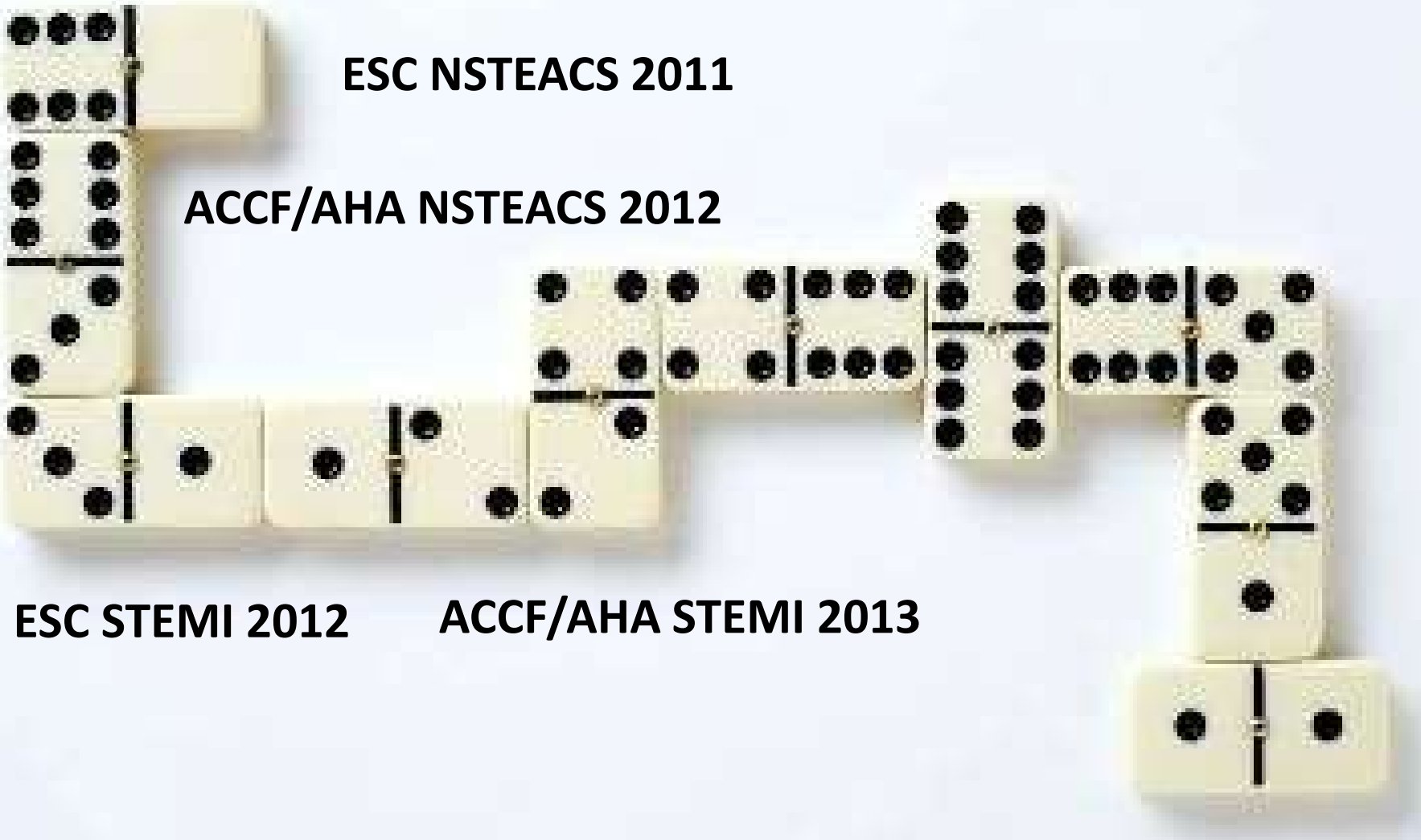
20 aspectos más novedosos y criticables de las guías SCA

J.A. Barrabés
Unidad Coronaria, Servicio de Cardiología
Hospital Vall d'Hebron, Barcelona
Madrid, 6 de julio de 2013



Hamm CW et al EHJ 2011
Jneid H et al Circulation 2012

Steg PG et al EHJ 2012
O'Gara PT et al Circulation 2013

Rev Esp Cardiol. 2012;65(2):125-130

Editorial

Comentarios a la guía de práctica clínica de la ESC para el manejo del síndrome coronario agudo en pacientes sin elevación persistente del segmento ST. Un informe del Grupo de Trabajo del Comité de Guías de Práctica Clínica de la Sociedad Española de Cardiología

Comments on the ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-Segment Elevation. A Report of the Task Force of the Clinical Practice Guidelines Committee of the Spanish Society of Cardiology

Grupo de Trabajo de la SEC para la Guía ESC 2011 de SCASEST: Antonio Fernández-Ortiz *, Manuel Pan (coordinadores), Fernand
Xavier García-Moll, Javie

Comité de Guías de Prácti
Josep Comín, Antonio Fe

Revisores del documento:
Juan Ángel-Ferrer, Javier
Milagros Pedreira, Inmac

Rev Esp Cardiol. 2013;66(1):5-11

Editorial

Comentarios a la guía de práctica clínica de la ESC para el manejo del infarto agudo de miocardio en pacientes con elevación del segmento ST

Comments on the ESC Guidelines for the Management of Acute Myocardial Infarction in Patients Presenting With Persistent ST-Segment Elevation

Grupo de Trabajo de la Sociedad Española de Cardiología para la guía de práctica clínica sobre el síndrome coronario agudo con elevación del segmento ST◊

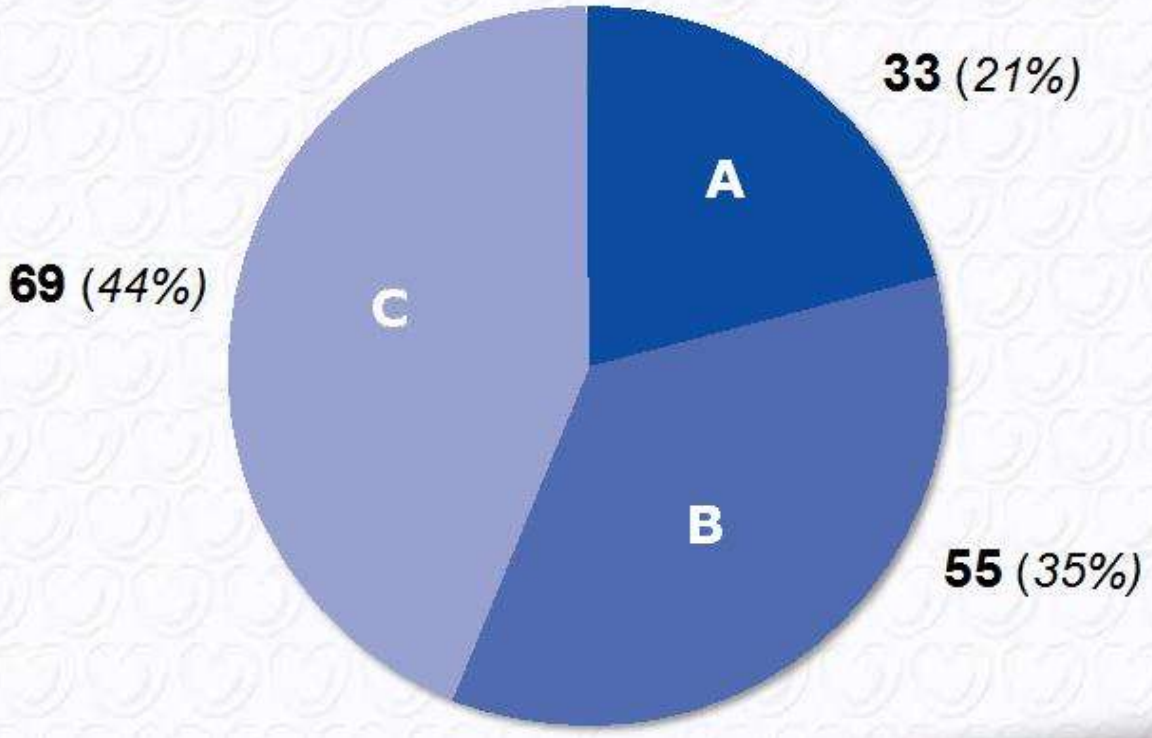
Grupo de Revisores Expertos para la guía de síndrome coronario agudo con elevación del segmento ST◊

Comité de Guías de Práctica Clínica de la Sociedad Española de Cardiología◊

Fernández-Ortiz A et al REC 2012
Worner F et al REC 2013

Levels of evidence

157 recommendations based on 346 references



European Heart Journal 2012 - doi:10.1093/eurheartj/ehs215

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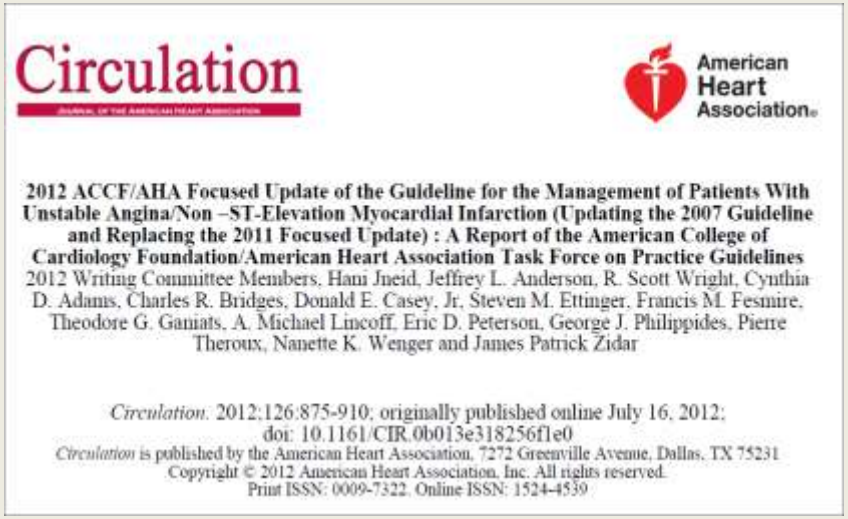
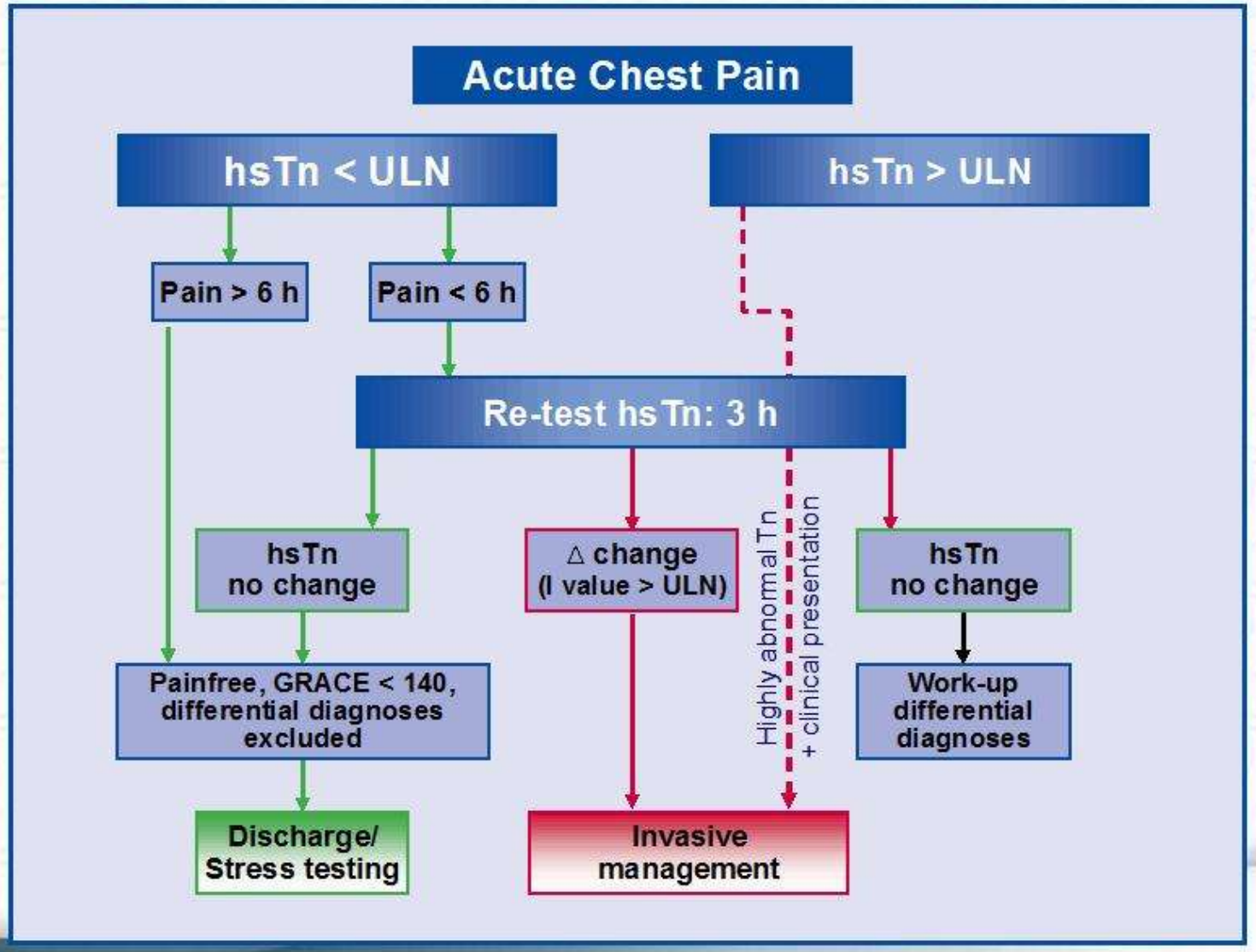
Guías SCASEST



