

Novedades en el diagnóstico y tratamiento en Cardiopatía Isquémica

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ESC/EACTS GUIDELINES



Guidelines

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ACCF/AHA FOCUSED UPDATE

2011 ACCF/AHA Focused Update of the Guidelines for the Management of Patients With Unstable Angina/ Non-ST-Elevation Myocardial Infarction

(Updating

A Report of
American He



European Heart Journal
doi:10.1093/eurheartj/ehr236

ESC GUIDELINES

ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation

The Task Force for the management of acute coronary syndromes
(ACS) in patients presenting without persistent ST-segment
elevation of the European Society of Cardiology (ESC)

Diagnóstico precoz de la enfermedad coronaria

Síndrome Coronario Agudo sin Elevación del Segmento ST

Diagnóstico y valoración pronóstica

Tratamiento Antitrombótico

Estrategia revascularizadora

Infarto agudo de miocardio con Elevación del Segmento ST

Tratamiento

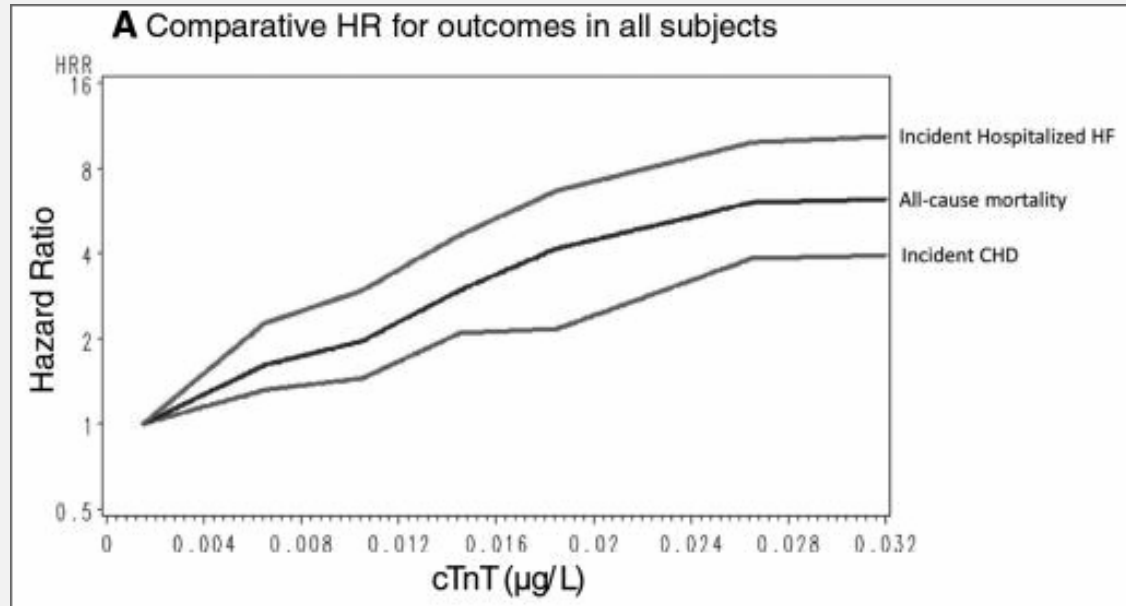
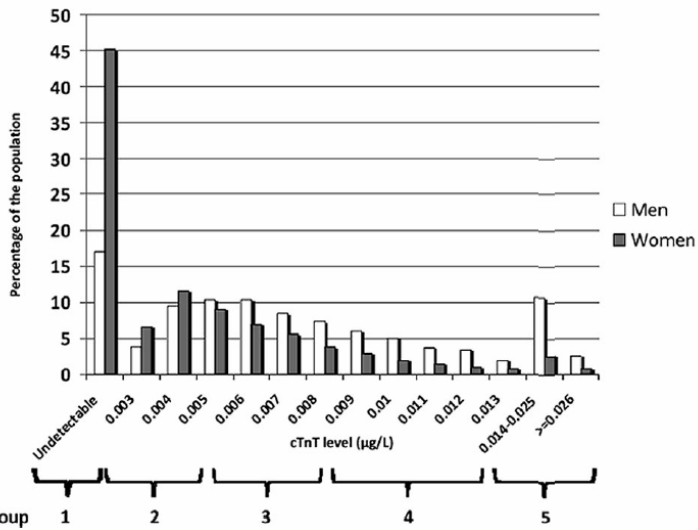
El problema de la obstrucción microvascular

Diagnóstico precoz de la enfermedad coronaria

¿Hay algo nuevo para la predicción de eventos CV?

Población general sin enfermedad CV conocida.
N= 9.698 personas entre 54 y 74 años

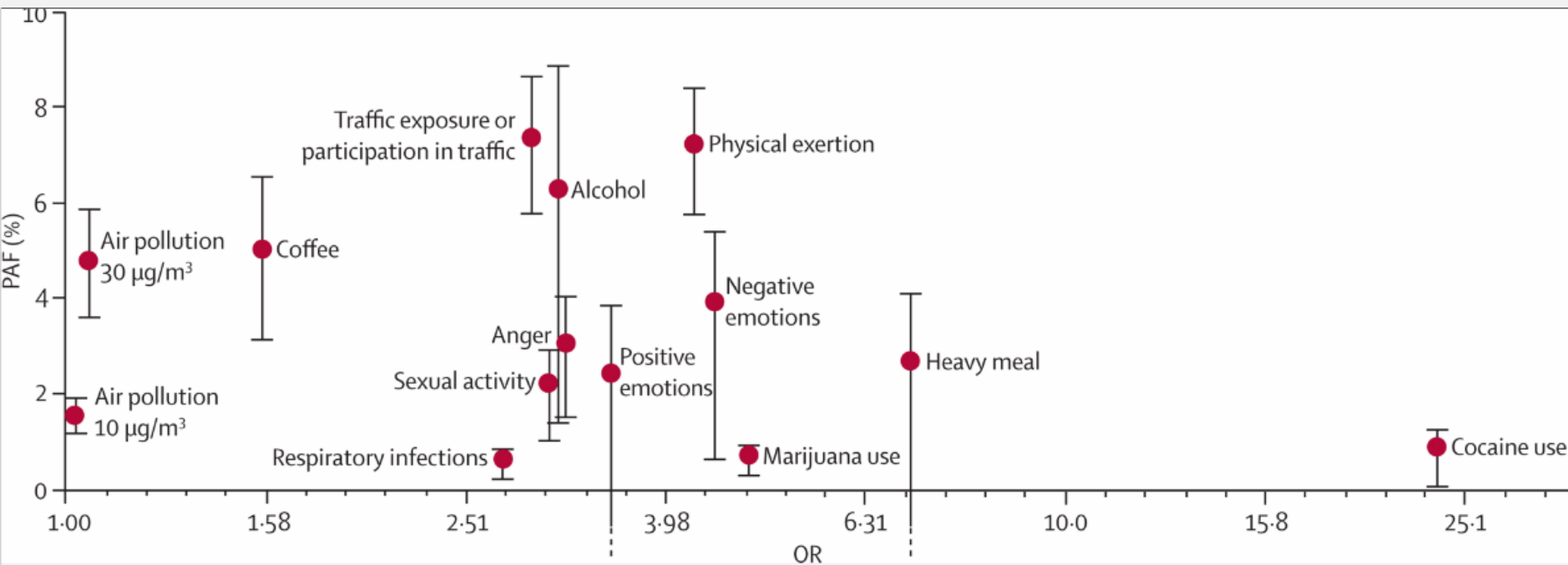
ARIC Study



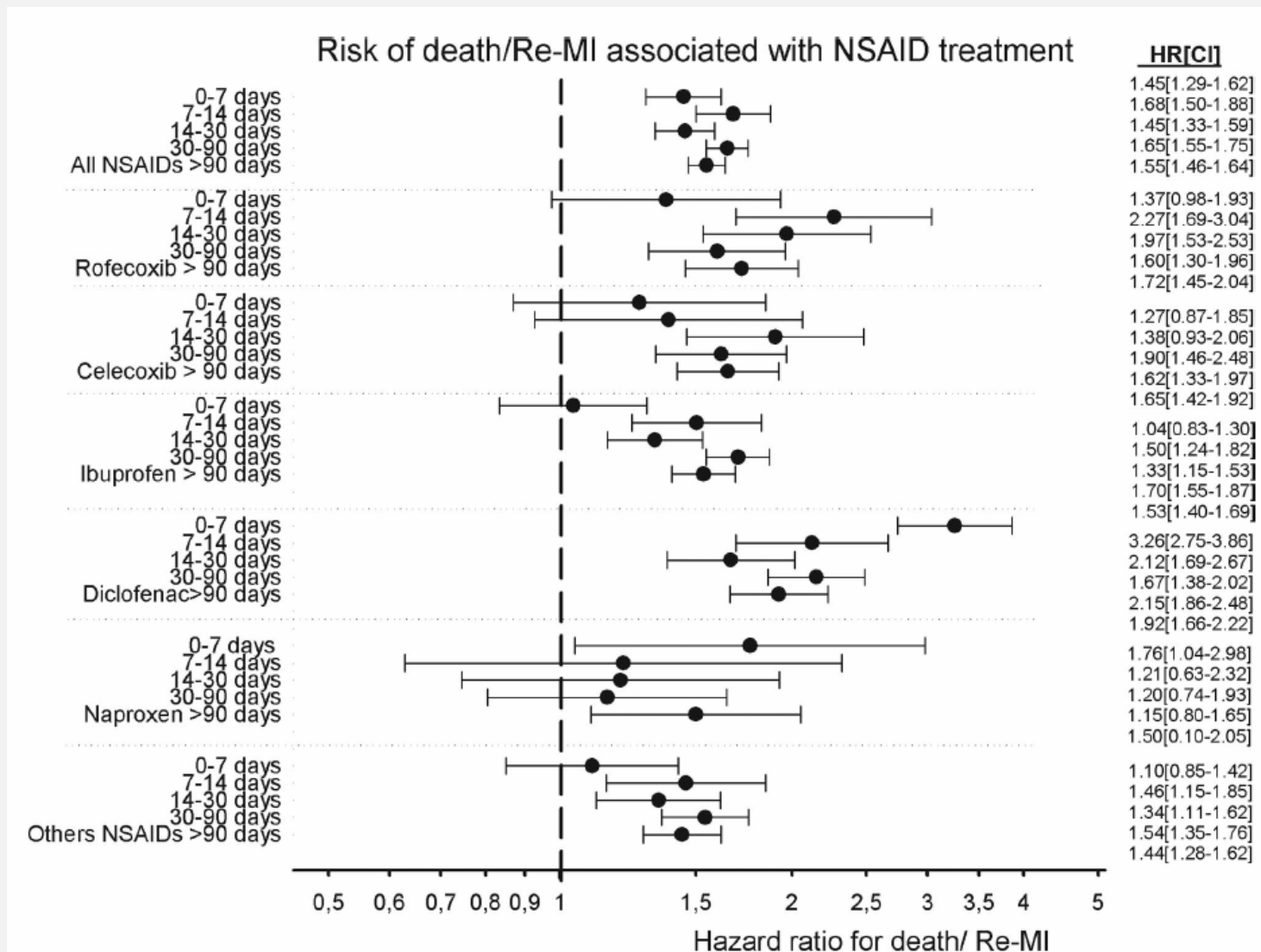
¿Quién está expuesto a enfermedad coronaria?

Meta-análisis de 36 estudios poblacionales.

La importancia de los desencadenantes de infarto de miocardio



Riesgo de Muerte/Re-Infarto asociado a AINEs



Riesgo de Muerte/Re-Infarto asociado a AINEs

Table 3

Odds ratios and 95% confidence intervals of different acute coronary syndrome types by history of ischemic heart disease according to recency of nonsteroidal anti-inflammatory drug use compared to nonuse

	Patients Without IHD			Patients With IHD		
	Patients/Controls	Adjusted OR*	95% CI	Patients/Controls	Adjusted OR*	95% CI
Unstable angina						
n	365/2,655			452/288		
Recency						
Nonuse	226/1,602	1	—	314/224	1	—
Current use	52/399	1.13	0.80–1.59	56/20	1.94	1.09–3.45
Non-ST-segment elevation myocardial infarction						
n	609/2,655			391/288		
Recency						
Nonuse	381/1,602	1	—	265/224	1	—
Current use	84/399	1.07	0.80–1.42	49/20	1.85	1.03–3.32
ST-segment elevation myocardial infarction						
n	889/2,655			227/288		
Recency						
Nonuse	562/1,602	1	—	154/224	1	—
Current use	108/399	0.96	0.74–1.25	18/20	1.06	0.52–2.16

* Odds ratios adjusted for age, gender, body mass index, smoking, diabetes, dyslipidemia, hypertension, antiplatelet drugs, NSAIDs, statins, and antihypertensive drugs using unconditional logistic regression.

