IAMCEST: Manejo prehospitalario

TRATAMIENTO ANTITROMBÓTICO

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Management of STEMI

REPERFUSION Therapy

Pharmacologic Therapy

Antithrombotic Therapy

Antiischemic Therapy

Other therapies

- BB
- GTN
- Other

Statins •
ACEI •
Aldosterone Inh •

Primary Angioplasty

Antiplatelets
- Aspirin
- Clopidogrel
- GP IIb/IIIa Inh
- Prasugrel, Ticagrelor

Anticoagulants
- UFH
- Enoxaparin
- Bivalirudin

Mujer de 75 años que acude a un hospital rural en zona montañosa

Dolor torácico de 2 horas

Diabética. HTA.

TA: 150/110 mm Hg   FC: 95 lpm   T: 155 cm   P: 60 Kg   Sat 02. 95%

AC: RCR. No soplos   AP: Algunos crepitantes en bases

IAM anterior extenso

Hospital con capacidad de angioplastia primaria 24 h. a 1,5 - 2 horas

Table 8 Logistics of pre-hospital care

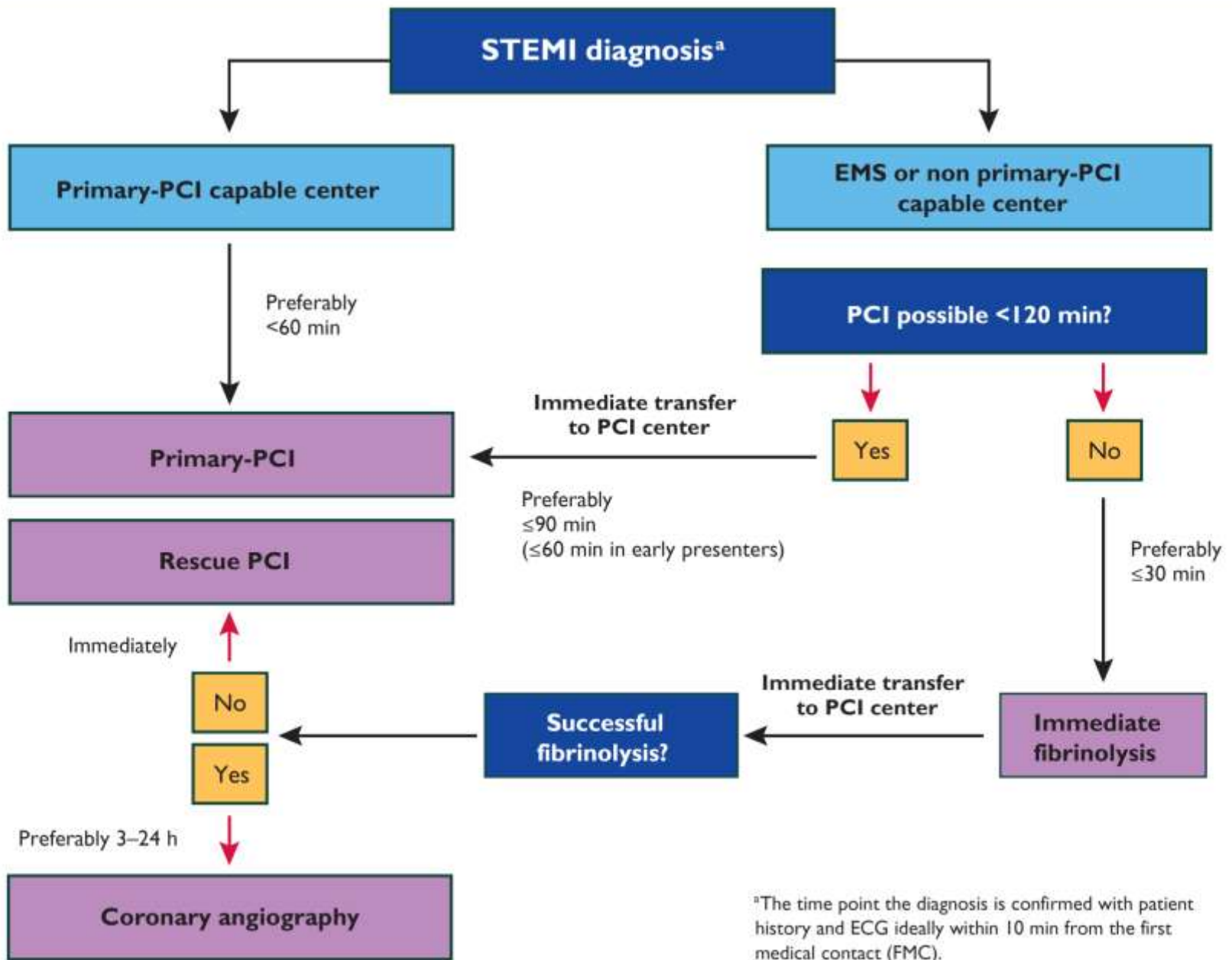| Recommendations	Class[a]	Level[b]	Ref[c]
Ambulance teams must be trained and equipped to identify STEMI (with use of ECG recorders and telemetry as necessary) and administer initial therapy, including thrombolysis where applicable.	I	B	43
The prehospital management of STEMI patients must be based on regional networks designed to deliver reperfusion therapy expeditiously and effectively, with efforts made to make primary PCI available to as many patients as possible.	I	B	47
Primary PCI-capable centres must deliver a 24/7 service and be able to start primary PCI as soon as possible but always within 60 min from the initial call.	I	B	6, 52, 55
All hospitals and EMSs participating in the care of patients with STEMI must record and monitor delay times and work to achieve and maintain the following quality targets: • first medical contact to first ECG ≤10 min; • first medical contact to reperfusion therapy; • for fibrinolysis ≤30 min; • for primary PCI ≤90 min (≤60 min if the patient presents within 120 min of symptom onset or directly to a PCI-capable hospital).	I	B	56, 57
All EMSs, emergency departments, and coronary care units must have a written updated STEMI management protocol, preferably shared within geographic networks.	I	C	
Patients presenting to a non-PCI-capable hospital and awaiting transportation for primary or rescue PCI must be attended in an appropriately monitored area.	I	C	
Patients transferred to a PCI-capable centre for primary PCI should bypass the emergency department and be transferred directly to the catheterization laboratory.	IIa	B	41, 50, 58

¿Qué harías ahora?

1. Fibrinolisis e ingreso en la UVI del hospital

2. Fibrinolisis y traslado a hospital con sala de hemodinámica

3. Traslado para angioplastia primaria a hospital con sala de hemodinámica

4. Llamar a Pepe Barrabés para que me diga que hacer

Table 10 A summary of important delays and treatment goals in the management of acute ST-segment elevation myocardial infarction

Delay	Target
Preferred for FMC to ECG and diagnosis	≤10 min
Preferred for FMC to fibrinolysis ('FMC to needle')	≤30 min
Preferred for FMC to primary PCI ('door to balloon') in primary PCI hospitals	≤60 min
Preferred for FMC to primary PCI	≤90 min (≤60 min if early presenter with large area at risk)
Acceptable for primary PCI rather than fibrinolysis	≤120 min (≤90 min if early presenter with large area at risk) if this target cannot be met, consider fibrinolysis.
Preferred for successful fibrinolysis to angiography	3–24 h

FMC = first medical contact; PCI = percutaneous coronary intervention.

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                        STEMI diagnosisᵃ


   Primary-PCI capable center          EMS or non primary-PCI
                                           capable center


          Preferably                     PCI possible <120 min?
          <60 min

                           Immediate transfer
                            to PCI center
        Primary-PCI                          Yes          No

                           Preferably
                           ≤90 min
        Rescue PCI         (≤60 min in early presenters)
                                                          Preferably
                                                          ≤30 min
     Immediately

               No          Immediate transfer
                            to PCI center
               Yes        Successful      ←    Immediate
                          fibrinolysis?        fibrinolysis

  Preferably 3–24 h


    Coronary angiography              ᵃThe time point the diagnosis is confirmed with patient
                                      history and ECG ideally within 10 min from the first
                                      medical contact (FMC).
                                      All delays are related to FMC (first medical contact).
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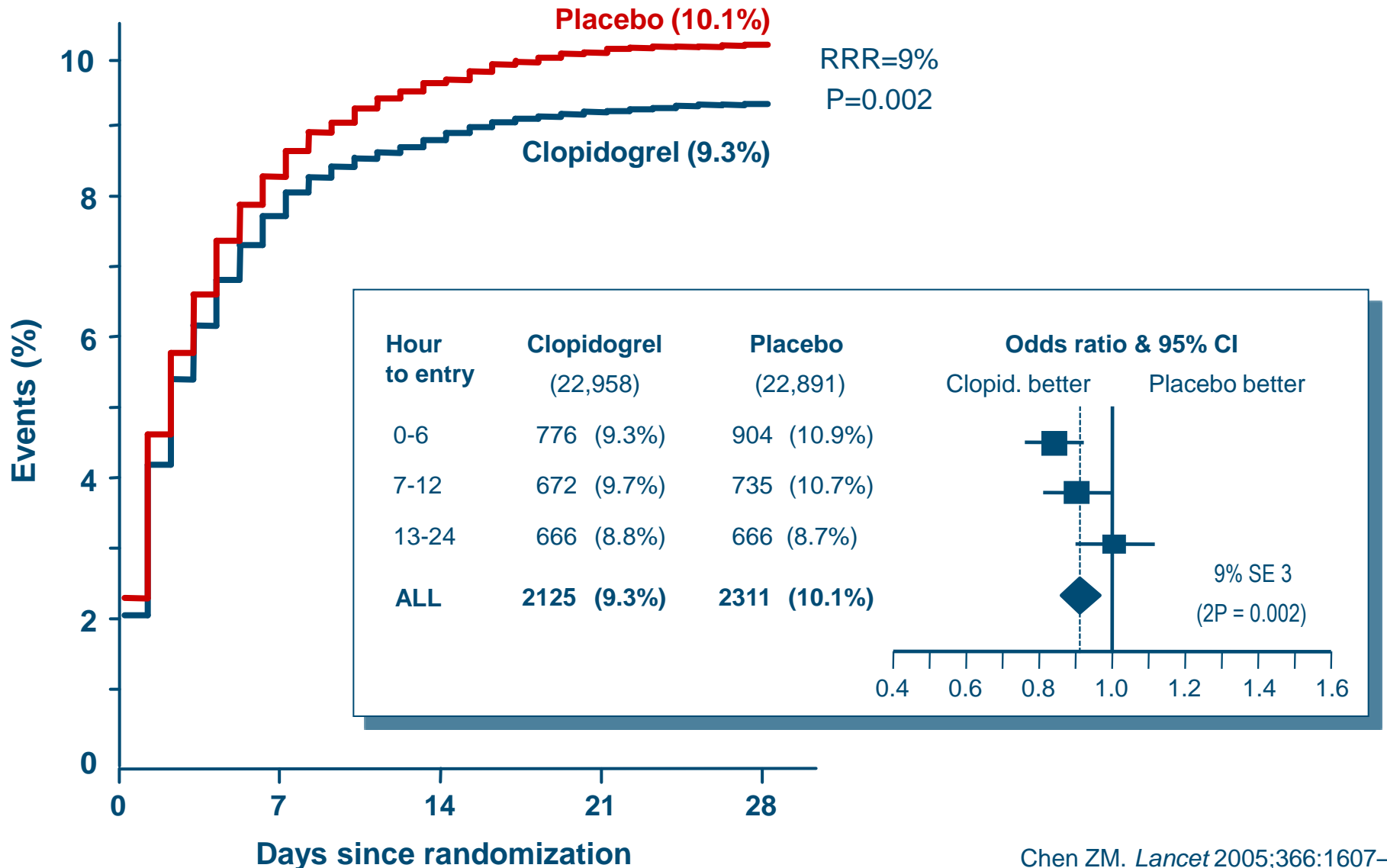
Cath = catheterization laboratory; EMS = emergency medical system; FMC = first medical contact; PCI = percutaneous coronary intervention; STEMI = ST-segment elevation myocardial infarction.

Si la opción fuera fibrinolisis,
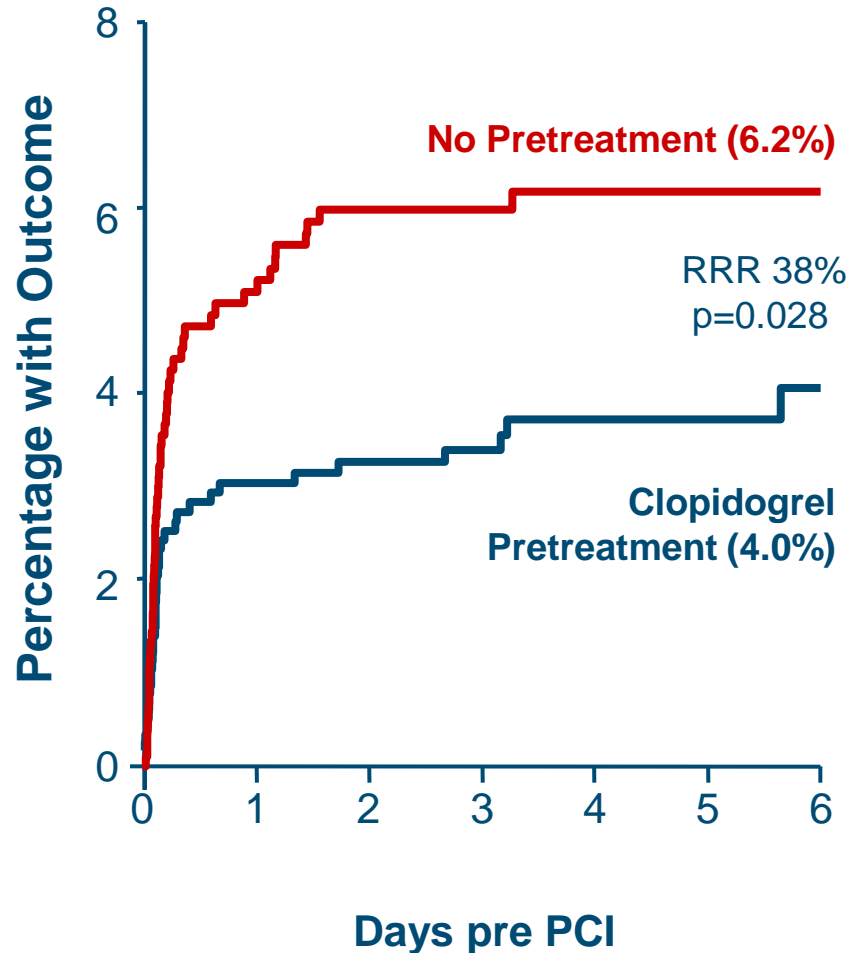
¿qué tratamiento antitrombótico utilizarías?

1. AAS 500 mg iv + Clopidogrel 600 mg p.o + Enoxa (30 mg iv + 60 mg sc.)

2. AAS 300 mg po + Clopidogrel 300 mg p.o + Enoxa (45mg sc.)

3. AAS 300 mg po + Prasugrel 60 mg + Fondaparinux 2,5 mg sc.

4. AAS 300 mg po + Ticagrelor 180 mg + Enoxaparina 40 mg sc.

5. Cualquiera de las anteriores sería válida

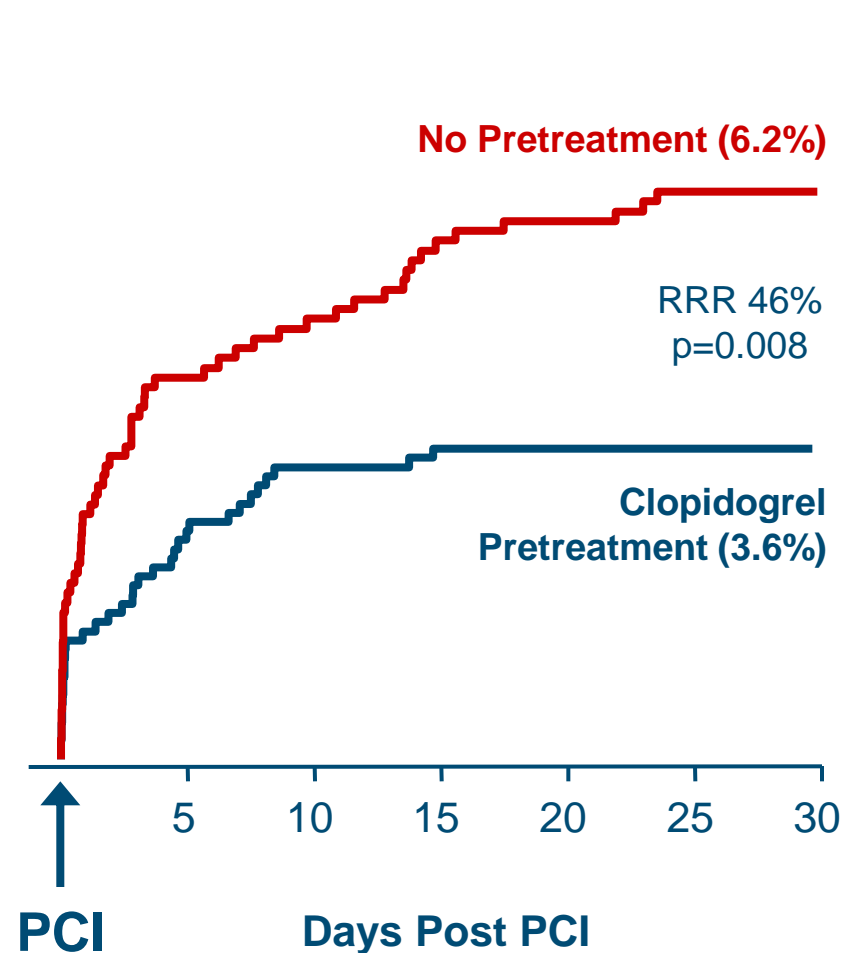# COMMIT: Effect of timing of clopidogrel treatment on STEMI outcomes (Death, re-infarction, stroke)

Placebo (10.1%)

Clopidogrel (9.3%)

RRR=9%
P=0.002

Hour to entry	Clopidogrel (22,958)	Placebo (22,891)	Odds ratio & 95% CI
			Clopid. better Placebo better
0-6	776 (9.3%)	904 (10.9%)	
7-12	672 (9.7%)	735 (10.7%)	
13-24	666 (8.8%)	666 (8.7%)	
ALL	2125 (9.3%)	2311 (10.1%)	9% SE 3 (2P = 0.002)

0.4 0.6 0.8 1.0 1.2 1.4 1.6

Events (%)

Days since randomization

Chen ZM. *Lancet* 2005;366:1607–21

PCI-CLARITY: Effect of clopidogrel pretreatment on STEMI outcomes before and after PCI


Recurrent MI or stroke <u>before</u> PCI

No Pretreatment (6.2%)

RRR 38%
p=0.028

Clopidogrel
Pretreatment (4.0%)

CV death, recurrent MI or stroke <u>after</u> PCI

No Pretreatment (6.2%)

RRR 46%
p=0.008

Clopidogrel
Pretreatment (3.6%)

Percentage with Outcome

Days pre PCI

PCI   Days Post PCI

Sabatine M. *JAMA* 2005;294:1224-32.