1. Protocolo rápido de atención al dolor torácico con TN-us
2. Papel del ecocardiograma y Tc coronario
3. Antiagregación
4. Anticoagulación
5. Momento de la coronariografía y revascularización
6. Prevención secundaria

Rapid rule-out of ACS with high-sensitivity troponin



European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

www.escardio.org/guidelines

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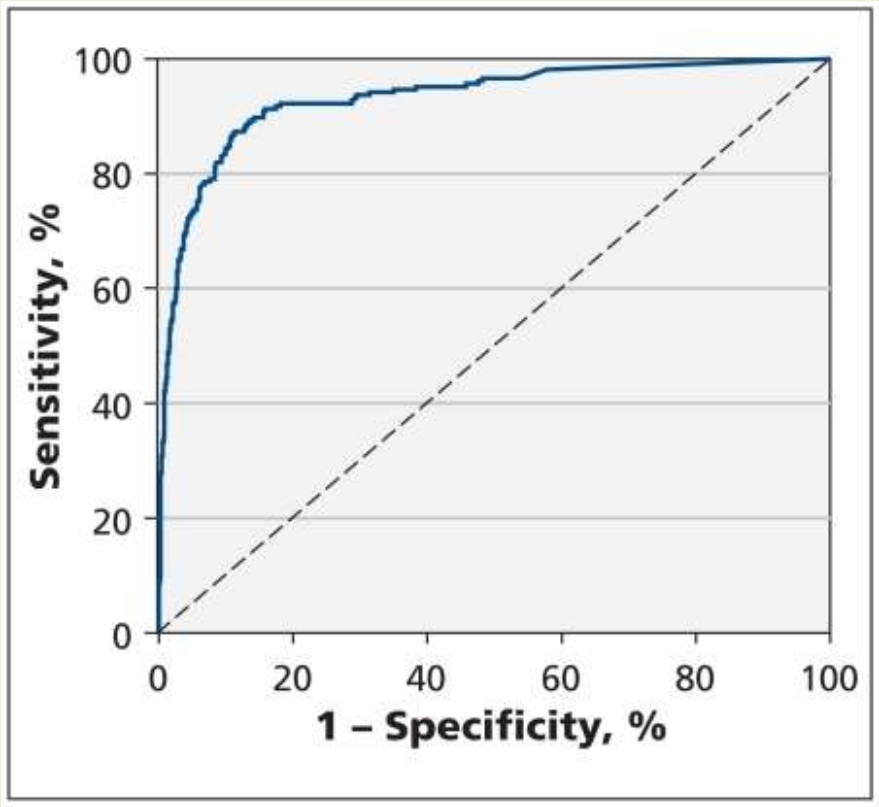
Troponina ultrasensible y despistaje del SCASEST



Area under ROC curve for NSTEMI at 2 h = 0.93

Aldous SJ et al CMAJ 2012;184:E260-8

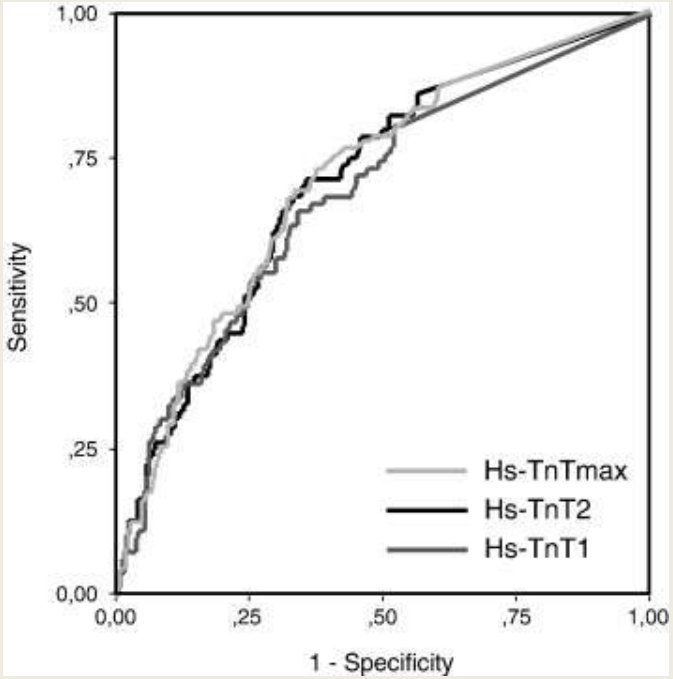


Table III. Sensitivity, specificity, positive predictive value and negative predictive value of the detection (>3 ng/L), and 99th percentile (≥14 ng/L) limits of hs-TnT in the whole population (N = 446)

	Sensitivity	Specificity	PPV	NPV
Acute coronary syndrome				
hs-TnTmax >3	87	40	25	93
hs-TnT1 >3	81	47	26	91
hs-TnTmax ≥14	30	90	40	85
Composite end point				
hs-TnTmax >3	92	39	20	97
hs-TnT1 >3	85	46	21	95
hs-TnTmax ≥14	34	89	33	89

PPV, Positive predictive value; *NPV*, negative predictive value.

Sanchis J et al Am Heart J 2012;164:194-200

Troponina ultrasensible y despistaje del SCASEST

- Mayor sensibilidad pero:
  - más falsos positivos
  - sensibilidad no perfecta → sigue existiendo la angina inestable
- No evita la necesidad de tests no invasivos en algunos casos → escala GRACE tiene validez limitada en la UDT
- Rendimiento sobre evaluación convencional limitado
- La definición de 'cambio significativo' es discutible
- La guía americana no menciona la Tn-US

Recommendations for diagnosis and risk stratification (2)

Recommendations	Class	Level
Blood has to be drawn promptly for troponin (cardiac troponin T or I) measurement. The result should be available within 60 min. The test should be repeated 6-9 h after initial assessment if the first measurement is not conclusive. Repeat testing after 12-24 h is advised if the clinical condition is still suggestive of ACS.	I	A
A rapid rule-out protocol (0 and 3 h) is recommended when highly sensitive troponin tests are available.	I	B
An echocardiogram is recommended for all patients to evaluate regional and global LV function and to rule in or rule out differential diagnoses.	I	C
Coronary angiography is indicated in patients in whom the extent of CAD or the culprit lesion has to be determined.	I	C
Coronary CT angiography should be considered as an alternative to invasive angiography to exclude ACS when there is a low to intermediate likelihood of CAD and when troponin and ECG are inconclusive.	IIa	B
In patients without recurrence of pain, normal ECG findings, negative troponins tests, and a low risk score, a non-invasive stress test for inducible ischaemia is recommended before deciding on an invasive strategy.	I	A

European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

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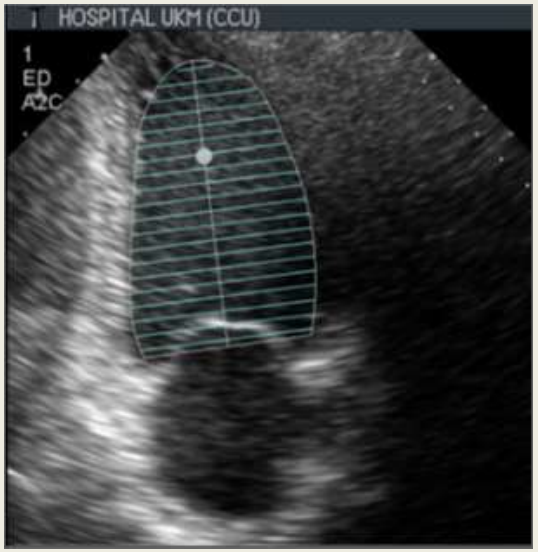
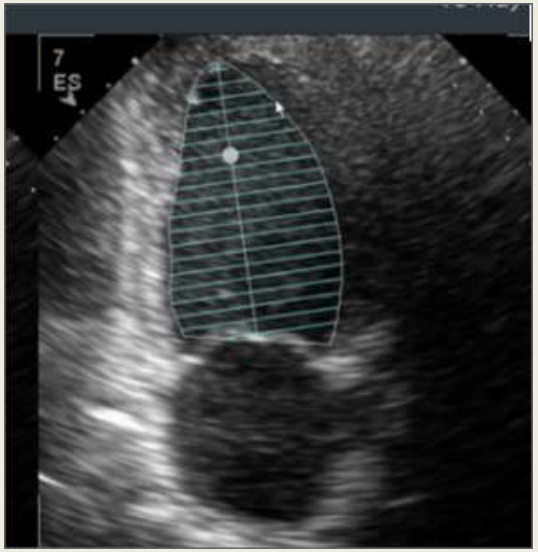
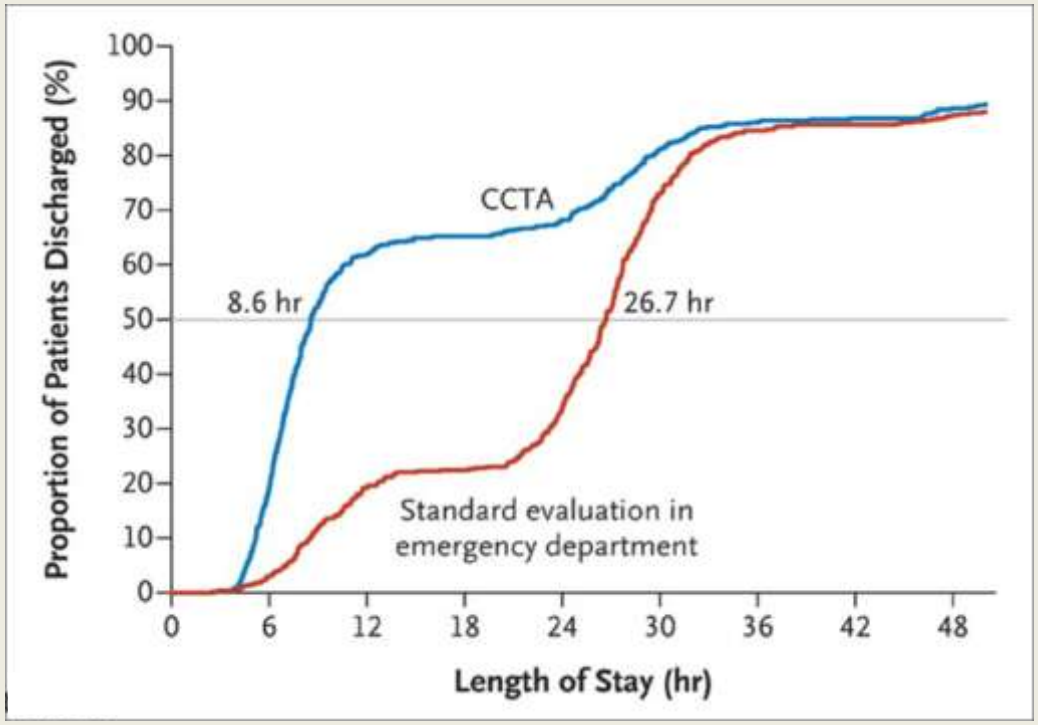
¿ECO a todos? ¿En Urgencias?





