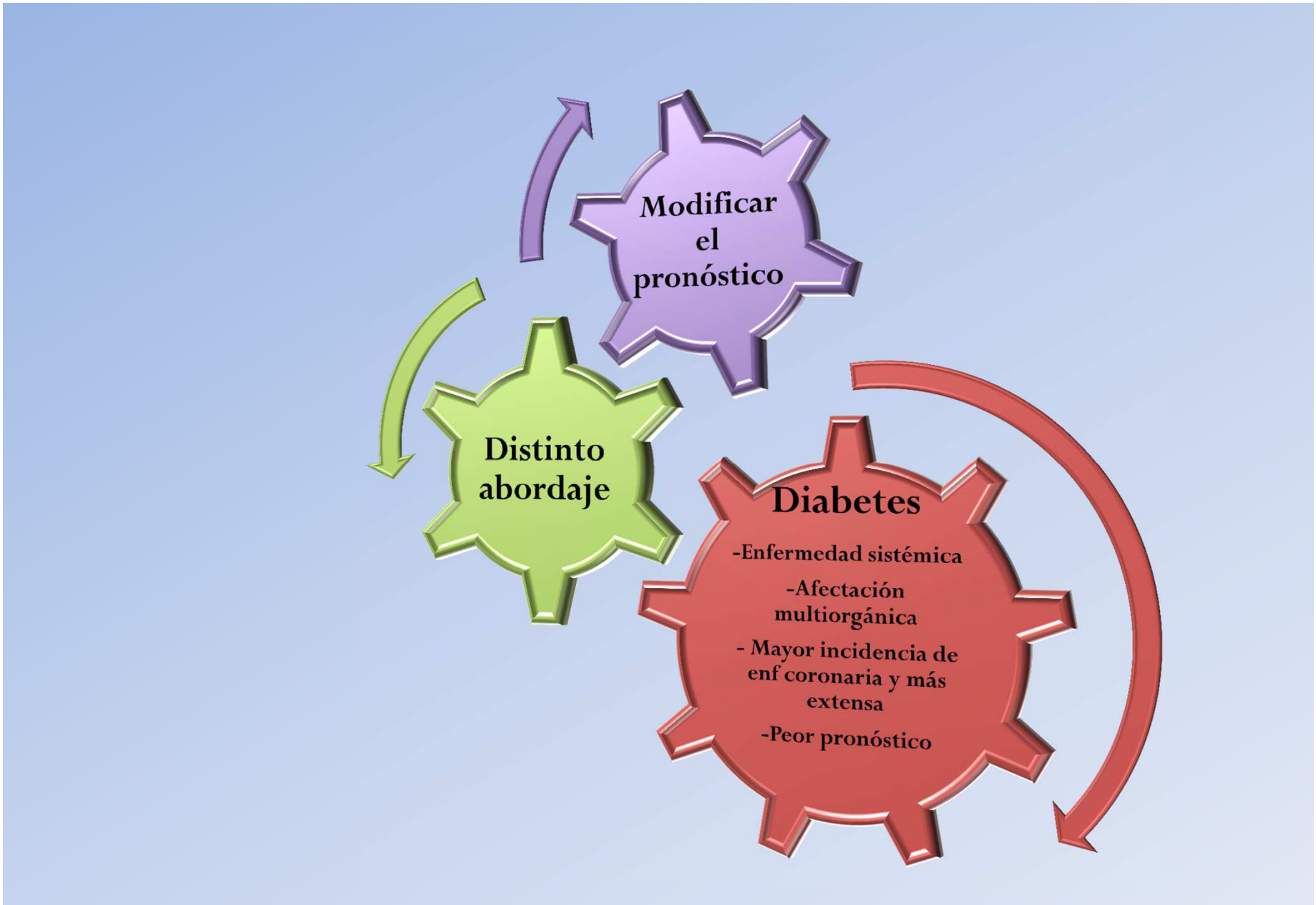
Complicaciones de la Diabétes
Cardiopatía Isquémica

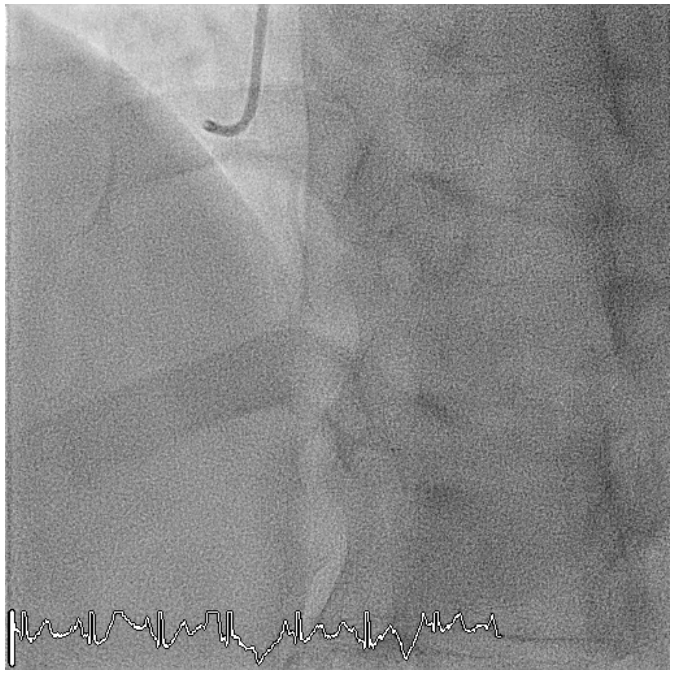
Dr Juan Miguel Ruiz Nodar

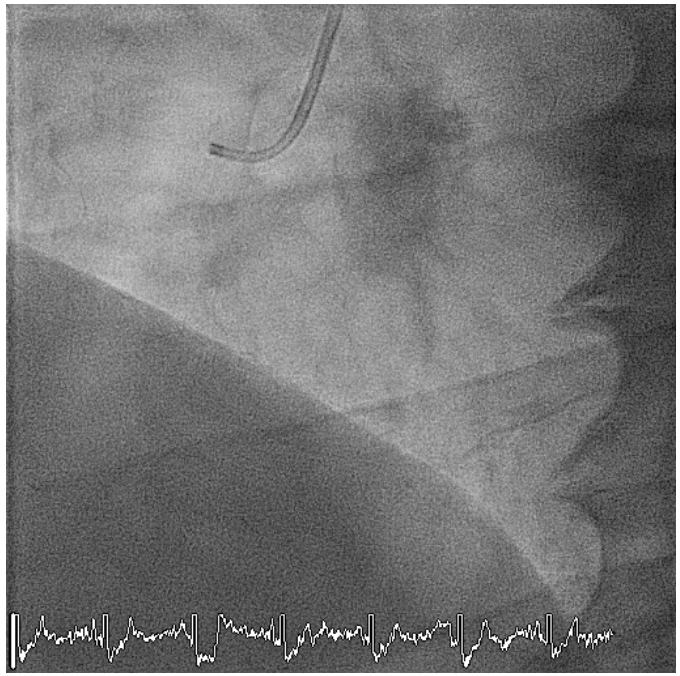
Hemodinámica y Cardiología Intervencionista

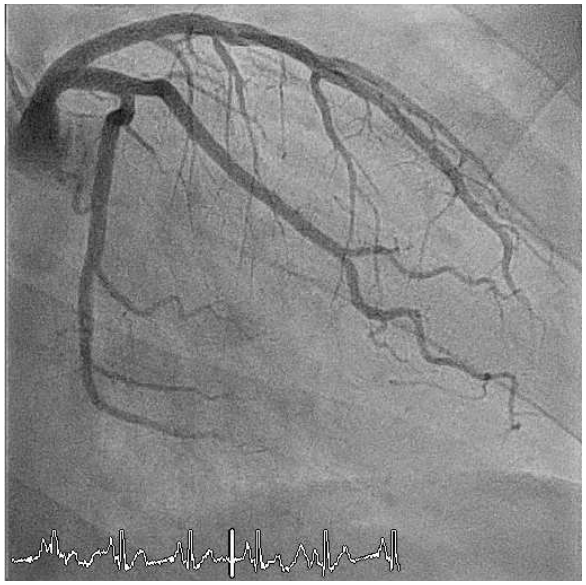
Hospital General Universitario de Alicante

Sevilla, 30 de enero de 2015


Modificar el pronóstico
Distinto abordaje
Diabetes
-Enfermedad sistémica
-Afectación multiorgánica
- Mayor incidencia de enf coronaria y más extensa
-Peor pronóstico