FIBRINOLYSIS IN THE ELDERLY

Coadjuvant therapy: Enoxaparin vs UFH (ASSENT-3 Plus)

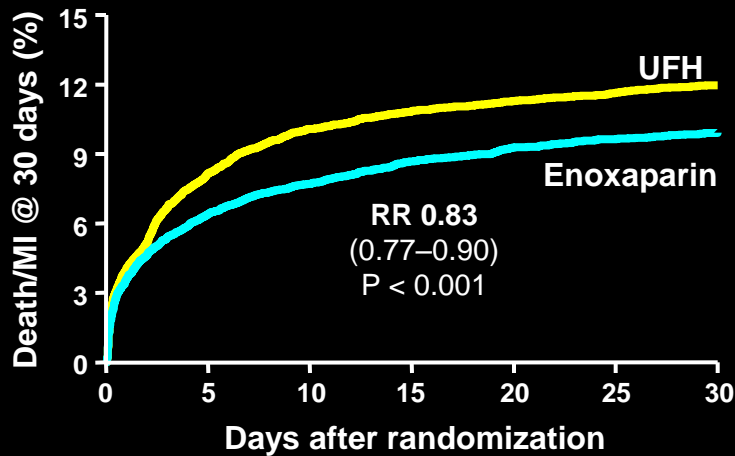**Enox**: 30 mg iv + 1 mg/Kg/12 h

Wallentin L. *Circulation* 2003;108:135-42.
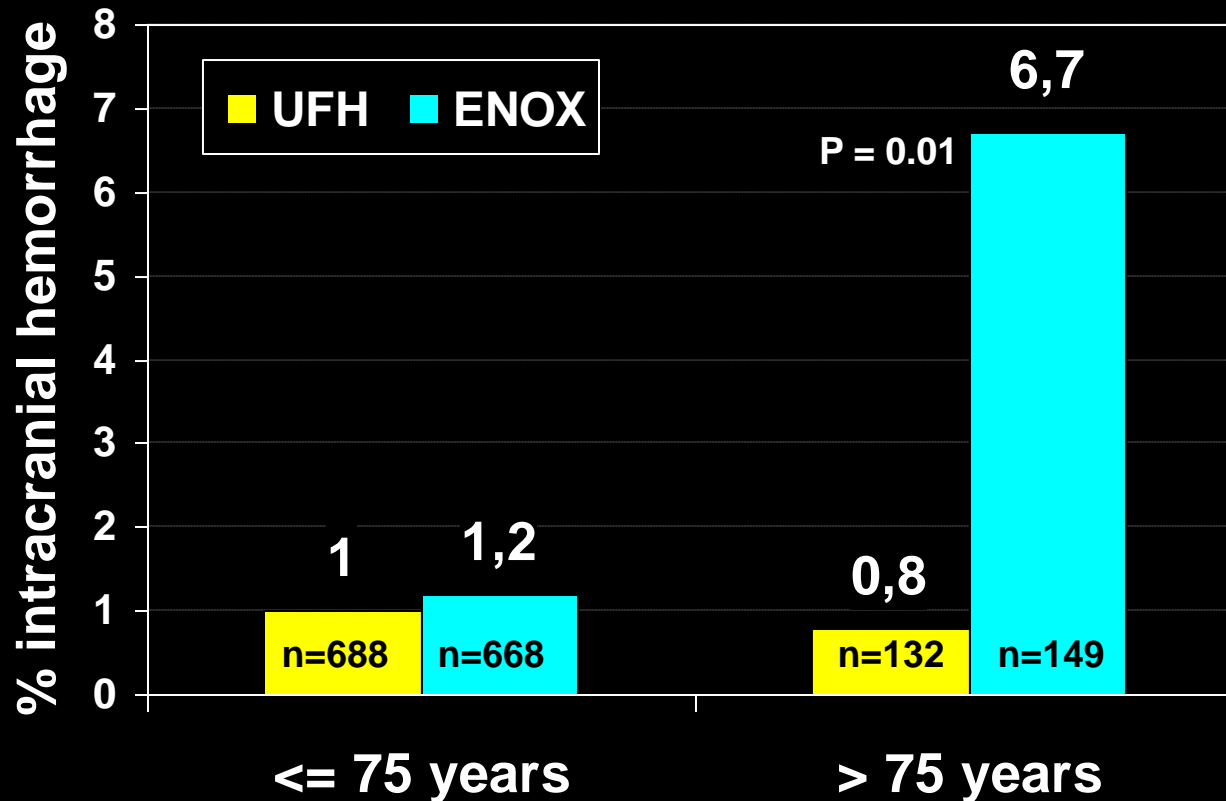
FIBRINOLYSIS IN THE ELDERLY
Coadjuvant therapy: Enoxaparin vs UFH (Extract-TIMI 25)

Enox (≥75 years): No bolus + 0.75 mg/Kg/12 h

Death/MI @ 30 days (%) — Days after randomization

UFH

Enoxaparin

RR 0.83
(0.77–0.90)
P < 0.001

Subgroup	No. of Patients	Relative Risk	End Point Unfractionated Heparin	Enoxaparin
			percent	
Sex				
Male	15,696		10.1	8.2
Female	4,783		18.3	15.4
Age				
<75 yr	17,947		9.9	7.9
≥75 yr	2,532		26.3	24.8
Infarct location				
Anterior	8,933		14.0	12.5
Other	11,400		10.2	7.9
Diabetes				
No	17,189		11.1	9.2
Yes	3,060		17.1	13.6
Prior MI				
No	17,745		11.1	9.2
Yes	2,659		17.8	14.3
Fibrinolytic agent				
Streptokinase	4,139		11.8	10.2
Fibrin-specific	16,283		12.0	9.8
Time to treatment				
<Median	9,899		11.3	8.7
≥Median	10,394		12.5	11.0
Overall	20,479		12.0	9.9

0.5 — 1.0

Enoxaparin Better — Unfractionated Heparin Better
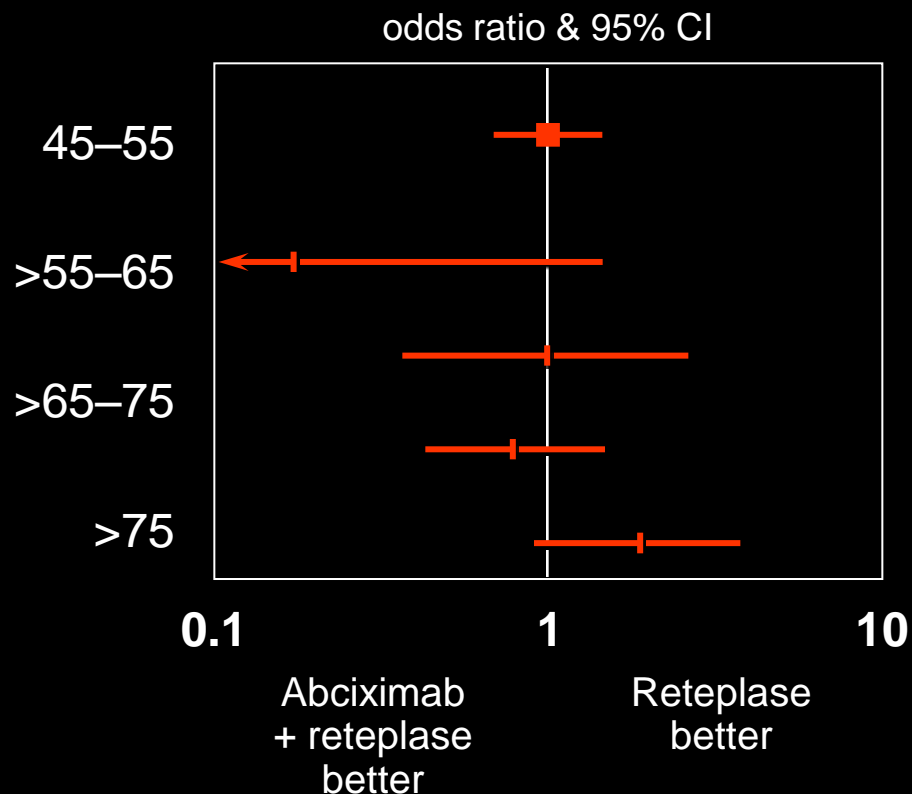
Antman EM. *N Engl J Med 2006*;354:1477-88.

FIBRINOLYSIS IN THE ELDERLY
COMBINED THERAPY with Abciximab (GUSTO V – AMI)

Overall effect
(30-day mortality)
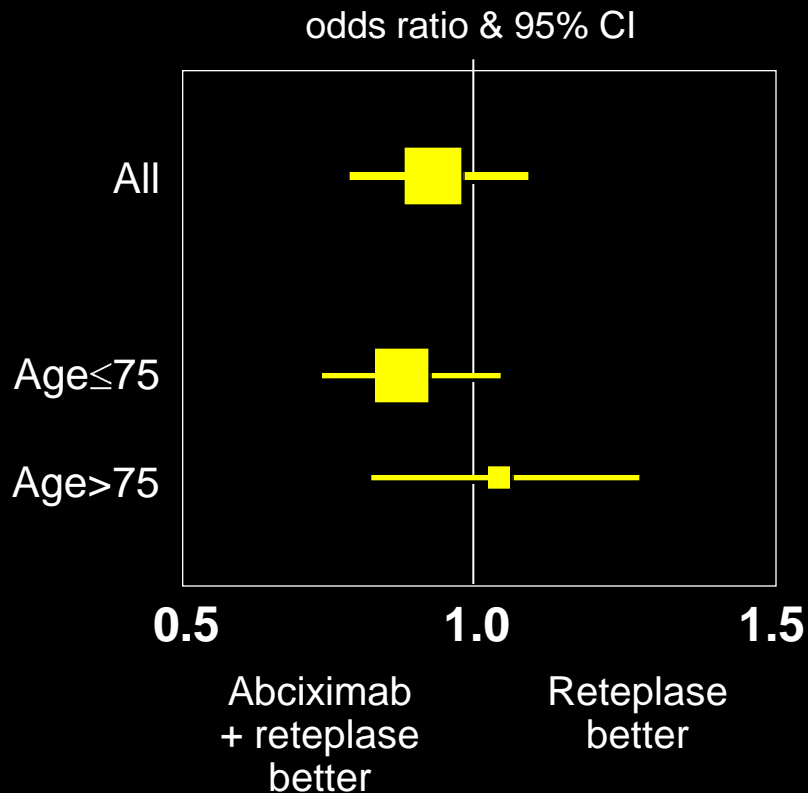
Intracranial hemorrhage rate

odds ratio & 95% CI

odds ratio & 95% CI

All

Age≤75

Age>75

45–55

>55–65

>65–75

>75

0.5   1.0   1.5

0.1   1   10

Abciximab
+ reteplase
better

Reteplase
better

Abciximab
+ reteplase
better

Reteplase
better

Lancet 2001; 357:1905-14.

FIBRINOLYSIS IN THE ELDERLY
COMBINED THERAPY with Abciximab (ASSENT 4)

TNK-tPA + Enox
Abcx Better

TNK-tPA+
UFH better

Enoxaparin vs UFH

Abciximab vs UFH

Overall event rate

Age (years) *

≤ 75

> 75

* p = 0.001 for interaction

0.5   1   2
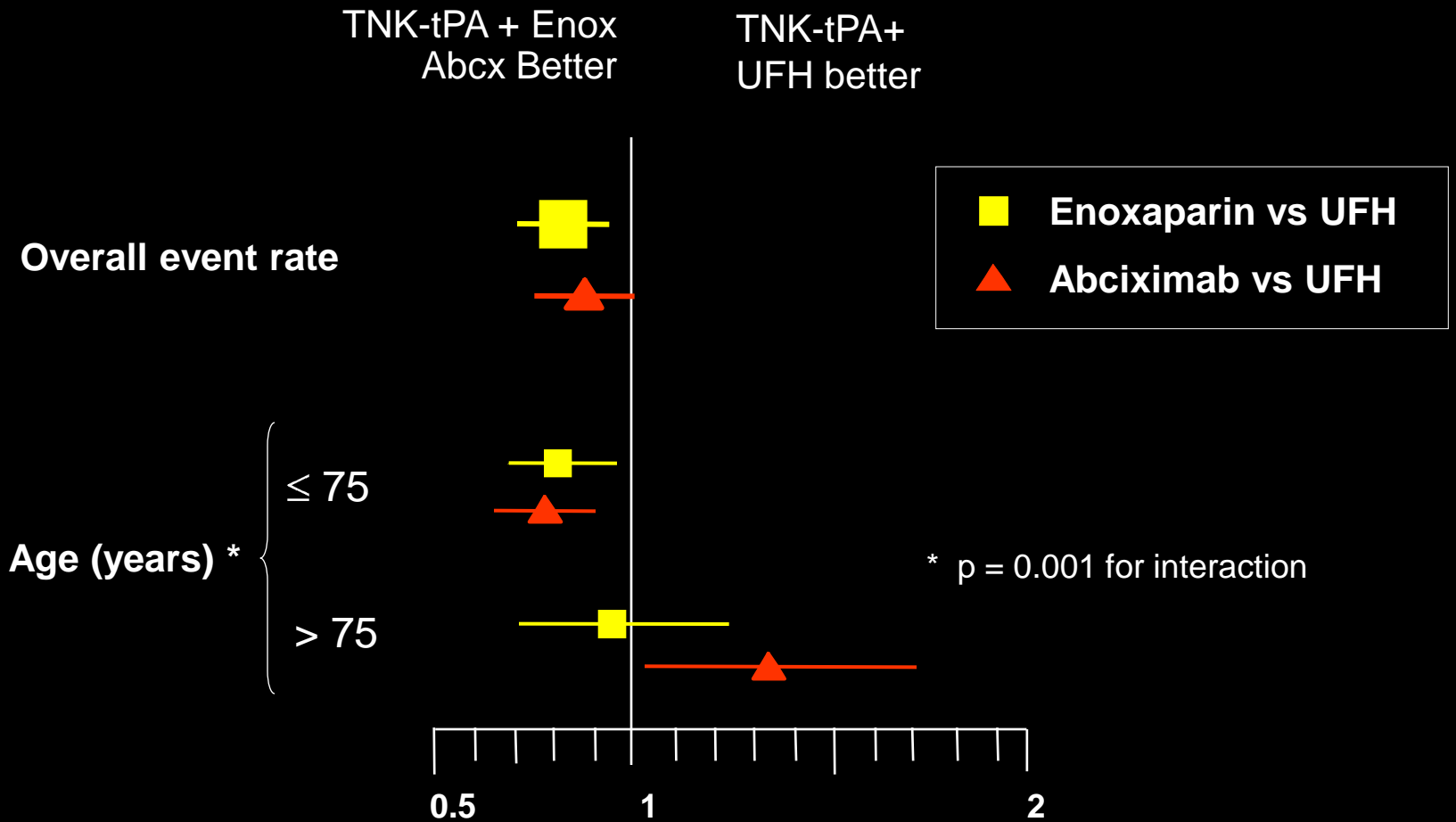
Primary efficacy and safety endpoint:
Death, recurrent MI, refractory ischaemia, ICH or other major bleeding

Lancet 2001;358:605–13.

IAM con ↑ST

REPERFUSIÓN

Fibrinolisis

Angioplastia primaria

- Aspirina   300 / 100 mg

- Clopidogrel
- Enoxaparina

<75 años   Clopi 300 / 75 mg
                  Enox 1mg/Kg/12h

<75 años   Clopi 75 / 75 mg
                  Enox 0,75 mg/Kg/12h

Angioplastia electiva

Angioplastia de rescate

Si la opción fuera angioplastia primaria,

¿qué tratamiento antiagregante utilizarías?