Ingreso →

Dolor torácico

Diagnóstico de trabajo →

Sospecha de síndrome coronario agudo

ECG →

Elevación ST persistente

Anomalías ST/T

ECG normal o indeterminado

Bioquímica →

Troponinas positivas

Troponinas Negativas x 2

Diagnóstico →

IAMCEST

IAMSEST

Angina inestable

Síndrome Coronario Agudo sin Elevación del Segmento ST

Diagnóstico y valoración pronóstica

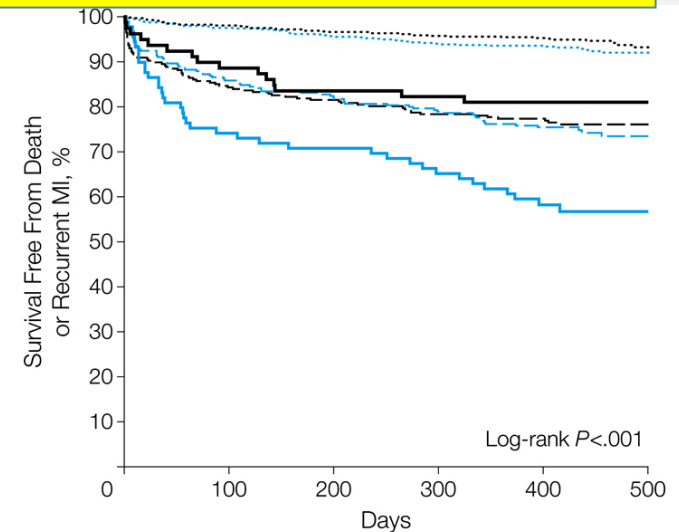
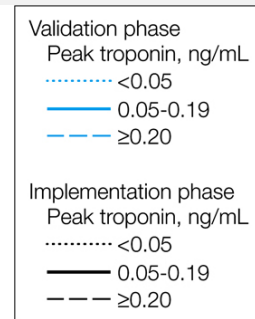
Tratamiento Antitrombótico

Estrategia revascularizadora

SCASEST: Diagnóstico y pronóstico

- Validation phase 2008 (N=1,038)
- Implementation phase 2009 (N=1054)
- TnT
 - <0.05 ug/L 64%
 - 0.05-0.2 ug/L 8%
 - >0.2 ug/L 28%
- In the validation phase, pts 0.05-0.2 ug/L had less:
 - cardiologist consultation
 - double antiplatelet
 - revascularization
 - secondary prevention

Las Troponinas Ultrasensibles



No. at risk						
Validation phase						
Peak troponin, ng/mL	0	100	200	300	400	500
<0.05	657	641	628	617	493	157
0.05-0.19	90	67	64	59	45	15
≥0.20	291	250	239	230	171	44
No. at risk						
Implementation phase						
Peak troponin, ng/mL	0	100	200	300	400	500
<0.05	683	670	660	653	529	173
0.05-0.19	80	71	67	66	54	16
≥0.20	291	243	235	226	191	63

Implementation of hs-TnI and risk of death/AMI in patients admitted with suspected ACS

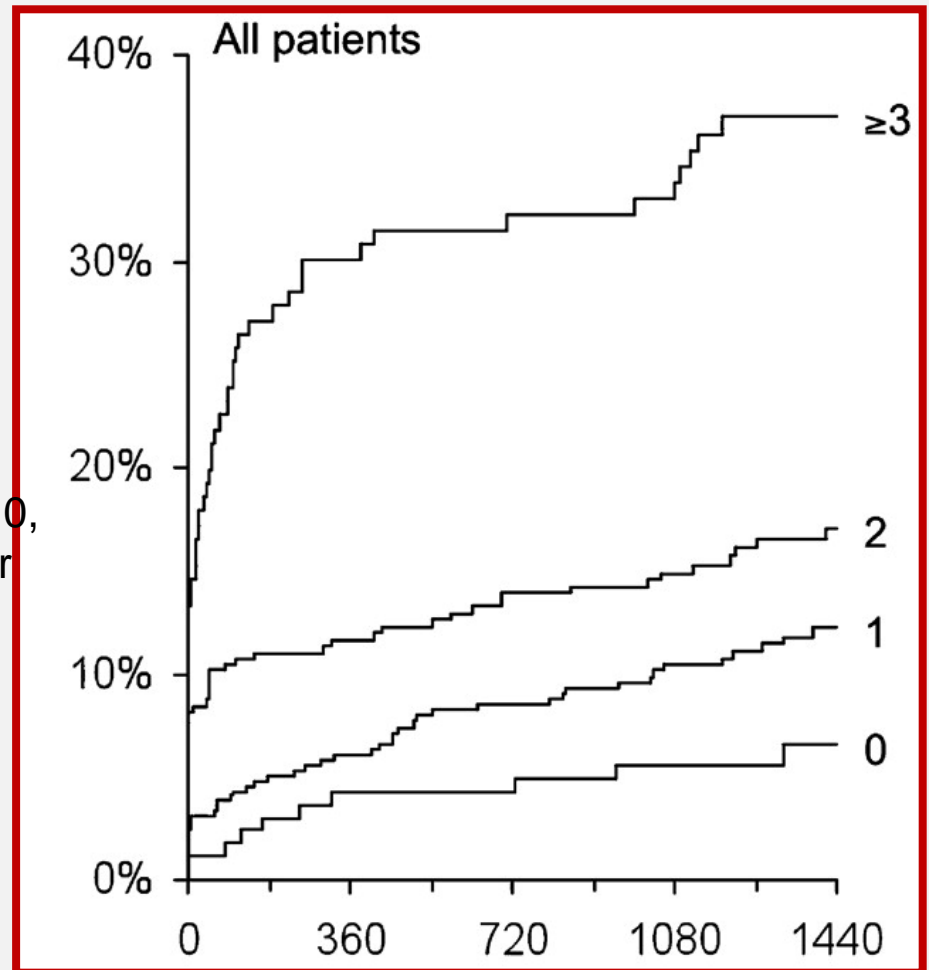
SCASEST: Diagnóstico y pronóstico

Multimarcador biológico

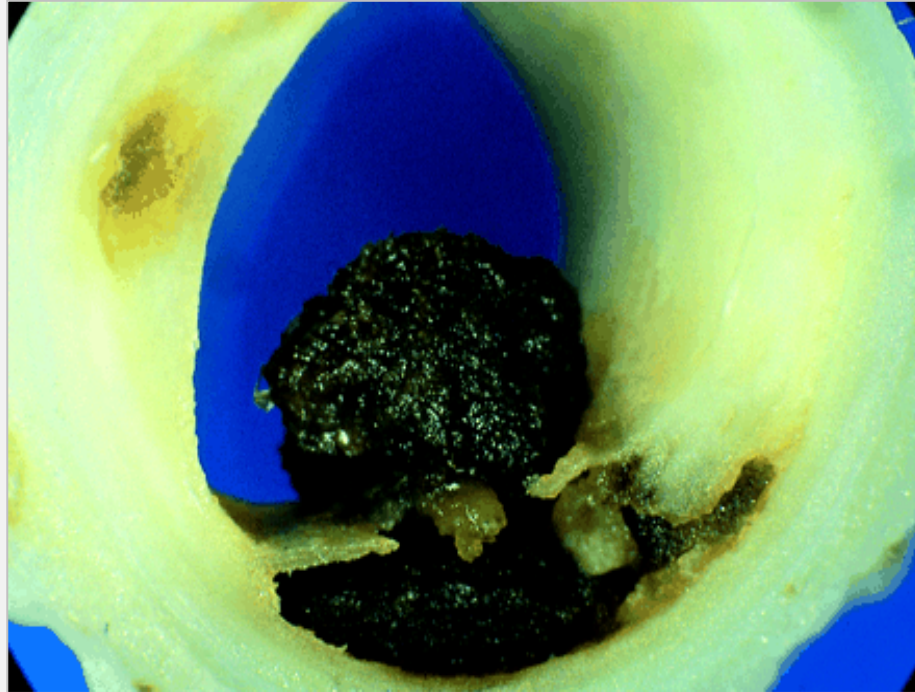
TnT >0.01 mg/l (adjusted HR 1.8)
IL-10 <3.5 ng/l (1.7)
Myeloperoxidase >350 mg/l (1.5)
PIGF >27 ng/l (1.9)

hsCRP,
Pregnancy-associated plasma protein A
sCD40L

A multimarker model consisting of TnT, IL-10, myeloperoxidase and PIGF predicted 4-year event rates that varied between 6.0% (all markers normal) and 35.8% (three or more biomarkers abnormal).



Síndrome Coronario Agudo sin Elevación del Segmento ST



¿Que antiagregante?

¿Que anticoagulante?

¿Cuándo y como revascularizar?