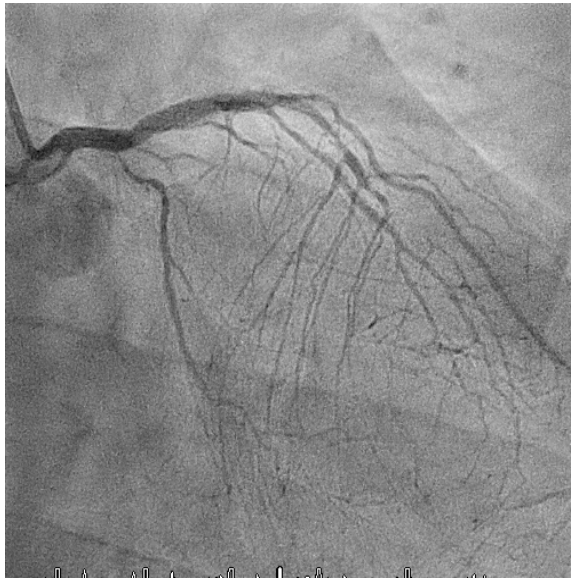


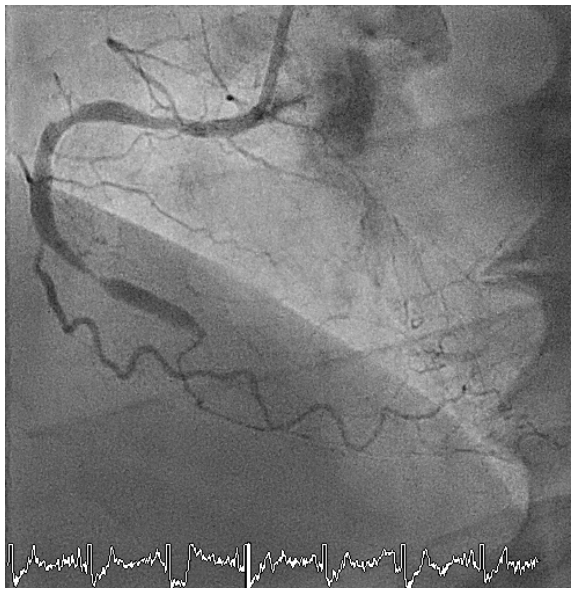




No DM

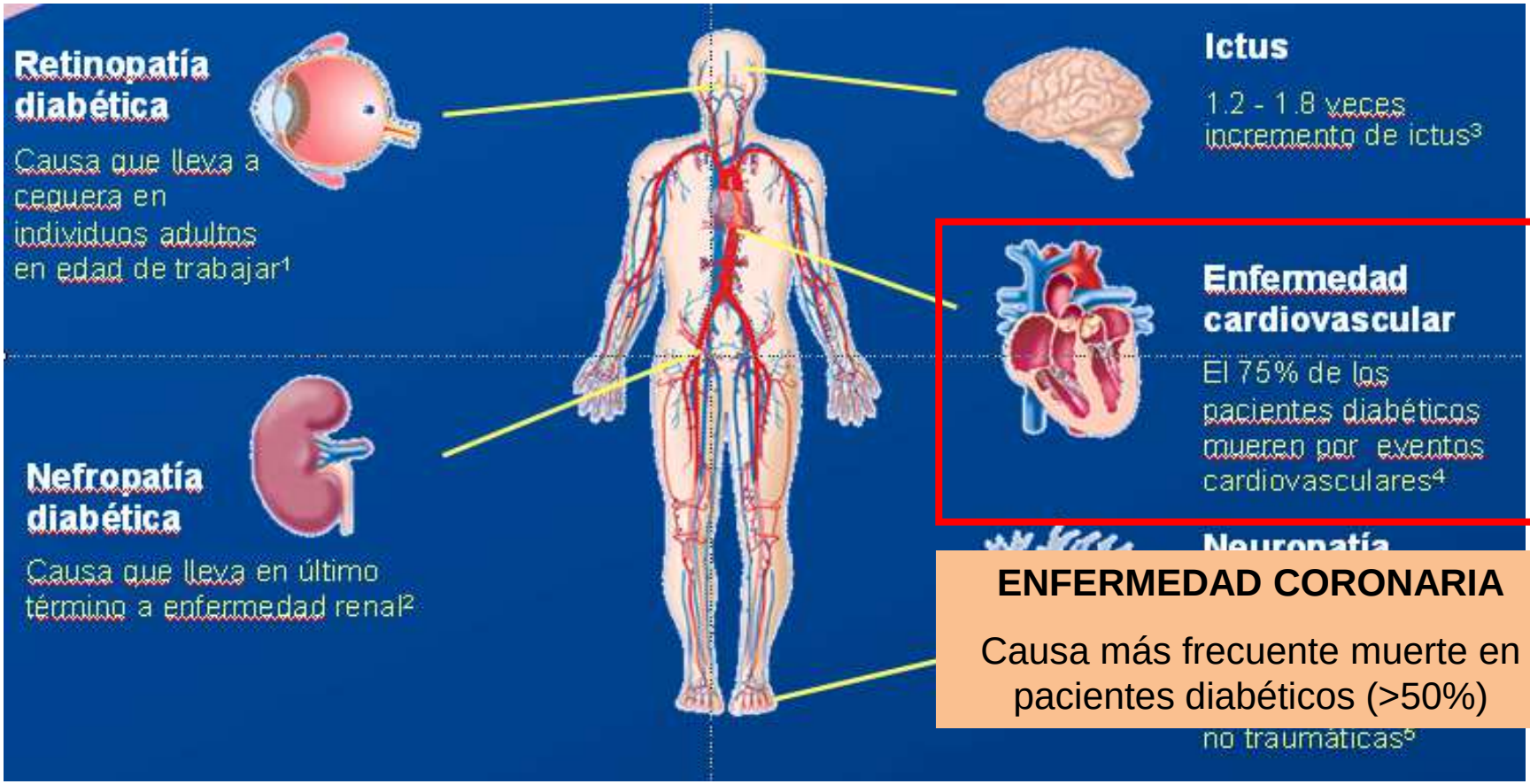
DM





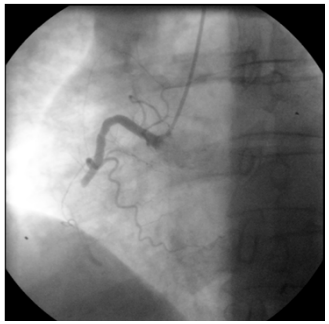

Epidemiología
¿Cómo debemos revascularizar al diabético?
Tratamiento médico: antiagregación

Prevalencia → **Extensión de la enfermedad** → **Pronóstico**



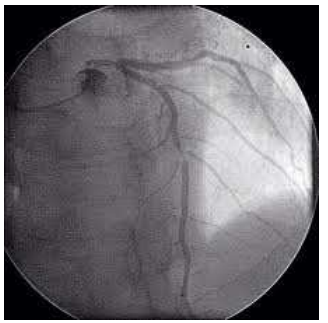
La cardiopatía para el clínico

La diabetes para el cardiólogo



SCACEST

SCASEST



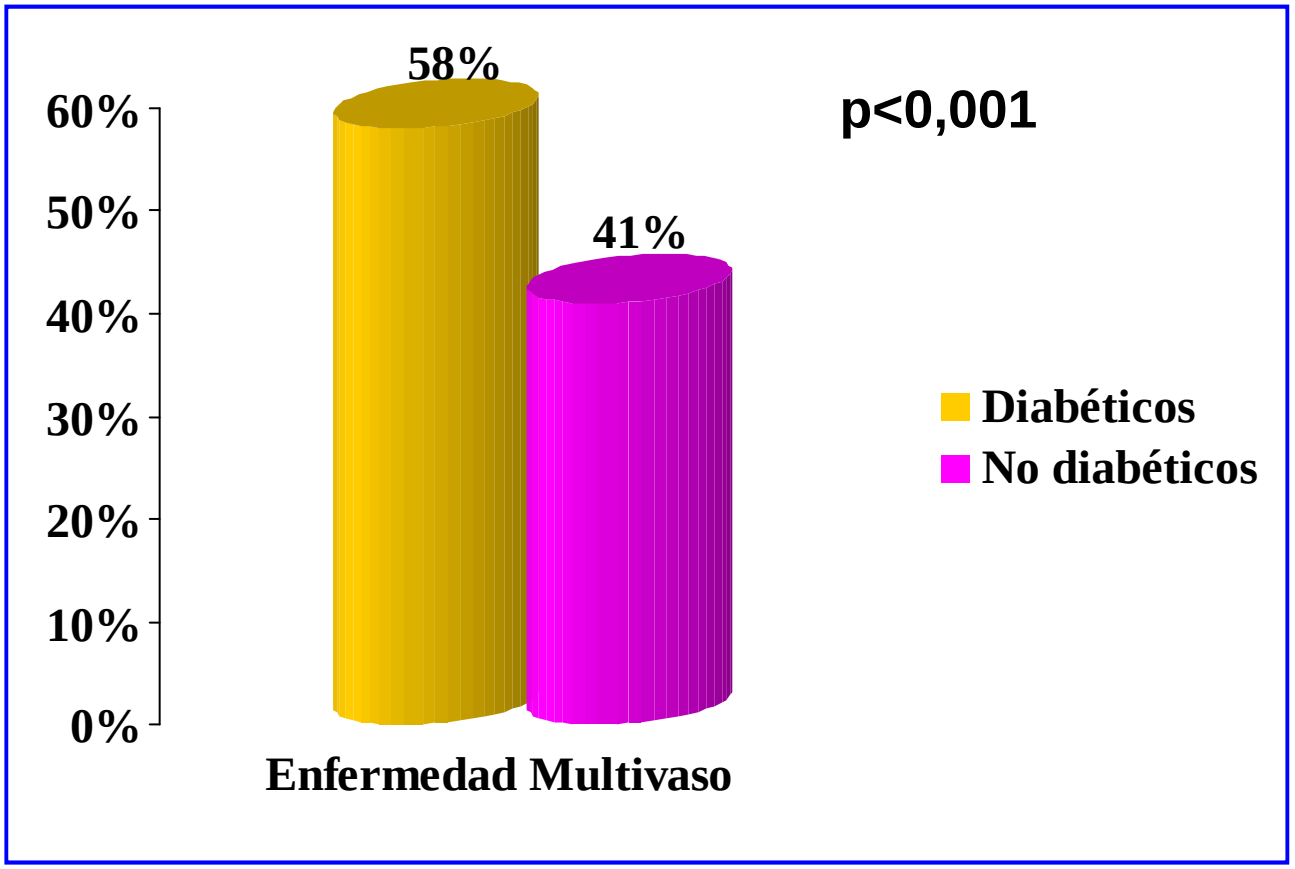
	PreCódigo (n=241)	Código Infarto (n=514)	p
Datos demográficos			
Edad	61,5 ± 12,6	61,8 ± 13,4	0,75
Mujeres	44 (18,3)	103 (20)	0,6
Antecedentes			
Tabaquismo	119 (49,4)	228 (44,4)	0,2
Dislipemia	138 (57,3)	266 (51,8)	0,16
Hipertensión	138 (57,3)	294 (57,2)	0,99
Diabetes	57 (23,7)	137 (26,7)	0,4
Insuficiencia renal	11 (4,6)	31 (6)	0,4
Vasculopatía periférica	26 (10,8)	32 (6,2)	0,03
IAM previo	26 (10,8)	63 (12,3)	0,6
ICP previo	18 (7,5)	39 (7,6)	0,95
Cirugía coronaria previa	6 (2,5)	7 (1,4)	0,21

	Total
Pacientes	1.133
Edad (años)	69,9 ± 11,9
Varones	750 (66,2)
Hipertensión	746 (65,8)
Tabaquismo	449 (39,6)
Dislipemia	645 (56,9)
Diabetes mellitus	402 (35,5)
ACV previo	114 (10,1)
Cardiopatía isquémica previa	586 (51,7)
AAS previa	448 (39,5)
Aclaramiento de creatinina	74,5 ± 38,5