1. AAS 300 mg iv + Clopidogrel 600 mg p.o.

2. AAS 300 mg po + Clopidogrel 300 mg p.o. + Inh. GP IIb/IIIa

3. AAS 300 mg po + Prasugrel 60 mg

4. AAS 300 mg po + Ticagrelor 180 mg

5. Cualquiera de las anteriores sería válida

Table 12 Periprocedural antithrombotic medication in primary percutaneous coronary intervention

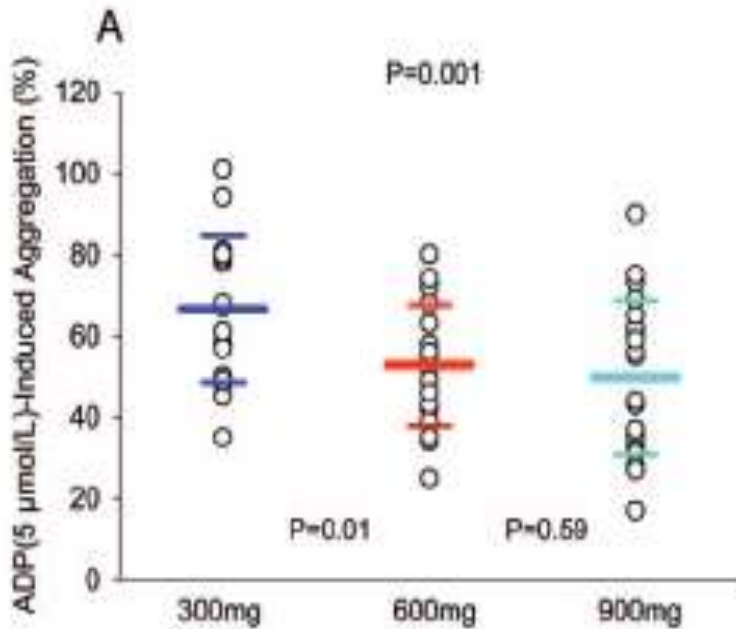| Recommendations	Class[a]	Level[b]	Ref[c]
Antiplatelet therapy			
Aspirin oral or i.v. (if unable to swallow) is recommended	I	B	133, 134
An ADP-receptor blocker is recommended in addition to aspirin. Options are:	I	A	135, 136
• Prasugrel in clopidogrel-naive patients, if no history of prior stroke/TIA, age <75 years.	I	B	109
• Ticagrelor.	I	B	110
• Clopidogrel, preferably when prasugrel or ticagrelor are either not available or contraindicated.	I	C	-
GP IIb/IIIa inhibitors should be considered for bailout therapy if there is angiographic evidence of massive thrombus, slow or no-reflow or a thrombotic complication.	IIa	C	-
Routine use of a GP IIb/IIIa inhibitor as an adjunct to primary PCI performed with unfractionated heparin may be considered in patients without contraindications.	IIb	B	137–141
Upstream use of a GP IIb/IIIa inhibitor (vs. in-lab use) may be considered in high-risk patients undergoing transfer for primary PCI.	IIb	B	127, 128, 137, 142
Options for GP IIb/IIIa inhibitors are (with LoE for each agent):			
• Abciximab		A	137
• Eptifibatide (with double bolus)		B	138, 139
• Tirofiban (with a high bolus dose)		B	140, 141
Anticoagulants			
An injectable anticoagulant must be used in primary PCI.	I	C	-
Bivalirudin (with use of GP IIb/IIIa blocker restricted to bailout) is recommended over unfractionated heparin and a GP IIb/IIIa blocker.	I	B	124
Enoxaparin (with or without routine GP IIb/IIIa blocker) may be preferred over unfractionated heparin.	IIb	B	122
Unfractionated heparin with or without routine GP IIb/IIIa blocker must be used in patients not receiving bivalirudin or enoxaparin.	I	C	I
Fondaparinux is not recommended for primary PCI.	III	B	118
The use of fibrinolysis before planned primary PCI is not recommended.	III	A	127, 143

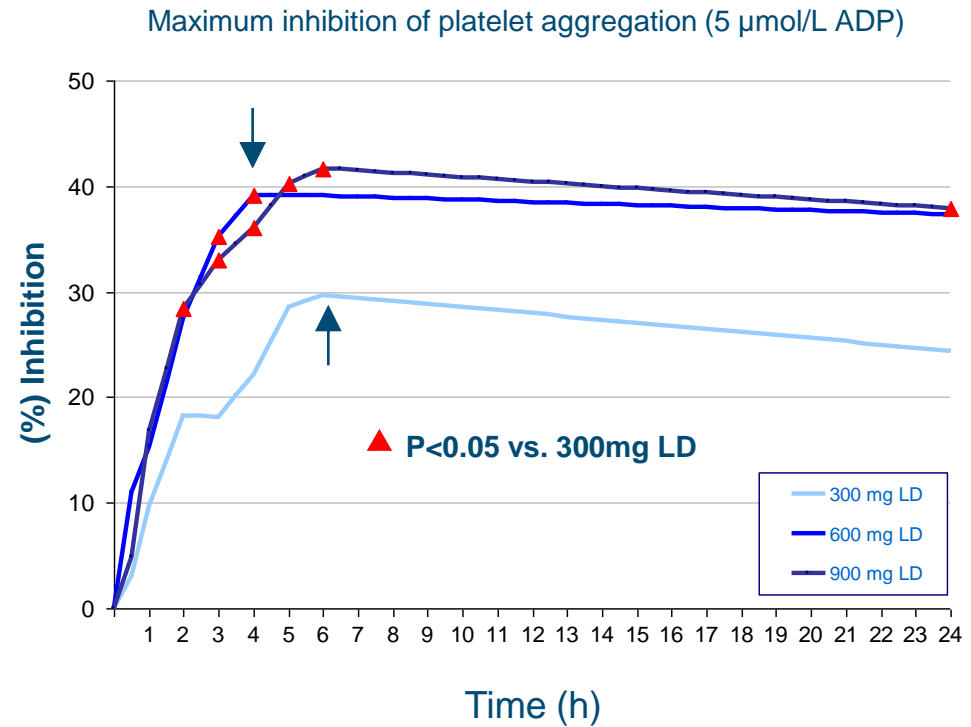# Efficacy of clopidogrel vs. ticlopidine in coronary stenting

Metanalysis

Bhatt DL. *J Am Coll Cardiol* 2002;39:9–14.
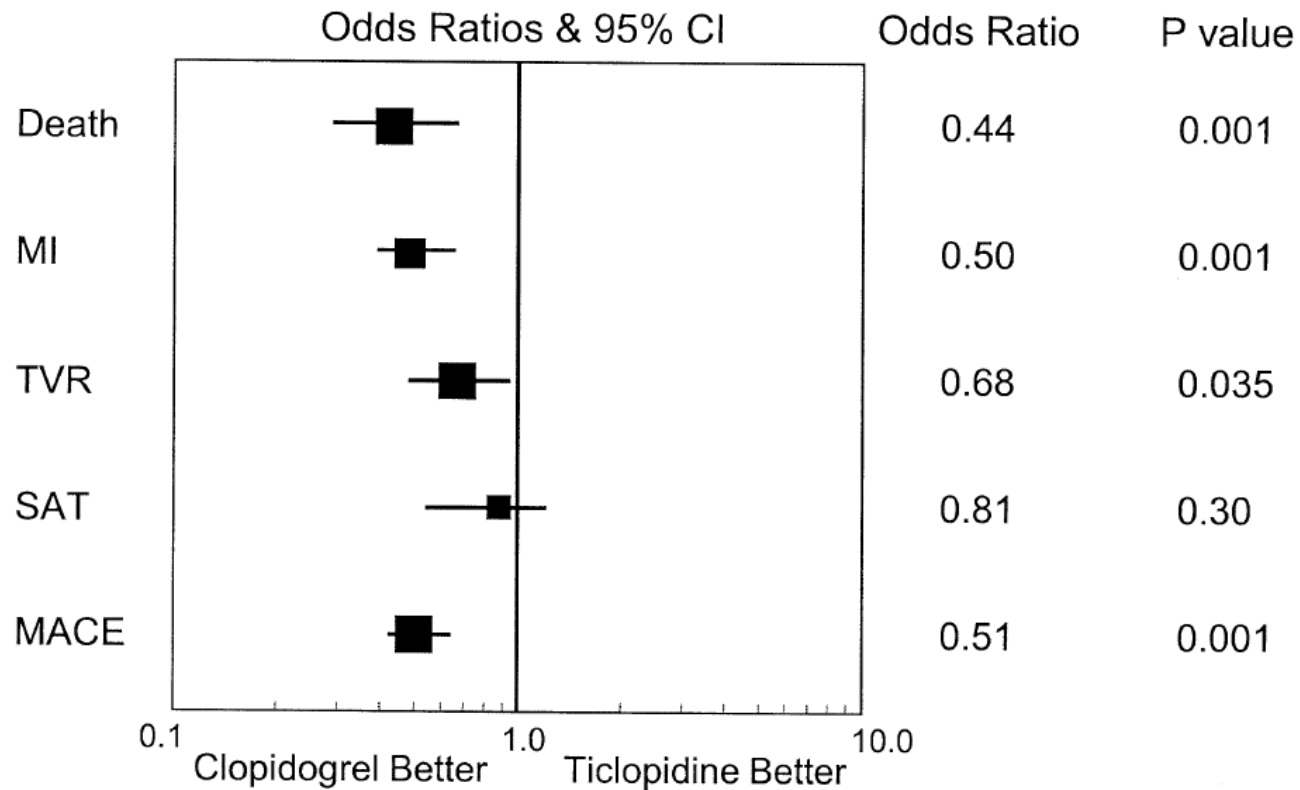
Effects of clopidogrel loading dose on platelet inhibition effect and timing

ISAR-CHOICE

ALBION

Maximum inhibition of platelet aggregation (5 µmol/L ADP)

▲ P<0.05 vs. 300mg LD

300 mg LD
600 mg LD
900 mg LD

Von Beckerath N. *Circulation* 2005;112:2946–50.

Montalescot G. *J Am Coll Cardiol* 2006;48:931–8.

PRINCIPLE-TIMI 44: Effects of prasugrel and clopidogrel on IPA

Wiviott SD et al. *Circulation*. 2007;116:2923-2932
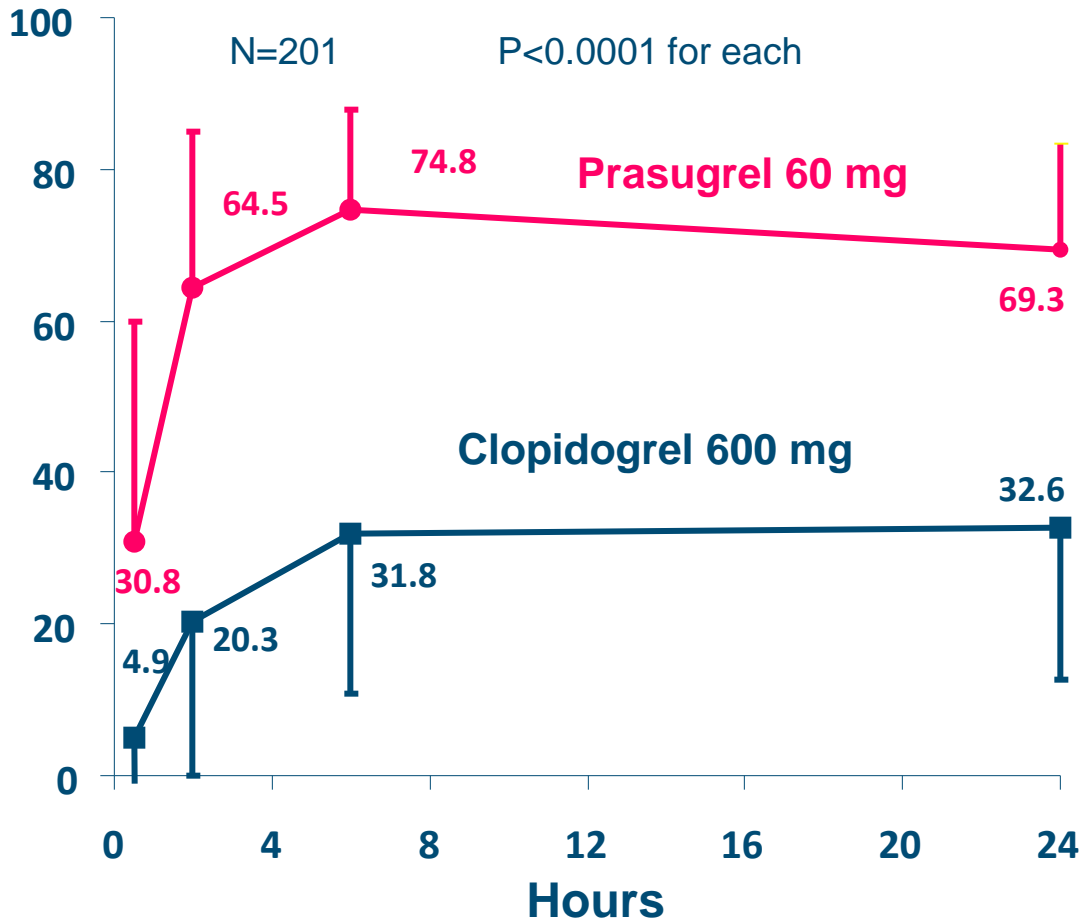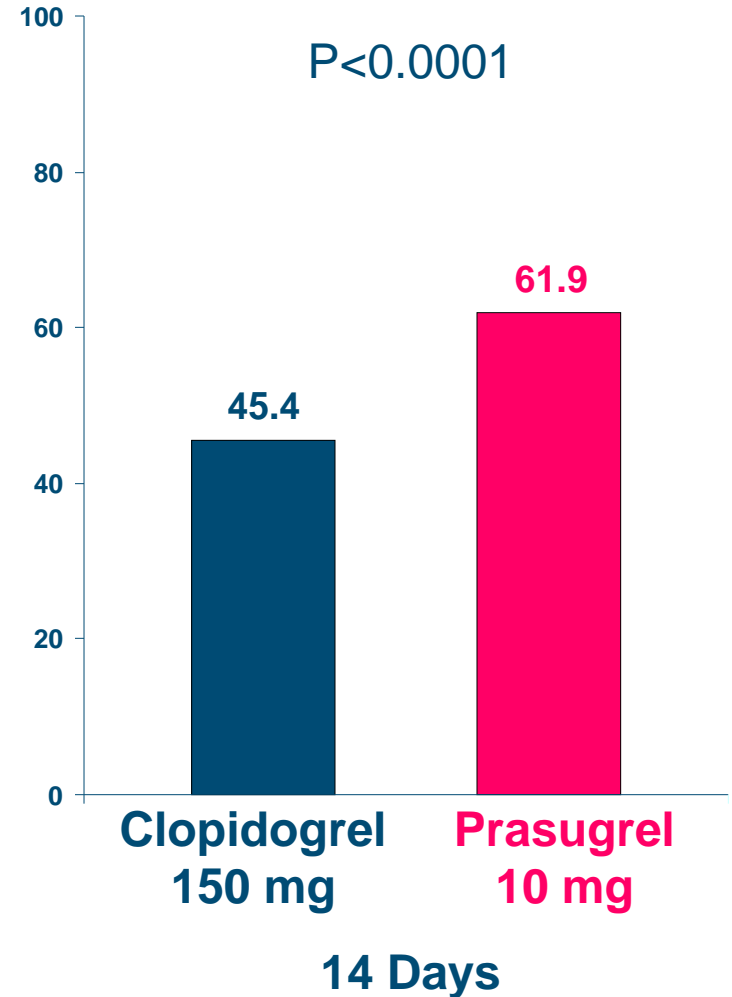
Ticagrelor 90mg vs Clopidogrel 300mg

(in NSTE-ACS Clopidogrel-Naïve Patients)

DISPERSE 2 - R Storey et al. J Am Coll Cardiol. 2007
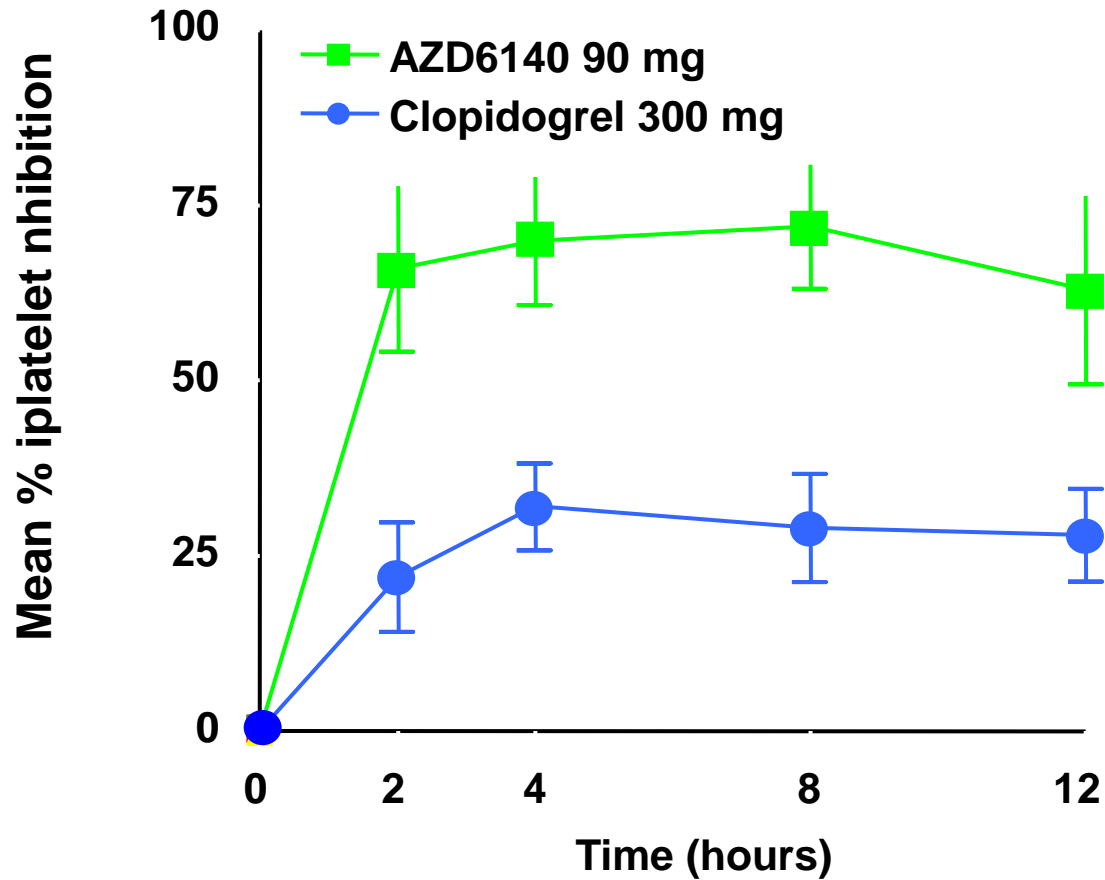
Platelet Aggregation at 4 hours