Lugar de acción de antitrombóticos

Anticoagulantes

Fondaparinux

Heparina
HBPM

Bivalirudina

Factor tisular

Cascada de
coagulación
plasmática

Protrombina

Factor
Xa

Trombina

Fibrinógeno

Aspirina

Colágeno

ADP

Tromboxano
A₂

Activación
GP 2b/3a

Agregación
plaquetaria

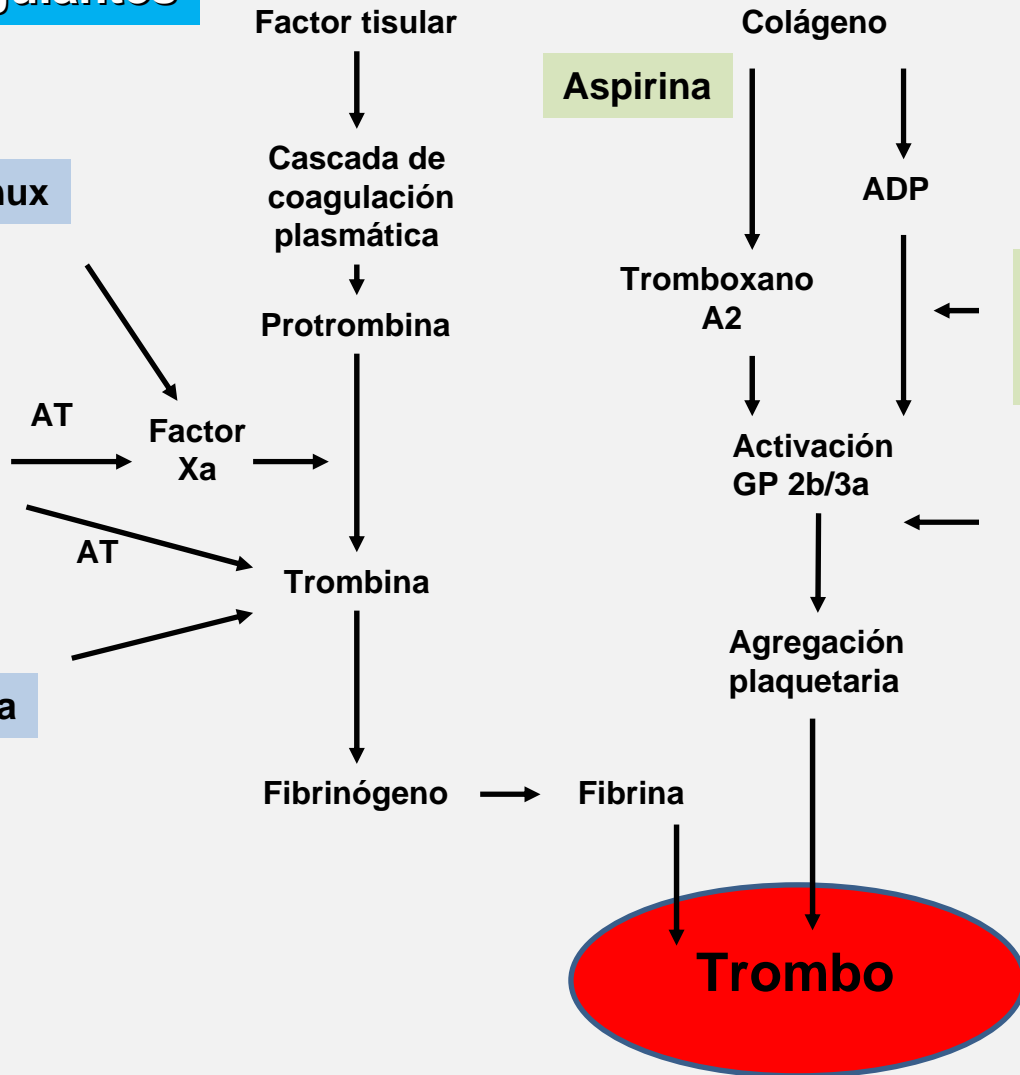
Antiplaquetarios

Clopidogrel
Prasugrel
Ticagrelor

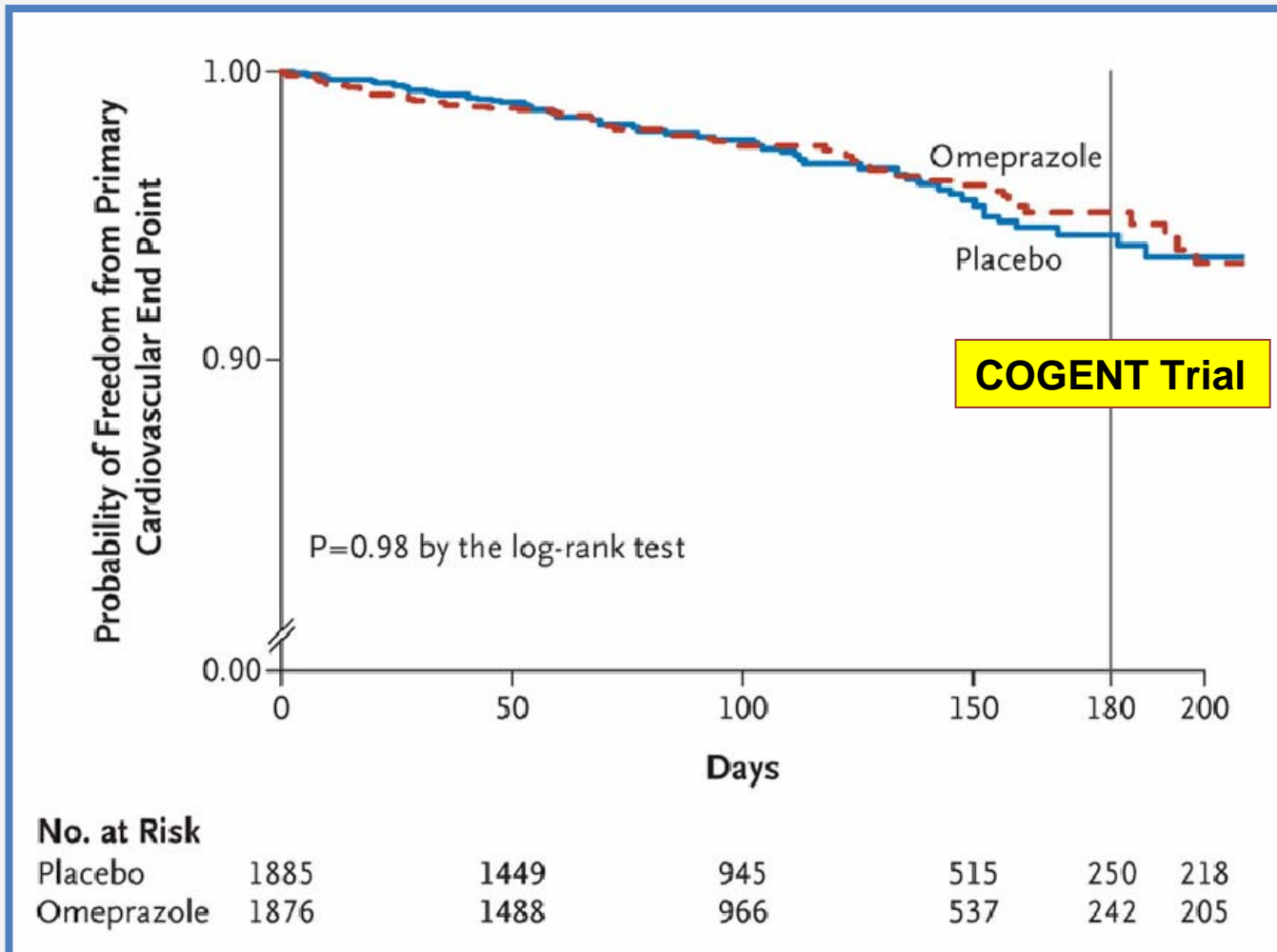
Inhibidores
GP 2b/3a

Fibrina

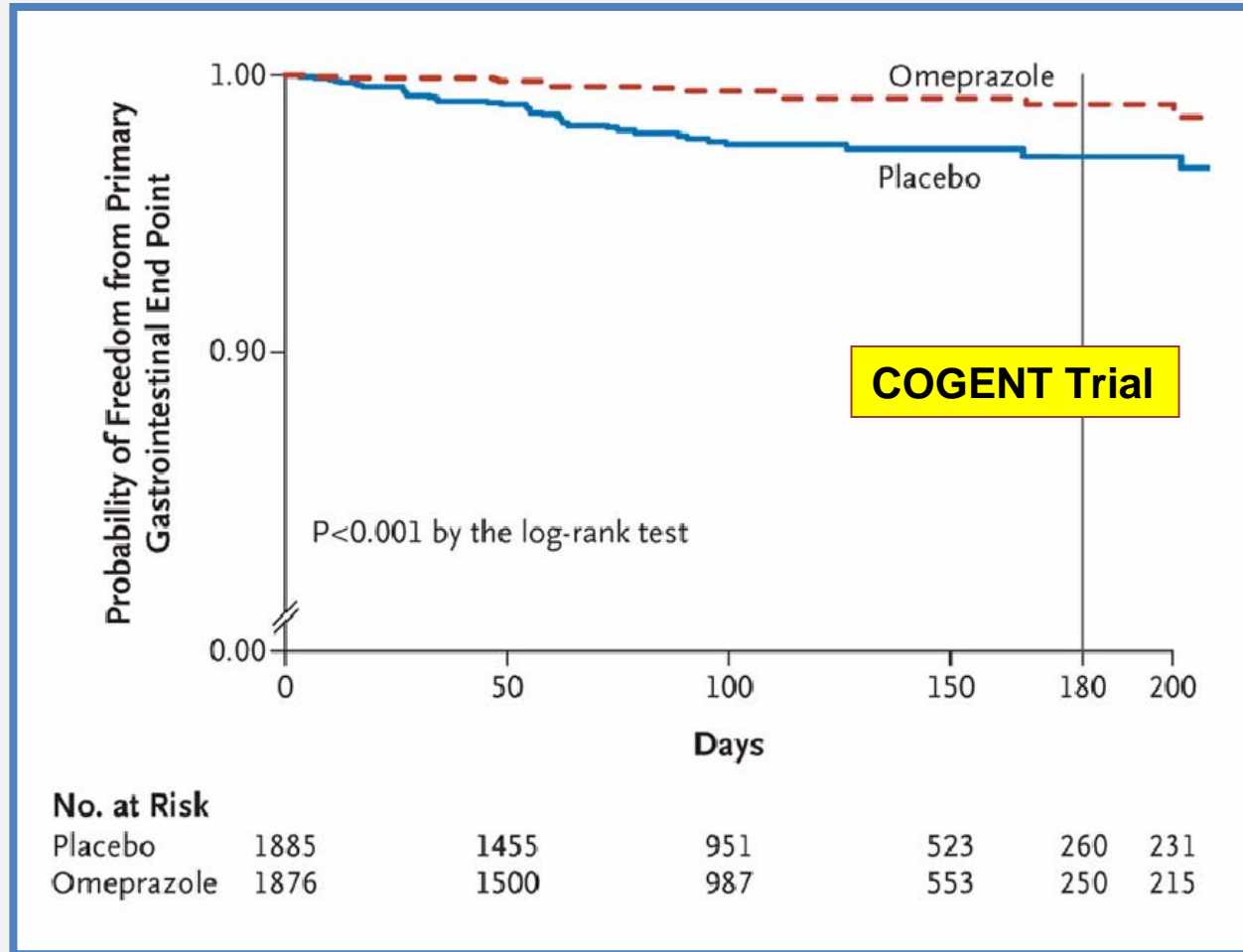
Trombo



Limitaciones de la Aspirina más clopidogrel: El problema de las interacciones farmacológicas

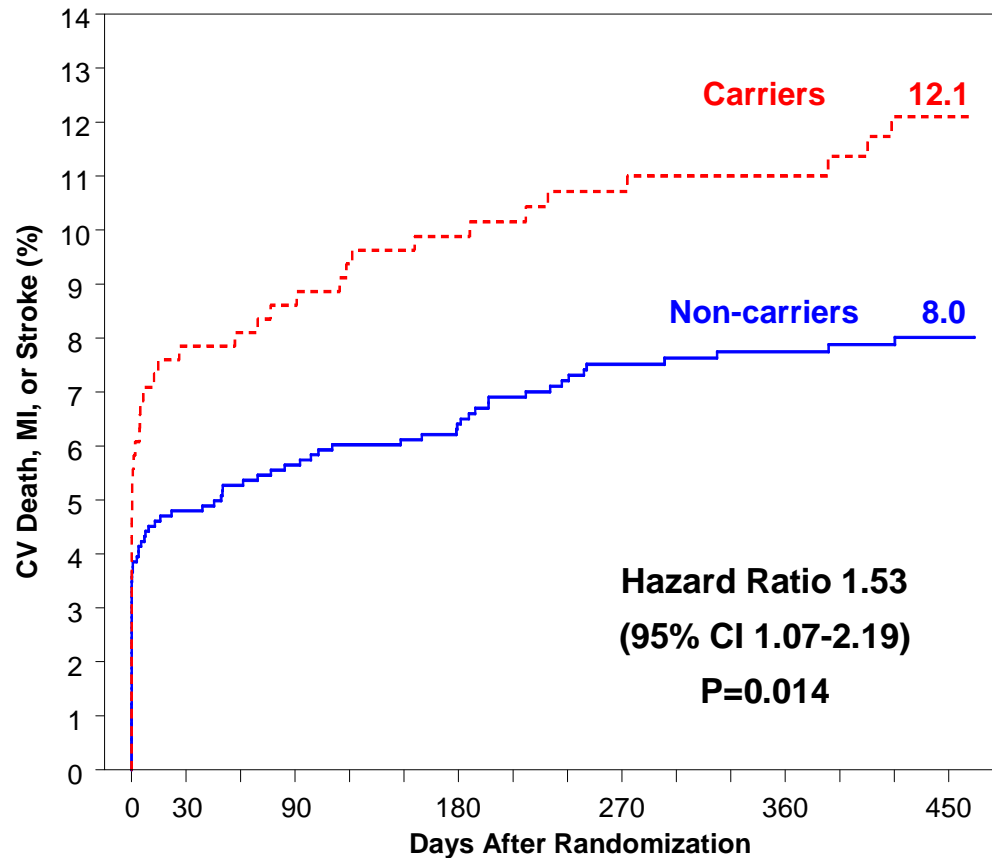


Limitaciones de la Aspirina más clopidogrel: El problema de las interacciones farmacológicas



Limitaciones de la Aspirina más clopidogrel: El problema de los polimorfismos genéticos

**CYP2C19 y
Muerte CV,
AVC, IM**



Number at Risk:

Non-Carrier	1064	1009	999	980	870	755	542
Carrier	395	364	360	348	306	270	181

Carriers: el 30% de la población

El clopidogrel no es suficiente

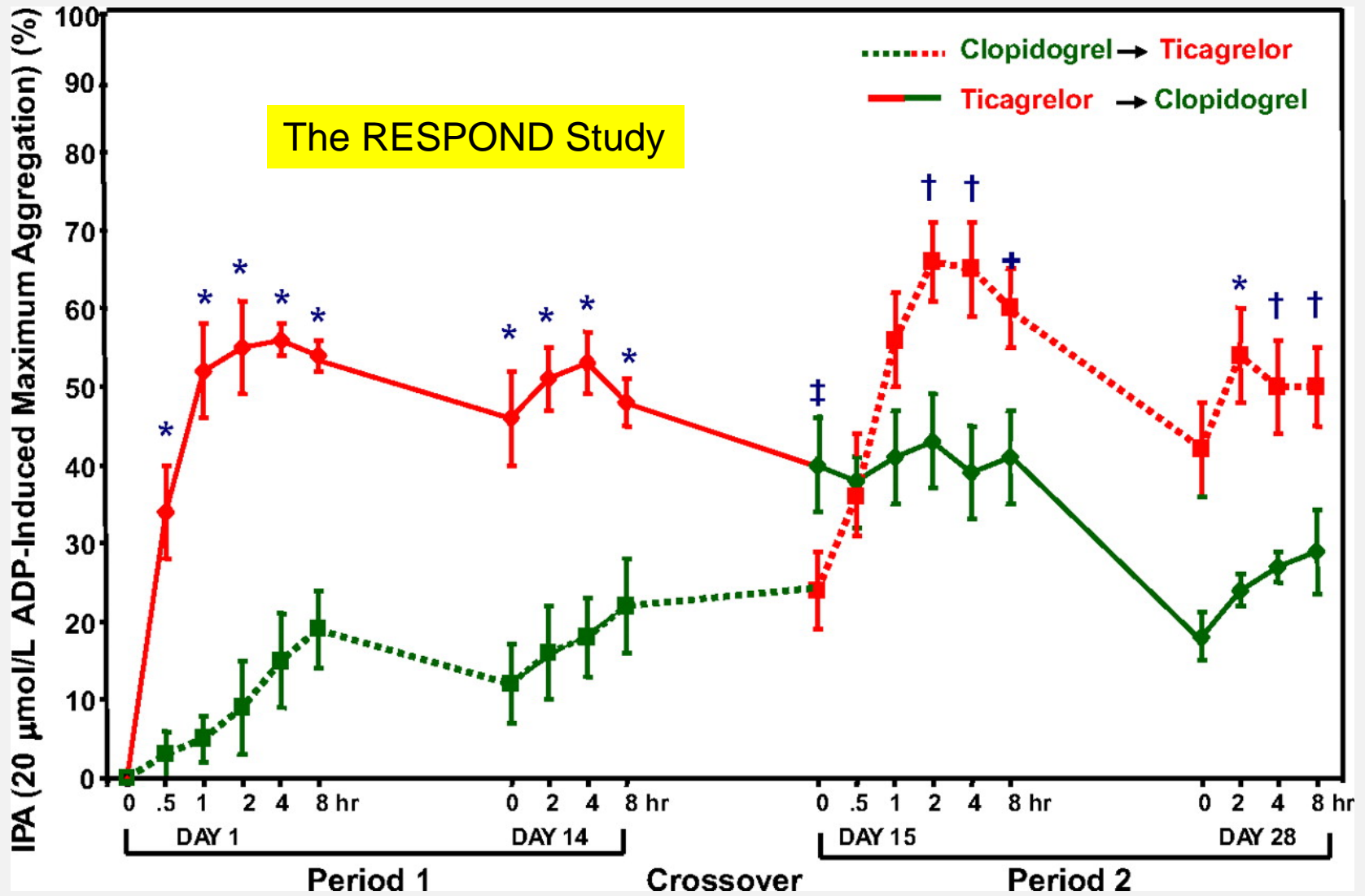


Table 8 P2Y₁₂ inhibitors

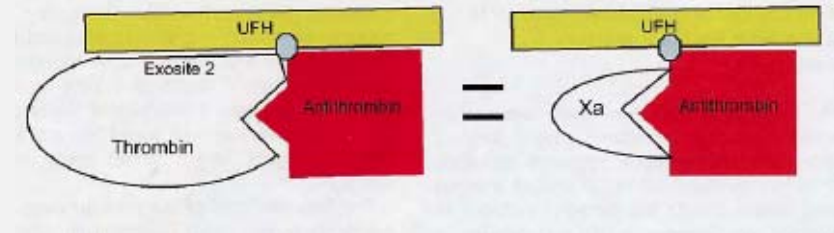
	Clopidogrel	Prasugrel	Ticagrelor
Class	Thienopyridine	Thienopyridine	Triazolopyrimidine
Reversibility	Irreversible	Irreversible	Reversible
Activation	Prodrug, limited by metabolism	Prodrug, not limited by metabolism	Active drug
Onset of effect^a	2–4 h	30 min	30 min
Duration of effect	3–10 days	5–10 days	3–4 days
Withdrawal before major surgery	5 days	7 days	5 days

Las Guías Europeas de SCASEST recomiendan Prasugrel y Ticagrelor sobre Clopidogrel

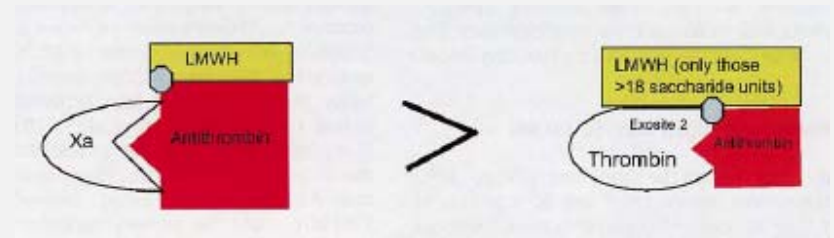
Aspirin should be given to all patients without contraindications at an initial loading dose of 150–300 mg, and at a maintenance dose of 75–100 mg daily long-term regardless of treatment strategy.	I	A
A P2Y ₁₂ inhibitor should be added to aspirin as soon as possible and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding.	I	A
A proton pump inhibitor (preferably not omeprazole) in combination with DAPT is recommended in patients with a history of gastrointestinal haemorrhage or peptic ulcer, and appropriate for patients with multiple other risk factors (<i>H. elicobacter pylori</i> infection, age ≥65 years, concurrent use of anticoagulants or steroids).	I	A
Prolonged or permanent withdrawal of P2Y ₁₂ inhibitors within 12 months after the index event is discouraged unless clinically indicated.	I	C
Ticagrelor (180-mg loading dose, 90 mg twice daily) is recommended for all patients at moderate-to-high risk of ischaemic events (e.g. elevated troponins), regardless of initial treatment strategy and including those pre-treated with clopidogrel (which should be discontinued when ticagrelor is commenced).	I	B
Prasugrel (60-mg loading dose, 10-mg daily dose) is recommended for P2Y ₁₂ -inhibitor-naïve patients (especially diabetics) in whom coronary anatomy is known and who are proceeding to PCI unless there is a high risk of life-threatening bleeding or other contraindications. ^d	I	B
Clopidogrel (300-mg loading dose, 75-mg daily dose) is recommended for patients who cannot receive ticagrelor or prasugrel.	I	A

¿Que posibilidades hay respecto a los anticoagulantes?

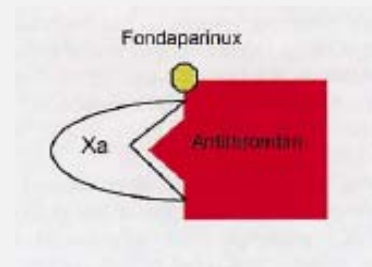
1. Heparina no fraccionada



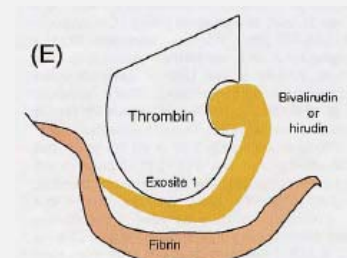
2. Enoxaparina



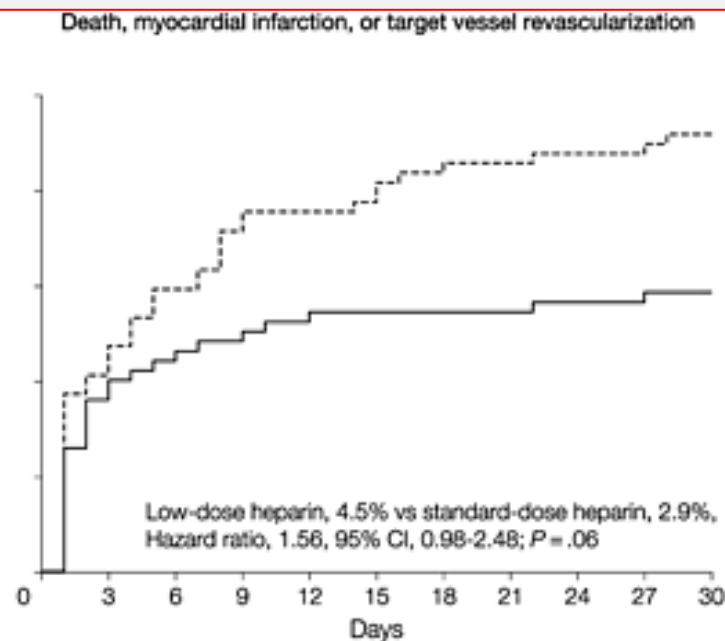
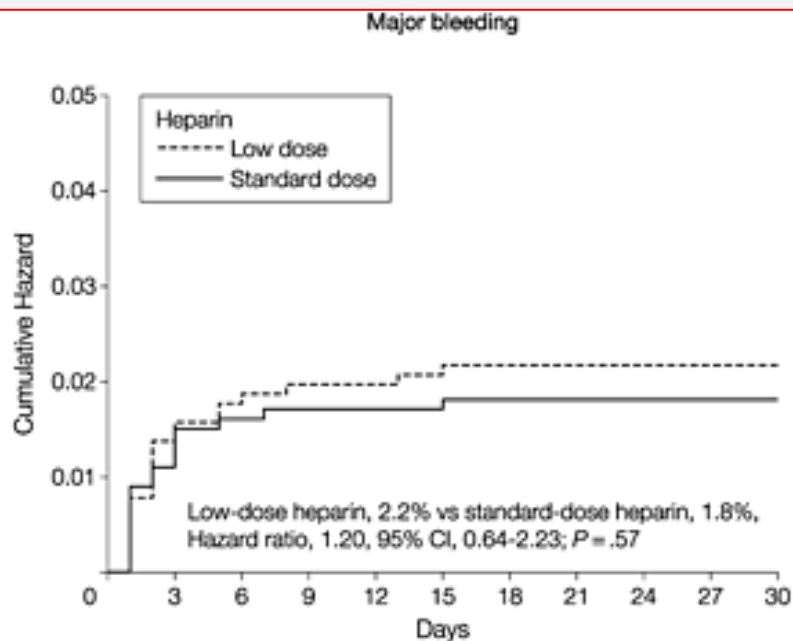
3. Fondaparinux



4. Bivalirudina



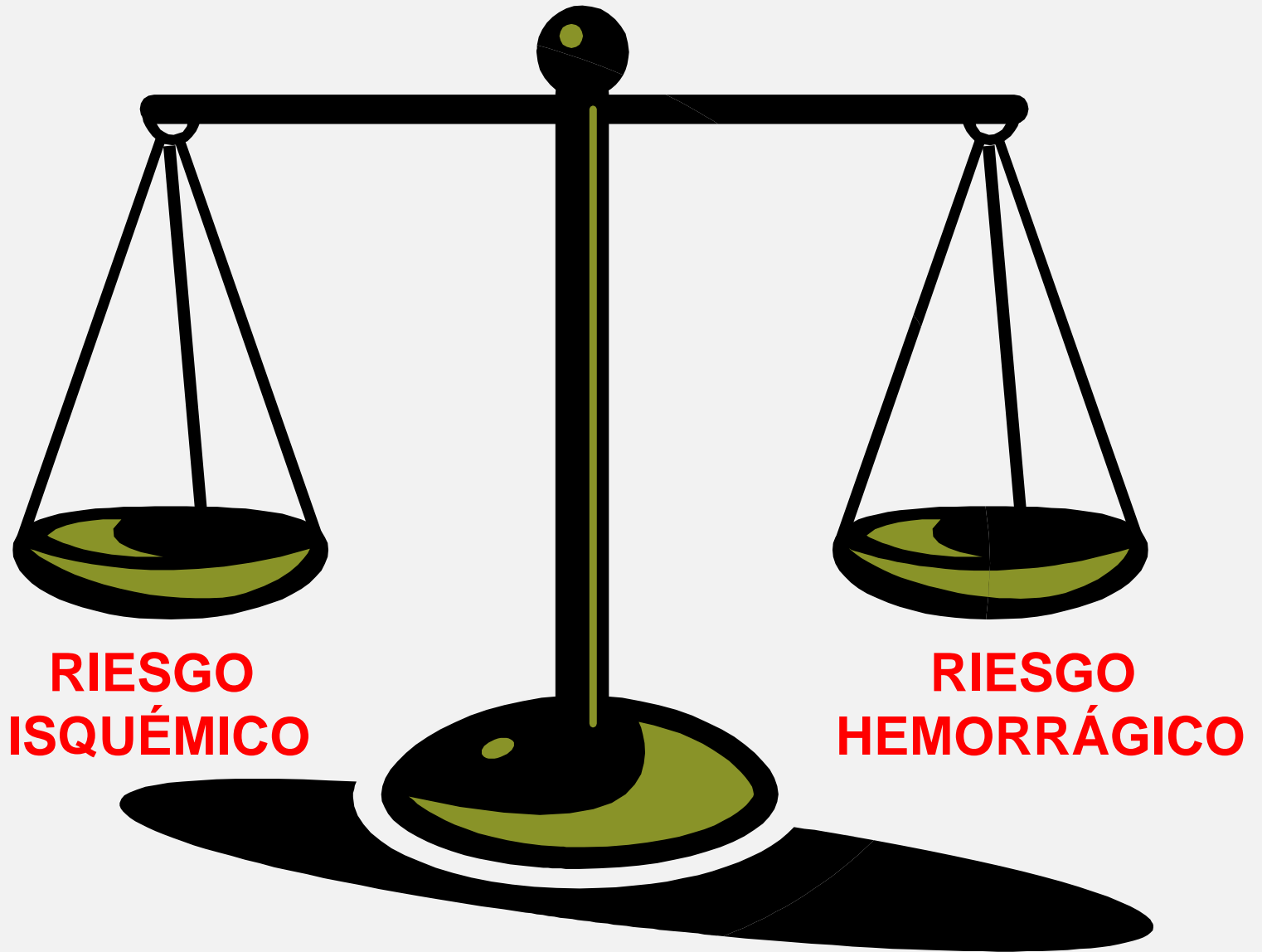
Fondaparinux + Heparina NF en el Cateterismo