Gomez-Hospital et al. REC 2012;65:911–8

Ruiz-Nodar et al. Registro GYSCA. REC 2010;63:390-9

Extensión enfermedad coronaria

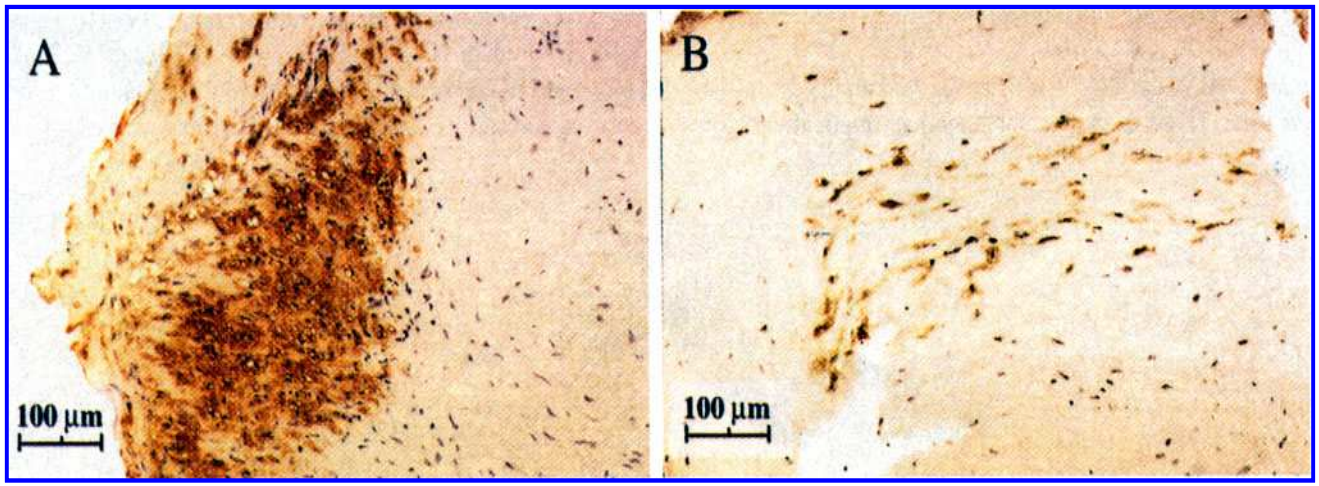


Goraya TY et al. J Am Coll Cardiol 2002;40:946-53

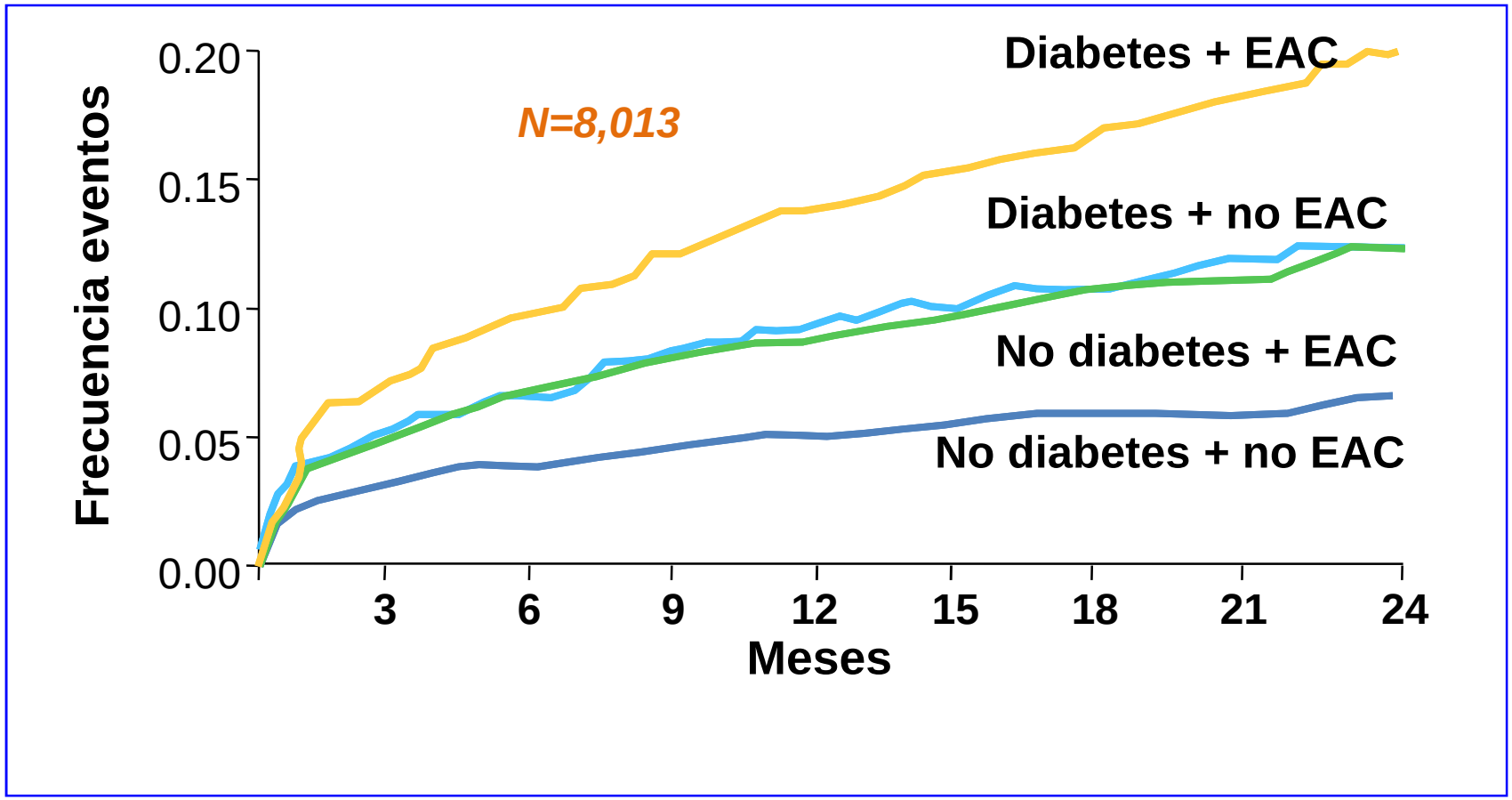
Composición placa

	Diabéticos	No diabéticos	
Contenido lípidos	7±2%	2 ±1%	**0,01**
Macrófagos	22 ±3%	12 ±1%	**0,003**
Trombo	62%	40%	**0,04**

Diabéticos No diabéticos



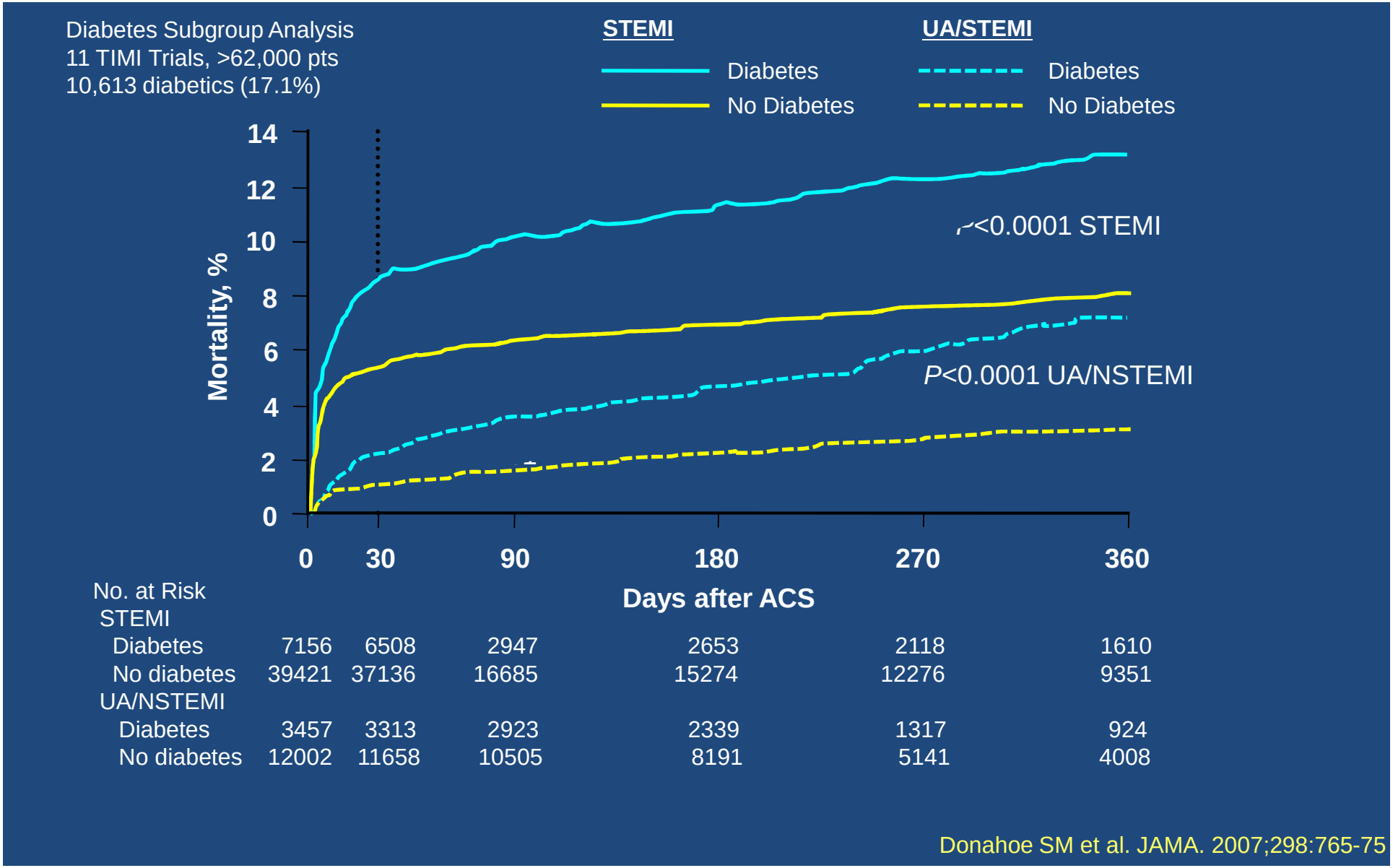
Moreno PR et al. Circulation 2000;102:2180-4



Riesgo de mortalidad cardiovascular: Registro OASIS

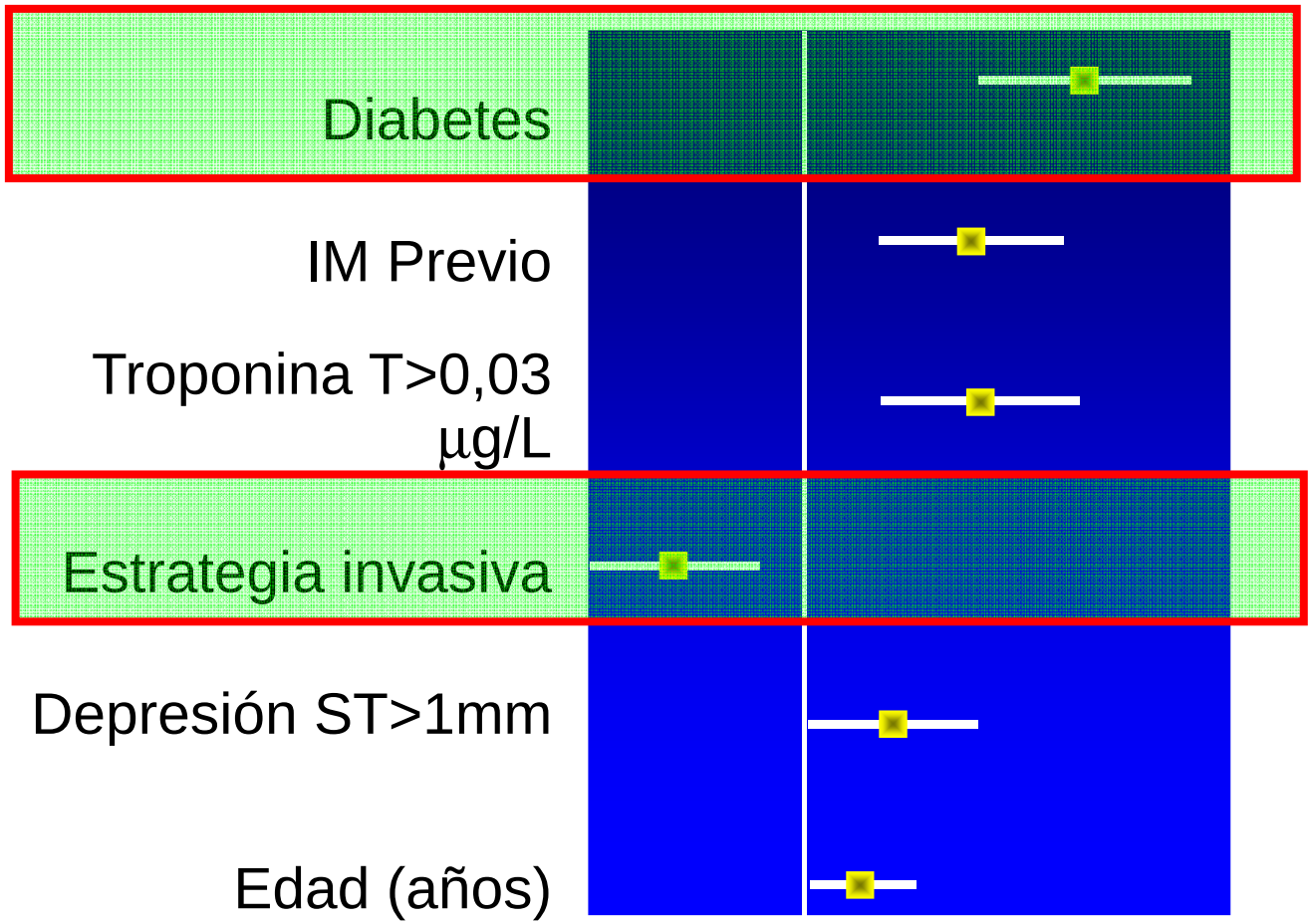
Malmberg K, et al. Circulation 2000;102:1014-9

Mortalidad del diabético 1 año después de presentar un SCA



Donahoe SM et al. JAMA. 2007;298:765-75

Predictores Independientes de Muerte e IM en Pacientes con SCA



	IR 95% IC
Diabetes	2,61(1,88-3,60)
IM Previo	1,80(1,35-2,40)
Troponina T>0,03 µg/L	1,84(1,34-2,54)
Estrategia invasiva	0,69(0,53-0,90)
Depresión ST>1mm	1,37(1,05-1,80)
Edad (años)	1,22(1,02-1,48)