TRITON TIMI-38
Study Design

ACS (STEMI or UA/NSTEMI) & Planned PCI 26% STEMI

ASA
(75-162 mg/day)

↓

Double-blind

n=13,500

CLOPIDOGREL
300 mg LD / 75 mg MD

PRASUGREL
60 mg LD / 10 mg MD

Median duration of therapy: 12 months

1° endpoint: Time to first: CV death, non-fatal MI, non-fatal stroke
2° endpoints: CV death, MI, Stroke, Rehosp-Recurrent Ischemia
                CV death, MI, UTVR   / Stent thrombosis
Safety endpoints: Non-CABG related TIMI major bleeding / life-threatening
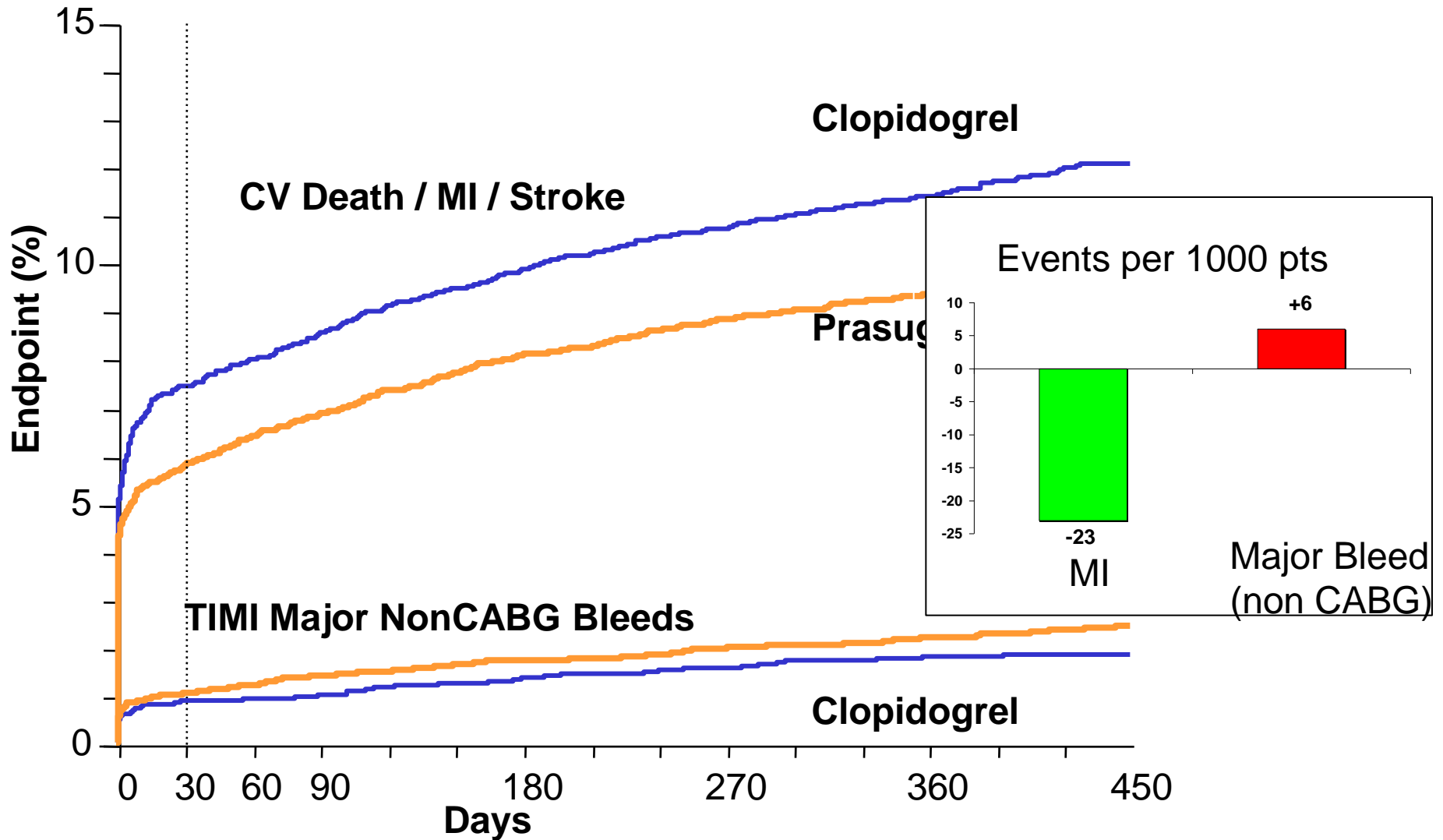   bleeding / TIMI major+minor bleeding

Wiviott SD et al. *Am Heart J.* 2006; 152:627-35.
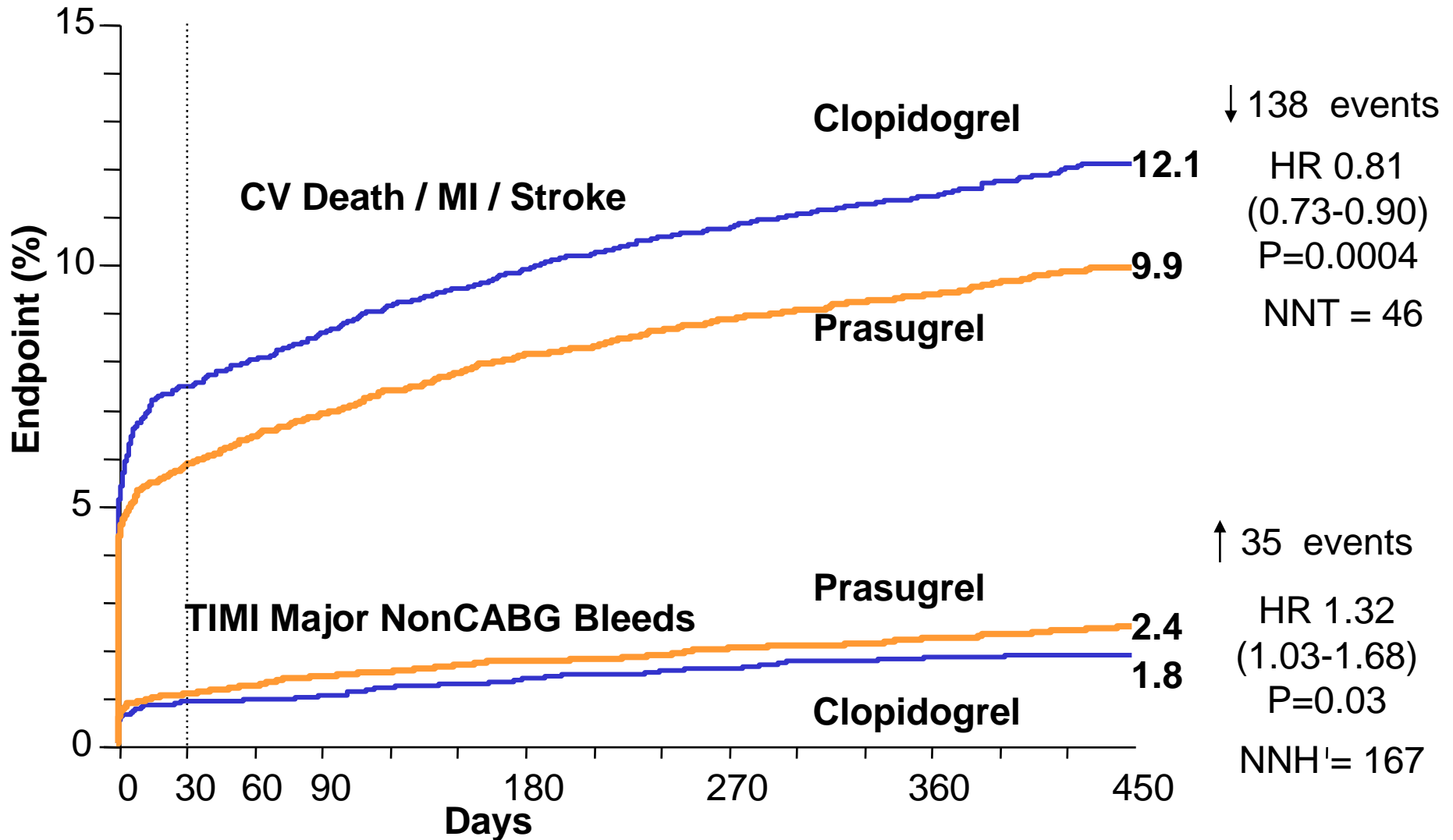
TRITON TIMI-38
Balance of Efficacy and Safety

TRITON TIMI-38
Balance of Efficacy and Safety

Clopidogrel

CV Death / MI / Stroke

Prasug...

Events per 1000 pts

+6

-23

MI

Major Bleed (non CABG)

TIMI Major NonCABG Bleeds

Clopidogrel

Endpoint (%)

Days

TRITON TIMI-38
Bleeding Events (Safety Cohort)

Chart: % Events comparing Clopidogrel (blue) and Prasugrel (yellow)

- **TIMI Major Bleeds:** Clopidogrel 1,8 | Prasugrel 2,4
  - ARD 0.6%
  - HR 1.32
  - P=0.03
  - NNH=167
- **Life Threatening:** Clopidogrel 0,9 | Prasugrel 1,4
  - ARD 0.5%
  - HR 1.52
  - P=0.01
- **Nonfatal:** Clopidogrel 0,9 | Prasugrel 1,1
  - ARD 0.2%
  - P=0.23
- **Fatal:** Clopidogrel 0,1 | Prasugrel 0,4
  - ARD 0.3%
  - P=0.002
- **ICH:** Clopidogrel 0,3 | Prasugrel 0,3
  - ARD 0%
  - P=0.74

Wiviott SD. N Engl J Med 2007;357:2001-15

Población con STEMI
TRITON-TIMI 38 (Montalescot G. Lancet 209;373:723-731)

9,5%

6,5%

CV Death, MI or Stroke
HR: 0.79; 95%CI 0.65 – 0.97
p=0.02

Number at risk
Prasugrel	1769	1588	1570	1551	1535	1517	1502	1493	1475	1226
Clopidogrel	1765	1543	1522	1506	1492	1481	1465	1459	1436	1177

TIMI Major non-CABG Bleed
HR: 0.74; 95%CI 0,39– 1,38
p=0,34

Primary PCI   1·54 (0·90–2·64)
Secondary PCI   0·39 (0·14–1·11)

1,3%

1,0%

1740	1584	1533	1502	1469	1440	1410	1390	1357	1110
1736	1551	1523	1503	1475	1449	1415	1400	1354	1092

Primary PCI
0·87 (0·68–1·11)

Secondary PCI
0·65 (0·46–0·92)

TRITON TIMI-38
Net Clinical Benefit Bleeding Risk Subgroups

Risk (%)

Prior
Stroke / TIA

Yes — **+ 37**

No — **-16**

$P_{int} = 0.006$

Age

>=75 — **-1**

< 75 — **-16**

$P_{int} = 0.18$

Wgt

< 60 kg — **+3**

>=60 kg — **-14**

$P_{int} = 0.36$

OVERALL — **-13**

0.5   1   2

Prasugrel Better   HR   Clopidogrel Better

Wiviott SD. N Engl J Med 2007;357:2001-15
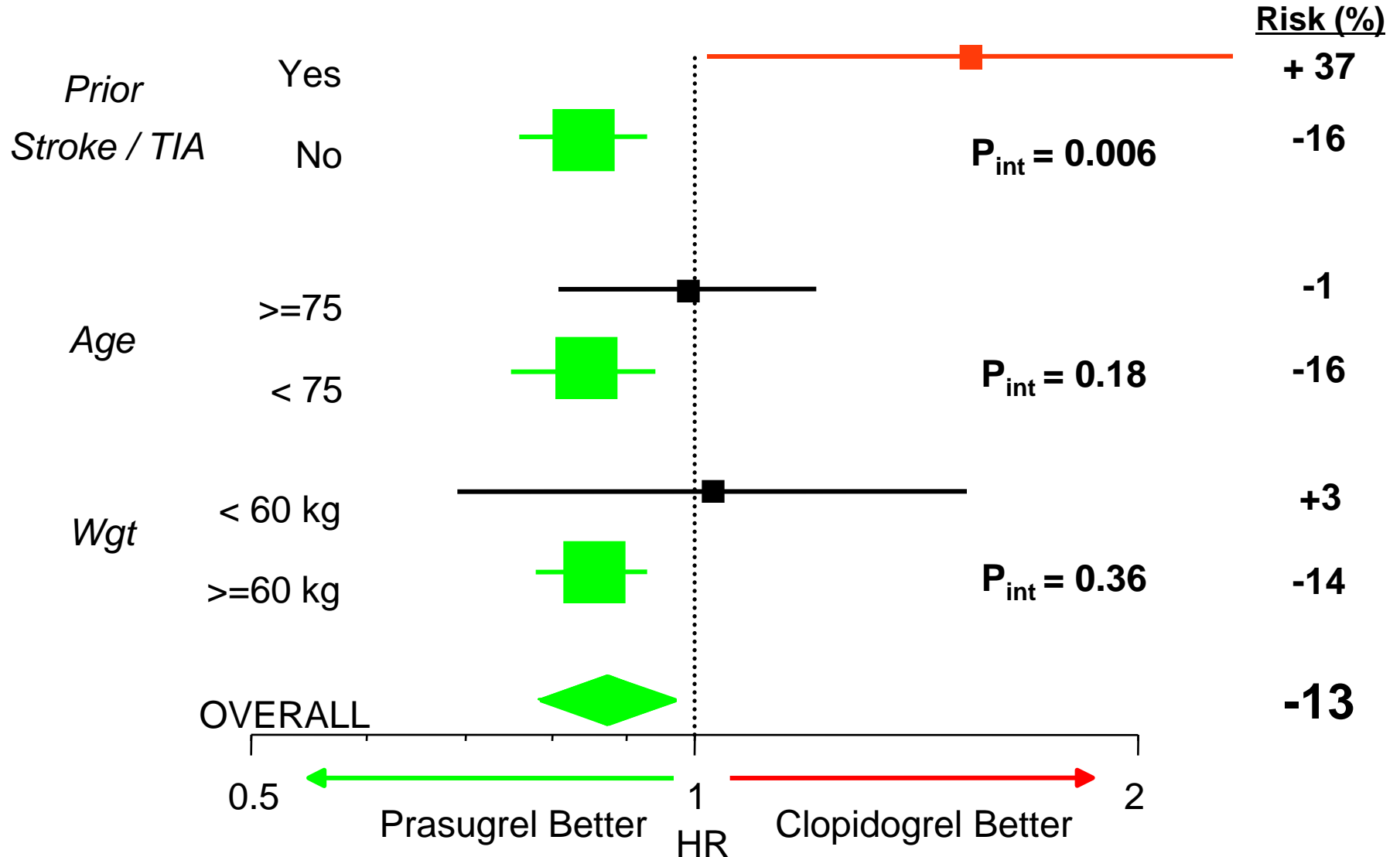
TRITON TIMI-38: Subgrupos de Sangrado
Implicaciones terapéuticas

DM Reducida
Edad > 75 a. ó
Peso < 60 kg

Evitar Prasugrel
ACV / AIT
Previo

16%

4%

Dosis mantenimiento (DM)10 mg

Beneficio Neto significativo con Prasugrel 80%

Wiviott SD. N Engl J Med 2007;357:2001-15
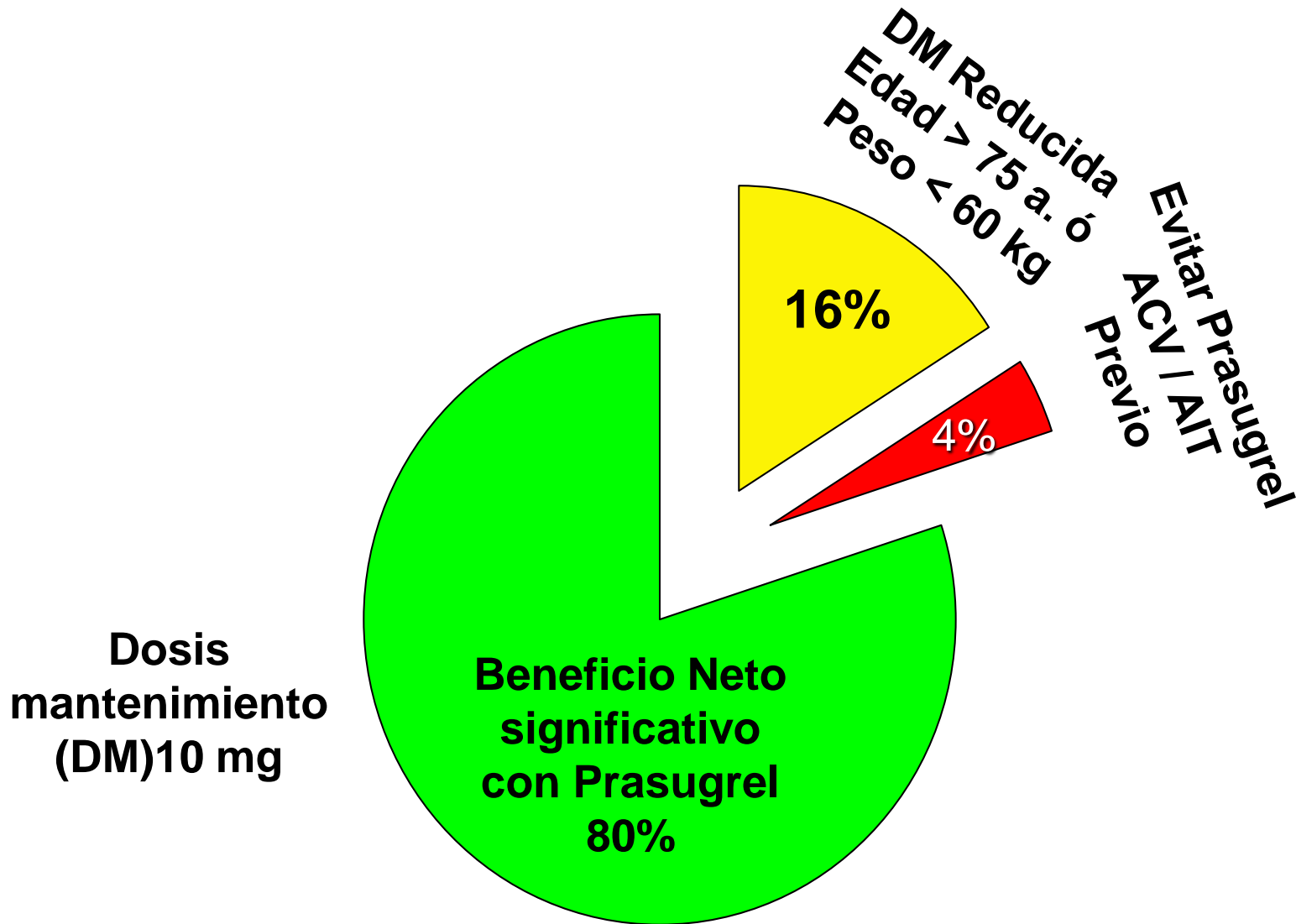
TRITON TIMI-38
Baseline Characteristics

	Clopidogrel (n=6795) %	Prasugrel (n=6813) %
UA/NSTEMI	74	74
STEMI	26	26
Age, median (IQR)	61 (53,69) y	61 (53, 70) y
≥75 y	13	13
Wgt, median (IQR)	83 kg (72, 92)	84 kg (73, 93)
< 60 kg	5.3	4.6
Female	27	25*
Diabetes	23	23
Prior MI	18	18
CrCl (ml/min) <60	12	11

Wiviott SD et al. *Am Heart J*. 2006; 152:627-35.