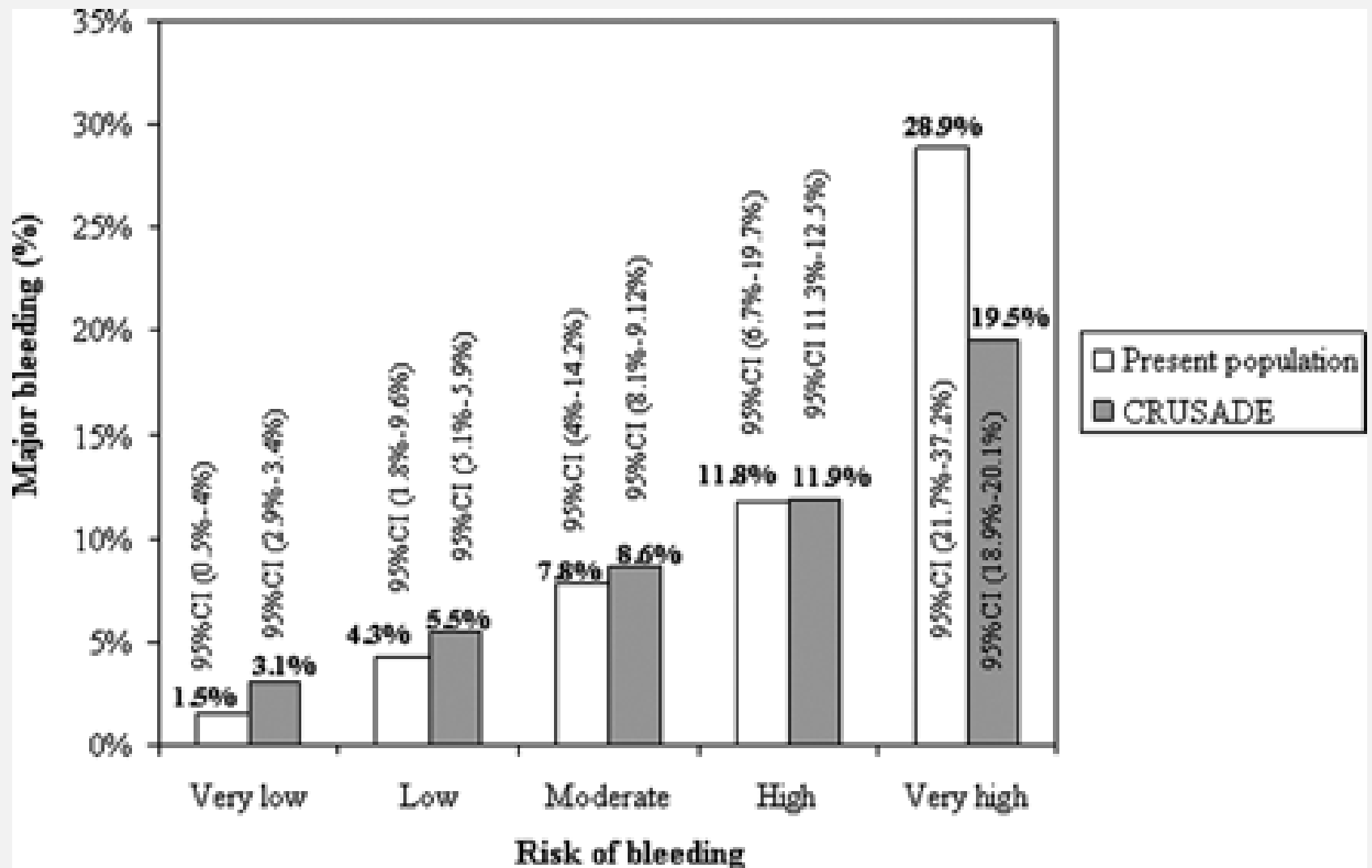
No. at risk

Heparin		0	3	6	9	12	15	18	21	24	27	30
Standard dose		1002	966	981	980	980	978					
Low dose		1024	1002	1001	998	997	994					

		0	3	6	9	12	15	18	21	24	27	30
		1002	980	975	975	974	971					
		1024	997	988	982	981	978					

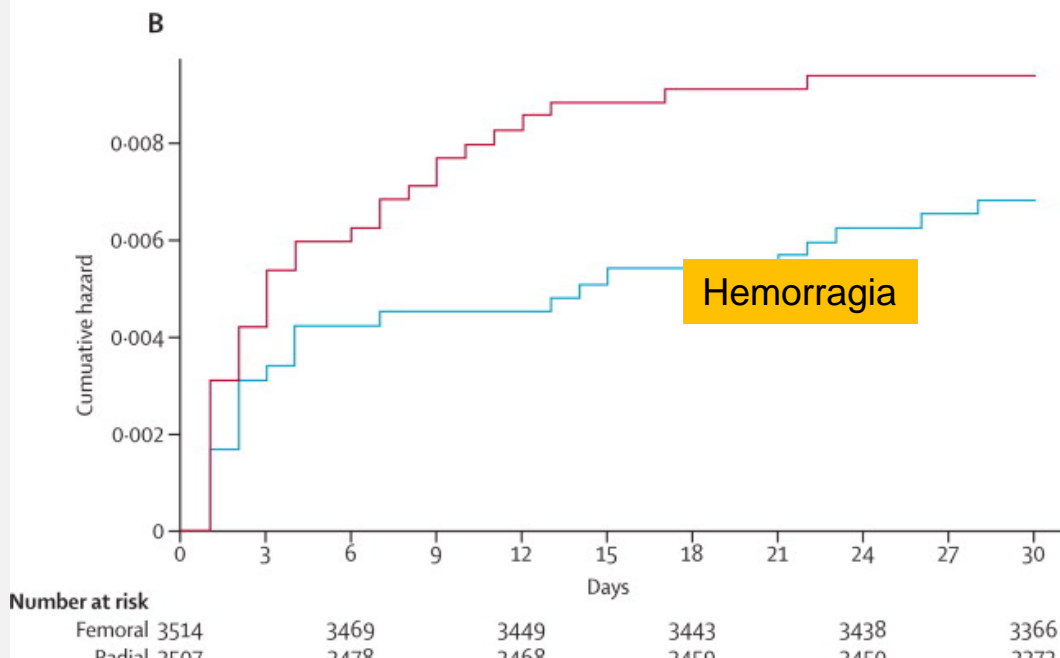
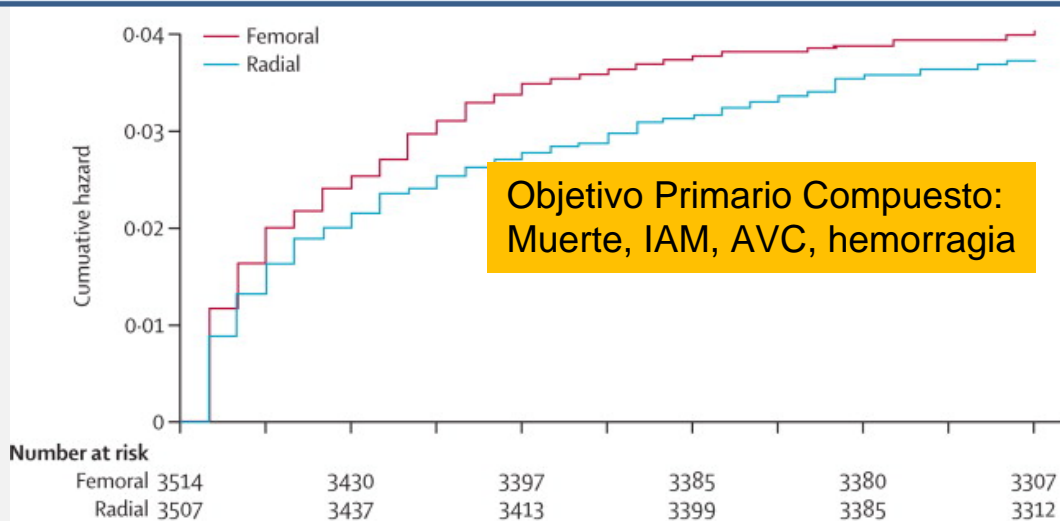


El problema de predecir una hemorragia



¿Cateterismo Radial o Femoral?

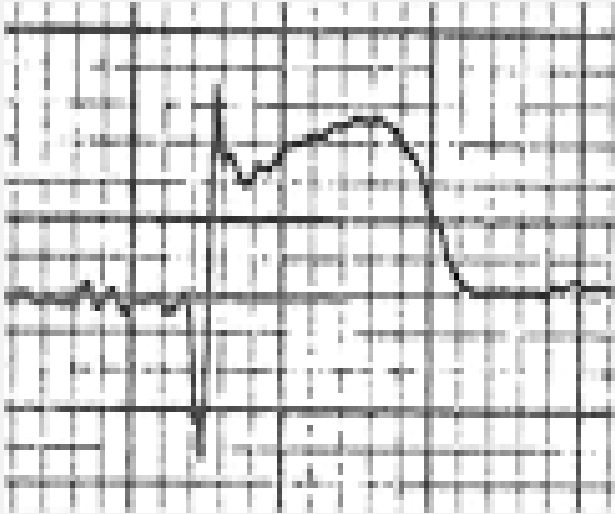
Rival Trial Study



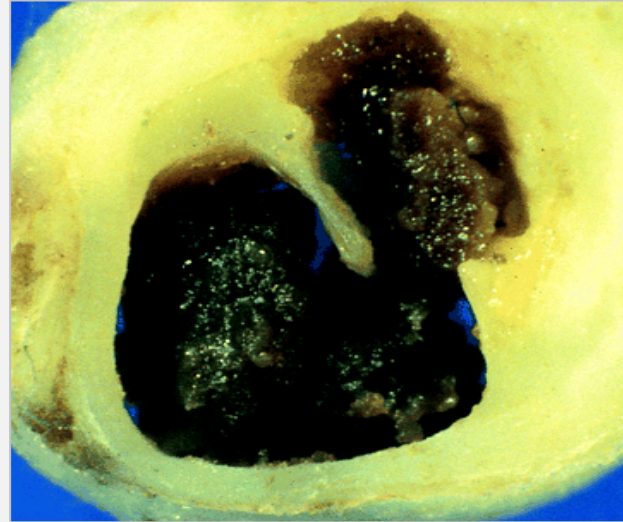
Infarto agudo de miocardio con Elevación del Segmento ST

Tratamiento

El problema de la obstrucción microvascular

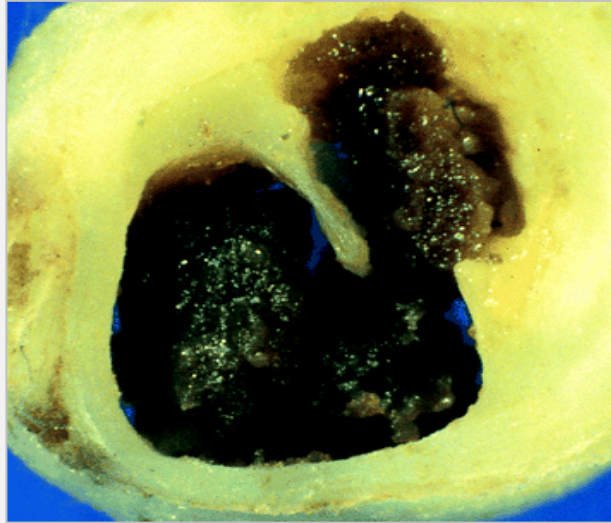


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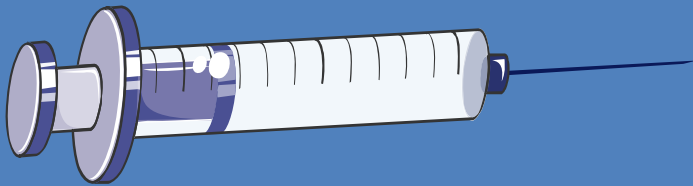
Elevación del segmento ST Oclusión coronaria

¡ Es una Urgencia !