- Problemas logísticos
- Otros métodos de valorar función VI
- Experiencia personal Urgencias limitada
- Guía ACCF/AHA → evaluar la FE en el ingreso (IB)

¿Tc coronario para descartar SCA en Urgencias?

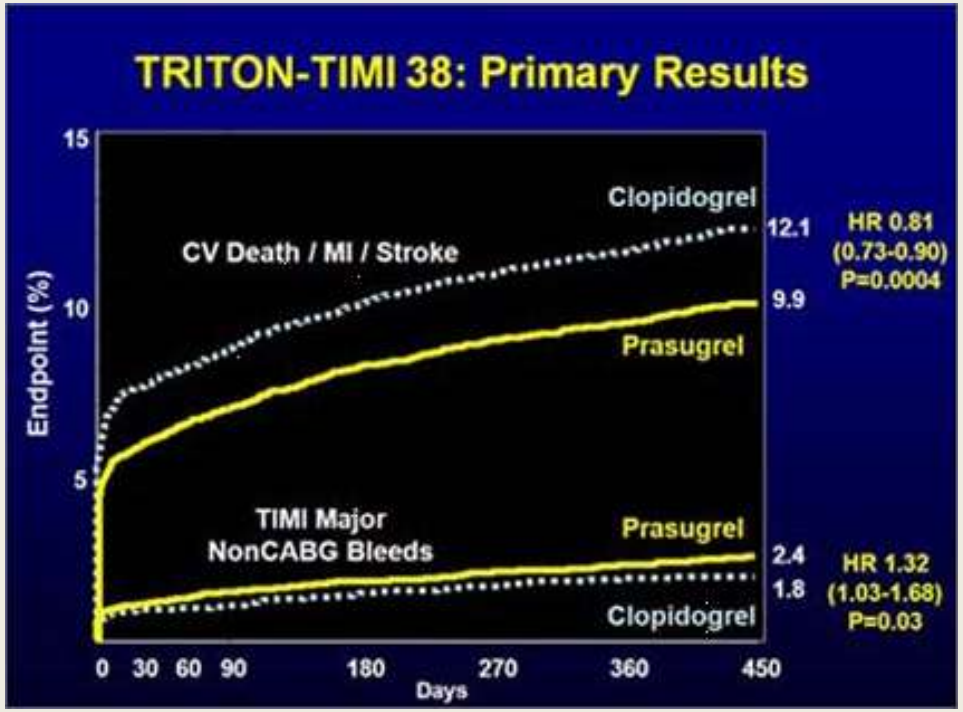


Hoffmann U et al, NEJM 2012;367:299-308

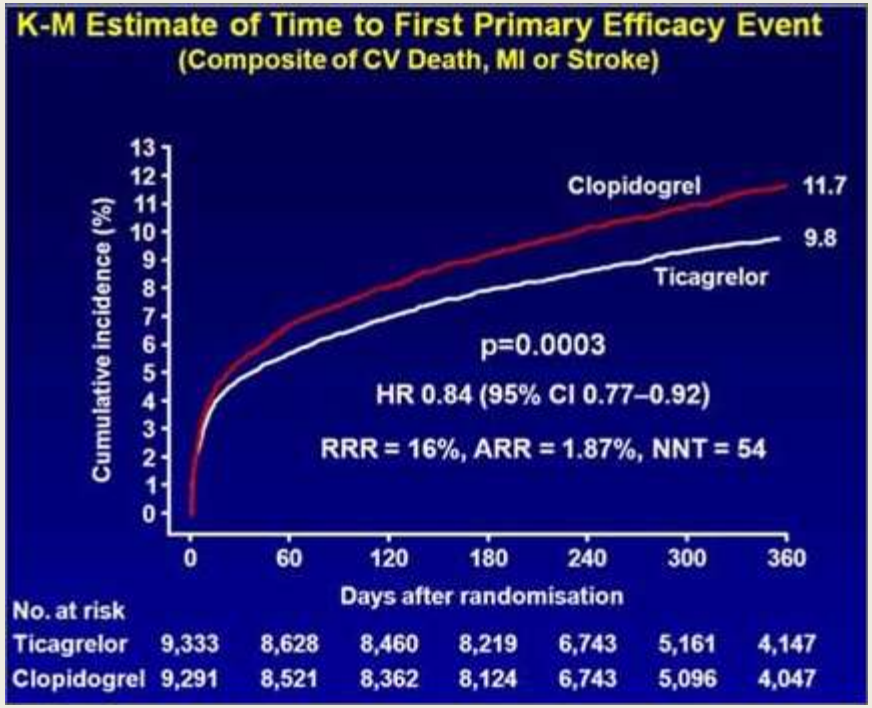
- Irradiación y coste
- Requiere preparar al paciente y experiencia
- Los pacientes óptimos son adecuados para ergometría
- Peor rendimiento en malos candidatos para ergometría

Nuevos antiagregantes orales

PRASUGREL: TRITON



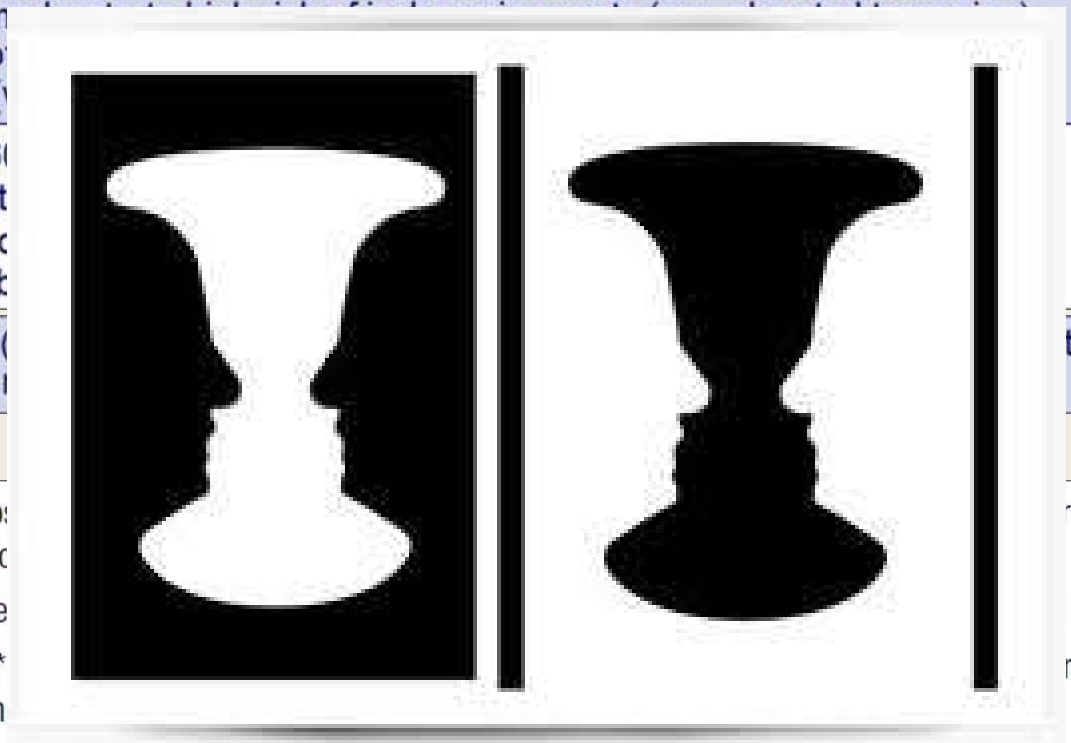
TICAGRELOR: PLATO



Wiviott SD et al. New Engl J Med 2007;357:2001-15
Wallentin L et al. New Engl J Med 2009;361:1045-57

Nuevos antiagregantes orales

Ticagrelor (180 mg loading dose, 90 mg twice daily) is recommended for all patients at m… regardless o… clopidogrel (…	I	B
Prasugrel (6… $P2Y_{12}$-inhibit… is known and… threatening b…	I	B
Clopidogrel (… who cannot …	I	A

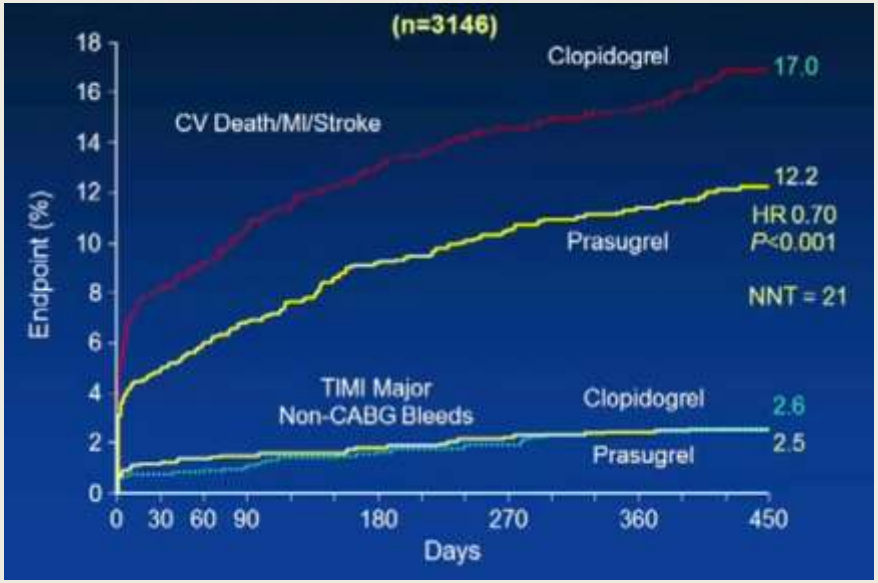


6. A loading do… One of the fo… whom PCI is planned.‡
   a. Clopidogre… *(Level of Evidence: B)* or
   b. Prasugrel* … anatomy is defined and a decision …
   c. Ticagrelor† 180 mg should be given as early as possible before or at the time of PCI.§ *(Level of Evidence: B)*

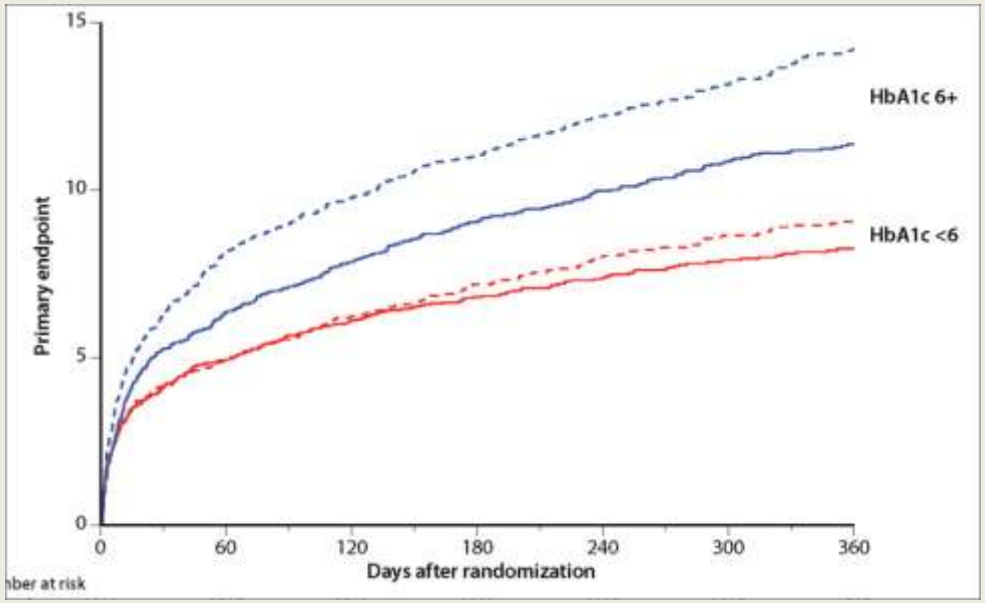
This guideline explicitly does not endorse one of the $P2Y_{12}$ receptor inhibitors over the other. There were several reasons

