pathological Q waves or new LBBB, or (ii) angiographic documented new graft or new native coronary artery occlusion, or (iii) imaging evidence of new loss of viable myocardium or new regional wall motion abnormality.

Guía IAMCEST

- Énfasis en la necesidad de disponer de redes geográficas con protocolos consensuados.

- La mejor organización y coordinación del cuidado del IAMEST debería reducir los retrasos en su tratamiento. Las nuevas guías son más exigentes en cuestiones de tiempos que las previas del 2008. El tiempo contacto médico – ECG: 10 minutos. Dos horas el límite de tiempo aceptable para el traslado desde un centro sin ICPP a un centro ICPP, pero se debería procurar 90 minutos. Si se cree que no es posible la ICPP en menos de dos horas desde el inicio de dolor se debería administrar fibrinolisis en menos de 30 minutos.

- Se recomienda monitorizar y publicar los resultados, incluyendo los tiempos puerta-balón y cualquier otra fuente de retraso. Europa no dispone de un registro paneuropeo de IAMEST, pero algunos países tienen registros nacionales.

Guía IAMCEST

- Si la fibrinolisis tiene éxito, se puede realizar coronariografía de cara a eventual ICP en las siguientes 3 a 24h. Si la fibrinolisis no tiene éxito, se debería considerar ICP inmediato

- Se recomienda implantar stents farmacoliberadores en los pacientes en los que no esté contraindicado la doble antiagregación y tengan una buena cumplimentación. Se recomienda prasugrel o ticagrelor sobre clopidogrel

- Se apoya el uso de la vía radial en lugar de la femoral, pero sólo en manos de hemodinamistas experimentados

- Se identifican varias áreas sobre las que investigar: tratamiento pre-hospitalario, manejo a largo plazo, doble antiagregación en pacientes anticoagulados, etc.

Recomendaciones de tratamiento post-IAMCEST

Table 22 Routine therapies i

Recommendations		
Active smokers with STEMI must re		
Each hospital participating in the ca		
Exercise-based rehabilitation is reco		
Antiplatelet therapy with low dose a		
In patients who are intolerant to as		
DAPT with a combination of aspirin clopidogrel) in patients treated with		
DAPT with aspirin and an oral ADP strict minimum of:		
• 1 month for patients receiving		
• 6 months for patients receiving		
In patients with left ventricular thro		
In patients with a clear indication fo mechanical valve prosthesis), oral an		
If patients require triple antithrombo obligatory indication for OAC, the		
In selected patients who receive asp if the patient is at low bleeding risk		
DAPT should be used up to 1 year i		
Gastric protection with a proton pu high risk of bleeding		
Oral treatment with beta-blockers patients without contraindications		
Oral treatment with beta-blockers i		
Intravenous beta-blockers must be a		
Intravenous beta-blockers should be high blood pressure, tachycardia and		
A fasting lipid profile must be obtain		
It is recommended to initiate or con contraindication or history of intole		
Reassessment of LDL-cholesterol le (70 mg/dL) has been reached.		
Verapamil may be considered for se and no heart failure.		
ACE inhibitors are indicated starting systolic dysfunction, diabetes or an		
An ARB, preferably valsartan, is an particularly those who are intolerant		
ACE inhibitors should be considered		
Aldosterone antagonists, e.g. epleren diabetes, provided no renal failure o		

ACE = angiotensin-converting enzyme; ACS
DES = drug-eluting stent; LDL = low-densit
[a]Class of recommendation.
[b]Level of evidence.
[c]References.

Antiplatelet therapy with low dose aspirin (75–100 mg) is indicated indefinitely after STEMI.	I	A
In patients who are intolerant to aspirin, clopidogrel is indicated as an alternative to aspirin.	I	B
DAPT with a combination of aspirin and prasugrel or aspirin and ticagrelor is recommended (over aspirin and clopidogrel) in patients treated with PCI.	I	A
DAPT with aspirin and an oral ADP receptor antagonist must be continued for up to 12 months after STEMI, with a strict minimum of:	I	C
• 1 month for patients receiving BMS	I	C
• 6 months for patients receiving DES	IIb	B
In patients with left ventricular thrombus, anticoagulation should be instituted for a minimum of 3 months.	IIa	B
In patients with a clear indication for oral anticoagulation (e.g. atrial fibrillation with CHA_2DS_2-VASc Score ≥2 or mechanical valve prosthesis), oral anticoagulation must be implemented in addition to antiplatelet therapy.	I	C
If patients require triple antithrombotic therapy, combining DAPT and OAC, e.g. because of stent placement and an obligatory indication for OAC, the duration of dual antiplatelet therapy should be minimized to reduce bleeding risk.	I	C
In selected patients who receive aspirin and clopidogrel, low-dose rivaroxaban (2.5 mg twice daily) may be considered if the patient is at low bleeding risk.	IIb	B
DAPT should be used up to 1 year in patients with STEMI who did not receive a stent.	IIa	C
Gastric protection with a proton pump inhibitor should be considered for the duration of DAPT therapy in patients at high risk of bleeding.	IIa	C
Oral treatment with beta-blockers should be considered during hospital stay and continued thereafter in all STEMI patients without contraindications.	IIa	B
Oral treatment with beta-blockers is indicated in patients with heart failure or LV dysfunction.	I	A
Intravenous beta-blockers must be avoided in patients with hypotension or heart failure.	III	B
Intravenous beta-blockers should be considered at the time of presentation in patients without contraindications, with high blood pressure, tachycardia and no signs of heart failure.	IIa	B