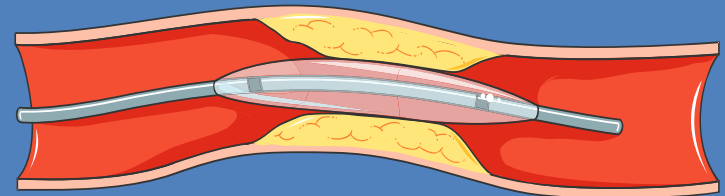


Oclusión coronaria

Reperfusion inmediata

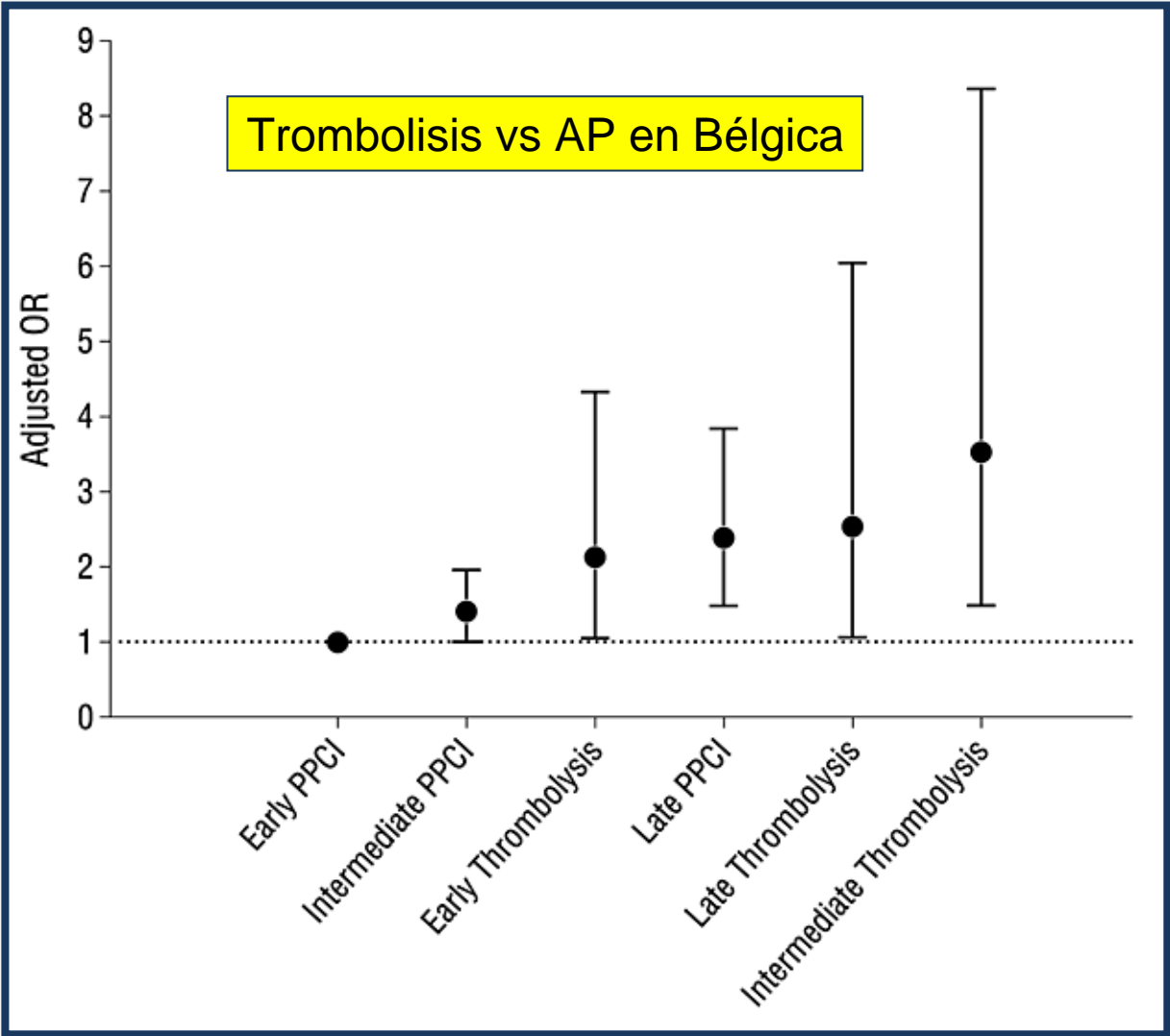


Fibrinolíticos



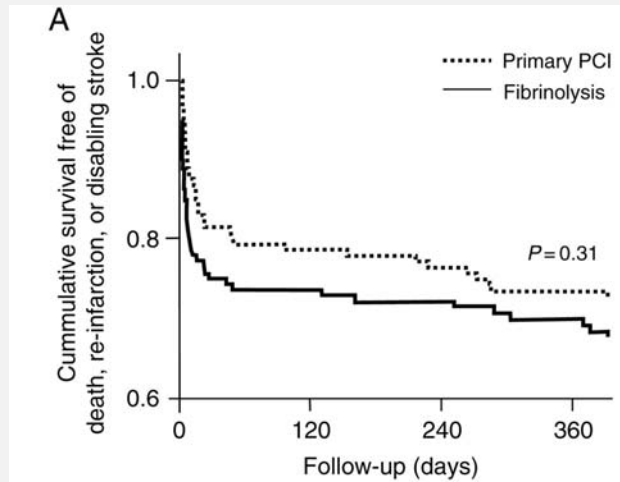
Angioplastia

La importancia del tiempo en la reperusión del IAM



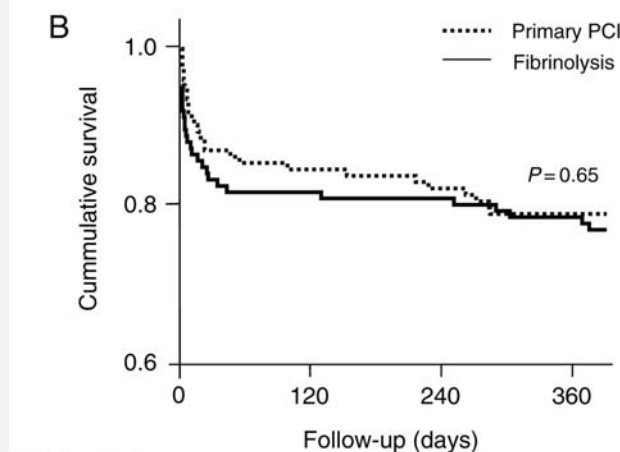
Reperusión en ancianos

Estudio TRIANA



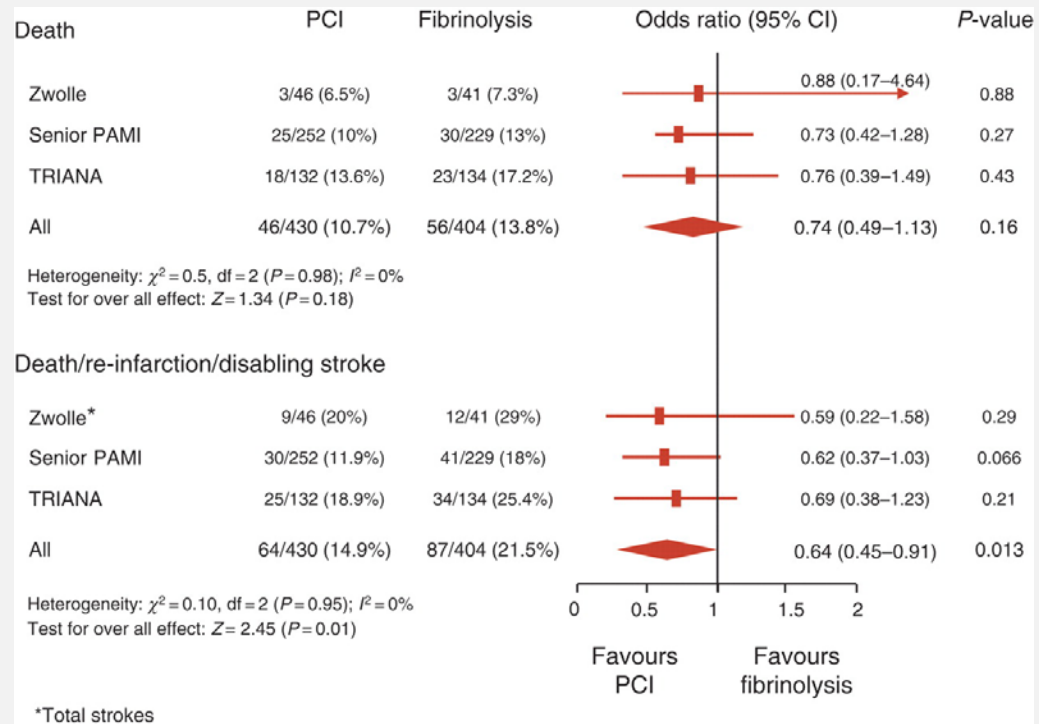
Patients at risk

Primary PCI	132	112	110	96
Fibrinolysis	134	97	95	91



Patients at risk

Primary PCI	132	111	108	104
Fibrinolysis	134	108	107	103



La angioplastia primaria

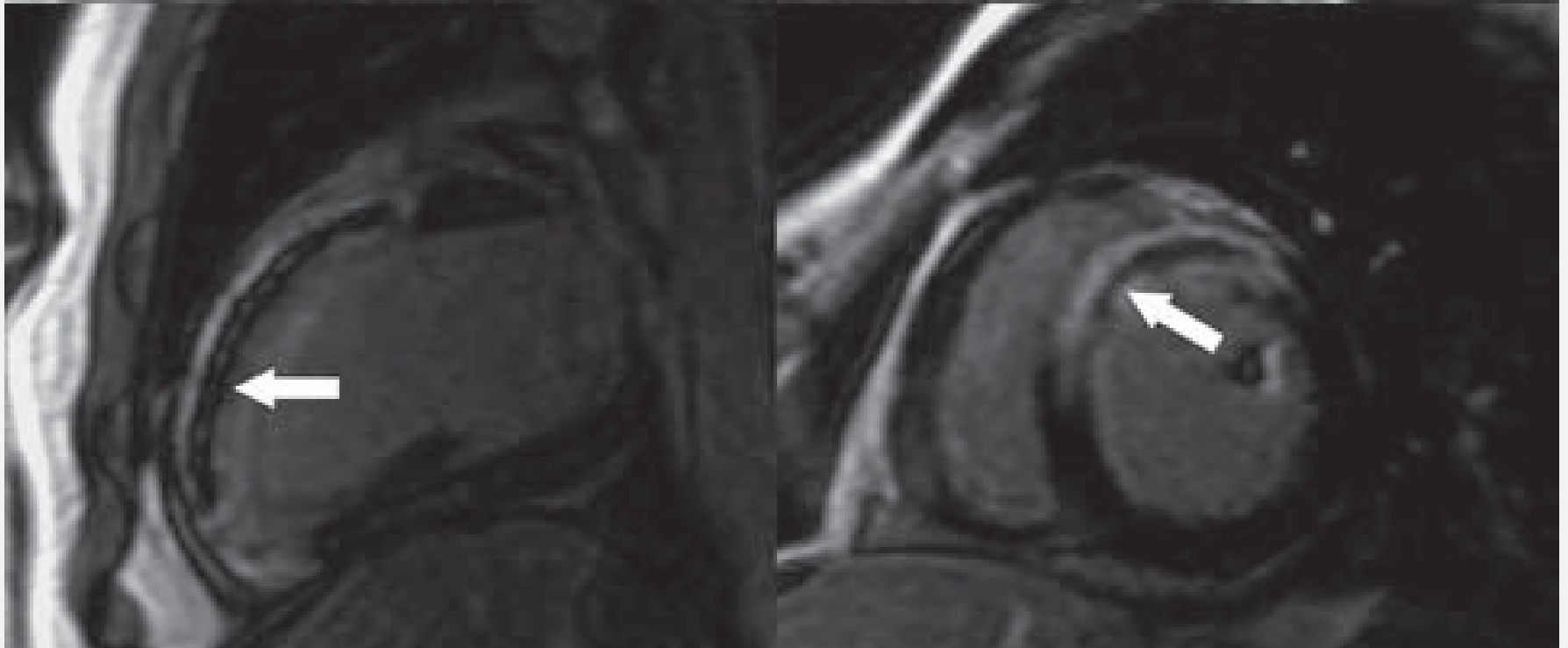