Nuevos antiagregantes orales en diabéticos

TRITON-TIMI 38: Prasugrel



PLATO: Ticagrelor



Wiviott SD et al. Circulation 2008;118:1626-36
James S et al EHJ 2010;31:3006-16

Recommendations for anticoagulants

Recommendations	Class	Level
Anticoagulation is recommended for all patients in addition to antiplatelet therapy.	I	A
The anticoagulation should be selected according to both ischaemic and bleeding risks, and according to the efficacy-safety profile of the chosen agent.	I	C
Fondaparinux (2.5 mg subcutaneously daily) is recommended as having the most favourable efficacy-safety profile with respect to anticoagulation.	I	A
If the initial anticoagulant is fondaparinux, a single bolus of UFH (85 IU/kg adapted to ACT, or 60 IU in the case of concomitant use of GPIIb/IIIa receptor inhibitors) should be added at the time of PCI.	I	B
Enoxaparin (1 mg/kg twice daily) is recommended when fondaparinux is not available.	I	B
If fondaparinux or enoxaparin are not available, UFH with a target aPTT of 50-70 s or other LMWHs at the specific recommended doses are indicated.	I	C
Bivalirudin plus provisional GPIIb/IIIa receptor inhibitors are recommended as an alternative to UFH plus GPIIb/IIIa receptor inhibitors in patients with an intended urgent or early invasive strategy, particularly in patients with a high risk of bleeding.	I	B
In a purely conservative strategy, anticoagulation should be maintained up to hospital discharge.	I	A
Discontinuation of anticoagulation should be considered after an invasive procedure unless otherwise indicated.	IIa	C
Crossover of heparins (UFH and LMWH) is not recommended.	III	B

European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

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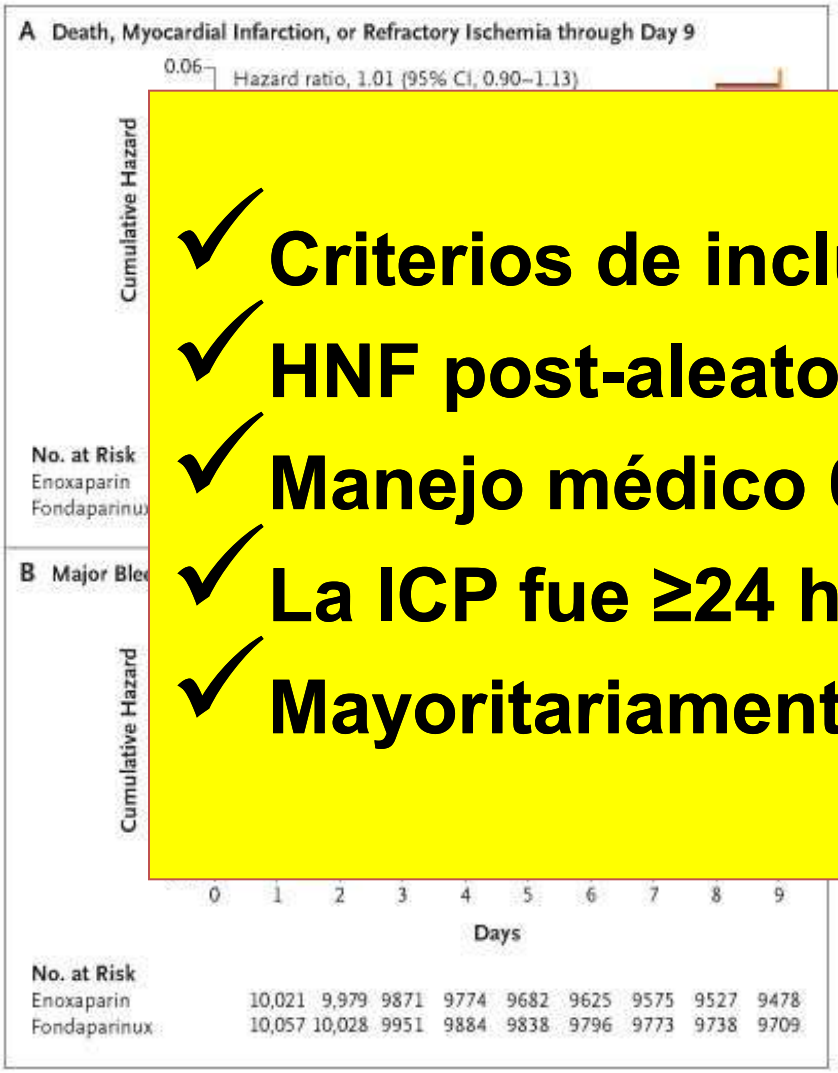
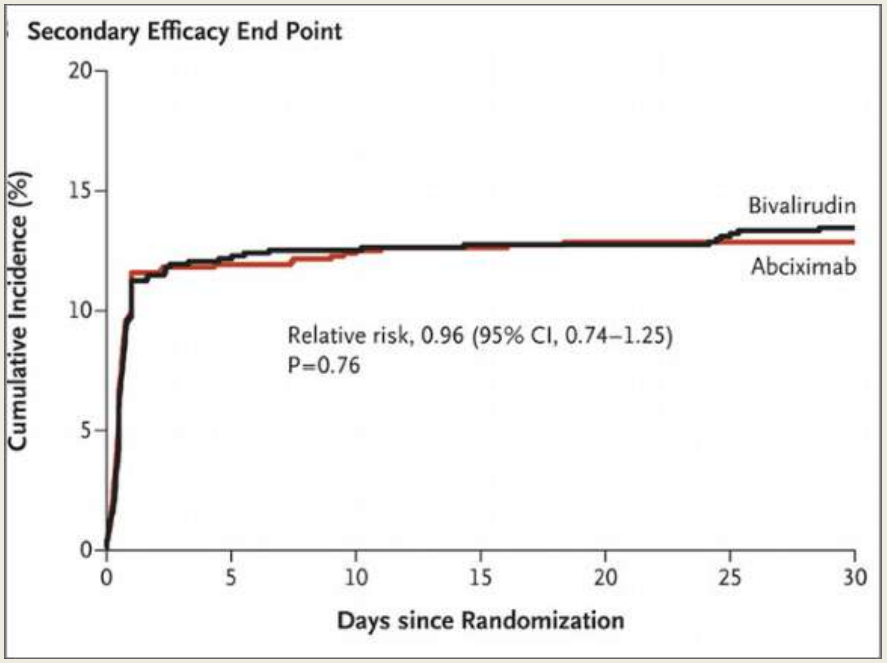
Fondaparinux vs. Enoxaparin in NSTE-ACS: OASIS-5

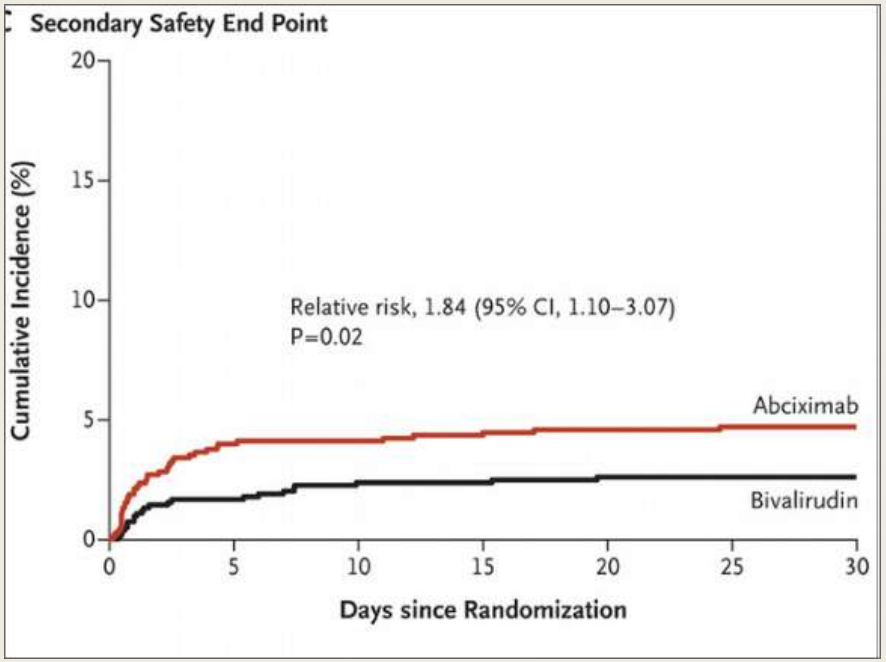


- ✓ **Criterios de inclusión cambiantes**
- ✓ **HNF post-aleatorización diferente**
- ✓ **Manejo médico 60%, ICP 31%**
- ✓ **La ICP fue ≥24 h en 70% de casos**
- ✓ **Mayoritariamente vía femoral**

OASIS-5 Investigators. NEJM 2006;354:1464-76

Abciximab+UFH vs. bivalirudin in NSTEMI ISAR-REACT 4





¿Se mantiene el beneficio de bivalirudina sobre HNF+anti-IIbIIIa con los nuevos antiagregantes?

Kastrati A et al. New Engl J Med 2011;365:1980-9

Anticoagulación en guías ACCF/AHA

American Heart Association

- Debe iniciarse en todos los pacientes lo antes posible (I)

- Si estrategia invasiva:
  - Enoxaparina o HNF (IA)
  - Bivalirudina y fondaparinux (IB)

- Si estrategia conservadora:
  - Enoxaparina o HNF (IA)
  - Fondaparinux (IB)

- Si estrategia conservadora y alto riesgo hemorrágico:
  - Fondaparinux (IB)

Anderson JL et al, Circulation 2007;116:803-77

Recommendations for invasive evaluation and revascularization

Recommendations	Class	Level
An invasive strategy (within 72 h after first presentation) is indicated in patients with: • at least one high-risk criterion, • recurrent symptoms.	I	A
Urgent coronary angiography (< 2 h) is recommended in patients at very high ischaemic risk (refractory angina, with associated heart failure, life-threatening ventricular arrhythmias, or haemodynamic instability).	I	C
An **early** invasive strategy (< 24 h) is recommended in patients with a GRACE score > 140 or with at least one primary high-risk criterion.	I	A
Non-invasive documentation of inducible ischaemia is recommended in low-risk patients without recurrent symptoms before deciding for invasive evaluation.	I	A
The revascularization strategy (*ad-hoc* culprit lesion PCI/ multivessel PCI/CABG) should be based on the clinical status as well as the disease severity, i.e. distribution and angiographic lesion characteristics (e.g. SYNTAX score), according to the local 'Heart Team' protocol.	I	C
As there are no safety concerns related to the use of DESs in ACS, DESs are indicated based on an individual basis taking into account baseline characteristics, coronary anatomy, and bleeding risk.	I	A
PCI of non-significant lesions is not recommended.	III	C
Routine invasive evaluation of low-risk patients is not recommended.	III	A

European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

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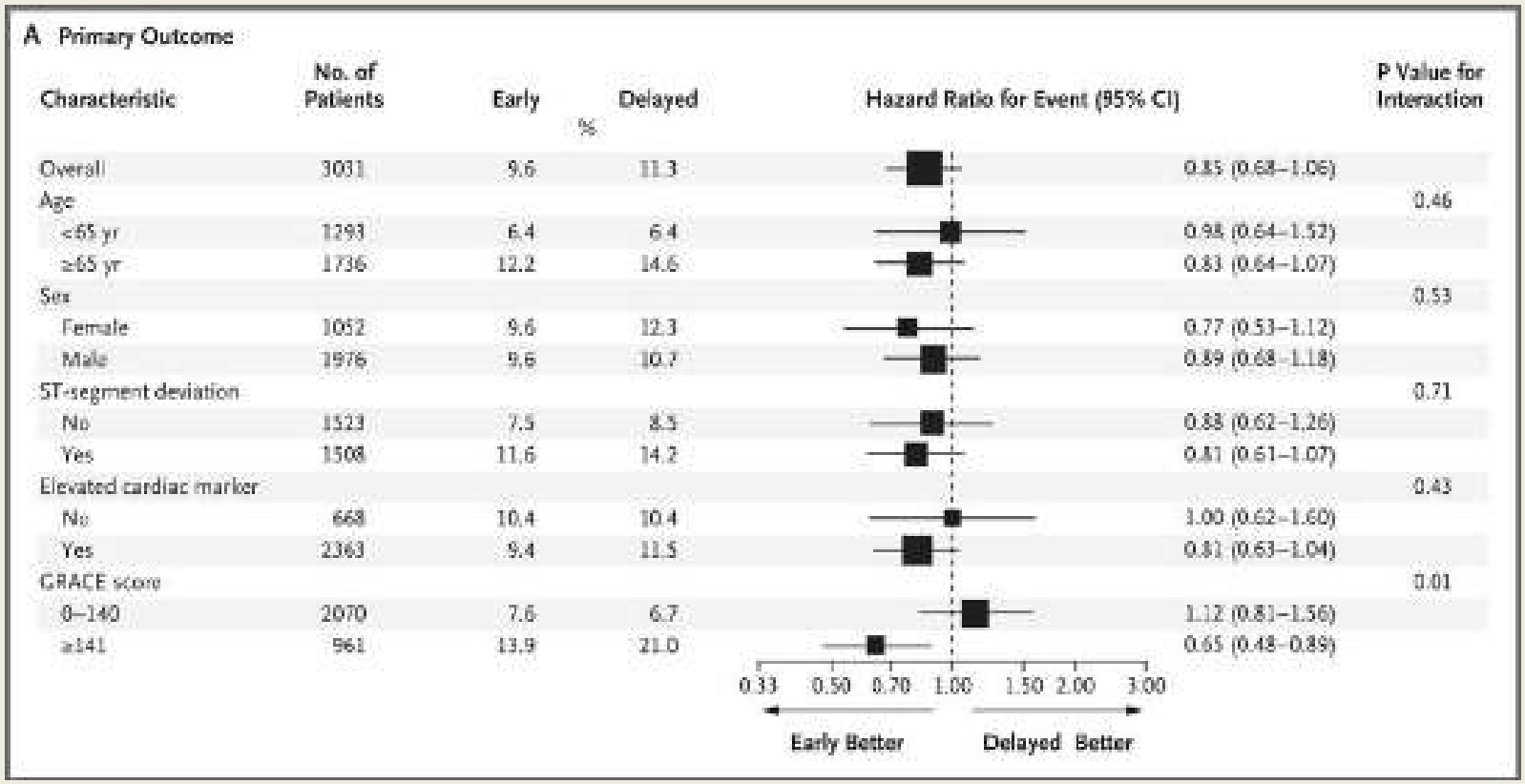
Early vs. delayed invasive intervention in acute coronary syndromes: TIMACS study