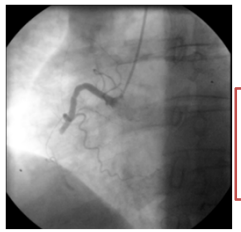
Nochammer A et al JACC 2004;43:585-91


Epidemiología
¿Cómo debemos revascularizar al diabético?
Tratamiento médico: antiagregación

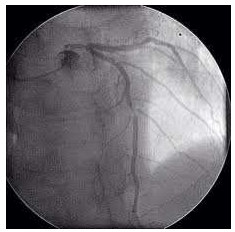
Guías de revascularización coronaria.
Soc. Europ. Cardiología 2014

Recommendations	Class[a]	Level[b]	Ref[c]
In patients presenting with STEMI, primary PCI is recommended over fibrinolysis if it can be performed within recommended time limits.	I	A	363
In patients with NSTE-ACS, an early invasive strategy is recommended over non-invasive management.	I	A	180,338, 364–366
In stable patients with multivessel CAD and/or evidence of ischaemia, revascularization is indicated in order to reduce cardiac adverse events.	I	B	93,367
In patients with stable multivessel CAD and an acceptable surgical risk, CABG is recommended over PCI.	I	A	106,175,349
In patients with stable multivessel CAD and SYNTAX score ≤ 22, PCI should be considered as alternative to CABG.	IIa	B	346,350
New-generation DES are recommended over BMS.	I	A	351,352
Bilateral mammary artery grafting should be considered.	IIa	B	368
In patients on metformin, renal function should be carefully monitored for 2 to 3 days after coronary angiography/PCI.	I	C	

Cómo tratar al DM



IAM: Angioplastia primaria



SCASEST: estrategia invasiva. Cate en 48h

Siempre con Stents Farmacoactivos

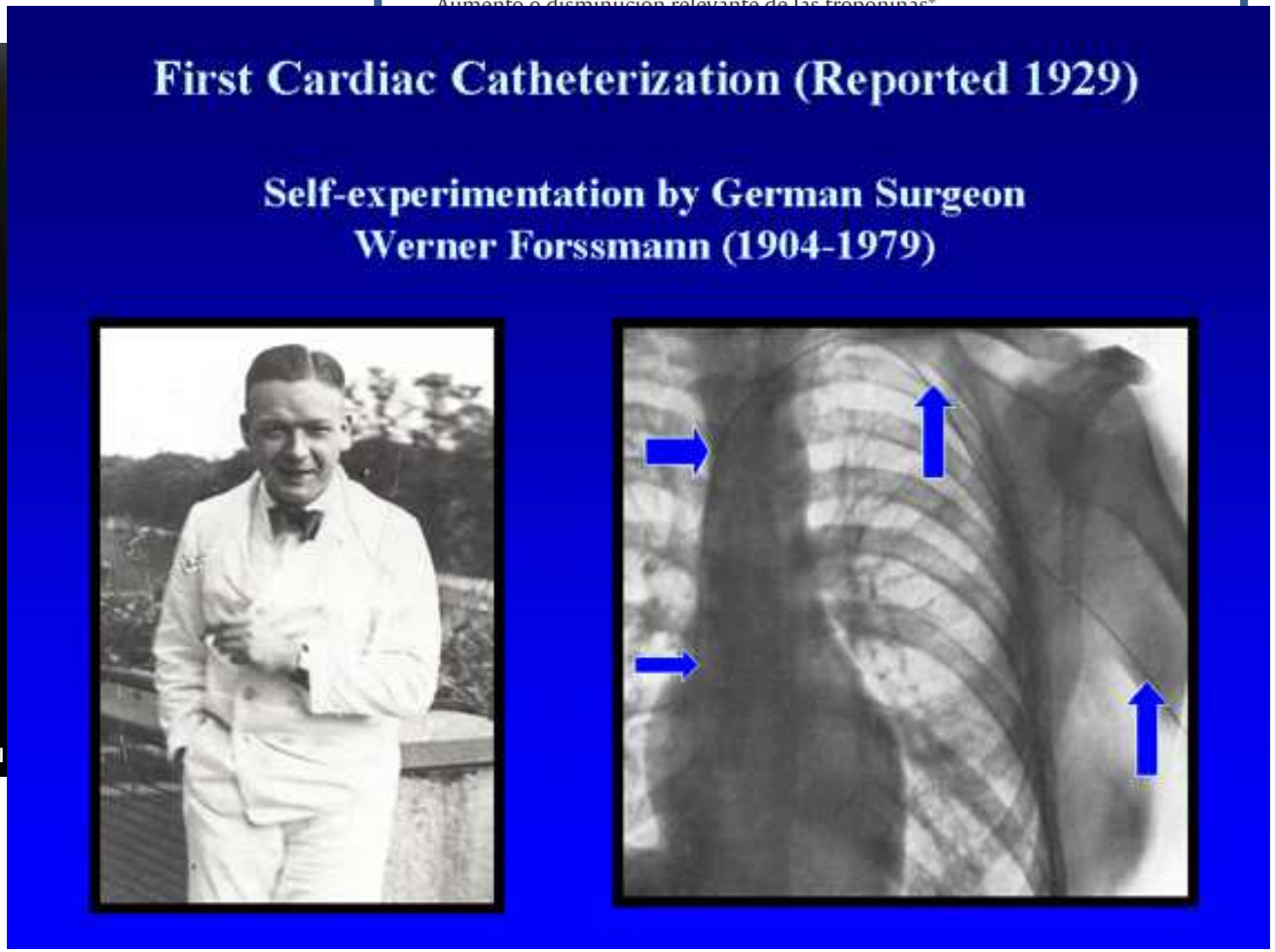
Cómo revascularizar al DM

Guías de revascularización miocárdica. EHT (29 agosto 2014) doi:10.1093/eurheartj/ehu278

DM= estrategia invasiva

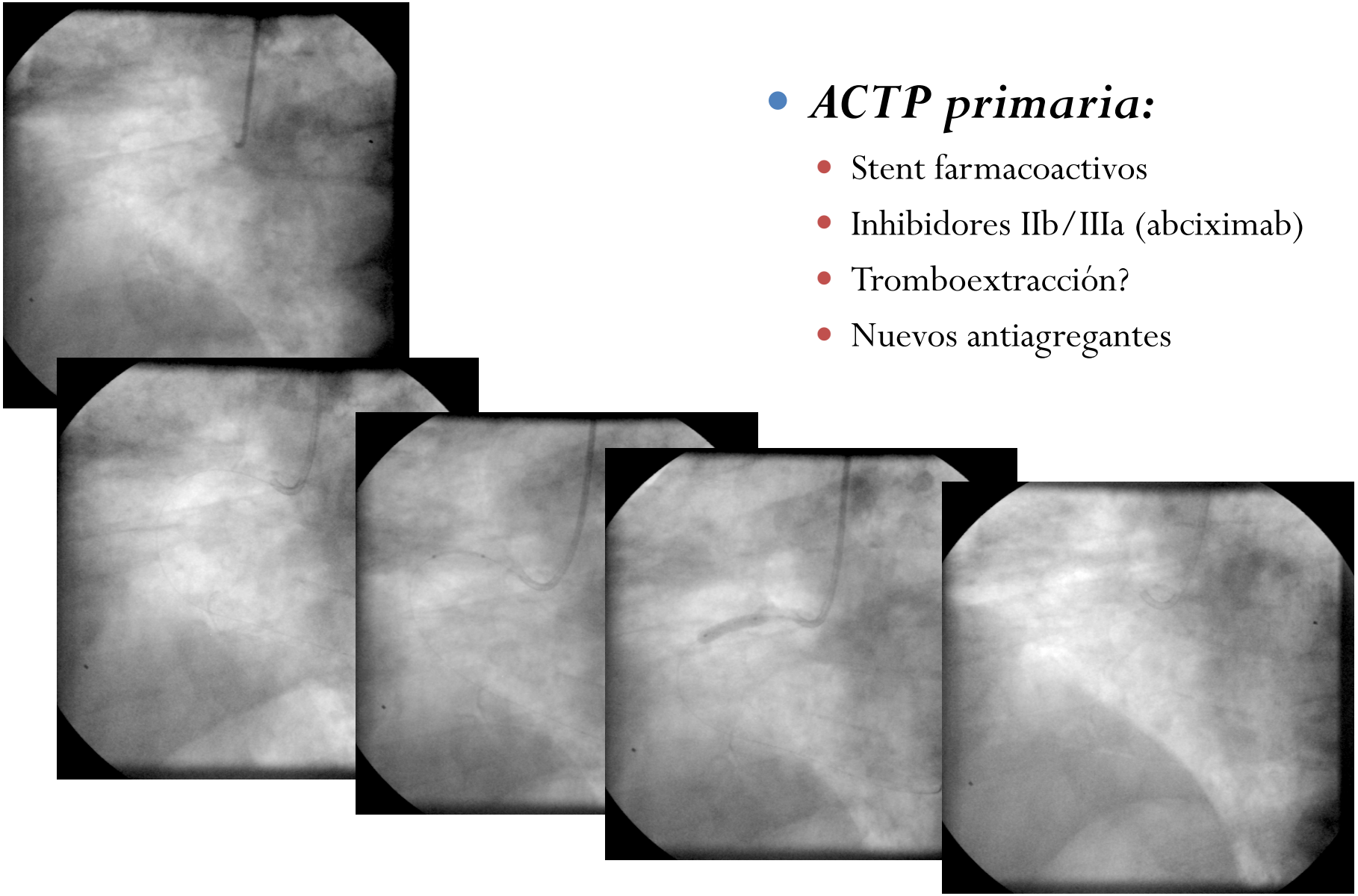
Tabla 9
Criterios de alto riesgo con indicación de manejo invasivo

Primarios
Aumento o disminución relevante de las troponinas*



Guías de la ESC para el SCASEST. REC 2012;65:173.e1-e55

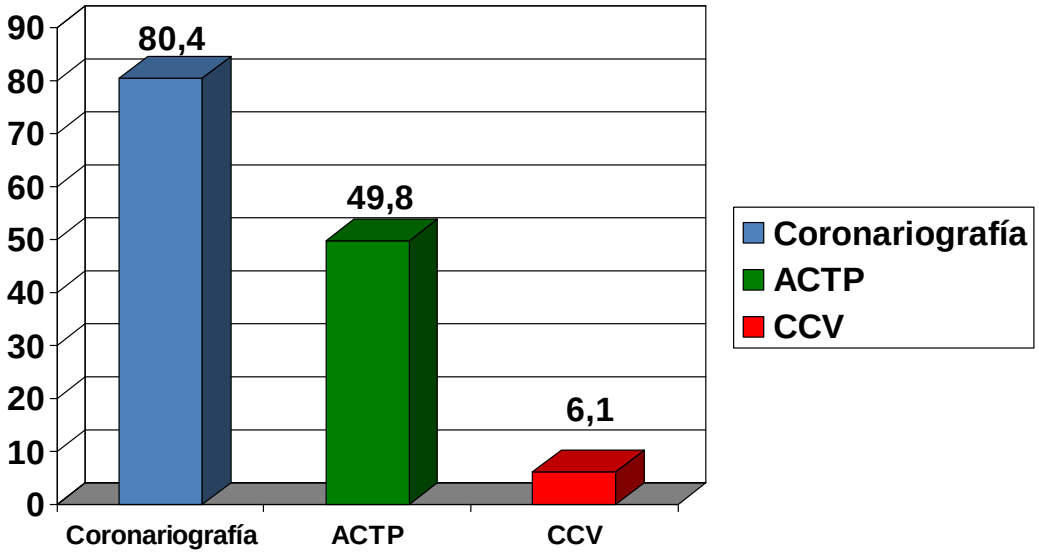
Como revascularizamos el SCACEST



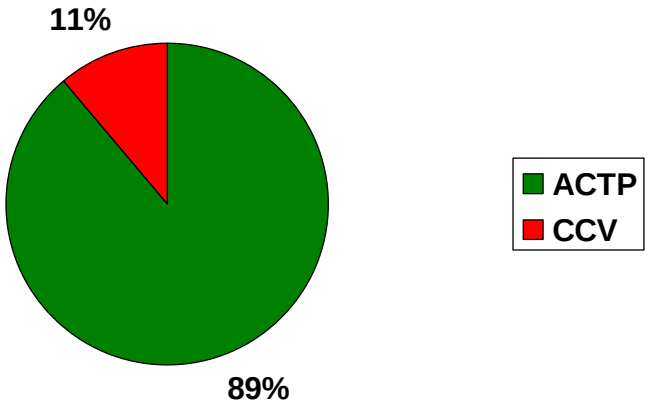
- ***ACTP primaria:***
  - Stent farmacoactivos
  - Inhibidores IIb/IIIa (abciximab)
  - Tromboextracción?
  - Nuevos antiagregantes