PLATO: Diseño del Estudio

SCASEST (riesgo moderado/alto) y SCACEST (si PCI primaria)
aleatorizados en <24 horas desde evento índice
Todos recibiendo AAS - Tratados previamente con Clopidogrel o no;

(N=18,624)

38% STEMI

Clopidogrel
Pretratados: no carga adicional,
No pretratados: 300/600-mg dosis carga
+ 75-mg/24 h mantenimiento

Ticagrelor
180-mg dosis de carga
+ 90-mg/12 h mantenimiento
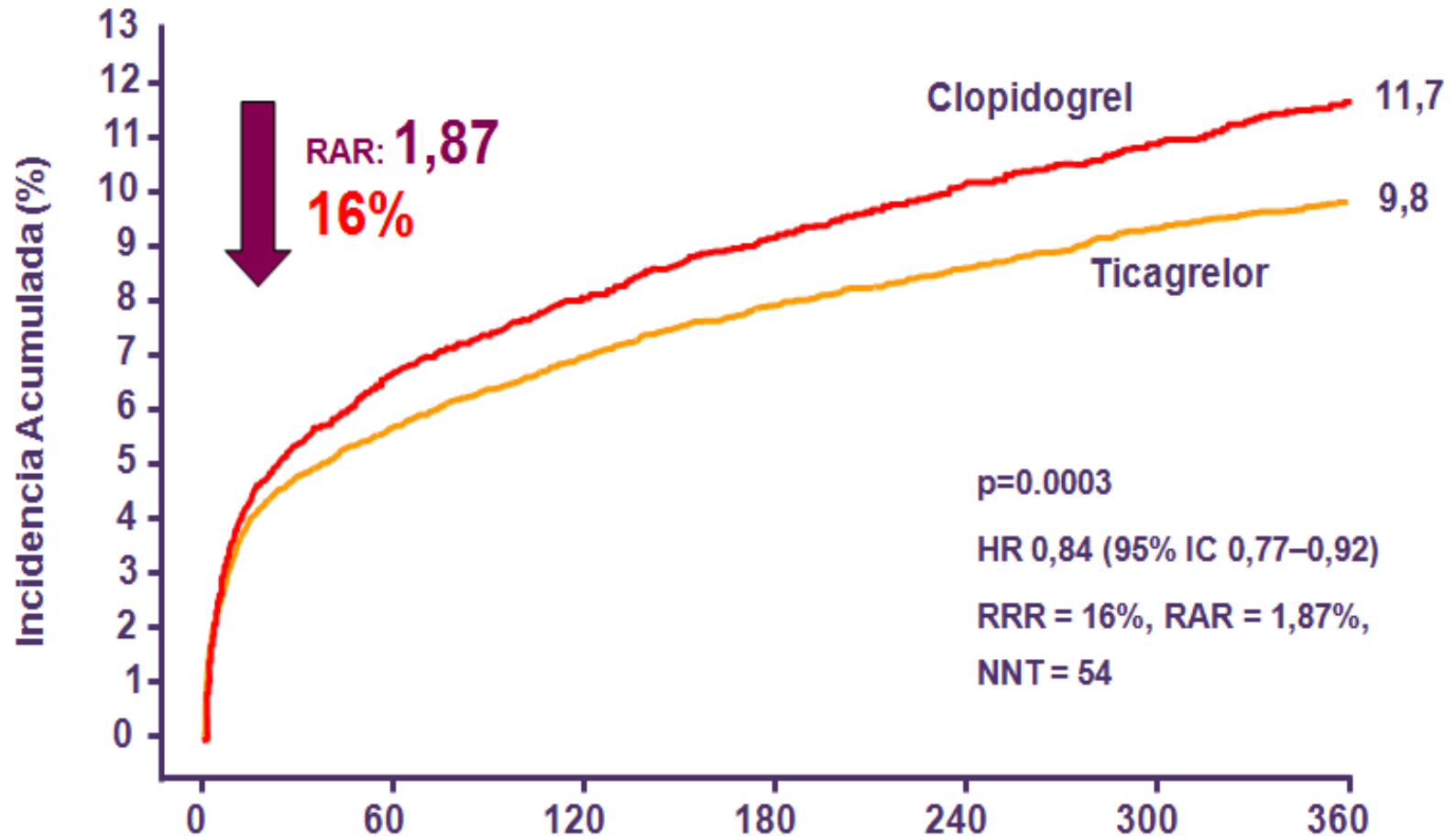(90mg adicional si ICP>24 horas)

6-12 meses de tratamiento

Objetivo Primario de eficacia: Muerte CV + IAM + ACV
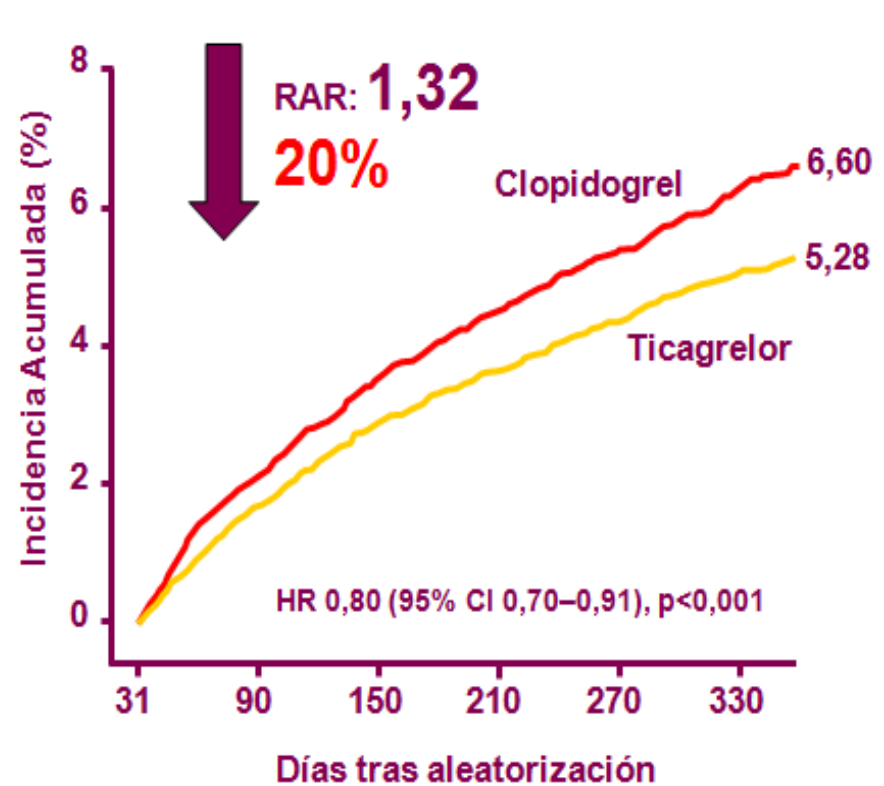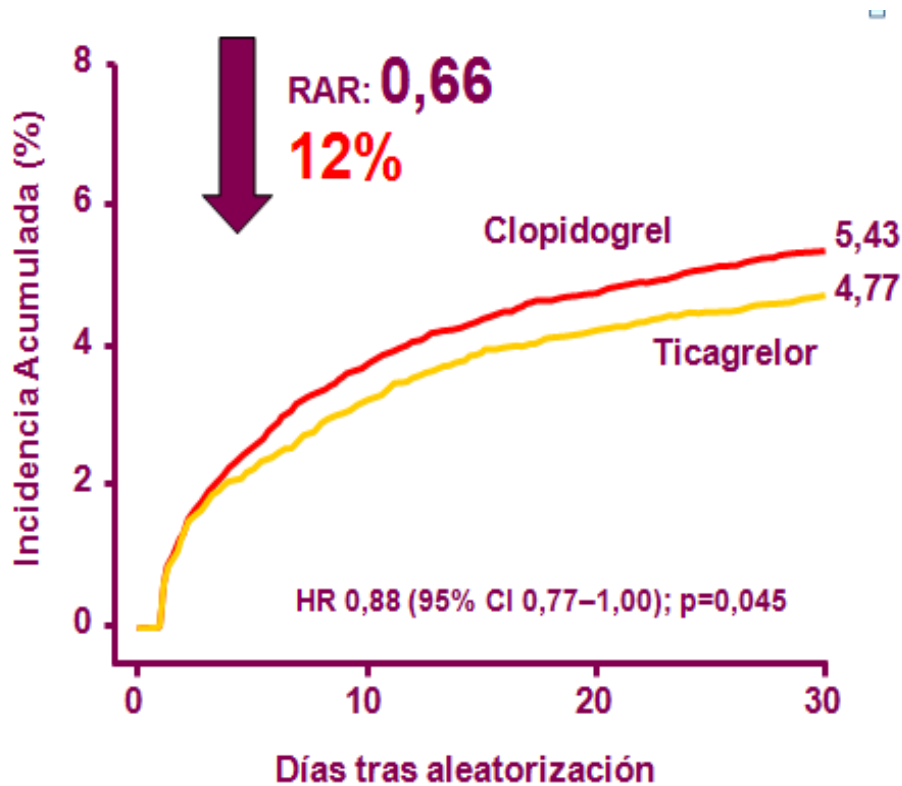Objetivo Primario de Seguridad: Sangrado mayor total

James S. *Am Heart J.* 2009;157:599-605;
Cannon CP. *Lancet.* 2010;375:283-293.

PLATO: Objetivo Primario de Eficacia

Tiempo hasta objetivo primario (Muerte CV, IAM ó ACV)

RAR: **1,87**

16%

Clopidogrel — 11,7

Ticagrelor — 9,8

p=0.0003

HR 0,84 (95% IC 0,77–0,92)

RRR = 16%, RAR = 1,87%,

NNT = 54

Incidencia Acumulada (%)

Días tras aleatorización

No. en riesgo							
Ticagrelor	9,333	8,628	8,460	8,219	6,743	5,161	4,147
Clopidogrel	9,291	8,521	8,362	8,124	6,743	5,096	4,047

Wallentin L. *New Engl J Med*. 2009;361:1045–57.

PLATO: Objetivo Primario de Eficacia en tiempo

Wallentin L. *New Engl J Med.* 2009;361:1045–57.

PLATO: Objetivos Secundarios de Eficacia

Infarto de Miocardio — Incidencia Acumulada (%) vs Meses tras aleatorización. Clopidogrel 6,9; Ticagrelor 5,8. RAR: 1,1 16%. HR 0,84 (95% IC, 0,75-0,95) P=0,005

Muerte Cardiovascular — Incidencia Acumulada (%) vs Meses tras aleatorización. Clopidogrel 5,1; Ticagrelor 4,0. RAR: 1,1 21%. HR 0,79 (95% IC, 0,69-0,91) P=0,001
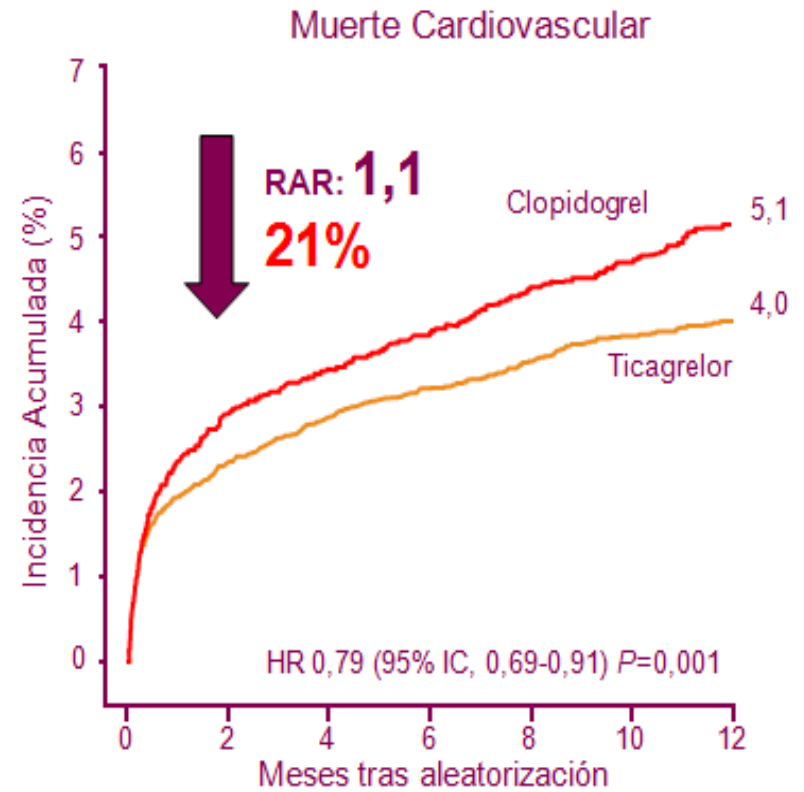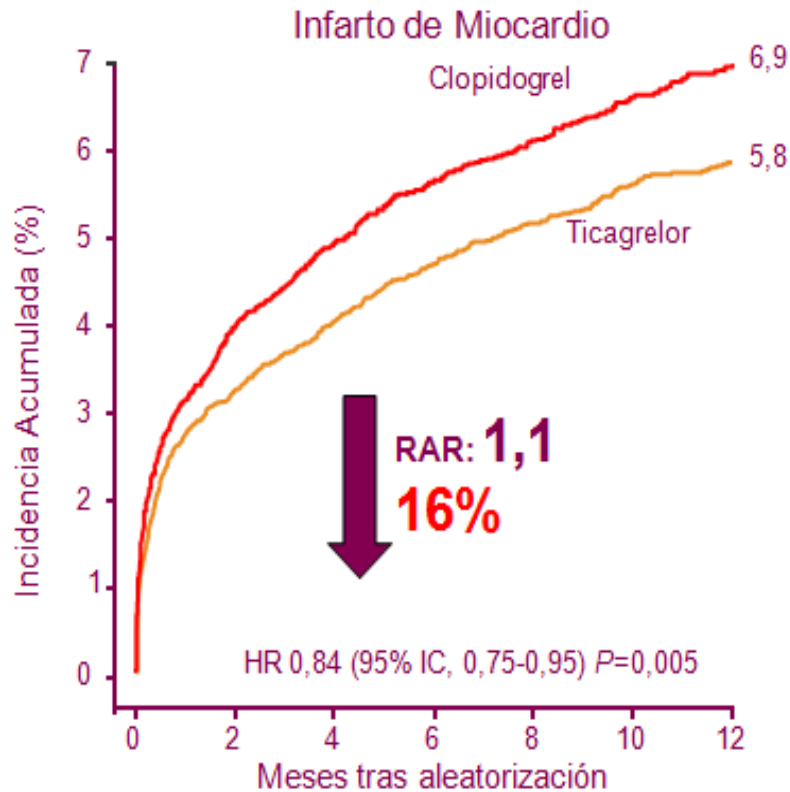
No. en riesgo

Ticagrelor	9333	8678	8520	8279	6796	5210	4191
Clopidogrel	9291	8560	8405	8177	6703	5136	4109

Ticagrelor	9333	8294	8822	8626	7119	5482	4419
Clopidogrel	9291	8865	8780	8589	7079	5441	4364

PLATO: Objetivo Primario de Seguridad
Sangrados Mayores Totales Criterio PLATO

Estimación de K-M (% por año)

Ticagrelor 11,6

Clopidogrel 11,2

RAR 0,4

HR 1,04 (95% CI 0,95–1,13); p=0,434

Días tras primera dosis
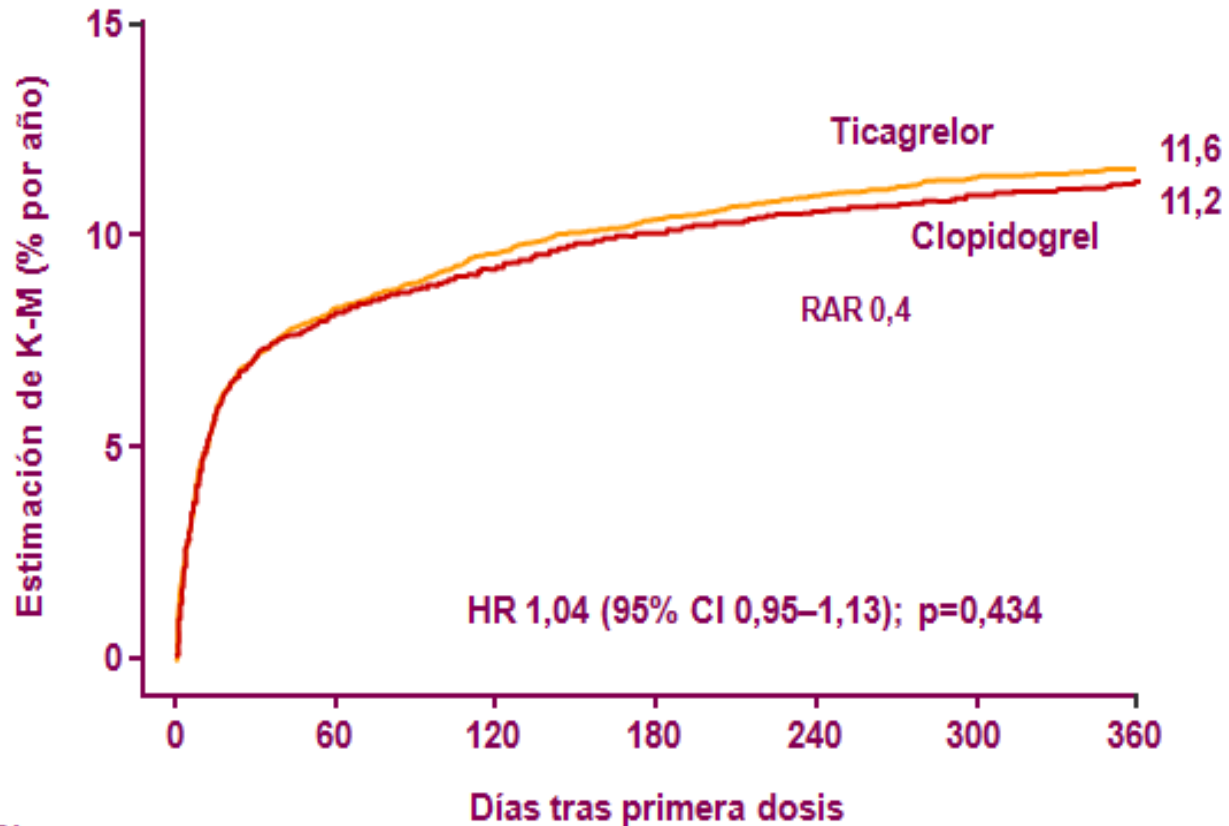
No. en Riesgo

Ticagrelor	9,235	7,246	6,826	6,545	5,129	3,783	3,433
Clopidogrel	9,186	7,305	6,930	6,670	5,209	3,841	3,479

Wallentin L. *New Engl J Med.* 2009;361:1045–57.