N= 3031 NSTE-ACS pts → early (<24 h) vs delayed (>36 h) angio + revascularization
Primary endpoint = Death / MI / stroke at 6 months
Results = No differences in primary endpoint
Early intervention reduced the combined endpoint death / MI / refractory angina



Mehta SR et al. New Engl J Med 2009;360:2165-75

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An **early** invasive strategy (< 24 h) is recommended in patients with a GRACE score > 140 or with at least one primary high-risk criterion.	I	A
Non-invasive documentation of inducible ischaemia is recommended in low-risk patients wit	I	A
The revasc should be b distribution to the local		C
As there ar indicated b coronary ar		A
PCI of non-		C
Routine inv		A

¿No es esto un poco ...

...discutible desde el punto de vista metodológico?

...simplista?

Todo anciano con dolor torácico sugestivo de angina y ECG normal → KT en <24 h

European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

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Recommendations for drugs in secondary prevention

Recommendations	Class	Level
β-Blockers are recommended in all patients with reduced LV systolic function (LVEF ≤ 40%).	I	A
ACE inhibitors are indicated within 24 h in all patients with LVEF ≤ 40% and in patients with heart failure, diabetes, hypertension, or CKD, unless contraindicated.	I	A
ACE inhibitors are recommended for all other patients to prevent recurrence of ischaemic events, with preference given to agents and doses of proven efficacy.	I	B
ARBs are recommended for patients who are intolerant to ACE inhibitors, with preference given to agents and doses of proven efficacy.	I	B
Aldosterone blockade with eplerenone is indicated in patients after MI who are already being treated with ACE inhibitors and β-blockers and who have an LVEF ≤ 35% and either diabetes or heart failure, without significant renal dysfunction [serum creatinine > 221 μmol/L (> 2.5 mg/dL) for men and > 177 μmol/L (> 2.0 mg/dL) for women] or hyperkalaemia.	I	A
Statin therapy with target LDL-C levels < 1.8 mmol/L (< 70 mg/dL) initiated early after admission is recommended.	I	B

European Heart Journal (2011) 32:2999–3054
doi:10.1093/eurheartj/ehr236

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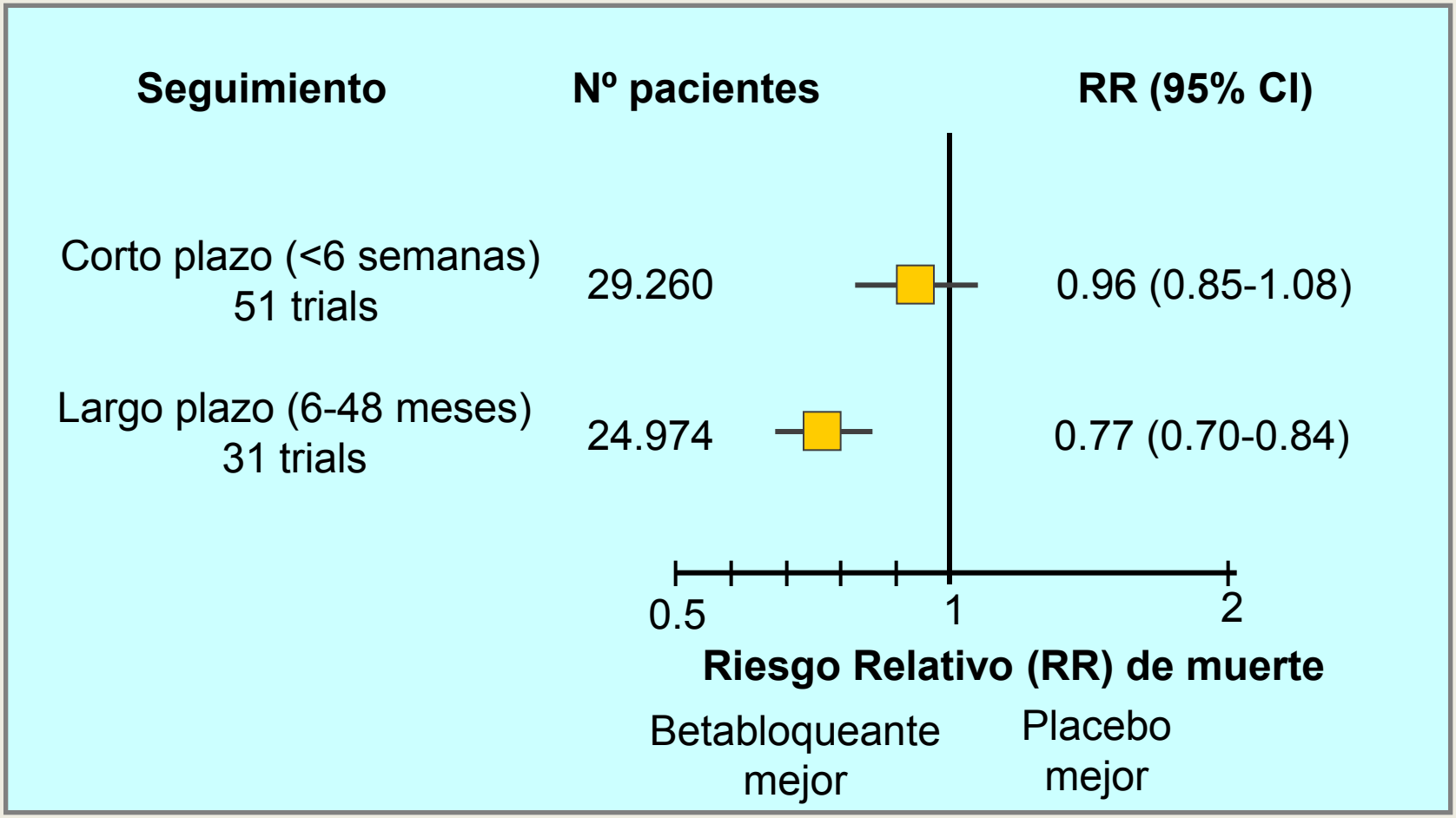
Efecto de los betabloqueantes sobre la mortalidad post-IAM: meta-análisis de 82 estudios



N=54.234

Freemantle N et al, BMJ 1995;318:1730

Guías IAMEST

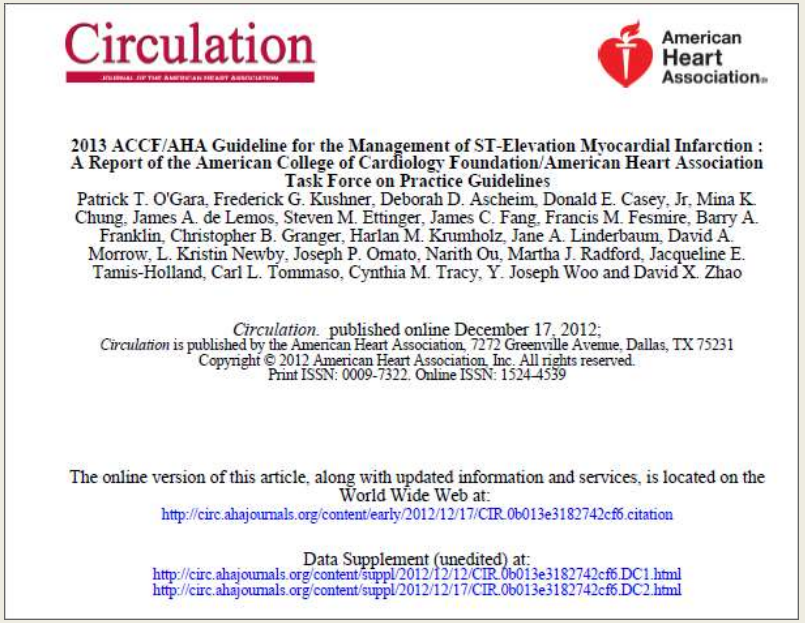
European Heart Journal (2012) 33, 2569–2619
doi:10.1093/eurheartj/ehs215

ESC GUIDELINES

ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation

The Task Force on the management of ST-segment elevation acute myocardial infarction of the European Society of Cardiology (ESC)

Authors/Task Force Members: Ph. Gabriel Steg (Chairperson) (France)*, Stefan K. James (Chairperson) (Sweden)*, Dan Atar (Norway), Luigi P. Badano (Italy), Carina Blömstrom-Lundqvist (Sweden), Michael A. Borger (Germany), Carlo Di Mario (United Kingdom), Kenneth Dickstein (Norway), Gregory Ducrocq (France), Francisco Fernandez-Aviles (Spain), Anthony H. Gershlick (United Kingdom), Pantaleo Giannuzzi (Italy), Sigrun Halvorsen (Norway), Kurt Huber (Austria), Peter Juni (Switzerland), Adnan Kastrati (Germany), Juhani Knuuti (Finland), Mattie J. Lenzen (Netherlands), Kenneth W. Mahaffey (USA), Marco Valgimigli (Italy), Arnoud van 't Hof (Netherlands), Petr Widimsky (Czech Republic), Doron Zahger (Israel)



Circulation

American Heart Association.

2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction : A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

Patrick T. O'Gara, Frederick G. Kushner, Deborah D. Ascheim, Donald E. Casey, Jr, Mina K. Chung, James A. de Lemos, Steven M. Ettinger, James C. Fang, Francis M. Fesmire, Barry A. Franklin, Christopher B. Granger, Harlan M. Krumholz, Jane A. Linderbaum, David A. Morrow, L. Kristin Newby, Joseph P. Ornato, Narith Ou, Martha J. Radford, Jacqueline E. Tamis-Holland, Carl L. Tommaso, Cynthia M. Tracy, Y. Joseph Woo and David X. Zhao