Como revascularizamos el SCASEST

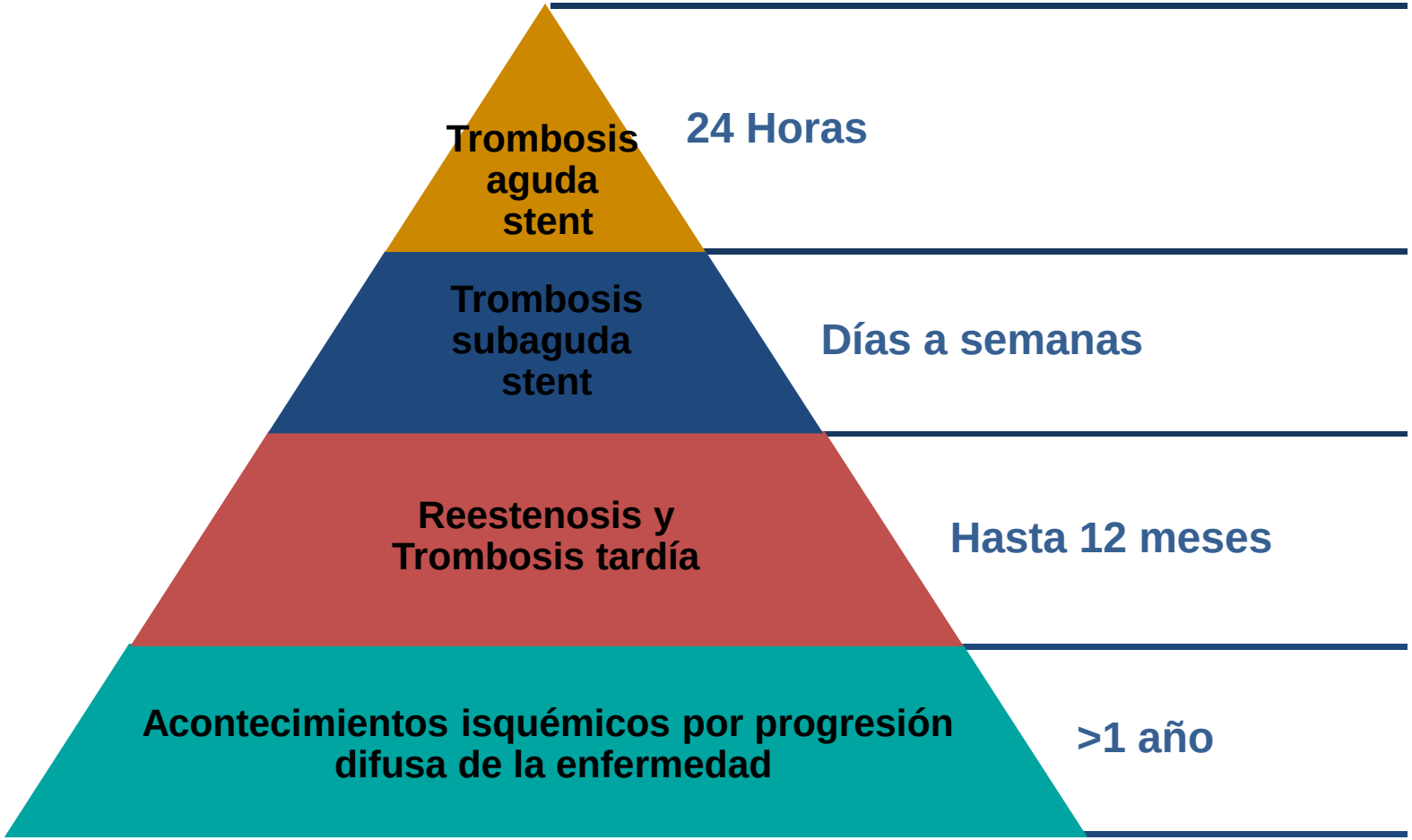
Registro Diocles. **1602 SCASEST**



- ***Ventajas ACTP:***
  - Inmediata
  - Enf 1 ó 2 vasos
  - Vaso culpable
  - Estancias hospitalarias



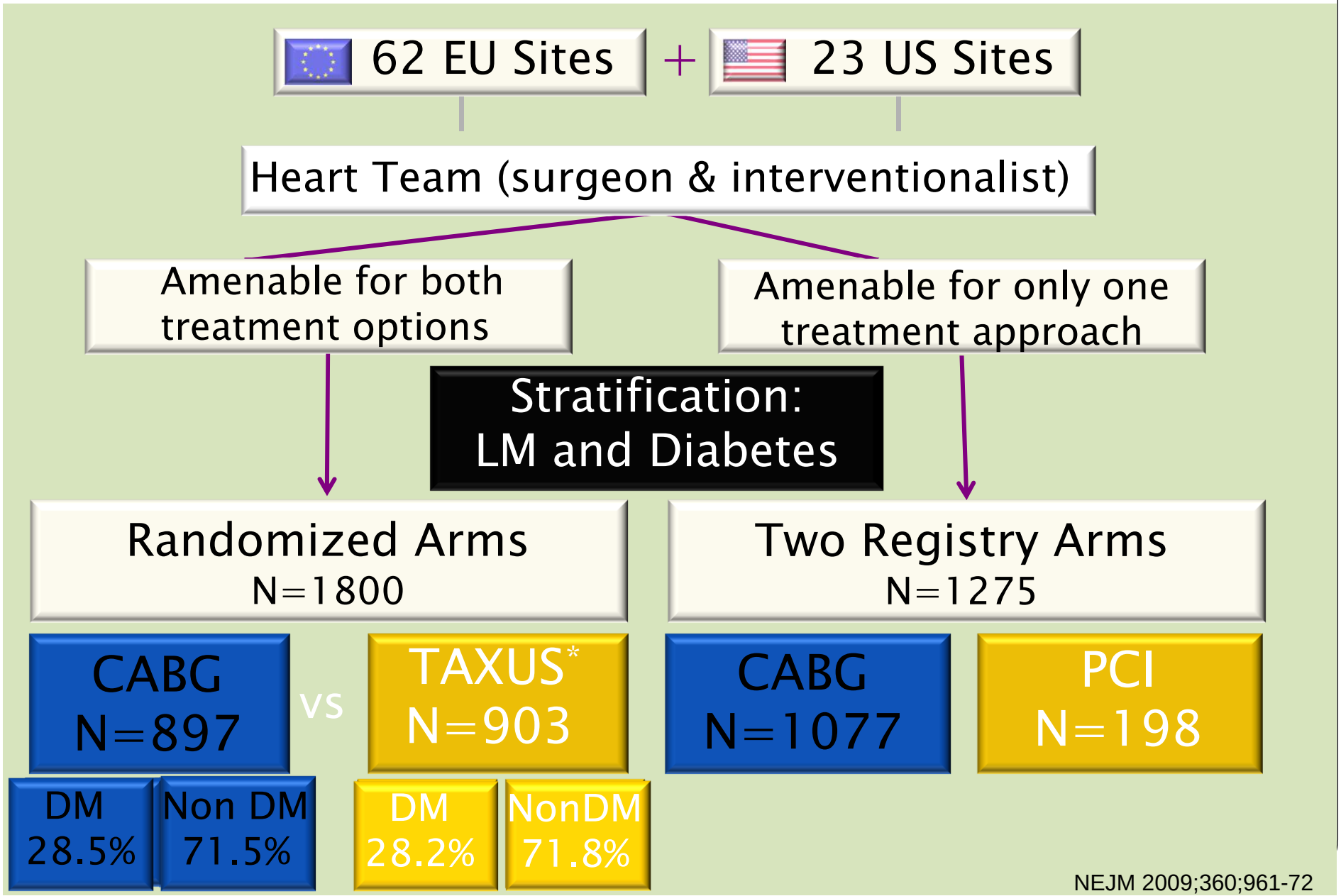
“Pirámide de riesgo ” Post-PCI



Bhatt DL. J Invasive Cardiol. 2003;15(Suppl B):3B-10B.