PLATO: Objetivos Secundarios de Seguridad

Sangrados Mayores No relacionados y relacionados con CABG

Wallentin L. *New Engl J Med.* 2009;361:1045–57.
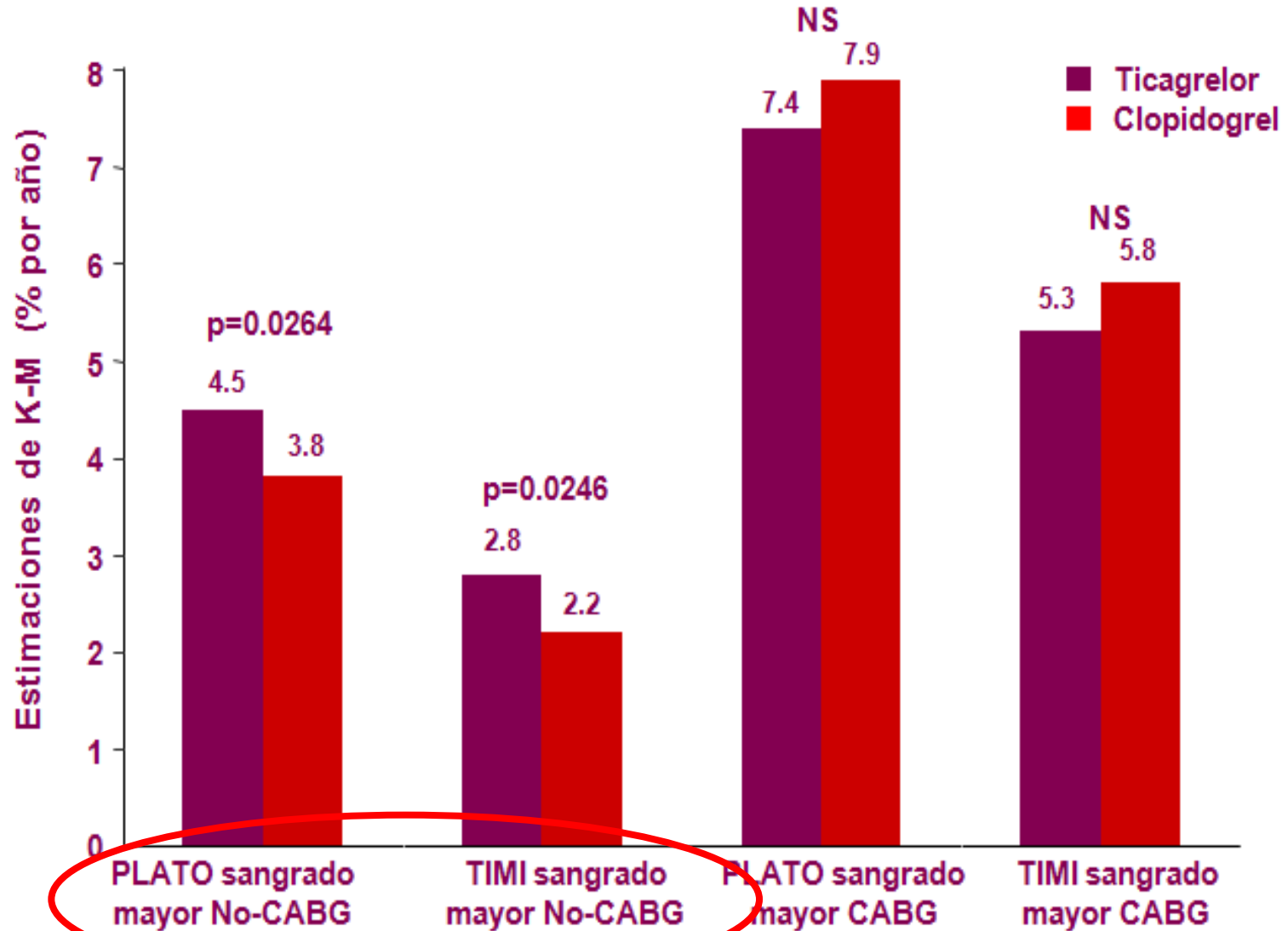
Población con STEMI
PLATO (Steg PG. Circulation 2010;122:2131-41)

Primary endpoint: CV death, MI or stroke

Clopidogrel 11.0
Ticagrelor 9.3

HR: 0.85 (95% CI = 0.74–0.97), p=0.02

Total major bleeding

Ticagrelor
Clopidogrel

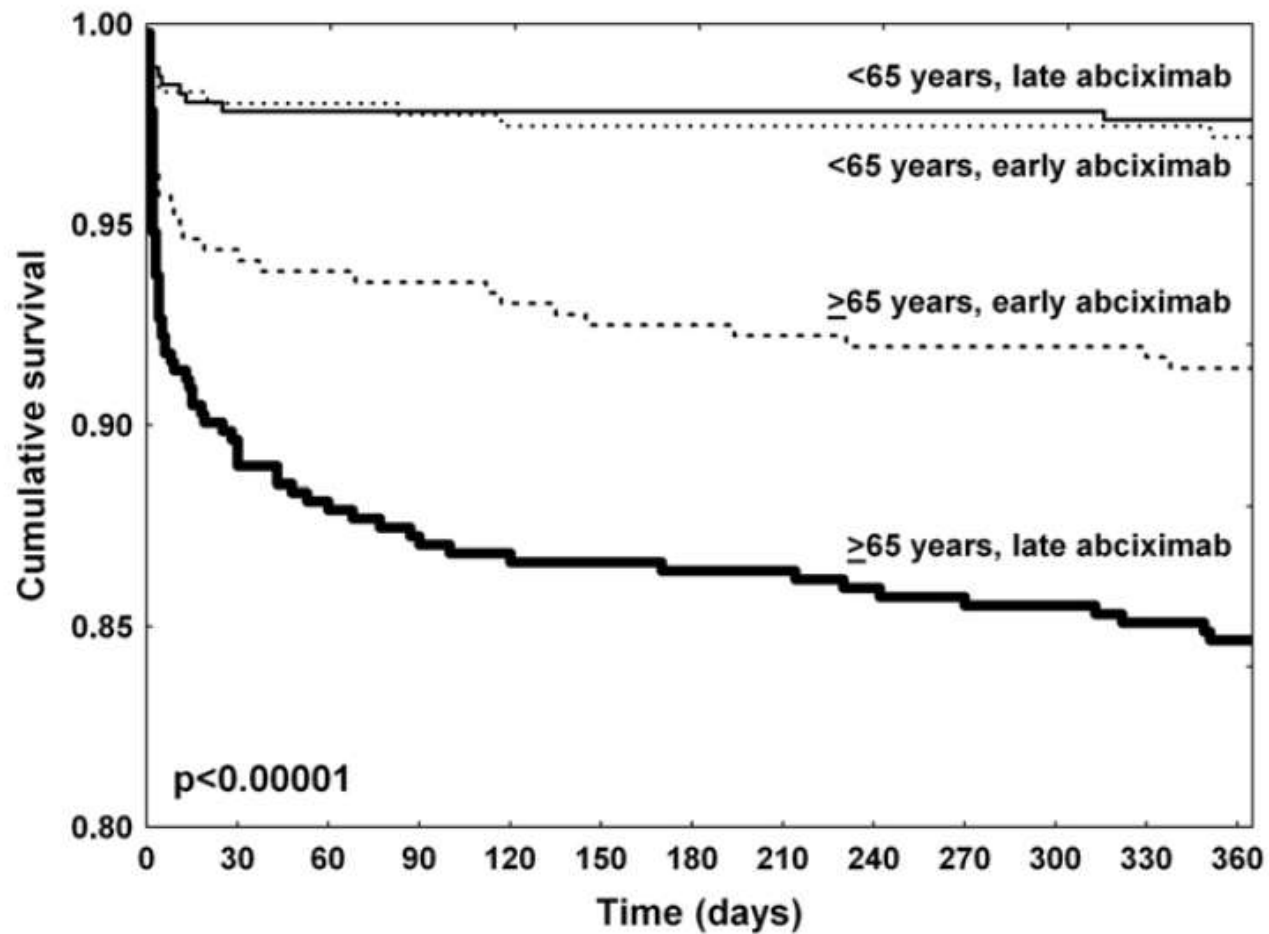| Endpoint	Ticagrelor	Clopidogrel	
PLATO major bleeding	9.0	9.3	NS
TIMI major bleeding	6.0	6.4	NS
Transfusion Any blood product	7.3	7.8	NS
PLATO life-threatening/fatal bleeding	4.5	4.9	NS
Fatal bleeding	0.3	0.1	NS
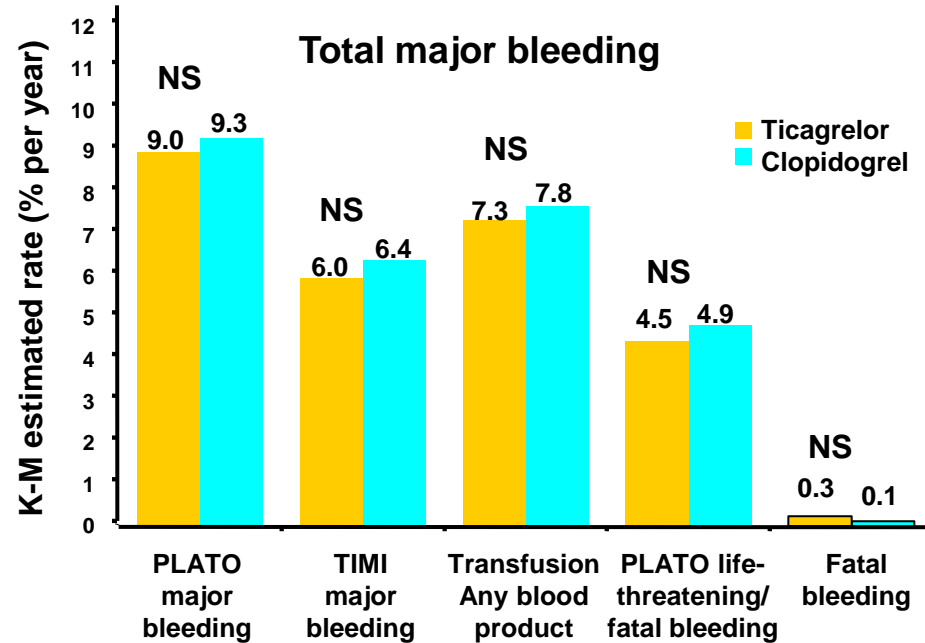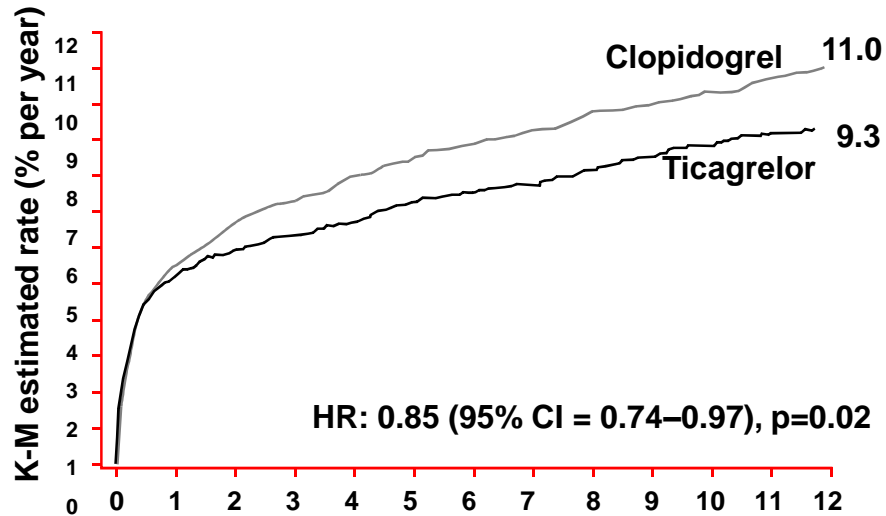
Si la opción fuera angioplastia primaria,

¿como plantearía iniciar el antitrombótico?

1. Iniciar tratamiento básico (AAS, NTG, morfina) y esperar al resultado de la coronariografía para completarlo

2. Iniciar tratamiento antiagregante y anticoagulante completo ya

3. Iniciar tratamiento básico y completarlo durante el traslado en la UVI móvil

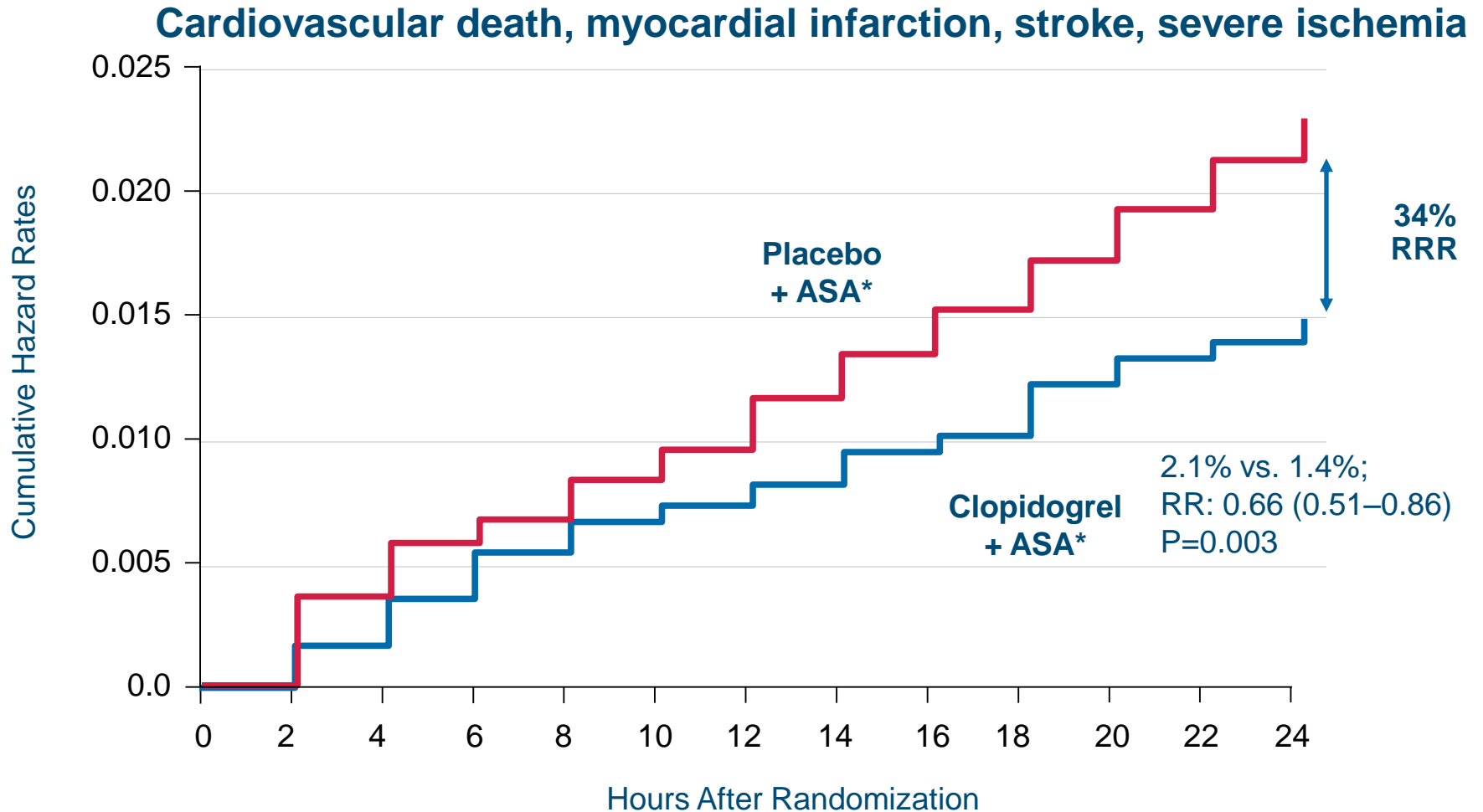4. Cualquiera es válido

5. No tengo ni idea

Table 12 Periprocedural antithrombotic medication in primary percutaneous coronary intervention