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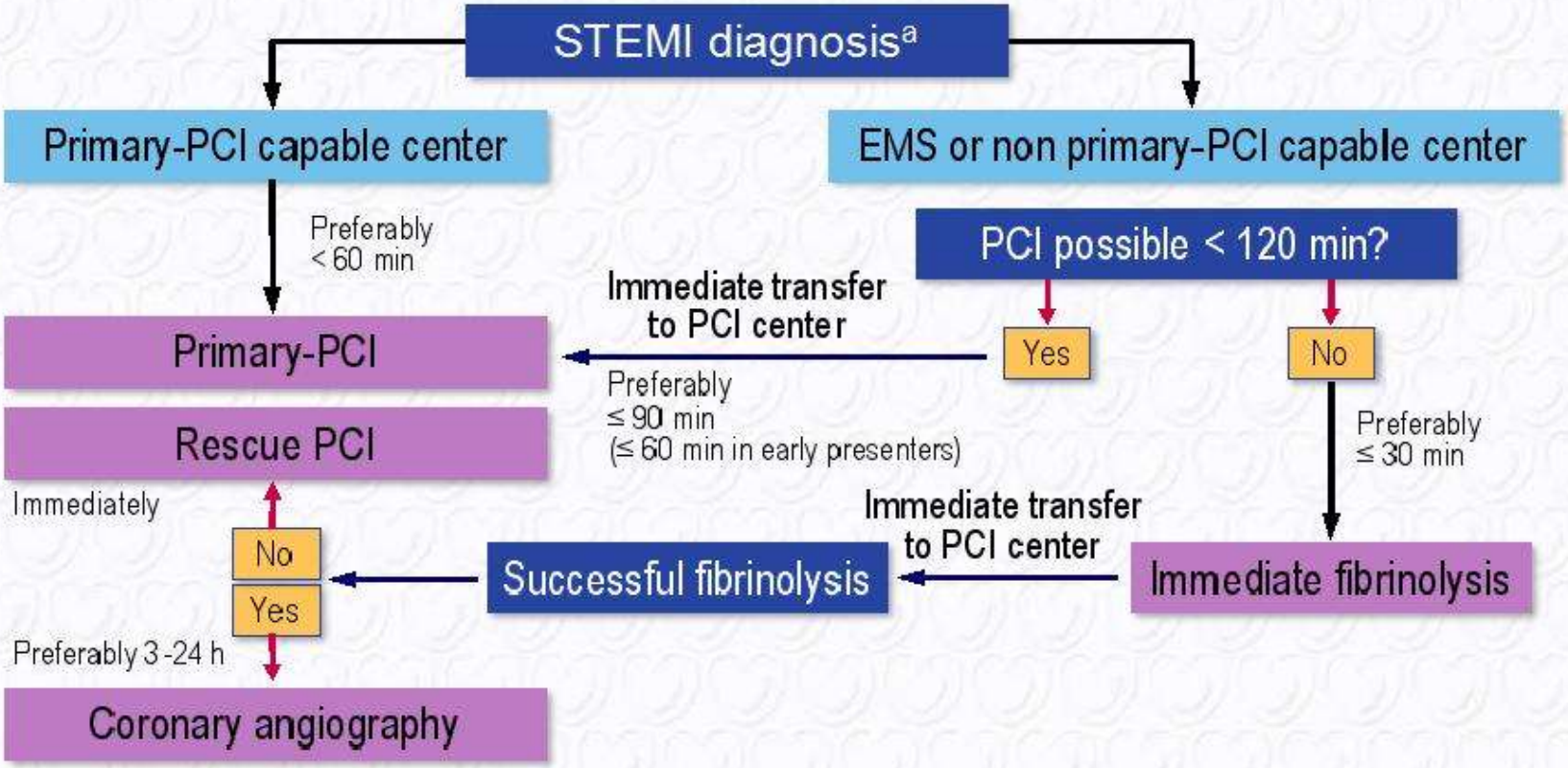
http://circ.ahajournals.org/content/early/2012/12/17/CIR.0b013e3182742cf6.citation

Data Supplement (unedited) at:
http://circ.ahajournals.org/content/suppl/2012/12/12/CIR.0b013e3182742cf6.DC1.html
http://circ.ahajournals.org/content/suppl/2012/12/17/CIR.0b013e3182742cf6.DC2.html

1. Estrategias de reperfusión
2. Bivalirudina vs. HNF+antiGPIIb/IIIa
3. Pacientes con anticoagulación crónica
4. Manejo de la insuficiencia mitral post-infarto

Prehospital and in-hospital management, and reperfusion strategies within 24 h of FMC



[a] The 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).

Cath = catheterization laboratory; EMS = emergency medical system; FMC = first medical contact; PCI = percutaneous coronary intervention; STEMI = ST-segment elevation myocardial infarction.

European Heart Journal 2012 - doi:10.1093/eurheartj/ehs215

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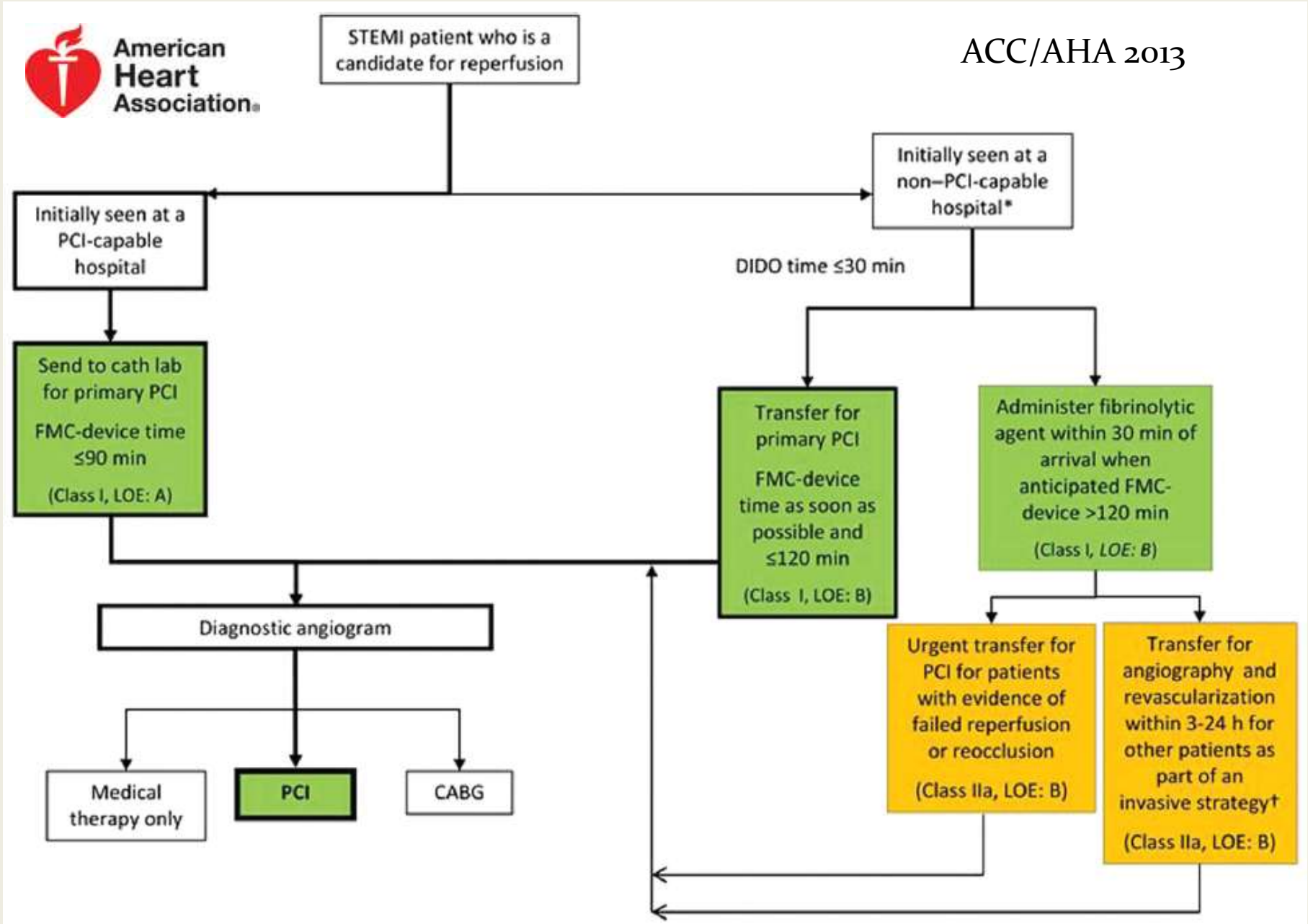
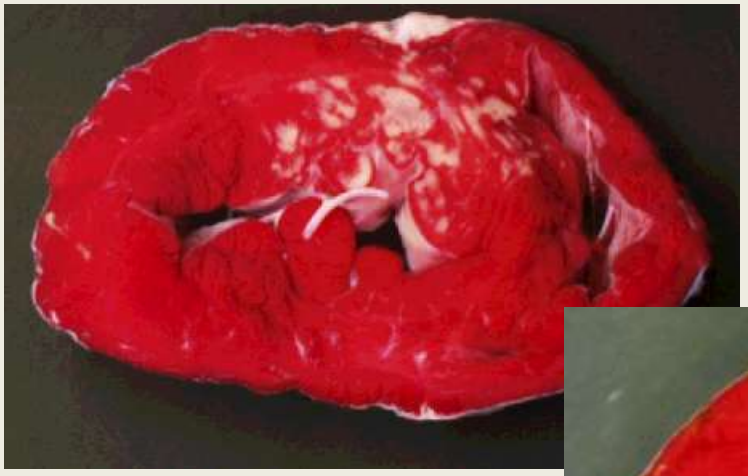


*Patients with cardiogenic shock or severe heart failure initially seen at a non–PCI-capable hospital should be transferred for cardiac catheterization and revascularization as soon as possible, irrespective of time delay from MI onset (*Class I, LOE: B*). †Angiography and revascularization should not be performed within the first 2 to 3 hours after administration of fibrinolytic therapy.