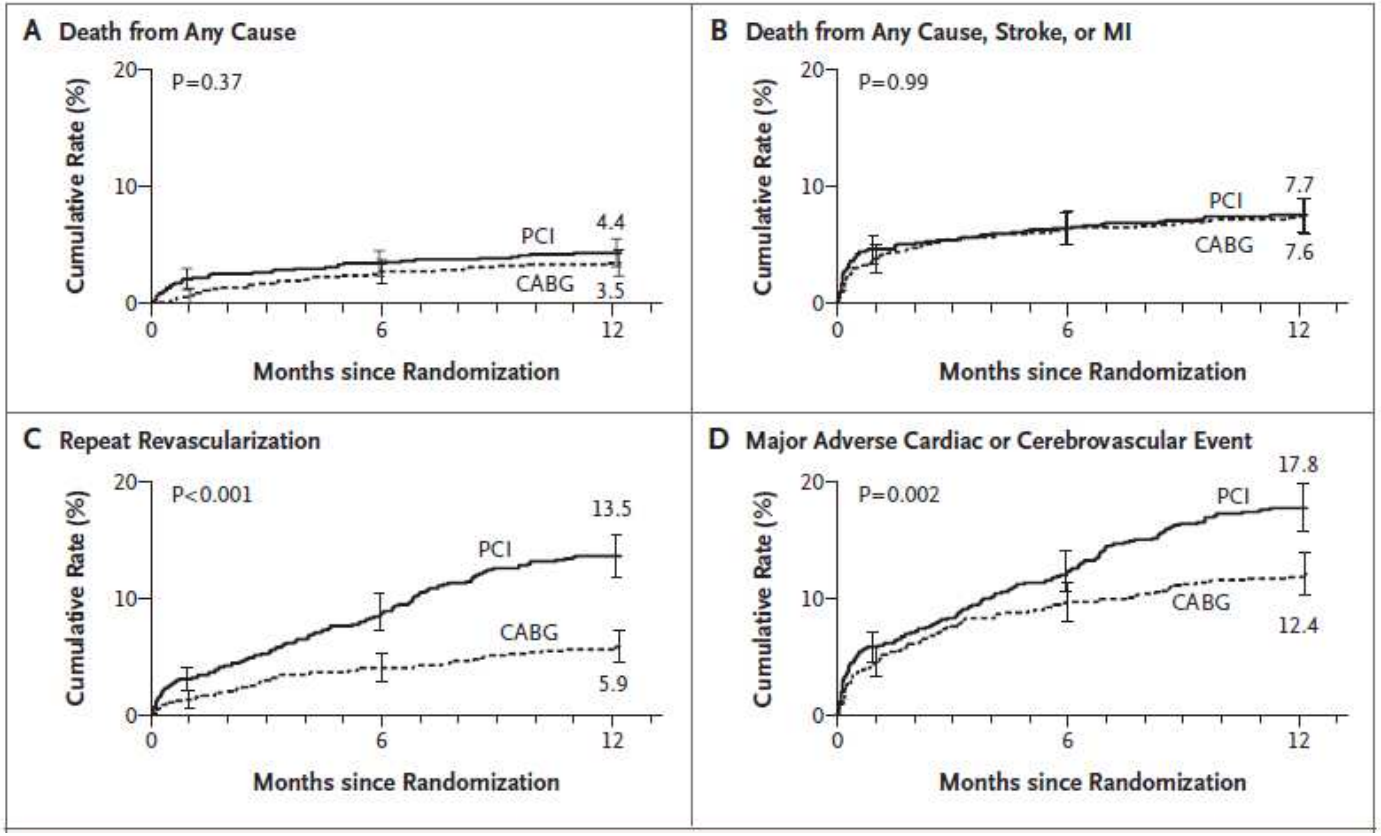
Enfermedad multivaso: ACTP vs CCV

SYNTAX Trial



NEJM 2009;360;961-72

SYNTAX Trial



NEJM 2009;360;961-72

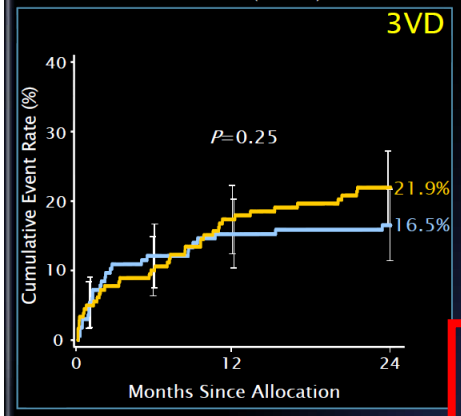
Syntax Score

NEJM 2009;360;961-72

Enfermedad de 3 vasos: SYNTAX Score

MACCE to 2 Years by SYNTAX Score Tercile *Low Scores (0–22)*

CABG (N=171)
TAXUS (N=181)



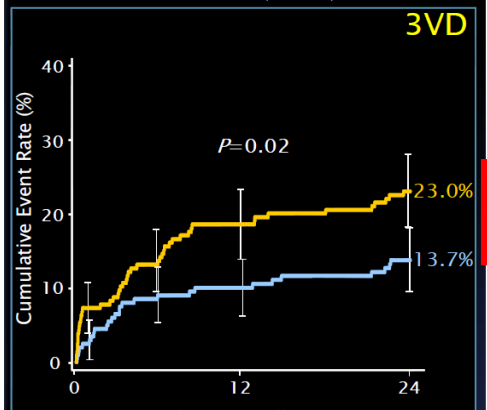
	CABG	PCI	*P* value
Death	5.5%	5.1%	0.85
CVA	1.9%	1.2%	0.57
MI	4.2%	3.9%	0.90
Death, CVA or MI	9.7%	8.4%	0.67
Revasc.	7.6%	17.1%	0.01

Cumulative KM Event Rate ± 1.5 SE; log-rank *P* value

Site-reported Data; ITT populatio

MACCE to 2 Years by SYNTAX Score Tercile *Intermediate Scores (23–32)*

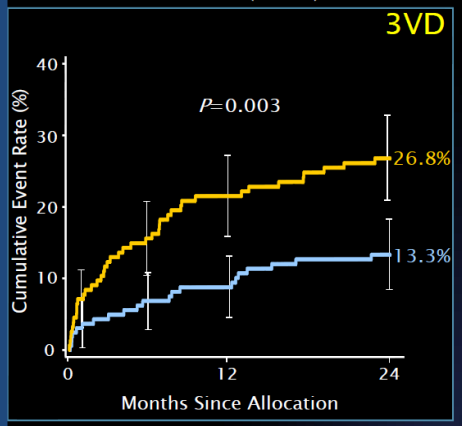
CABG (N=208)
TAXUS (N=207)



	CABG	PCI	*P* value
Death	4.1%	6.4%	0.30
CVA	3.1%	2.0%	0.50
MI	2.6%	7.4%	0.03
Death, CVA or MI	8.6%	11.7%	0.29
Revasc.	7.3%	16.1%	0.006

MACCE to 2 Years by SYNTAX Score Tercile *High Scores (≥33)*

CABG (N=166)
TAXUS (N=155)



	CABG	PCI	*P* value
Death	2.5%	8.5%	0.02
CVA	1.9%	2.1%	0.95
MI	1.9%	7.2%	0.02
Death, CVA or MI	6.3%	13.7%	0.03
Revasc.	7.7%	19.3%	0.002

Cumulative KM Event Rate ± 1.5 SE; log-rank *P* value

Site-reported data; ITT population

Enfermedad multivaso en el Diabético: ACTP vs CCV

FREEDOM Trial

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 DECEMBER 20, 2012 VOL. 367 NO. 25

Strategies for Multivessel Revascularization in Patients with Diabetes

Michael E. Farkouh, M.D., Michael Domanski, M.D., Lynn A. Sleeper, Sc.D., Flora S. Siami, M.P.H., George Dangas, M.D., Ph.D., Michael Mack, M.D., May Yang, M.P.H., David J. Cohen, M.D., Yves Rosenberg, M.D., M.P.H., Scott D. Solomon, M.D., Akshay S. Desai, M.D., M.P.H., Bernard J. Gersh, M.B., Ch.B., D.Phil., Elizabeth A. Magnuson, Sc.D., Alexandra Lansky, M.D., Robin Boineau, M.D., Jesse Weinberger, M.D., Krishnan Ramanathan, M.B., Ch.B., J. Eduardo Sousa, M.D., Ph.D., Jamie Rankin, M.D., Balram Bhargava, M.D., John Buse, M.D., Whady Hueb, M.D., Ph.D., Craig R. Smith, M.D., Victoria Muratov, M.D., M.P.H., Sameer Bansilal, M.D., Spencer King III, M.D., Michel Bertrand, M.D., and Valentin Fuster, M.D., Ph.D., for the FREEDOM Trial Investigators*

Table 2. Kaplan–Meier Estimates of Key Outcomes at 2 Years and 5 Years after Randomization.

Outcome	2 Years after Randomization		5 Years after Randomization		Patients with Event		P Value*
	PCI	CABG	PCI	CABG	PCI	CABG	
	number (percent)				*number*		
Primary composite†	121 (13.0)	108 (11.9)	200 (26.6)	146 (18.7)	205	147	0.005‡
Death from any cause	62 (6.7)	57 (6.3)	114 (16.3)	83 (10.9)	118	86	0.049
Myocardial infarction	62 (6.7)	42 (4.7)	98 (13.9)	48 (6.0)	99	48	<0.001
Stroke	14 (1.5)	24 (2.7)	20 (2.4)	37 (5.2)	22	37	0.03§
Cardiovascular death	9 (0.9)	12 (1.3)	73 (10.9)	52 (6.8)	75	55	0.12

* P values were calculated with the use of the log-rank test on the basis of all available follow-up data (i.e., more than 5 years).

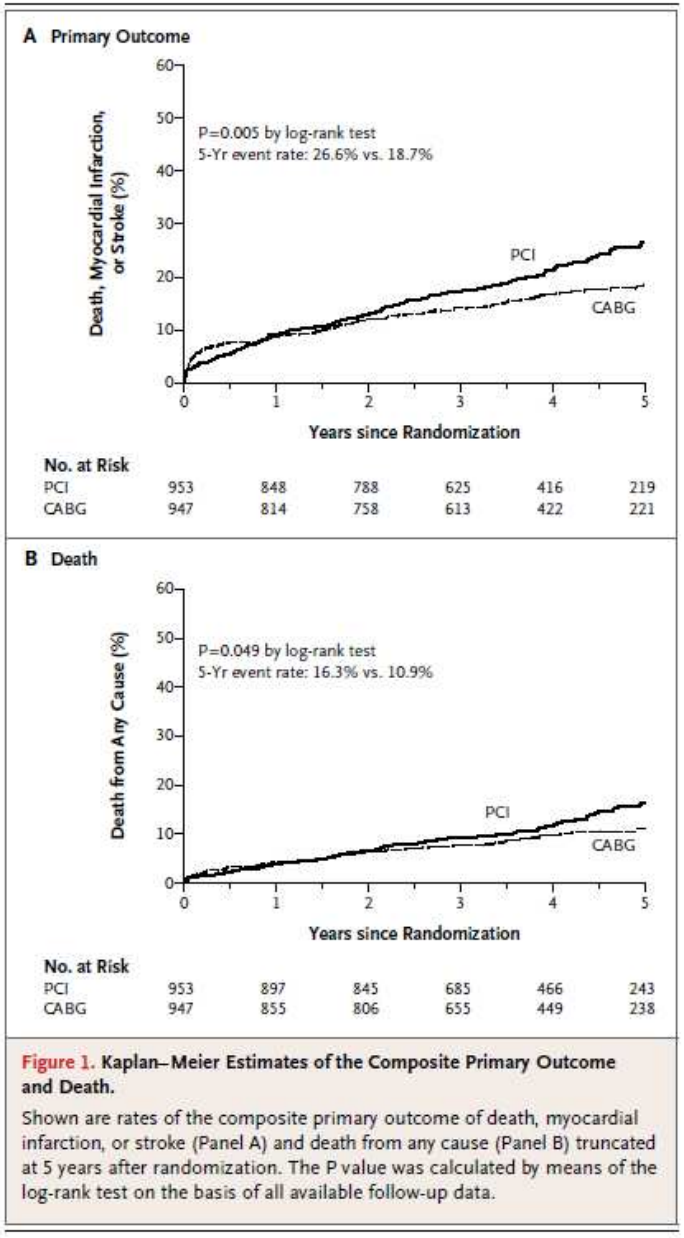


Figure 1. Kaplan–Meier Estimates of the Composite Primary Outcome and Death.

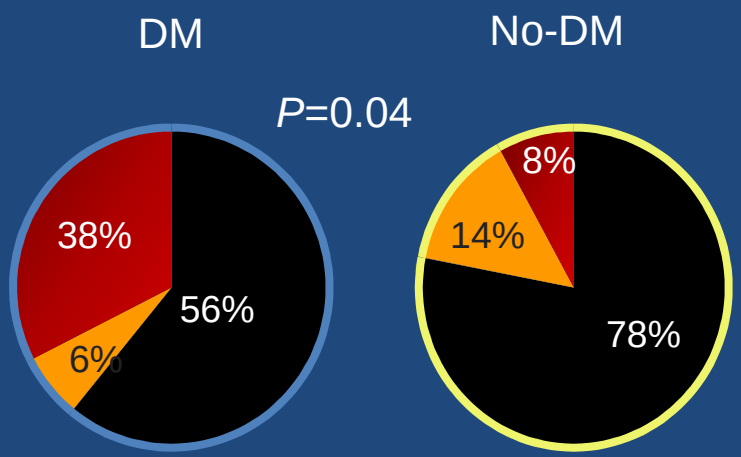
Shown are rates of the composite primary outcome of death, myocardial infarction, or stroke (Panel A) and death from any cause (Panel B) truncated at 5 years after randomization. The P value was calculated by means of the log-rank test on the basis of all available follow-up data.