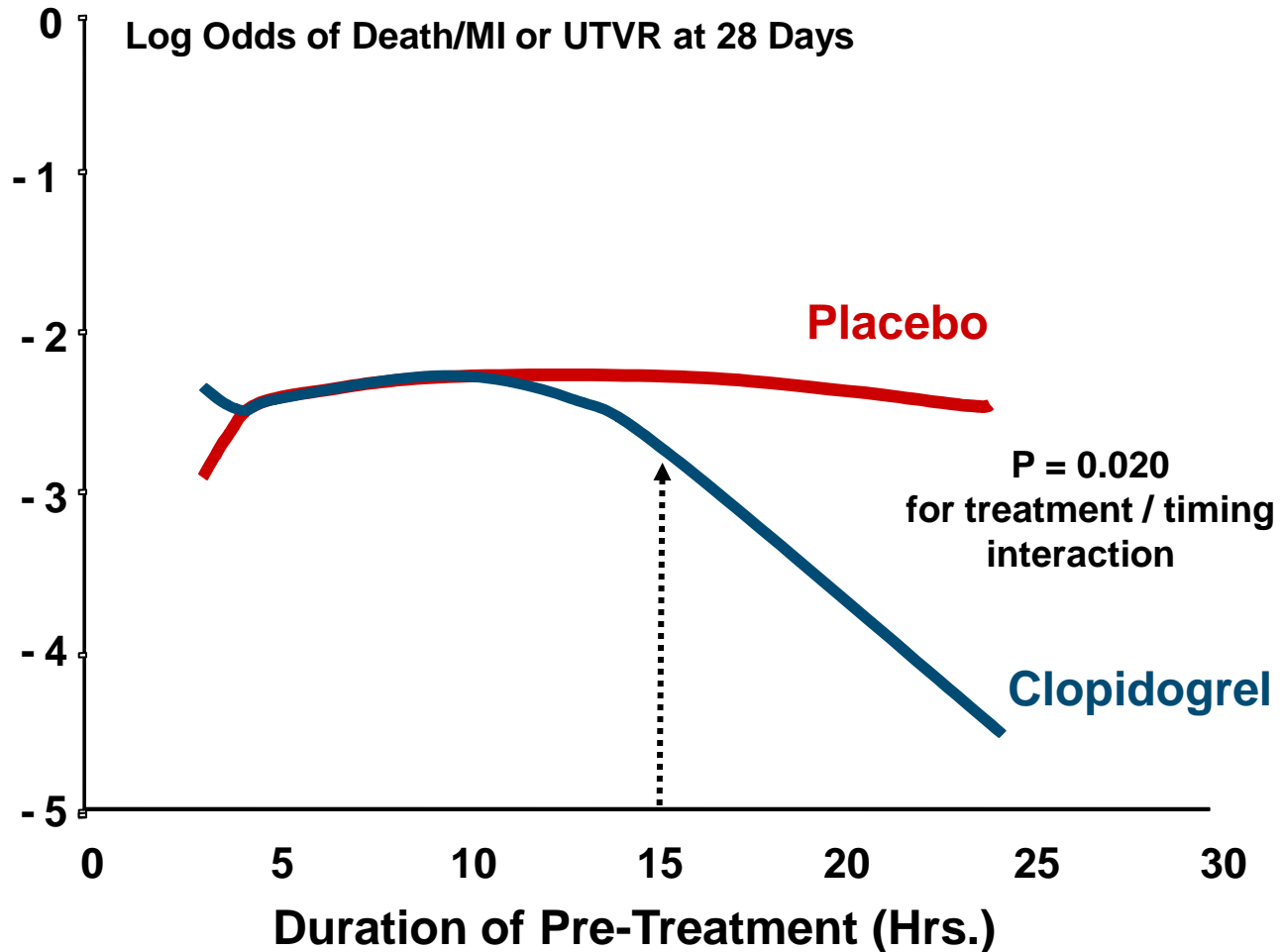| Recommendations	Class[a]	Level[b]	Ref[c]
Antiplatelet therapy			
Aspirin oral or i.v. (if unable to swallow) is recommended	I	B	133, 134
An ADP-receptor blocker is recommended in addition to aspirin. Options are:	I	A	135, 136
• Prasugrel in clopidogrel-naive patients, if no history of prior stroke/TIA, age <75 years.	I	B	109
• Ticagrelor.	I	B	110
• Clopidogrel, preferably when prasugrel or ticagrelor are either not available or contraindicated.	I	C	-
GP IIb/IIIa inhibitors should be considered for bailout therapy if there is angiographic evidence of massive thrombus, slow or no-reflow or a thrombotic complication.	IIa	C	-
Routine use of a GP IIb/IIIa inhibitor as an adjunct to primary PCI performed with unfractionated heparin may be considered in patients without contraindications.	IIb	B	137–141
Upstream use of a GP IIb/IIIa inhibitor (vs. in-lab use) may be considered in high-risk patients undergoing transfer for primary PCI.	IIb	B	127, 128, 137, 142
Options for GP IIb/IIIa inhibitors are (with LoE for each agent):			
• Abciximab		A	137
• Eptifibatide (with double bolus)		B	138, 139
• Tirofiban (with a high bolus dose)		B	140, 141
Anticoagulants			
An injectable anticoagulant must be used in primary PCI.	I	C	-
Bivalirudin (with use of GP IIb/IIIa blocker restricted to bailout) is recommended over unfractionated heparin and a GP IIb/IIIa blocker.	I	B	124
Enoxaparin (with or without routine GP IIb/IIIa blocker) may be preferred over unfractionated heparin.	IIb	B	122
Unfractionated heparin with or without routine GP IIb/IIIa blocker must be used in patients not receiving bivalirudin or enoxaparin.	I	C	1
Fondaparinux is not recommended for primary PCI.	III	B	118
The use of fibrinolysis before planned primary PCI is not recommended.	III	A	127, 143

ABCIXIMAB BEFORE PCI
(EUROTRANFER)

Dziewierz A. *Int J Cardiol* 2010;143;147–53.

CURE: Early effects of clopidogrel on NSTEACS event reduction

Cardiovascular death, myocardial infarction, stroke, severe ischemia

Placebo + ASA*

Clopidogrel + ASA*

34% RRR

2.1% vs. 1.4%;
RR: 0.66 (0.51–0.86)
P=0.003

Yusuf S. *Circulation* 2003;107:966–72.

CREDO: Effects of loading dose timing of clopidogrel pretreatment on PCI outcomes

Log Odds of Death/MI or UTVR at 28 Days

Placebo

P = 0.020
for treatment / timing
interaction

Clopidogrel

Duration of Pre-Treatment (Hrs.)

Steinhubl SR. *J Am Coll Cardiol*. 2006;4:939-43.

Meta-analysis of Clopidogrel Pretreatment in PCI:
Effect on CV death, MI, or stroke after PCI
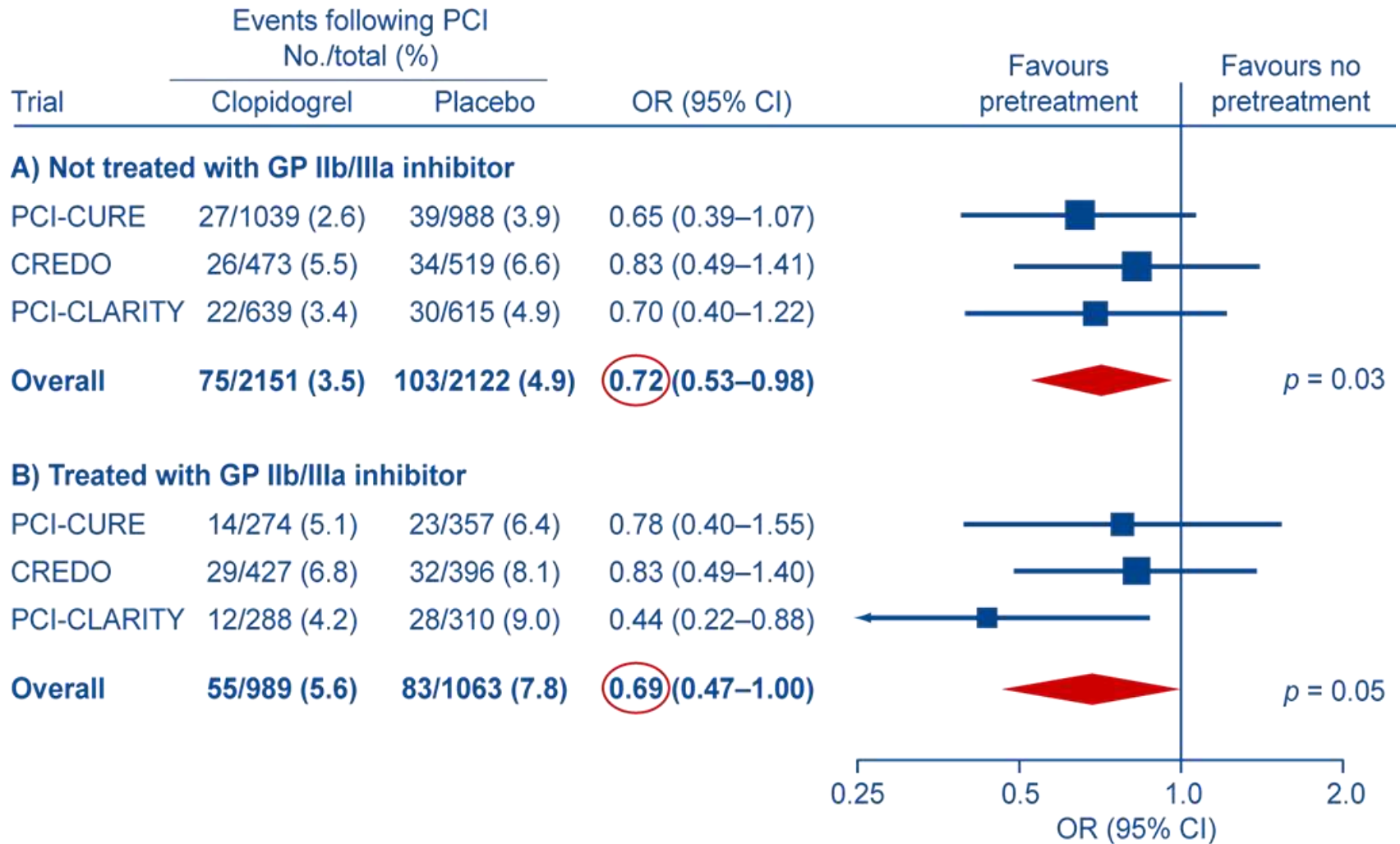
The ATLANTIC Trial-
Principal Investigator G. Montalescot

STE –ACS planned for PCI

N = 1770

RANDOMIZE
DOUBLE BLIND

- Written informed consent in mobile care unit
- Symptoms of acute MI of more than 30 min but less than 6 hours
- New persistent ST-segment elevation ≥ 1 mm in two or more contiguous ECG leads

Pre-Hospital

Ticagrelor 180mg loading dose

Loading dose placebo

In-Hospital

Loading dose placebo

Ticagrelor 180mg loading dose

Primary Objective:

- TIMI flow grade 3 of MI culprit vessel at initial angiography or

- ≥70% ST-segment elevation resolution pre-PCI

Ticagrelor 90mg/bid

30d

IAM con ↑ST

REPERFUSIÓN

Fibrinolisis

Angioplastia primaria

- Aspirina   300/100 mg

  +

- Clopidogrel 600/75 mg
  ó
- Prasugrel   60/10 mg
  ó
- Ticagrelor   180/90 mg/12h

IAM con ↑ST

REPERFUSIÓN

Fibrinolisis

- Aspirina   300 / 100 mg

- Clopidogrel
- Enoxaparina

  <75 años   Clopi   300 / 75 mg
                  Enox   1mg/Kg/12h

  <75 años   Clopi   75 / 75 mg
                  Enox   0,75 mg/Kg/12h

Angioplastia electiva   Angioplastia de rescate

Angioplastia primaria

- Aspirina   300/100 mg

                  +

- Clopidogrel 600/75 mg
  ó
- Prasugrel   60/10 mg
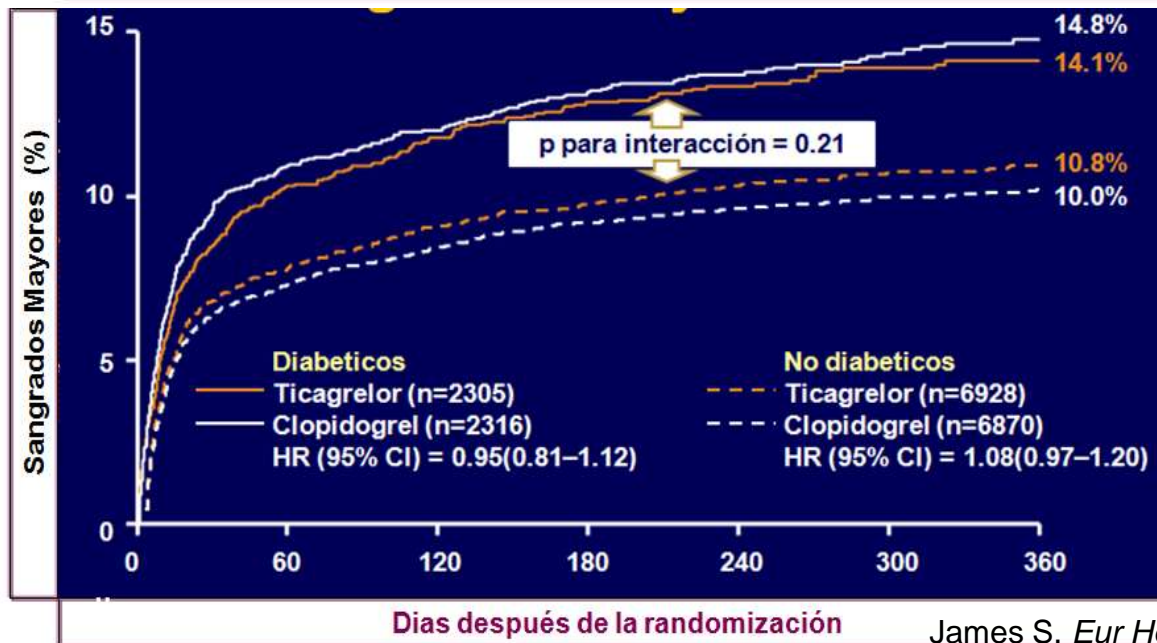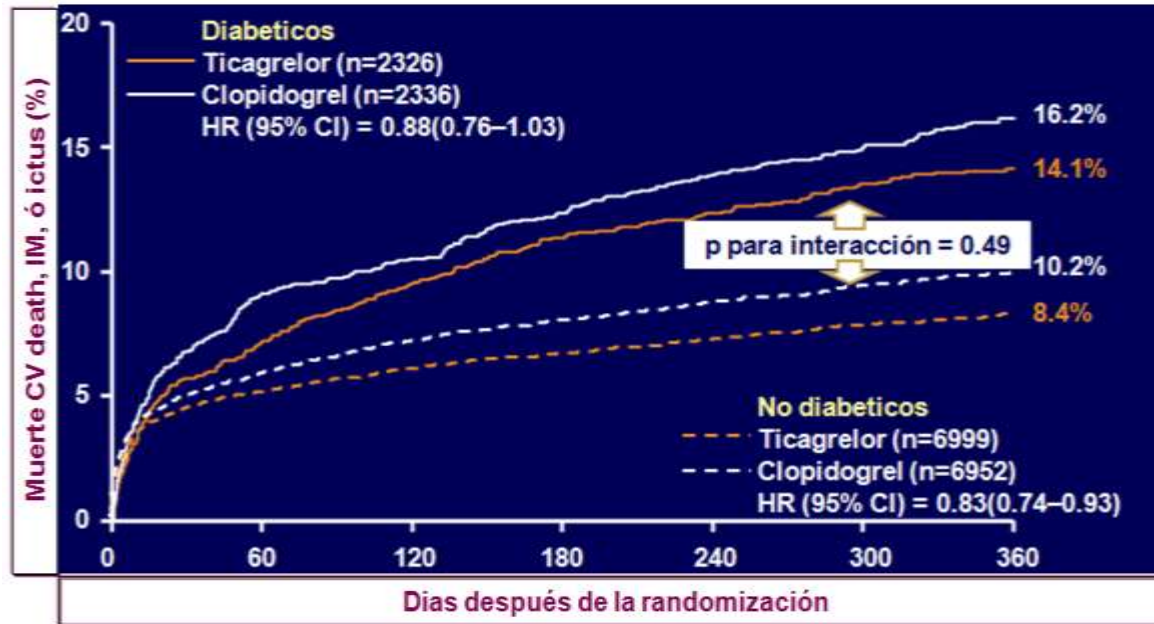 ó
- Ticagrelor   180/90 mg/12h

Si la opción fuera angioplastia primaria,

¿qué tratamiento anticoagulante utilizarías ahora?

1.   Ninguno

2.   Heparina Na 4000 UI iv.

3.   Enoxaparina 30 mg iv.

4.   Bivalirudina

5.   Fondaparinux

Manejo de los SCA

Tratamiento Farmacológico

Estrategia Invasiva

Otros tratamientos preventivos
- Estatinas
- IECAS
- Inh aldosterona

Tratamiento Antiisquémico (BB, NTG, otros)

Tratamiento Antitrombótico

Anticoagulación
- Heparina Na
- Enoxaparina
- Fondaparinux
- Bivalirudina

Antiagregación
- Aspirina
- Clopidogrel
- Prasugrel
- Ticagrelor
- Inh. GP IIb/IIIa?