Retraso del sistema vs. tiempo de isquemia en el beneficio de la reperfusión

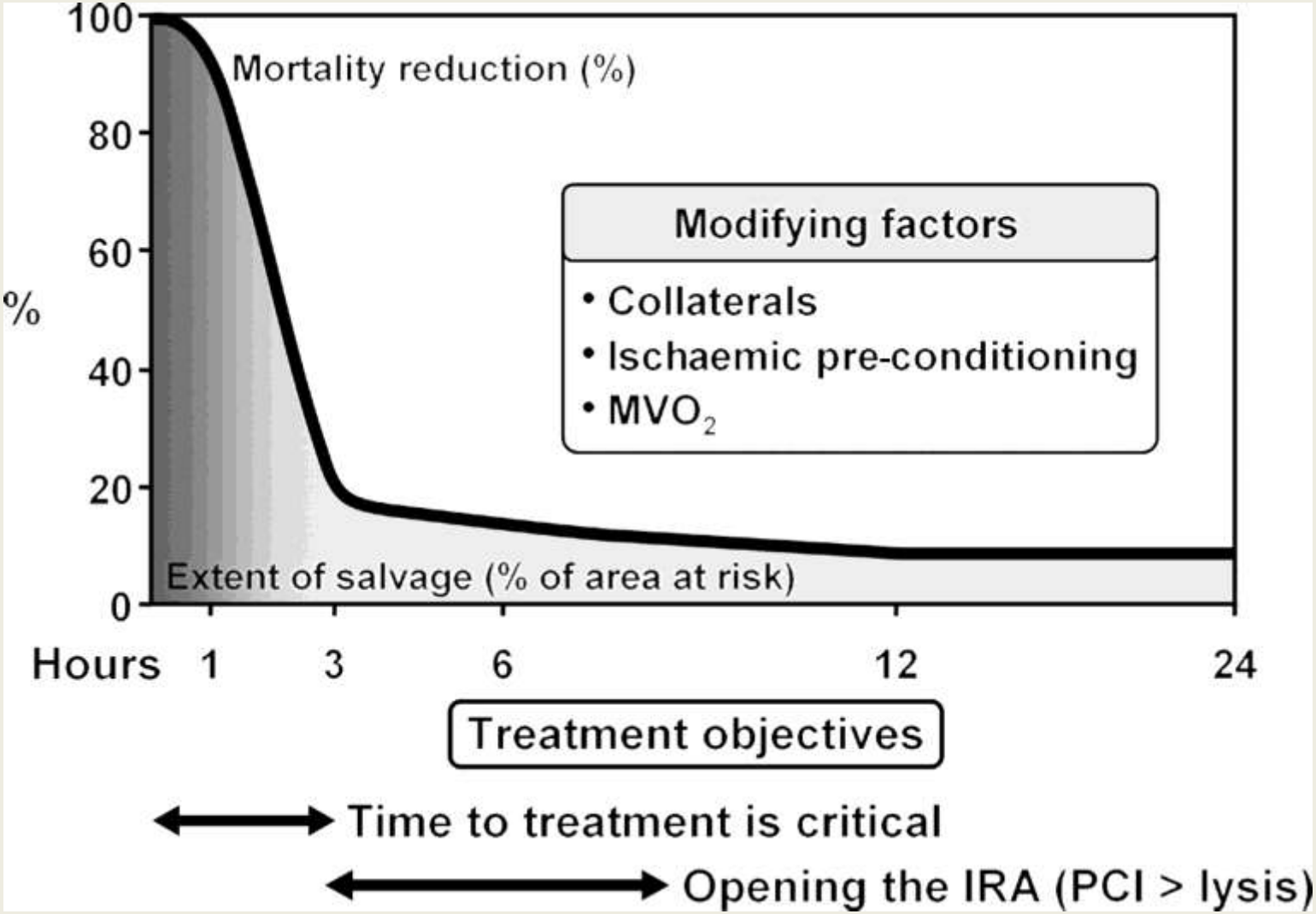


30 min

60 min

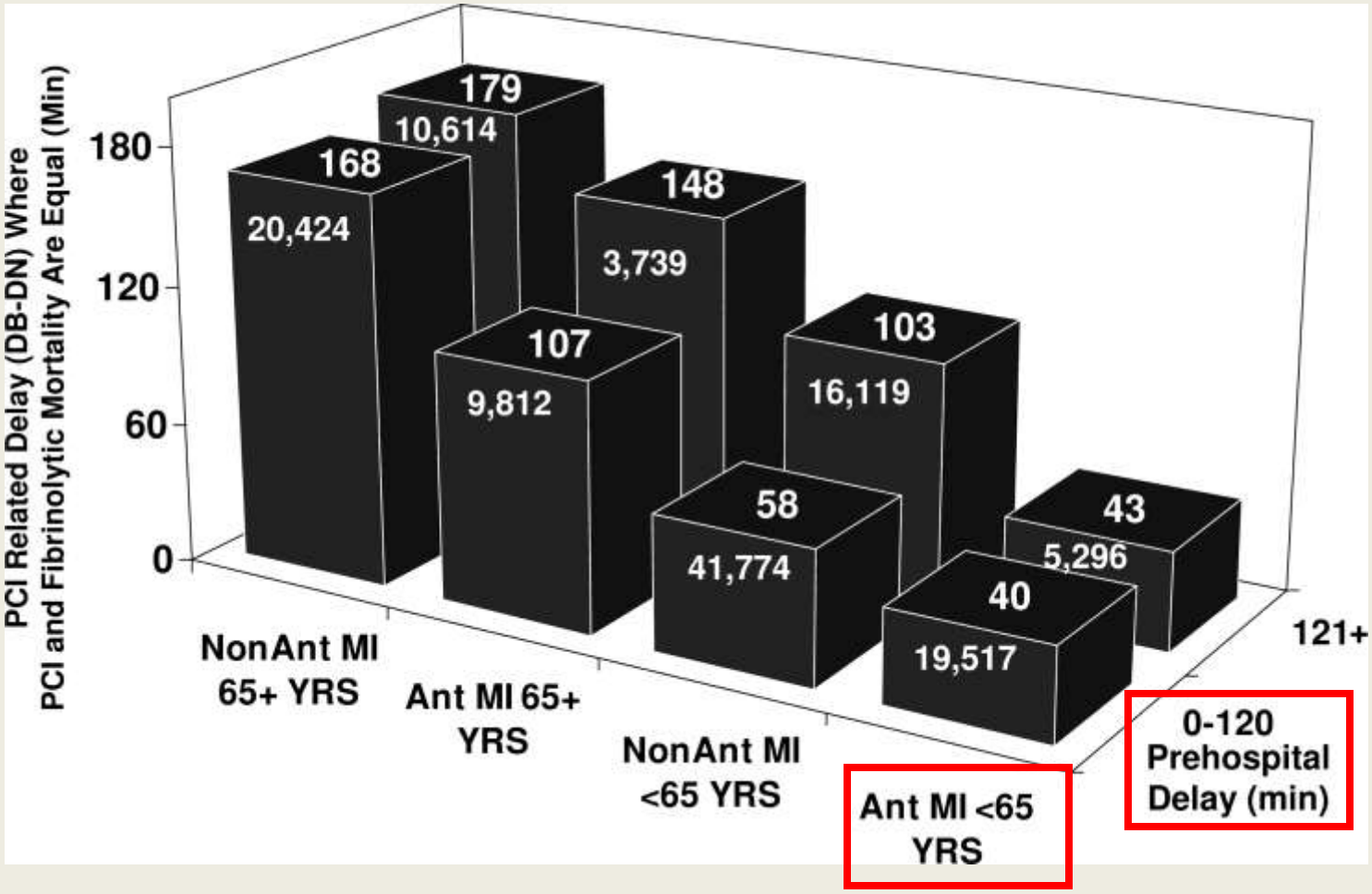
90 min

Retraso del sistema vs. tiempo de isquemia en el beneficio de la reperfusión



Gersh et al, JAMA 2005;293:979-86.

Retraso del sistema vs. tiempo de isquemia en el beneficio de la reperfusión



N = 192 509

Pinto, D. S. et al. Circulation 2006;114:2019-2025

Reperfusion strategy in early presenters: STREAM

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Fibrinolysis or Primary PCI in ST-Segment Elevation Myocardial Infarction

Paul W. Armstrong, M.D., Anthony H. Gershlick, M.D., Patrick Goldstein, M.D., Robert Wilcox, M.D., Thierry Danays, M.D., Yves Lambert, M.D., Vitaly Sulimov, M.D., Ph.D., Fernando Rosell Ortiz, M.D., Ph.D., Miodrag Ostojic, M.D., Ph.D., Robert C. Welsh, M.D., Antonio C. Carvalho, M.D., Ph.D., John Nanas, M.D., Ph.D., Hans-Richard Arntz, M.D., Ph.D., Sigrun Halvorsen, M.D., Ph.D., Kurt Huber, M.D., Stefan Grajek, M.D., Ph.D., Claudio Fresco, M.D., Erich Bluhmki, M.D., Ph.D., Anne Regelin, Ph.D., Katleen Vandenberghe, Ph.D., Kris Bogaerts, Ph.D., and Frans Van de Werf, M.D., Ph.D., for the STREAM Investigative Team*

STUDY PROTOCOL

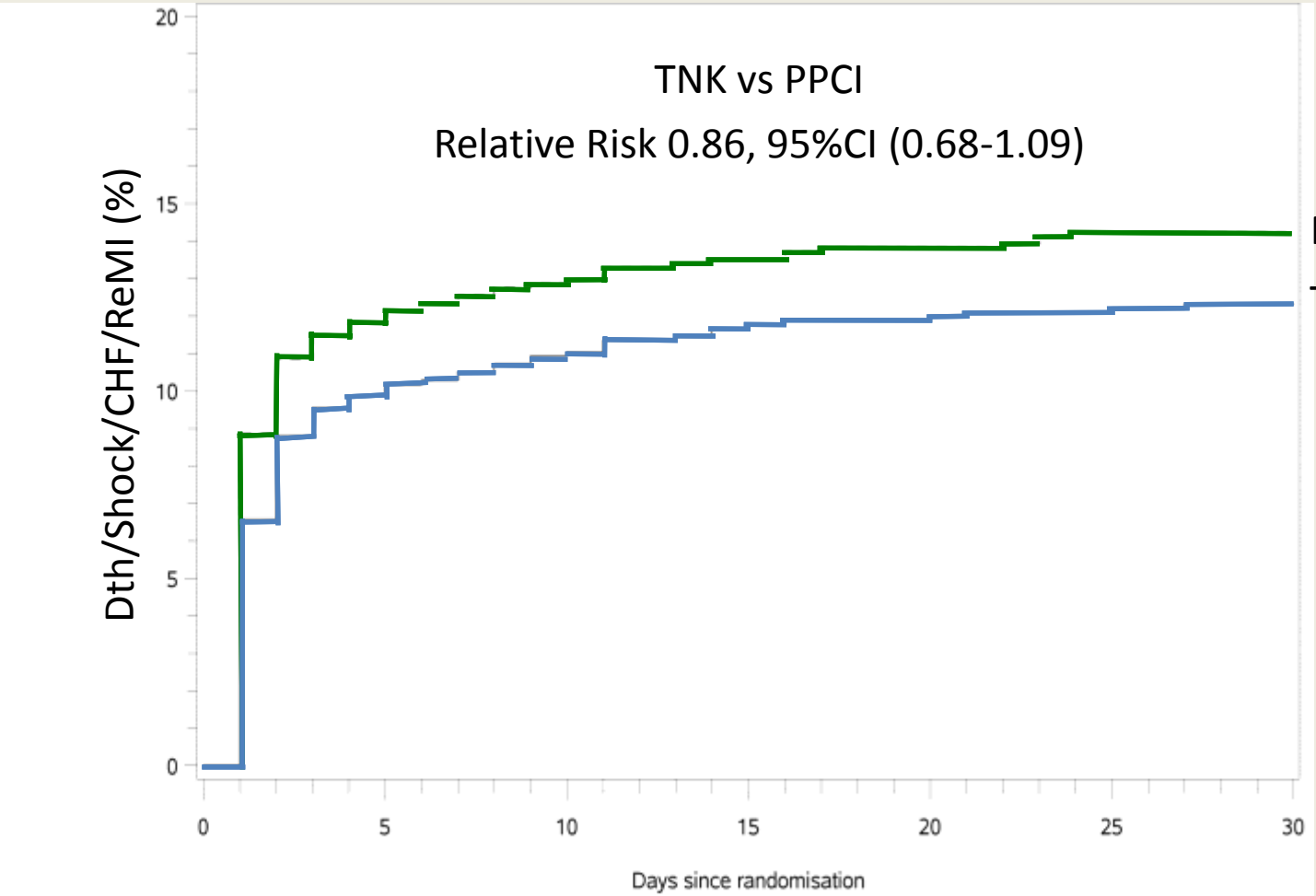
STEMI <3 hrs from onset symptoms, PPCI <60 min not possible, 2 mm ST-elevation in 2 leads

Ambulance/ER

PCI Hospital

After 20% of the planned recruitment, the TNK dose was reduced by 50% among patients ≥75 years of age.

STREAM. Primary Endpoint



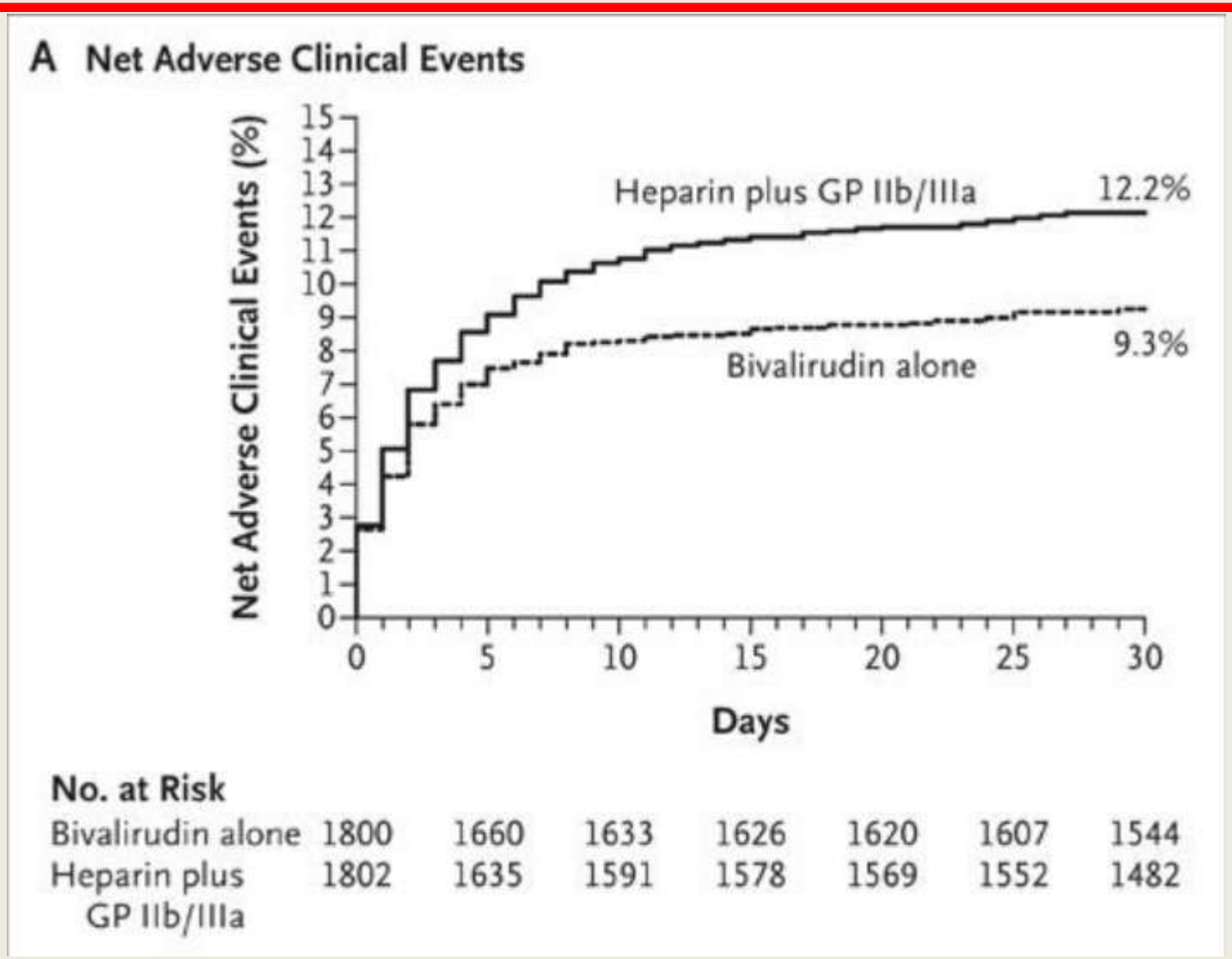
Periprocedural anti thrombotic medication in primary PCI, *con't*