NEJM 2012:367;2375-84


Epidemiología
¿Cómo debemos revascularizar al diabético?
Tratamiento médico: antiagregación

CLOPIDOGREL: eficacia en DM vs no-DM

Acute Phase of Treatment

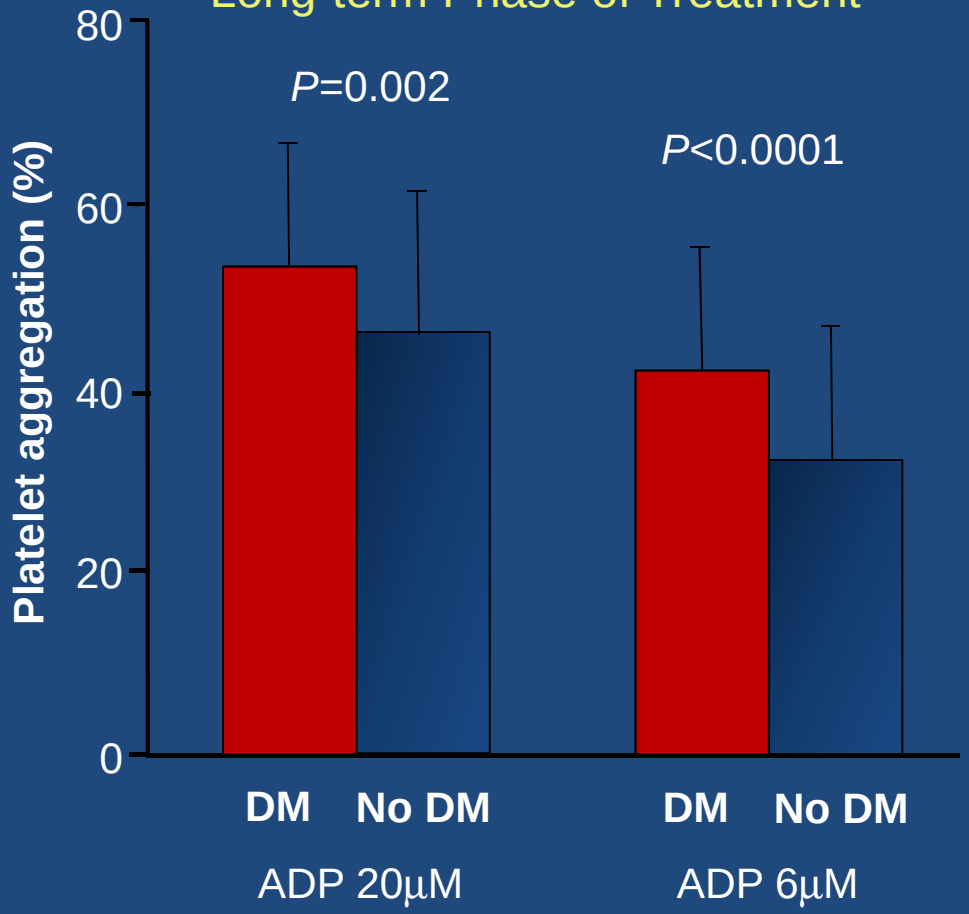


24 hrs post 300 mg LD

- Non-responders (Platelet inhibition <10%)
- Low responders (Platelet inhibition 10-29%)
- Responders (Platelet inhibition >30%)

Angiolillo DJ et al. Diabetes. 2005;54:2430-5.

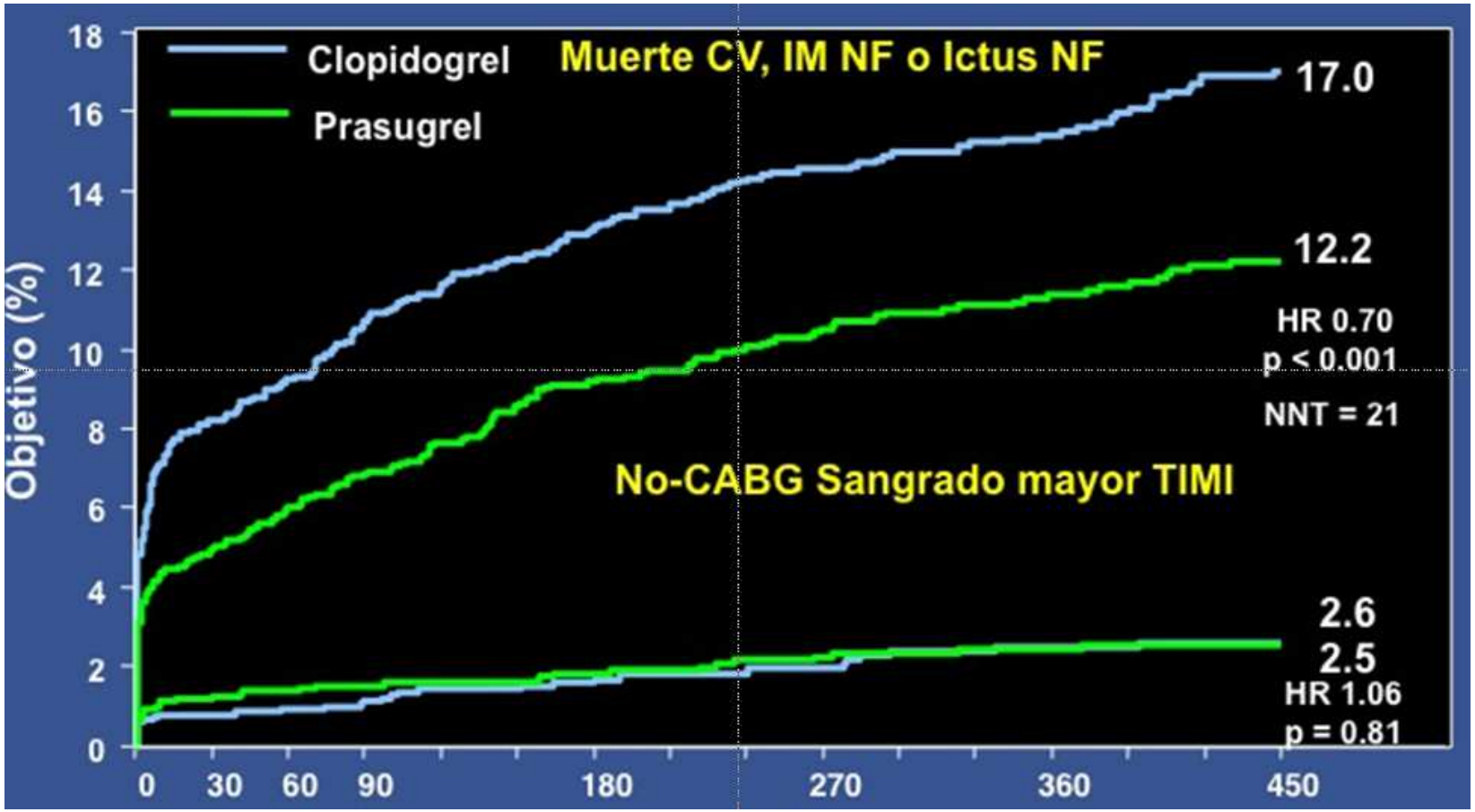
Long-term Phase of Treatment



Angiolillo DJ et al. J Am Coll Cardiol. 2006;48:298-304.

PRASUGREL

Triton-TIMI 38: Subgrupo diabetes (n=3146)



Wiviott et al. Circulation 2008;118:1626-36

TICAGRELOR

PLATO "Diabetes"

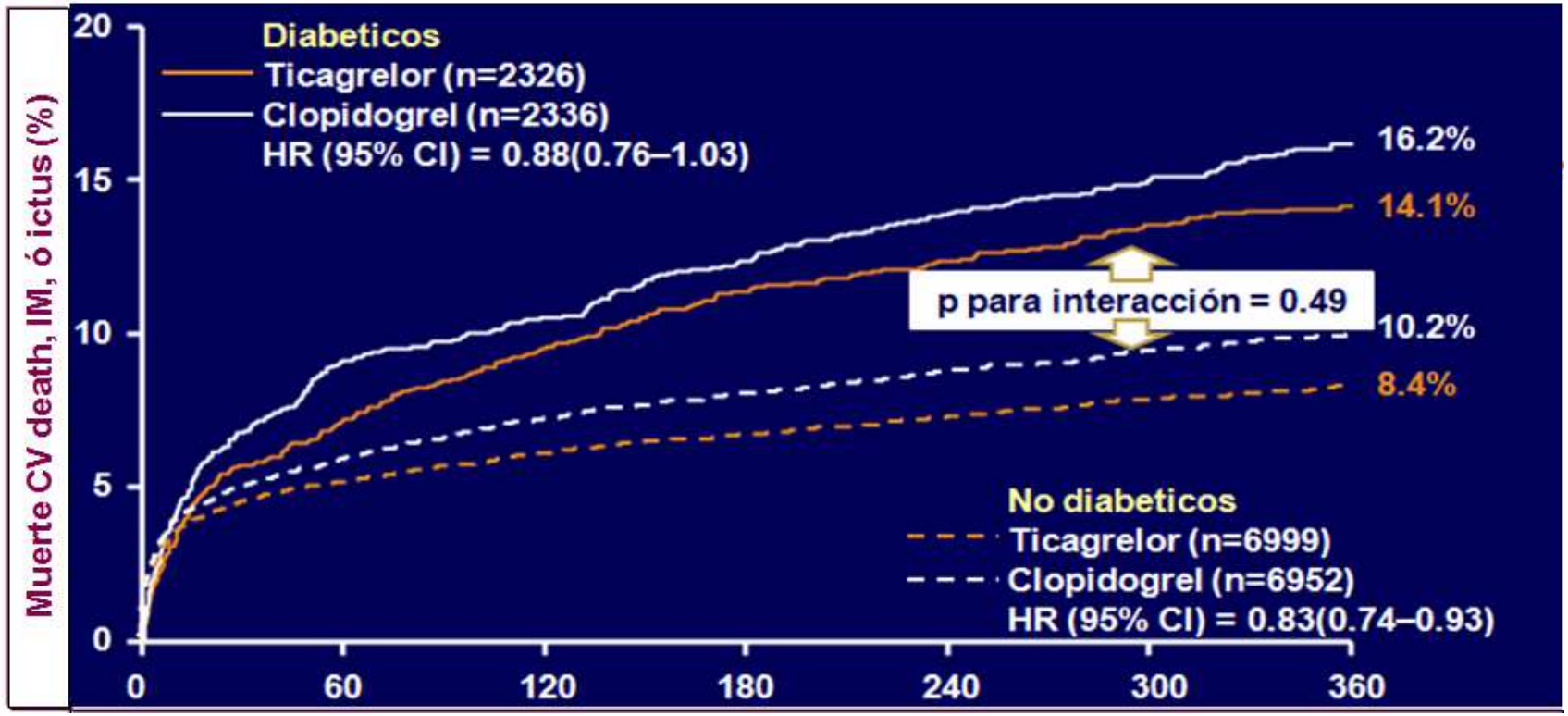
PLATO=18,624 pacientes: 4662 diabéticos
96% Diabetes tipo II

European Heart Journal (2010) 31, 3006–3016
doi:10.1093/eurheartj/ehq325

FASTTRACK
ESC CLINICAL TRIAL UPDATE

Ticagrelor vs. clopidogrel in patients with acute coronary syndromes and diabetes: a substudy from the PLATelet inhibition and patient Outcomes (PLATO) trial