Paradigma de la reperfusión coronaria



Recuperación de flujo TIMI 3
en >90% de casos

La obstrucción microvascular

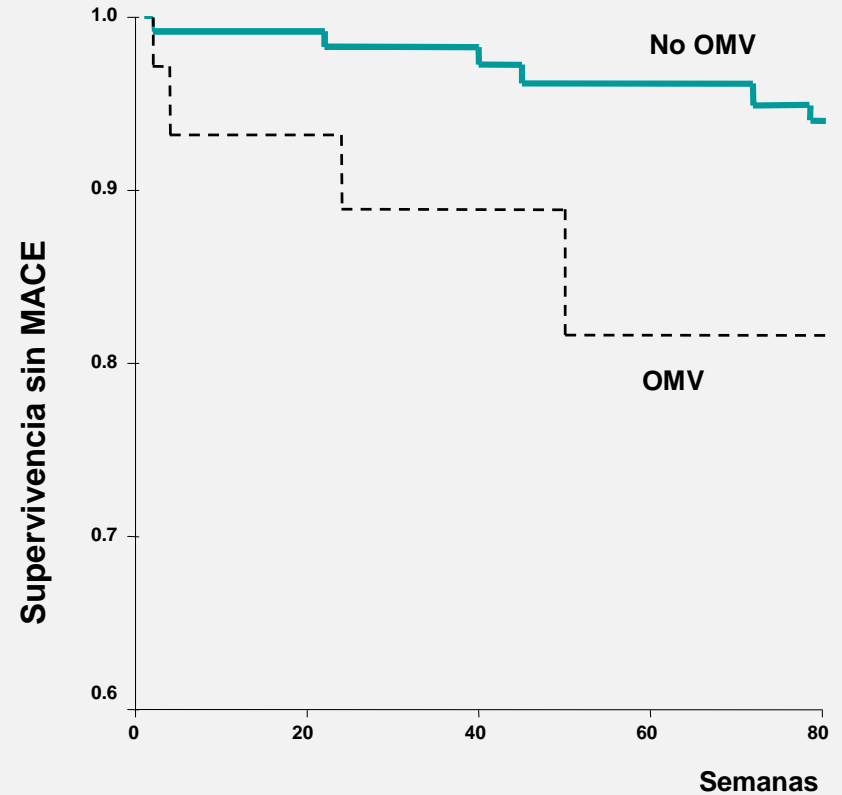
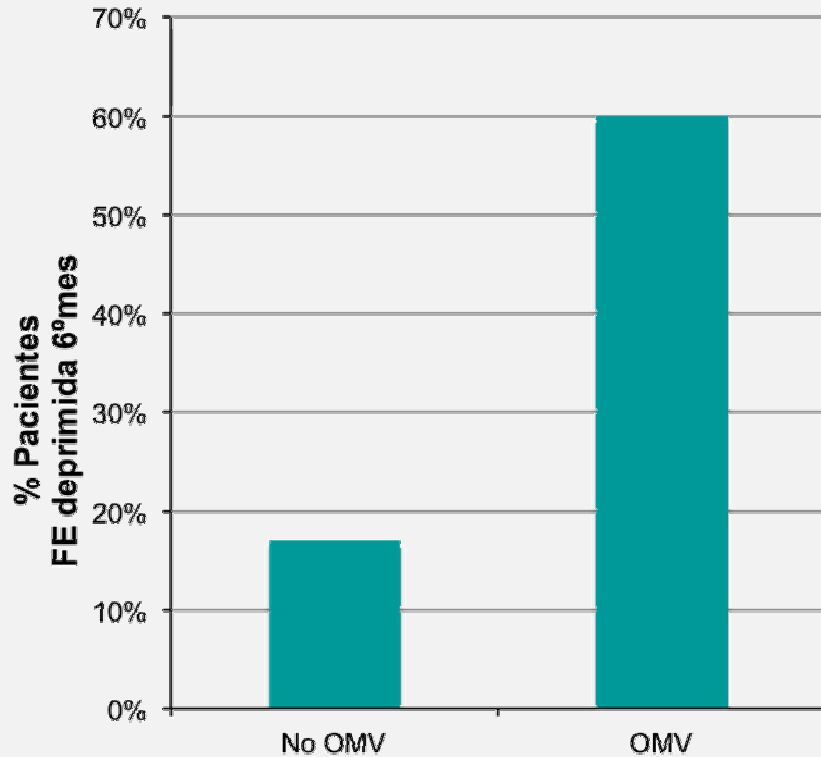
Concepto. Imagen de RMC



OMV en >30% de casos con flujo TIMI 3
Zona blanca = Infarto (captación tardía de gadolinio)
Zona negra central = OMV

La obstrucción microvascular

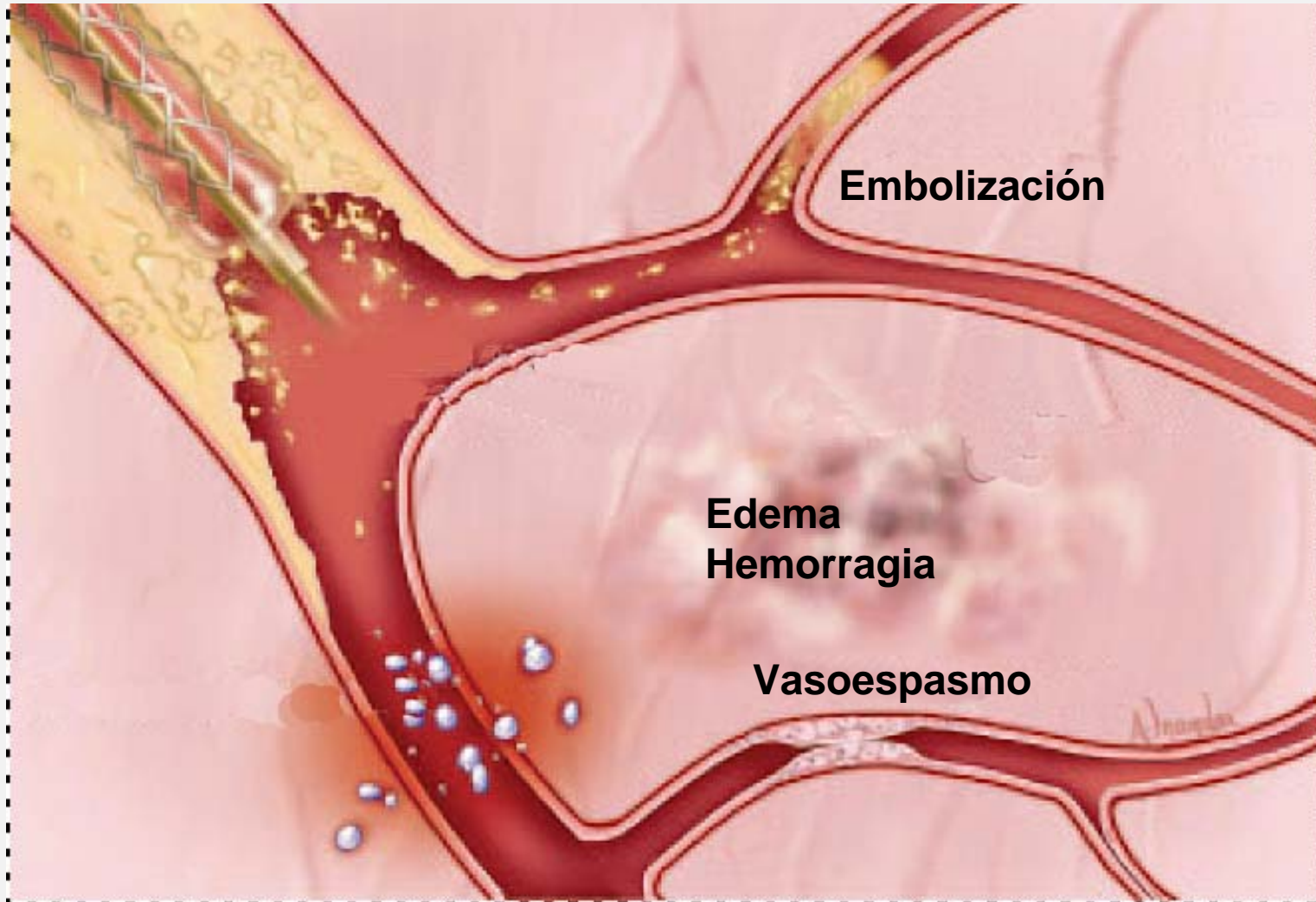
Impacto clínico



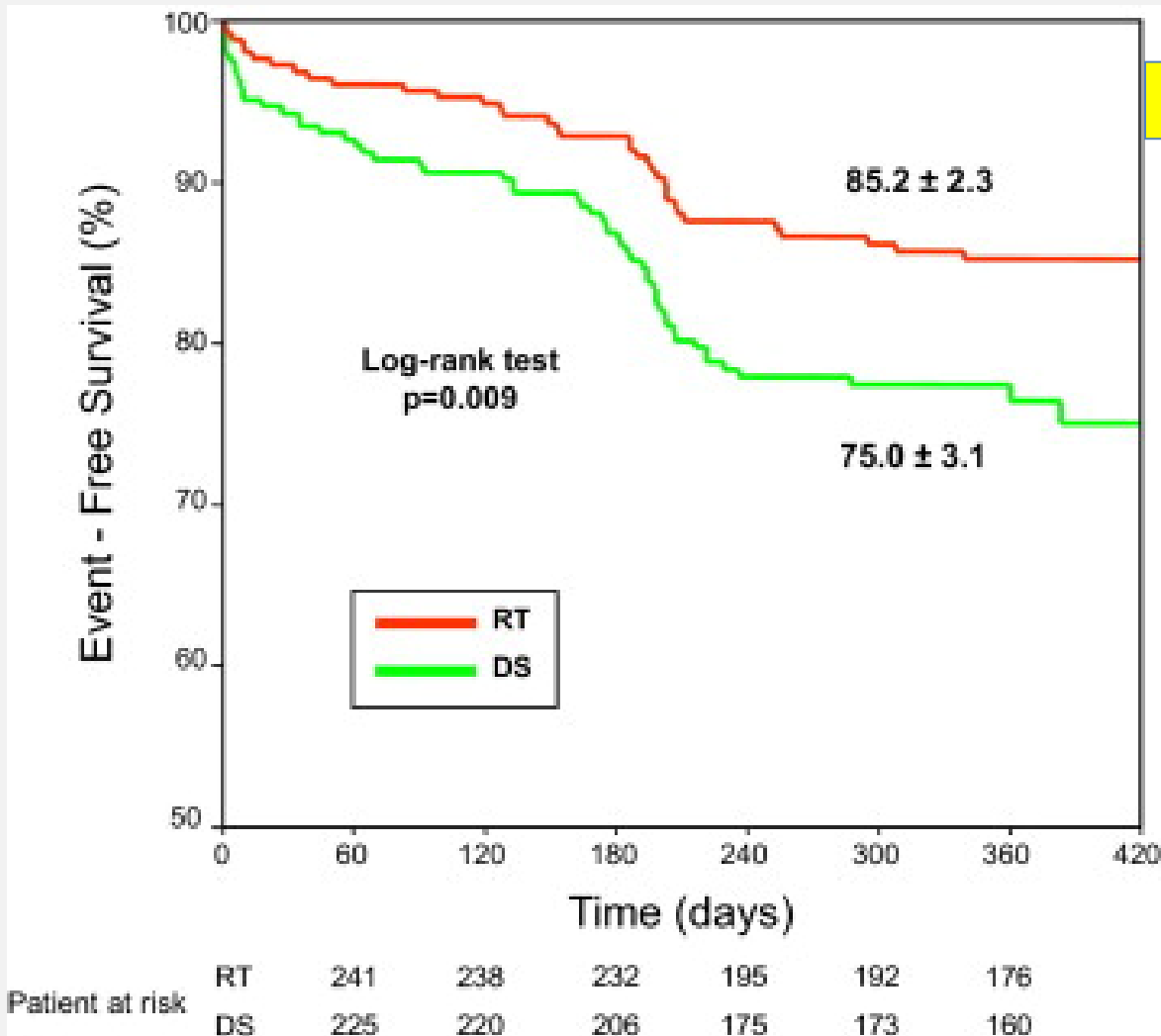
La OMV es un potente predictor de FE deprimida y eventos cardiovasculares en los meses siguientes