Recommendations	Class	Level
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
Enoxaparin (with or without routine GP IIb/IIIa blocker) may be preferred over unfractionated heparin.	IIb	B
Unfractionated heparin with or without routine GP IIb/IIIa blocker must be used in patients not receiving bivalirudin or enoxaparin.	I	C
Fondaparinux is not recommended for primary PCI.	III	B
The use of fibrinolysis before planned primary PCI is not recommended.	III	A

European Heart Journal 2012 - doi:10.1093/eurheartj/ehs215

EUROPEAN SOCIETY OF CARDIOLOGY®

Bivalirudin vs. heparin + GP IIb/IIIa in PPCI: HORIZONS-AMI

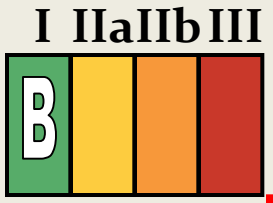


Stone GW et al. New Engl J Med 2008;358:2218-30

Anticoagulant Therapy to Support Primary PCI

For patients with STEMI undergoing primary PCI, the following supportive anticoagulant regimens are recommended:

- UFH, with additional boluses administered as needed to maintain therapeutic activated clotting time levels, taking into account whether a GP IIb/IIIa receptor antagonist has been administered; or



- Bivalirudin with or without prior treatment with UFH.

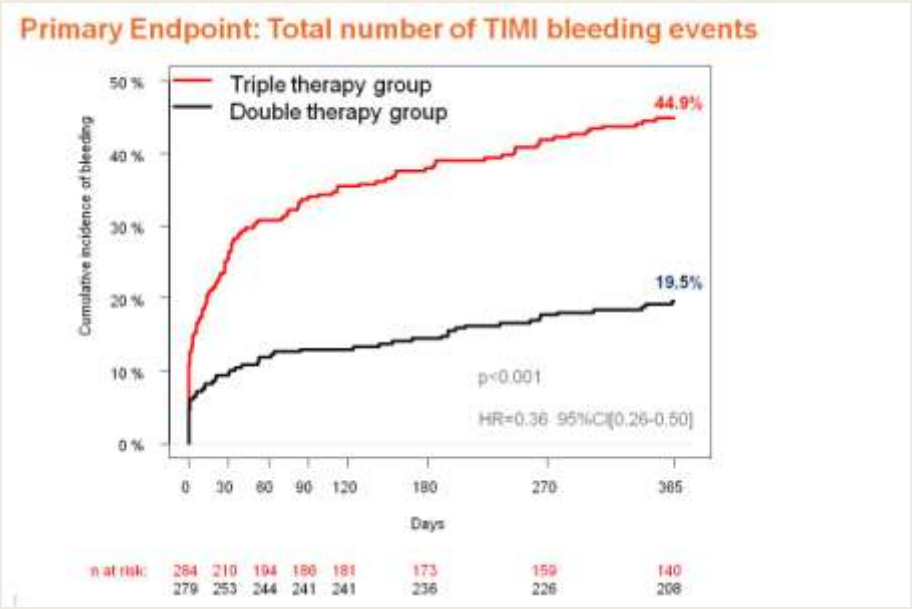
¿Se mantiene el beneficio de bivalirudina sobre HNF+anti-IIbIIIa con los nuevos antiagregantes?

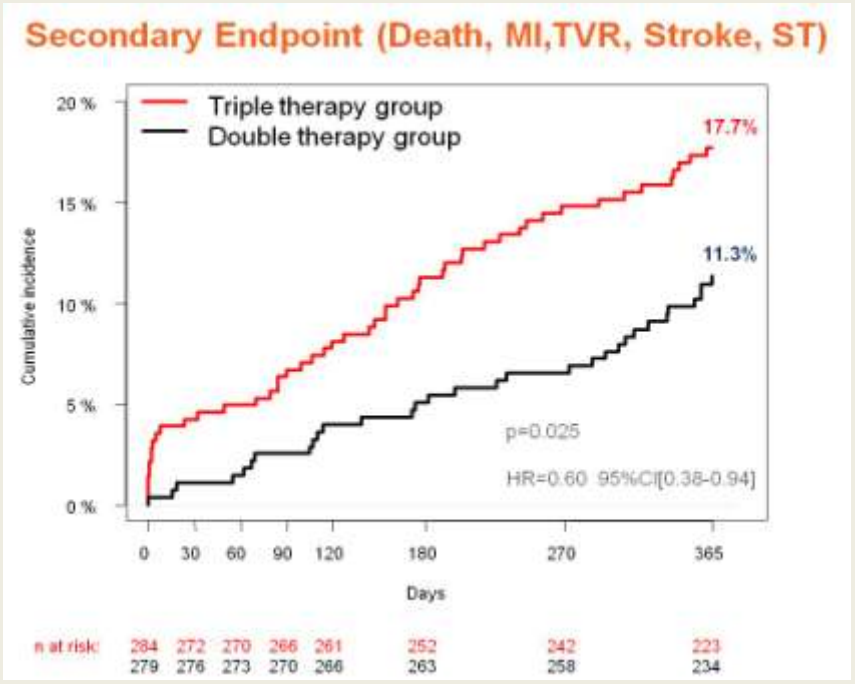
ACC/AHA STEMI Guidelines 2013

Pacientes con anticoagulación crónica

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

WOEST Study: Triple therapy vs. OAC+clopidogrel

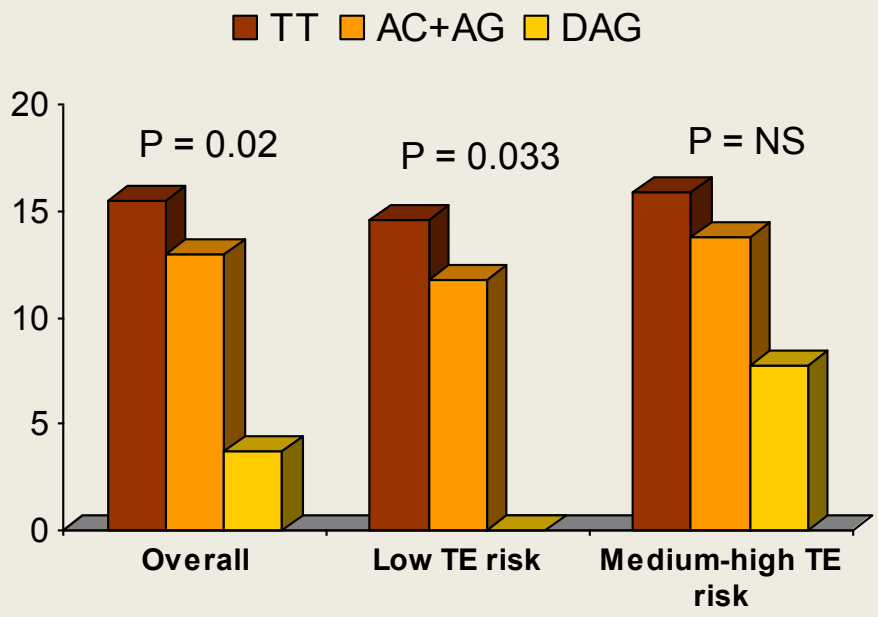




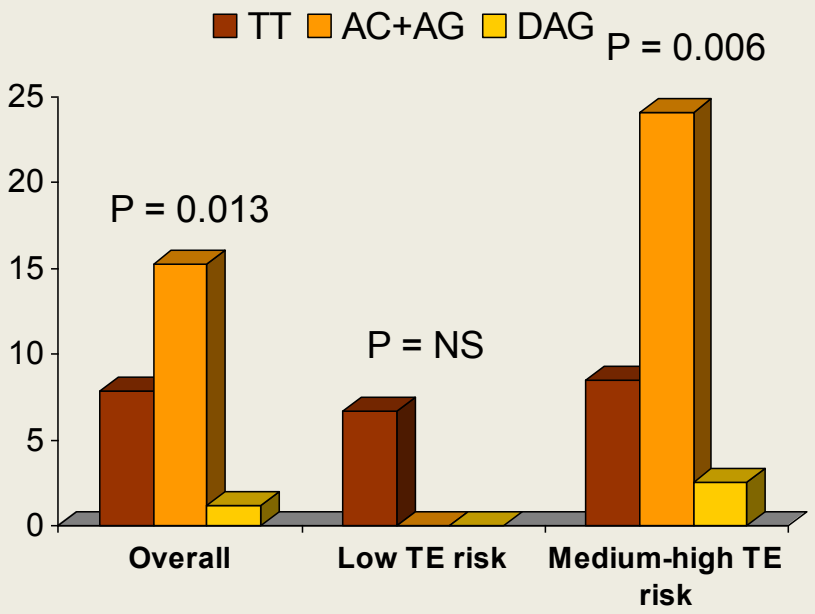
Dewilde WJ et al, Lancet 2013;381:1107-15

Pacientes con anticoagulación crónica: Registro MUSICA

Sangrado, %



Eventos CV, %



Trombosis stent: TT 4%, AC+AG 8.7%, DAG 0%

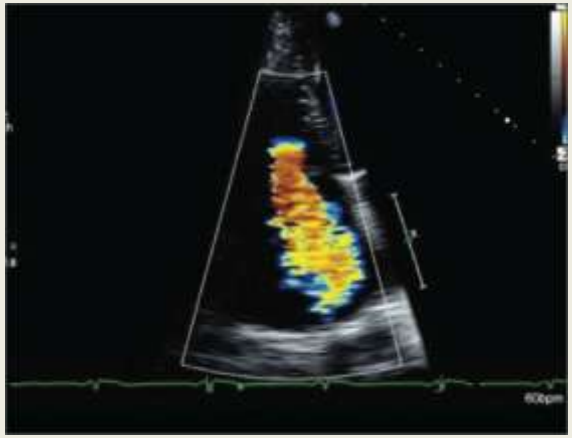
Sambola A et al, Heart 2009;95:1483-8

Insuficiencia mitral severa post-IAM

5.2.1 Mitral valve regurgitation

Mitral valve regurgitation may occur during the subacute phase due to LV dilatation, papillary muscle dysfunction or rupture of the tip of the papillary muscle or *chordae tendinae*. It usually presents as sudden haemodynamic deterioration with acute dyspnoea and pulmonary congestion and a new systolic murmur, which may be underappreciated in this context. The diagnosis is suspected by clinical examination and should be immediately confirmed by emergency echocardiography. Pulmonary oedema and cardiogenic shock may occur rapidly. Treatment is based on afterload reduction to reduce regurgitant volume and pulmonary congestion, if blood pressure allows. Intravenous diuretic and vasodilator/inotropic support, as well as IABP, may stabilize patients in preparation for angiography and surgery. Emergency surgical repair or valve replacement is required.[337]

Insuficiencia mitral severa post-IAM: disfunción vs. rotura músculo papilar



be appreciated. Suitable patients with papillary muscle rupture should be considered for urgent surgery while temporary stabilization with medical therapy and IABP is attempted.

With ischemic (functional) mitral regurgitation, treatment is focused on timely reperfusion, diuretics, and afterload reduction. The severity of mitral regurgitation may improve in some patients with aggressive medical treatment, PCI, or both. The rate of long-term survival after STEMI declines as a function of residual mitral regurgitation severity. If surgery is required during the index hospitalization because of ongoing ischemia or HF, mitral valve repair with a downsized annuloplasty ring usually is performed, though valve replacement may be preferred in many cases. In this regard, management of ischemic mitral regurgitation differs importantly from that of myxomatous mitral regurgitation.

American Heart Association.

O'Gara PT et al. ACC/AHA STEMI Guidelines 2013

Muchas gracias