Recomendaciones de tratamiento de insuficiencia cardiaca post-IAMCEST

Table 23 Treatment of heart failure and left ventricular dysfunction

Recommendations	Class[a]	Level[b]	Ref[c]
Treatment of mild heart failure (Killip class II)			
Oxygen is indicated to maintain a saturation >95%.	I	C	-
Loop diuretics, e.g. furosemide 20–40 mg i.v., is recommended and should be repeated at 1–4 h intervals if necessary.	I	C	-
i.v. nitrates or sodium nitroprusside should be considered in patients with elevated systolic blood pressure.	IIa	C	-
An ACE inhibitor is indicated in all patients with signs or symptoms of heart failure and/or evidence of LV dysfunction in the absence of hypotension, hyperkalaemia, or renal failure.	I	A	309–312
An ARB (eldartan) is an alternative to ACE inhibitors particularly if ACE inhibitors are not tolerated.	I	B	281
An aldosterone antagonist (eplerenone) is recommended in all patients with signs or symptoms of heart failure and/or evidence of LV dysfunction provided no renal failure or hyperkalaemia.	I	B	282
Hydralazine and isosorbide dinitrate should be considered if the patient is intolerant to both ACE inhibitors and ARBs.	IIa	C	313
Treatment of moderate heart failure (Killip class III)			
Oxygen is indicated.	I	C	-
Ventilatory support should be instituted according to blood gases.	I	C	-
Loop diuretics, e.g. furosemide 20–40 mg i.v., are recommended and should be repeated at 1–4 h intervals if necessary.	I	C	-
Morphine is recommended. Respiration should be monitored. Nausea is common and an antiemetic may be required. Frequent low-dose therapy is advisable.	I	C	-
Nitrates are recommended if there is no hypotension.	I	C	-
Inotropic agents: • Dopamine	IIa	C	-
• Dobutamine (inotropic)	IIa	C	-
• Levosimendan (inotropic/vasodilator).	IIb	C	-
An aldosterone antagonist such as spironolactone or eplerenone must be used if LVEF ≤40%.	I	B	282, 314
Ultrafiltration should be considered.	IIa	B	315
Early revascularization must be considered if the patient has not been previously revascularized.	I	C	-
Treatment of cardiogenic shock (Killip class IV)			
Oxygen/mechanical respiratory support is indicated according to blood gases.	I	C	-
Urgent echocardiography/Doppler must be performed to detect mechanical complications, assess systolic function and leading conditions.	I	C	-
High-risk patients must be transferred early to tertiary centres.	I	C	-
Emergency revascularization with either PCI or CABG in suitable patients must be considered.	I	B	100
Fibrinolysis should be considered if revascularization is unavailable.	IIa	C	-
Intra-aortic balloon pumping may be considered.	IIb	B	1, 98, 305
LV assist devices may be considered for circulatory support in patients in refractory shock.	IIb	C	-
Haemodynamic assessment with balloon floating catheter may be considered.	IIb	B	316
Inotropic/vasopressor agents should be considered: • Dopamine	IIa	C	-
• Dobutamine	IIa	C	-
• Noradrenaline (preferred over dopamine when blood pressure is low).	IIb	B	306, 317

ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; CABG = coronary artery bypass graft; i.v. = intravenous; LV = left ventricular; LVEF = left ventricular ejection fraction; PCI = percutaneous coronary intervention.
[a]Class of recommendation.
[b]Level of evidence.
[c]References.

«Lo mejor en Enfermedad Arterial Coronaria»

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SOCIEDAD ESPAÑOLA DE CARDIOLOGÍA