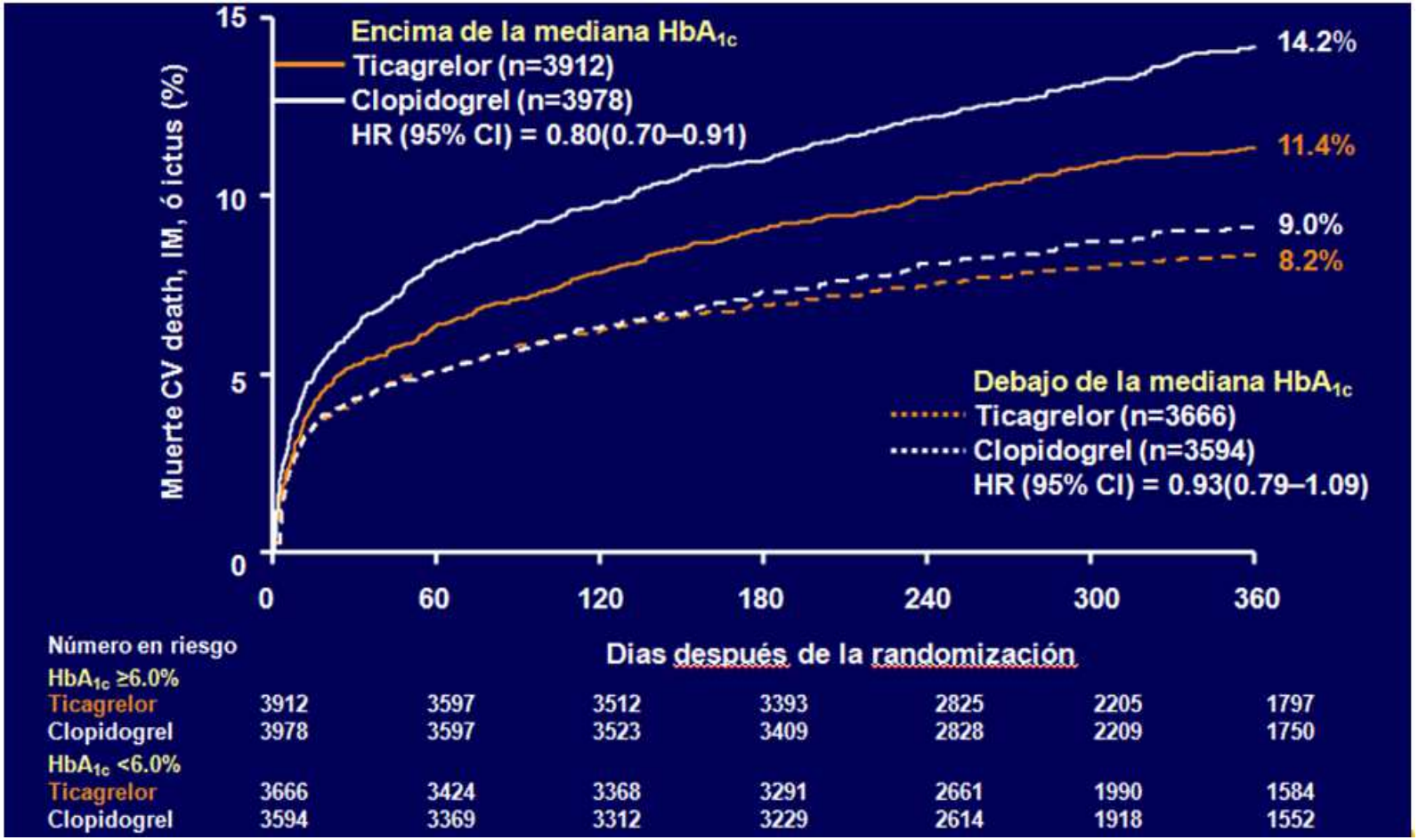
Stefan James[1]*, Dominick J. Angiolillo[2], Jan H. Cornel[3], David Erlinge[4], Steen Husted[5], Frederic Kontny[6], Juan Maya[7], Josë C. Nicolau[8], Jindrich Spinar[9], Robert F. Storey[10], Susanna R. Stevens[11], and Lars Wallentin[1], for the PLATO study group



El beneficio de la variable primaria fue consistente con los resultados del estudio principal PLATO

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

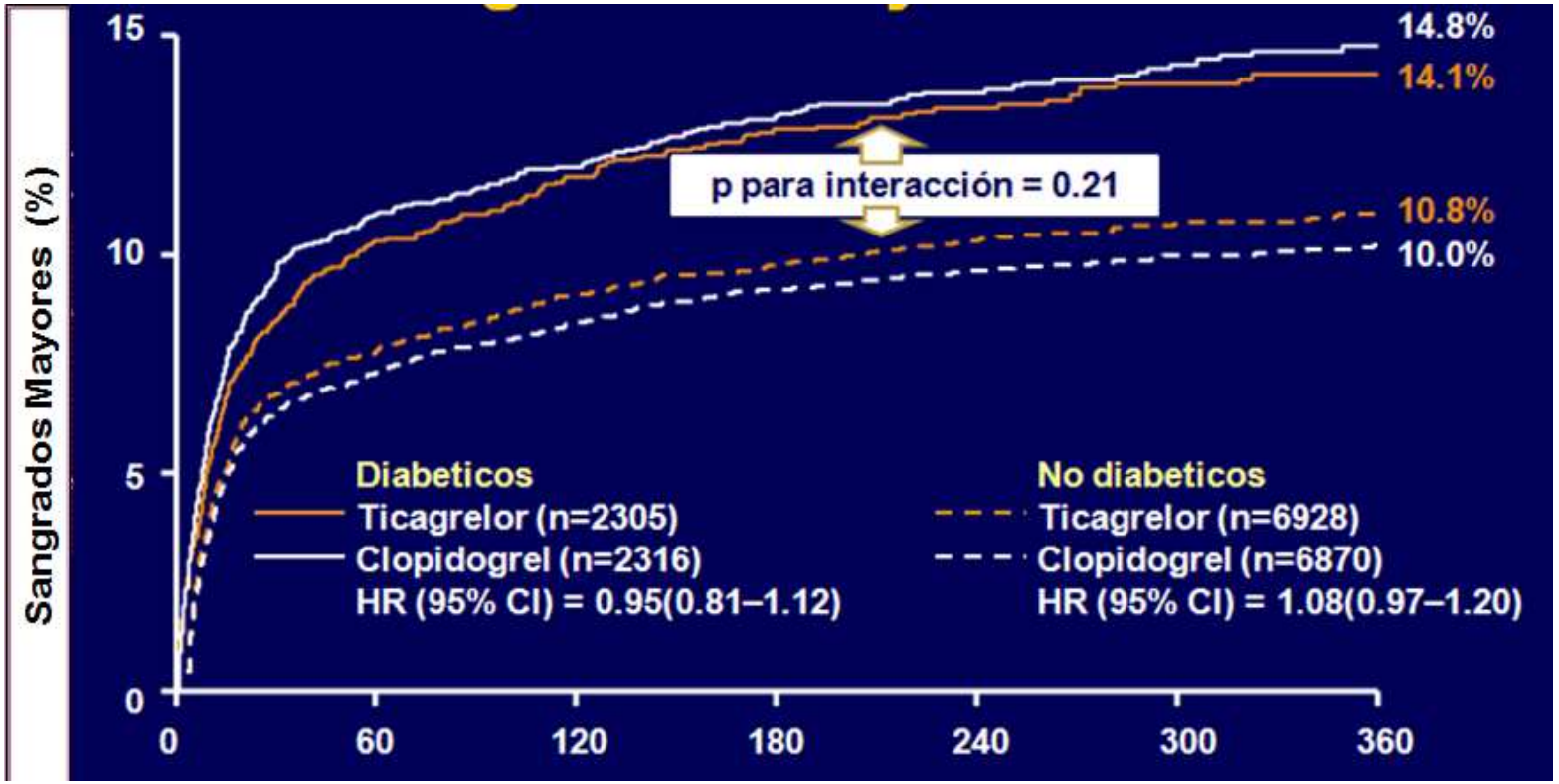
Endpoint primario según la mediana de HbA_{1c}



Mediana de HbA_{1c}=6%

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

PLATO “Diabetes”: sangrados mayores



Los sangrados ocurren con similar frecuencia en los grupos de ticagrelor y clopidogrel independientemente de la diabetes

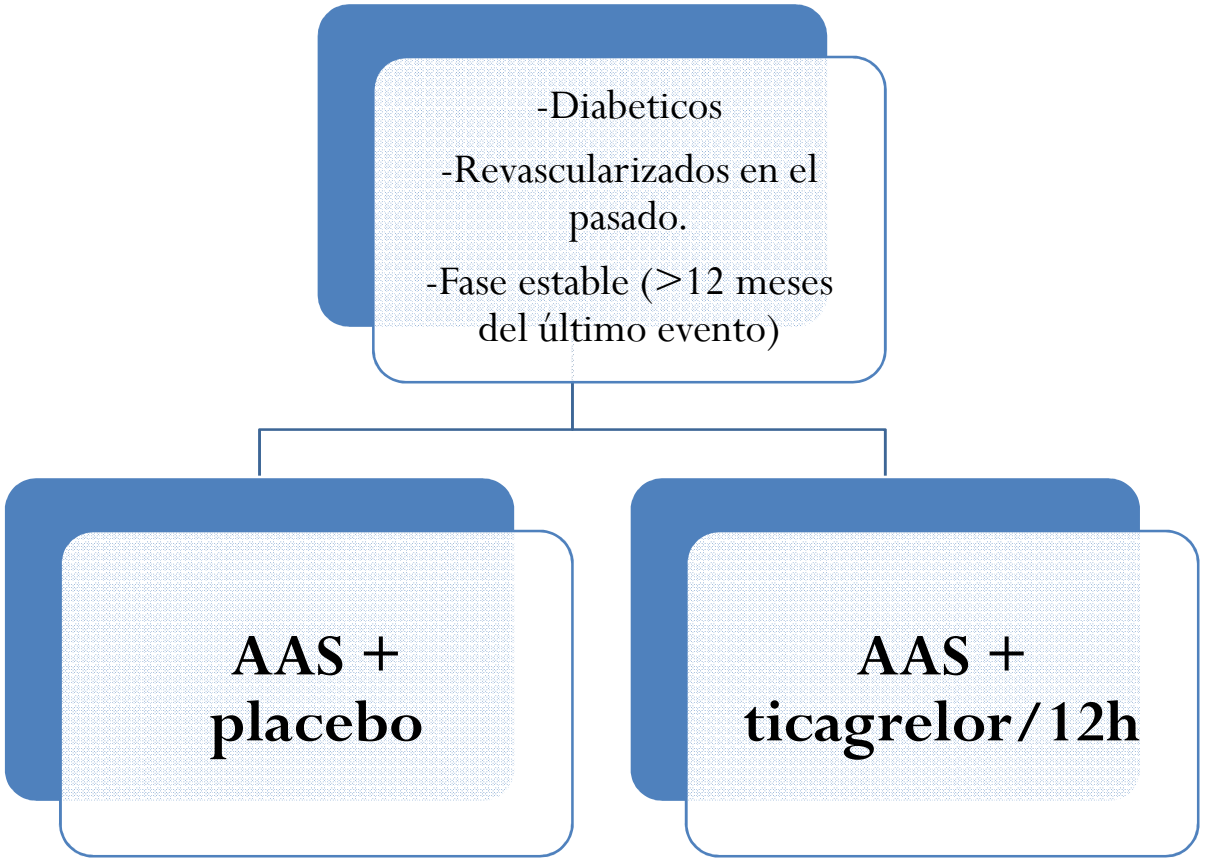
No se observa interacción entre la diabetes y el tratramiento (p=0.21)

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

¿Doble antiagregación cuanto tiempo?

12 meses para el SCACEST y SCASEST

A Study Comparing Cardiovascular Effects of Ticagrelor Versus Placebo in Patients With Type 2 Diabetes Mellitus (THEMIS)



Conclusiones

1. La diabetes provoca una **enfermedad coronaria** muy prevalente, de **mayor extensión y peor pronóstico**.
2. En el **SCACEST**: **ACTP primaria** con stents farmacoactivos.
3. **En el SCASEST:**
    1. estrategia invasiva precoz
    2. revascularización con stents farmacoactivos en la enfermedad de 1 ó 2 v.
    3. Se debe favorecer la revascularización quirúrgica en pacientes con enfermedad del tronco y 3 vasos avanzada.
4. La **optimización del tratamiento médico** en los diabéticos mejora el pronóstico. Nuevos antiagregantes: **Prasugrel y Ticagrelor** durante 12 meses.

Muchas gracias