Obstrucción microvascular

Patogenia



Trombectomia en IAM



The JETSTENT Trial

Trombectomía

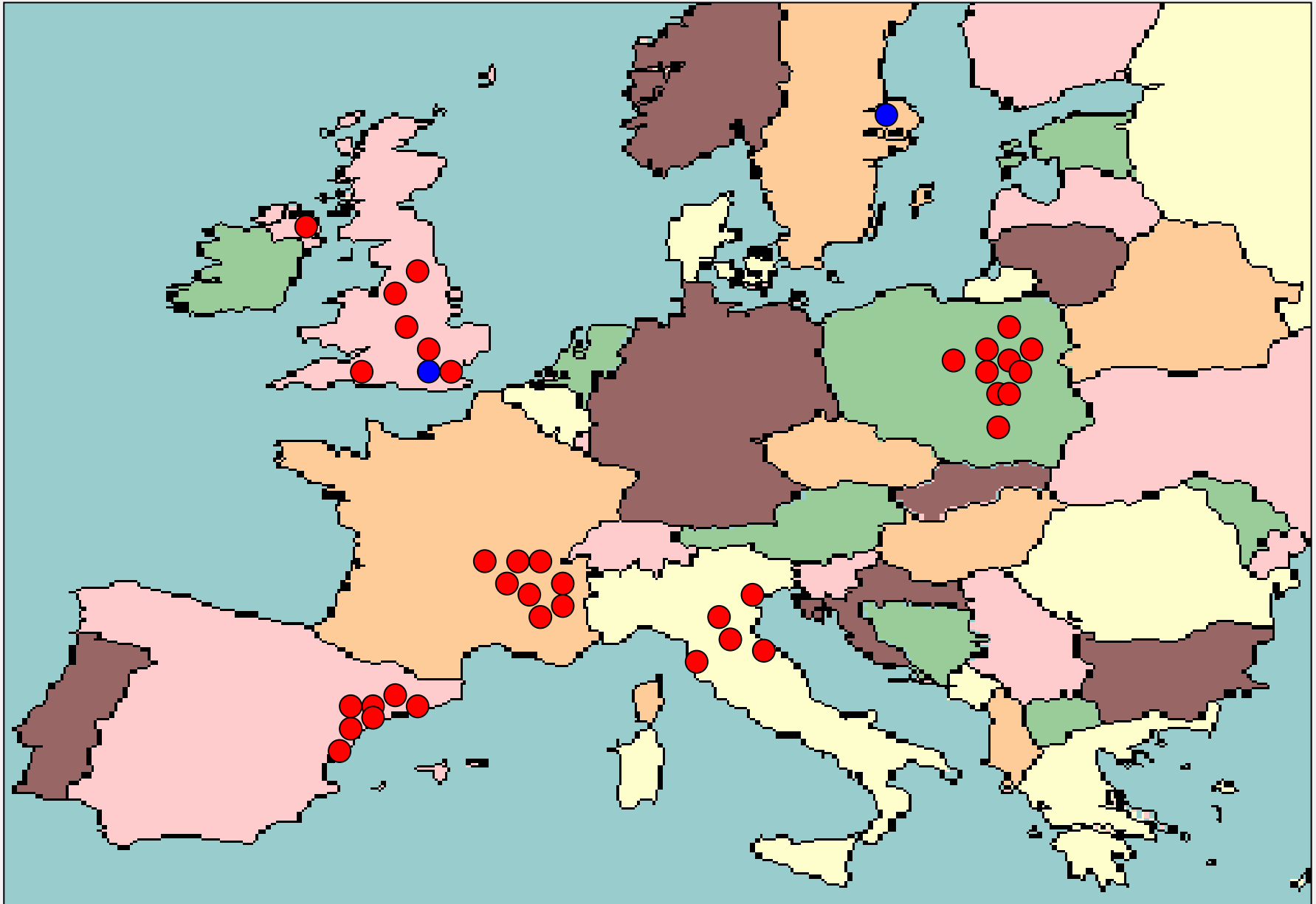
Stent directo

The role of cardiac registries in evidence-based medicine

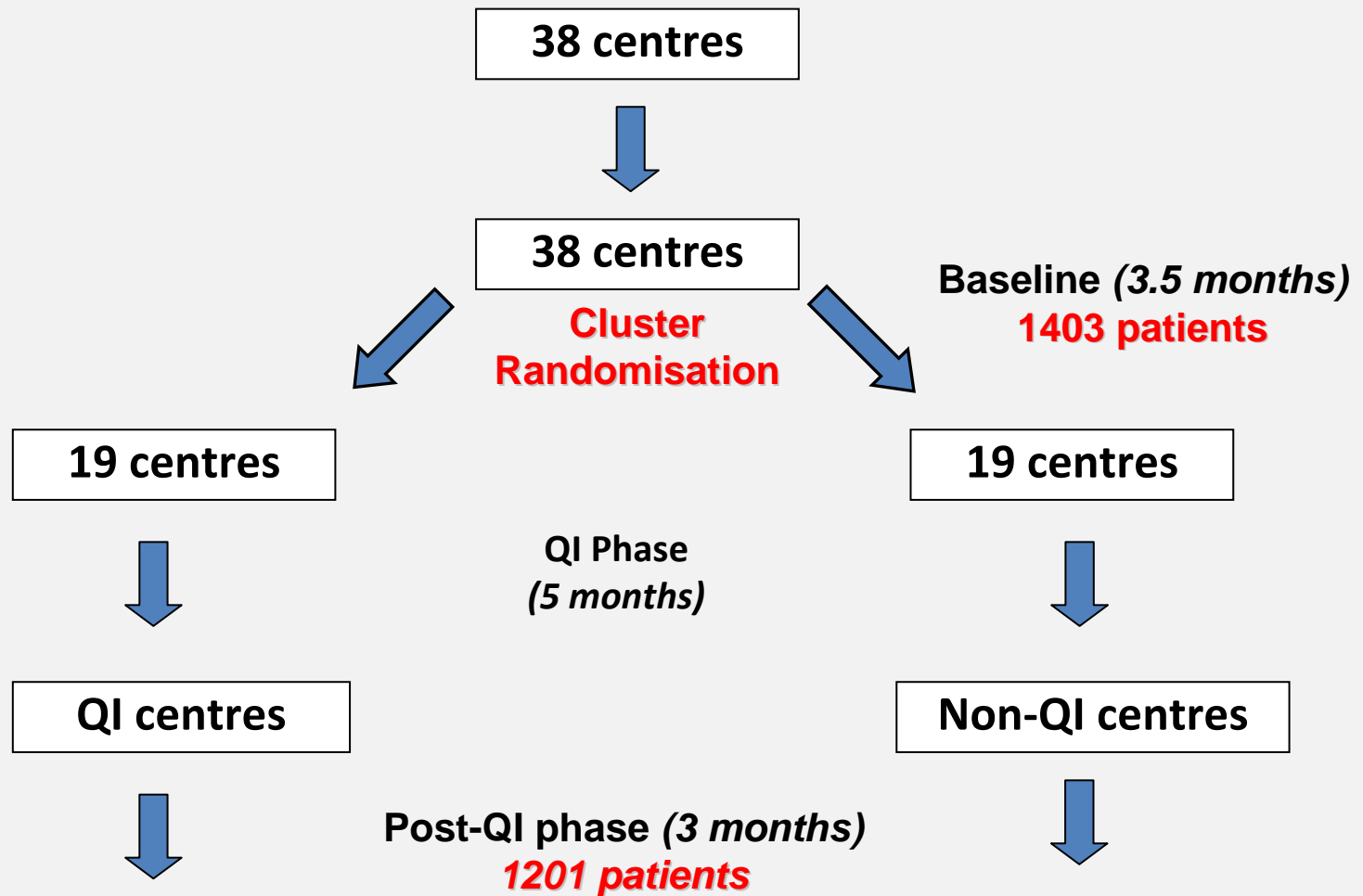
Anselm K. Gitt^{1*}, Hector Bueno², Nicolas Danchin³, Kevin Fox⁴, Matthias Hochadel¹, Peter Kearney⁵, Aldo P. Maggioni⁶, Grzegorz Opolski⁷, Ricardo Seabra-Gomes⁸, and Franz Weidinger⁹



EQUIP Centres

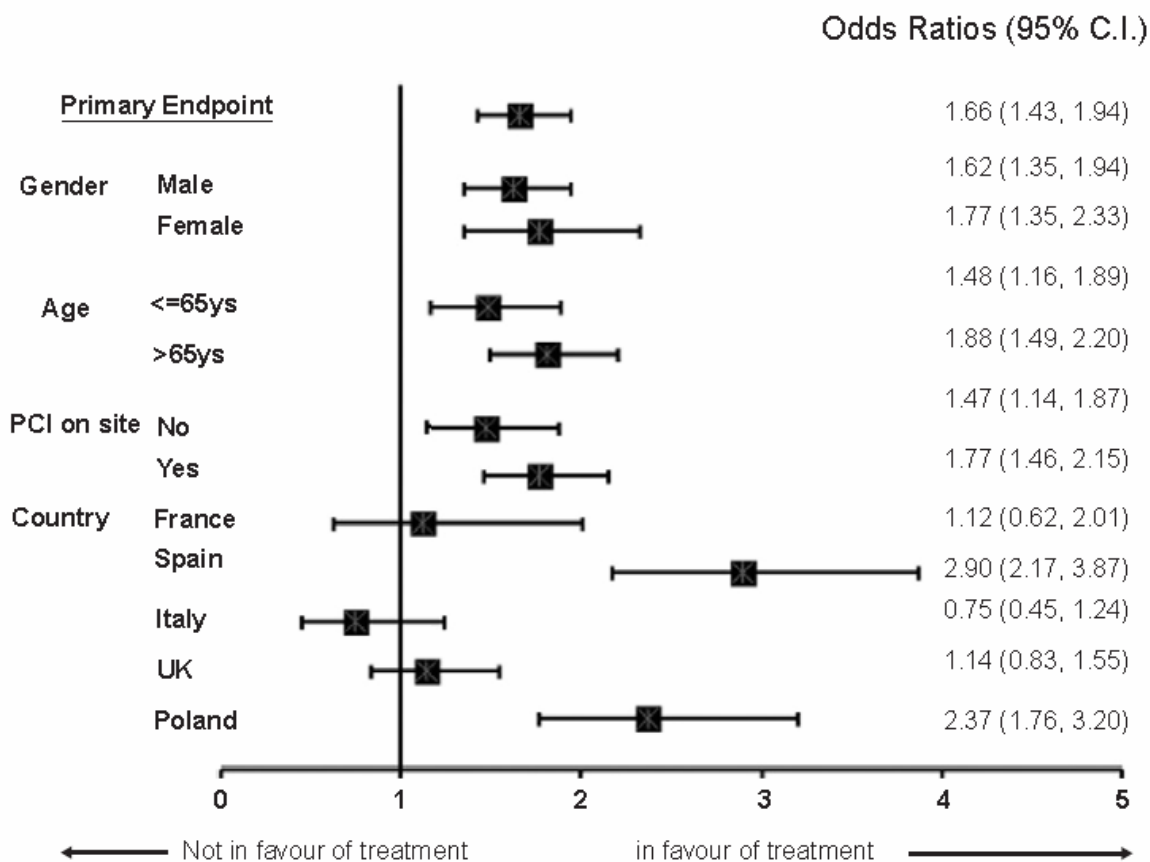


Study design- flow chart



Es posible mejorar con un programa adecuado

Figure 3



Forest plot of primary outcome analyzed by key subgroups: gender, age, ability to perform PCI on site and country. Odds ratios and 95% CIs are shown. Interaction *P* value for country effect <.001.

Conclusiones

- Cada vez conocemos mejor la fisiopatología del proceso arteriosclerótico
- El tratamiento del SCA sin elevación del segmento ST es complejo y es fundamental conocer el riesgo isquémico y el riesgo hemorrágico.
- El tratamiento del IAM con elevación del segmento ST se basa en la rápida reperusión, pero son necesarias nuevas estrategias para limitar el daño miocárdico.
- El gran reto del futuro es aplicar de forma generalizada todos los avances que ahora tenemos.