SCASEST

SCACEST

ICP CRC

ICPP FL

PLATO: Subgrupo de diabéticos (n=4662)

James S. *Eur Heart J* 2010;31:3006–3016.

TRITON-TIMI-38 *vs* PLATO
Study Designs

TRITON

n= 13,608

ACS → Angiograpy → R → PCI

Prasugrel LD 60 mg + MD 10 mg

Clopidogrel LD 300 mg + MD 75 mg

100%   99%

PLATO

n= 18,624

ACS → R → Angiograpy → PCI

Ticagrelor 180 mg + MD 90 mg x2

Clopidogrel LD 300 mg + MD 75 mg
Clopidogrel LD 600 mg (16%)

81%   64.3%
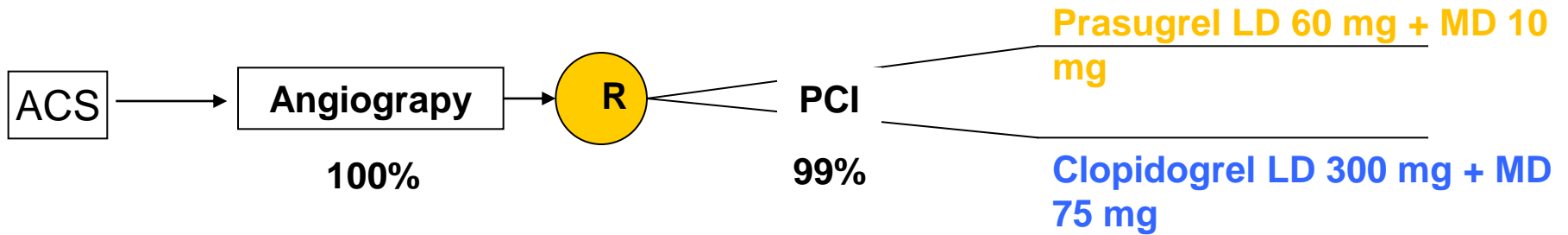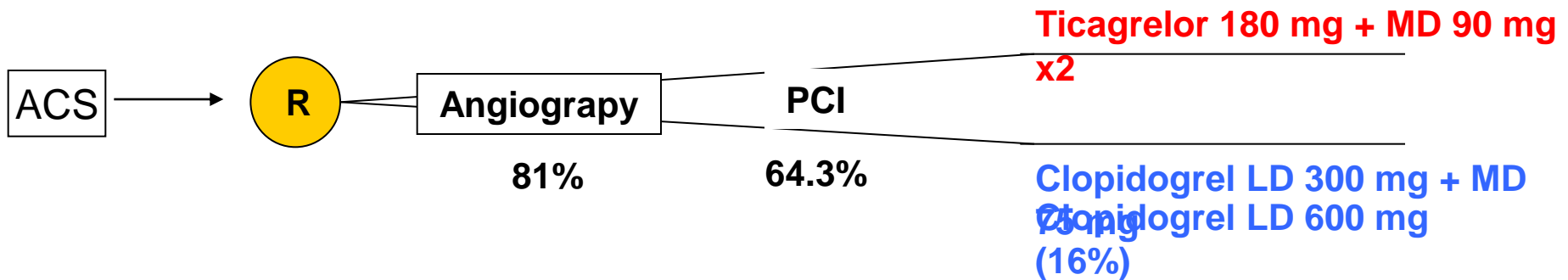
	CURE	TRITON	PLATO
	12,562	13 608	18 624
Inclusion	NSTEACS	IR-HR (TIMI≥3) ACS **with cath → PCI**	IR-HR ACS
Timing	NSTEACS < 24 h	NSTEACS <72 h with cath → PCI STEMI <12 h → PPCI STEMI 12h - 14 days → PCI	NSTEACS < 24 h STEMI <24 h → PPCI
Contraindic	Thienop	Thienop < 5 days FL < 24-48 h	FL < 24 h
Pretreatment	Clopi naïve 100%	Clopi naïve 100%	Clopi naïve (54%) / Clopi pretretated (46%)
% Tn +	-	75%	86%
% STEMI	0	26%	37.6%
Diabetes	22.4%	23%	25%
% USA	¿	32%	8.7%
% Angio		**100%**	**69%**
% PCI	21%	**99%**	**55%**
% CABG		1%	**4.2%**
Max FU	12 mo	15 mo (464 days)	12 mo
% EndPoint	9.3% - 11,4%	9.9% -12.1%	9% - 10.7%
% Mortality	5,8% - 6,2%	3.0% - 3.2%	3.9% - 5.0%
% CVDeath	5,1% - 5,4%	2.1% - 2.4%	3.4% – 4.3%
% MI	5,6% - 6,7%	7.3% - 9.5%	5.3% - 6.6%
Discontinuation	46.2%		

TRITON and PLATO and CURRENT

EARLY CV Death / MI / Stroke (30days)

Clopidogrel 300mg + 75mg

Prasugrel 60mg + 10mg

Ticagrelor 180mg + 90mg x2

Clopidogrel 600mg + 150mg

7.1% (Clopidogrel 75 TRITON)

5.6% (Prasugrel   TRITON)

5.4 % (Clopidogrel 75 PLATO)

4.8 % (Ticagrelor   PLATO)

4.4 % (Clopidogrel 75   CURRENT)

4.2 % (Clopidogrel 150 CURRENT)
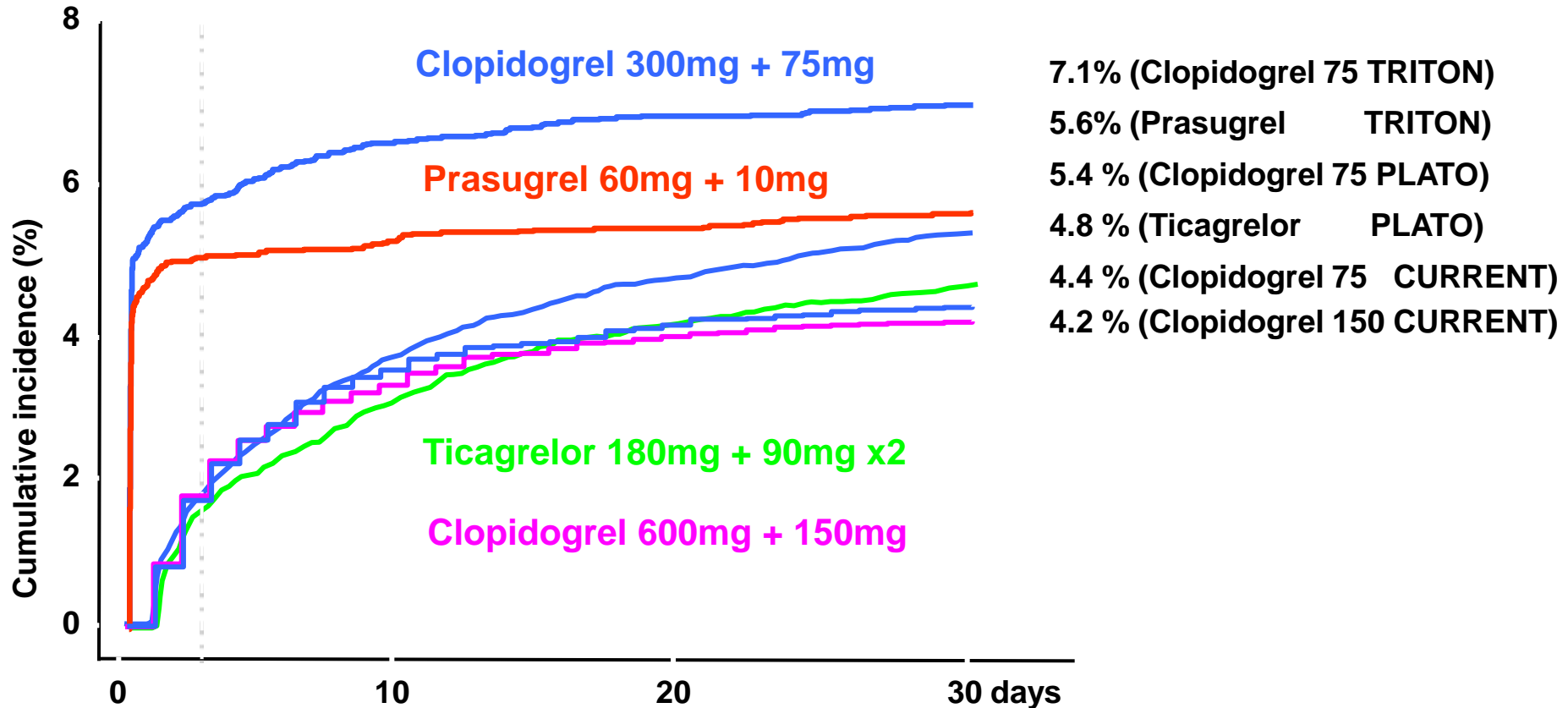
Clopidogrel 75mg vs Prasugrel 10mg	HR 0.77 (95% CI 0.67–0.88), p<0.001*	**- 23%**
Clopidogrel 75mg vs Ticagrelor 90mg x2	HR 0.88 (95% CI 0.77–0.95), p=0.045*	**- 12%**
Clopidogrel 75mg vs Clopidogrel 150mg	HR 0.96 (95% CI 0.85-1.08), p=0.47	**- 4%**

TRITON TIMI-38: Subgrupo de diabéticos (n=3146)

Wiviott SD. N Engl J Med 2007;357:2001-15
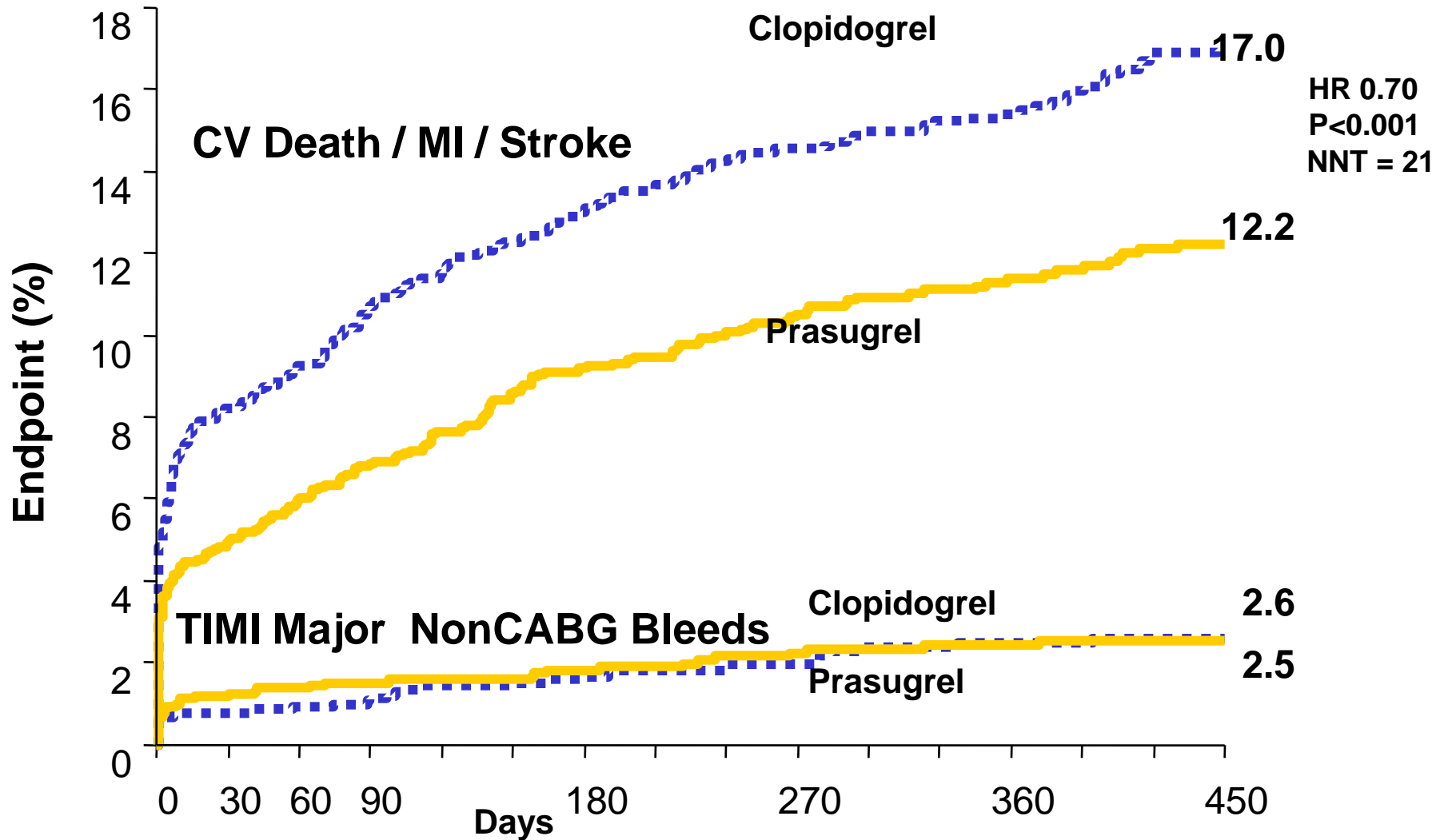
Protocolo tratamiento antiagregante en SCA HGUGM

SCA

SCASEST

Alto riesgo isquémico[1]

No alto riesgo hemorrágico → **ASA + Ticagrelor**

Alto riesgo hemorrágico[2]

Riesgo isquémico Bajo/Intermedio

SCACEST

FIBRINOLISIS

ANGIOPLASTIA PRIMARIA

Riesgo isquémico Bajo/Intermedio

Alto riesgo isquémico[1]

Alto riesgo Hemorrágico[2,3]

No alto riesgo hemorrágico

<75 a. → **ASA + Prasugrel**

≥75 a.

ASA + Clopidogrel
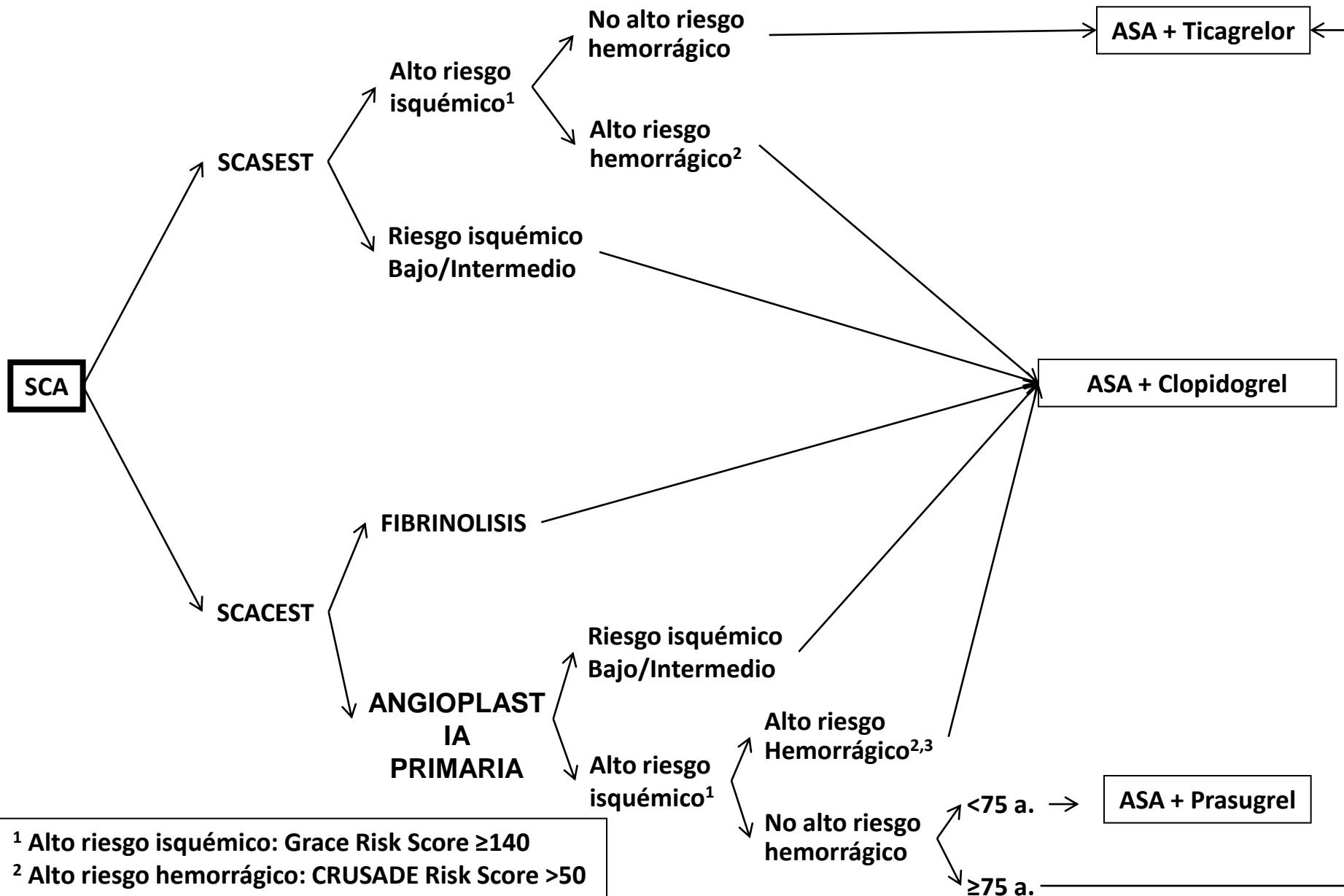
[1] **Alto riesgo isquémico: Grace Risk Score ≥140**
[2] **Alto riesgo hemorrágico: CRUSADE Risk Score >50**
[3] **ACV ó AIT previos, Peso < 60 Kg**