4to SIMPOSIO DE MEDICINA CARDIOVASCULAR "CENTENARIO 2018"

¿Cómo se hace la mejor angioplastia primaria en 2018?

Datos para una reperfusión efectiva

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Datos para una reperfusión efectiva

1- Tiempos
2- DAPT
3- Vía de Acceso
4- Anticoagulación – Antitrombosis
5- Tromboaspiracion
6- STENT: DES vs BMS – Directo vs Diferido
7- Solo ARI o MV?

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TIEMPOS

mpos:

es de traslado y activación.

riage prehosp adecuado hacia centros

4/7

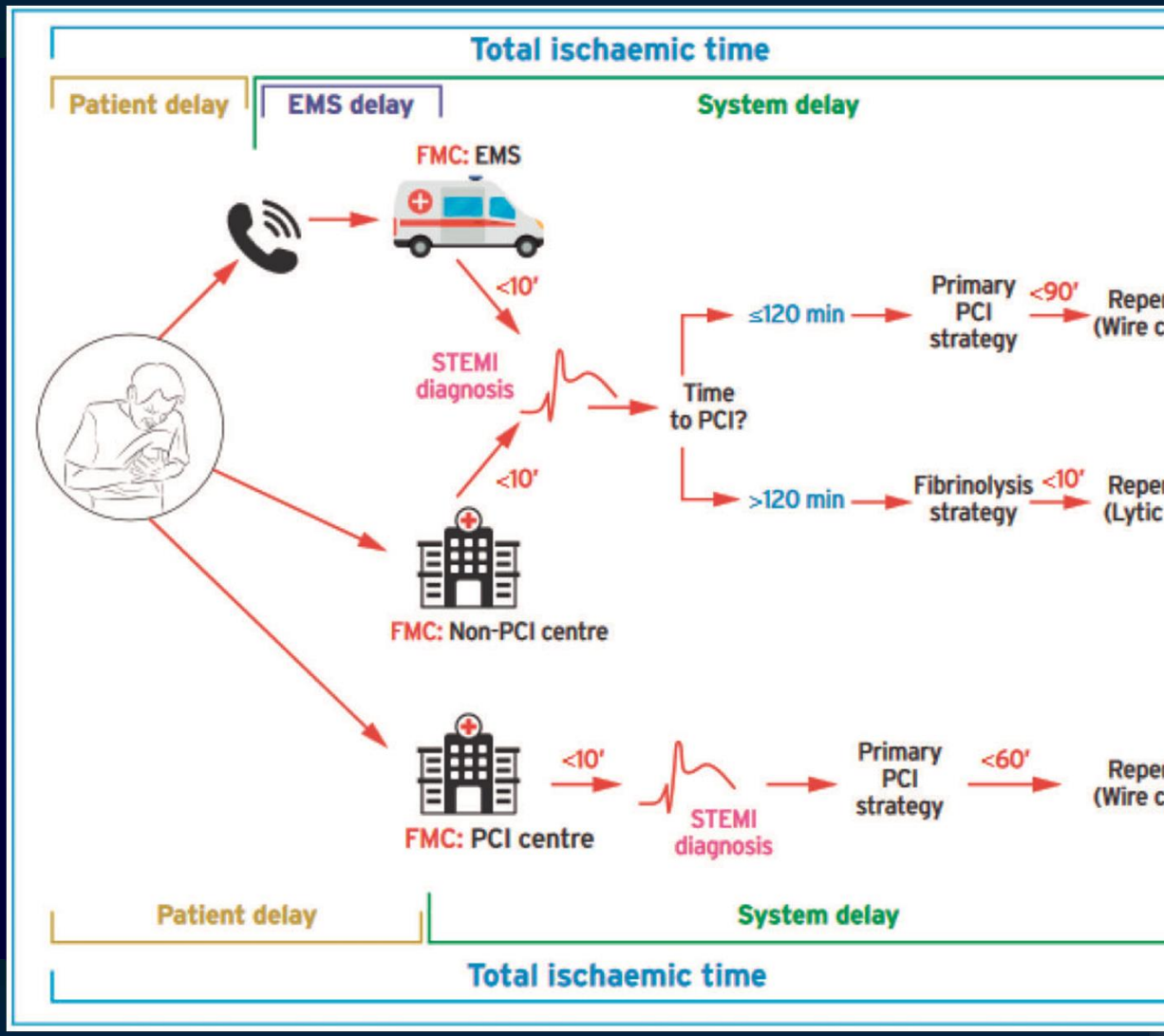
reactivar al Centro con envio de ECG

vitar el paso por la sala de guardia e ir

irecto a sala de hemodinamia

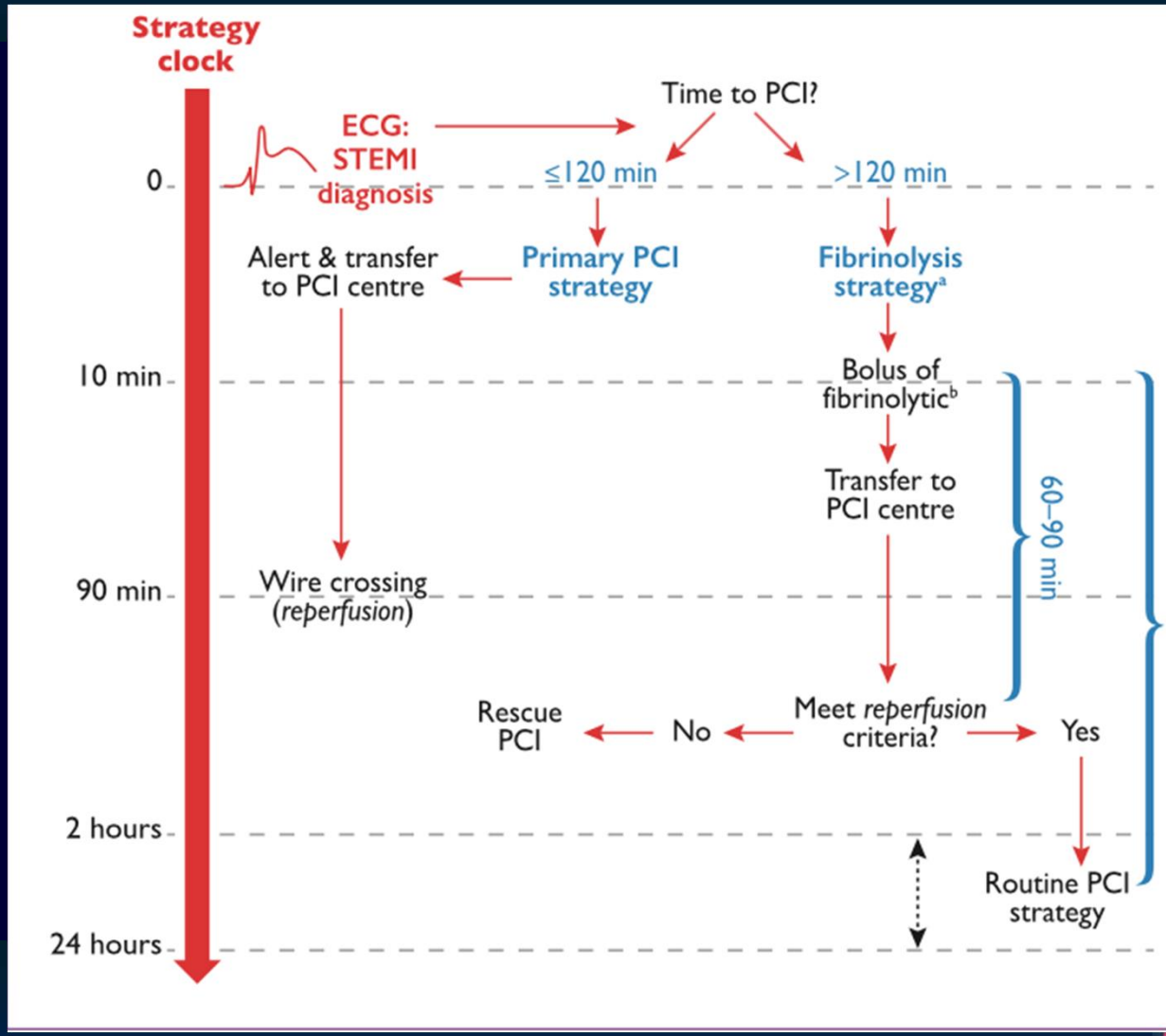
Maximo tiempo esperable para PPCI

120 min FMC



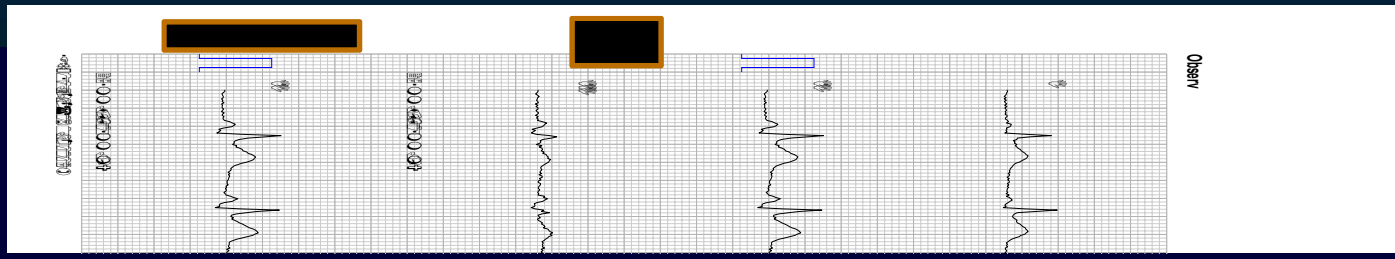
TIEMPOS

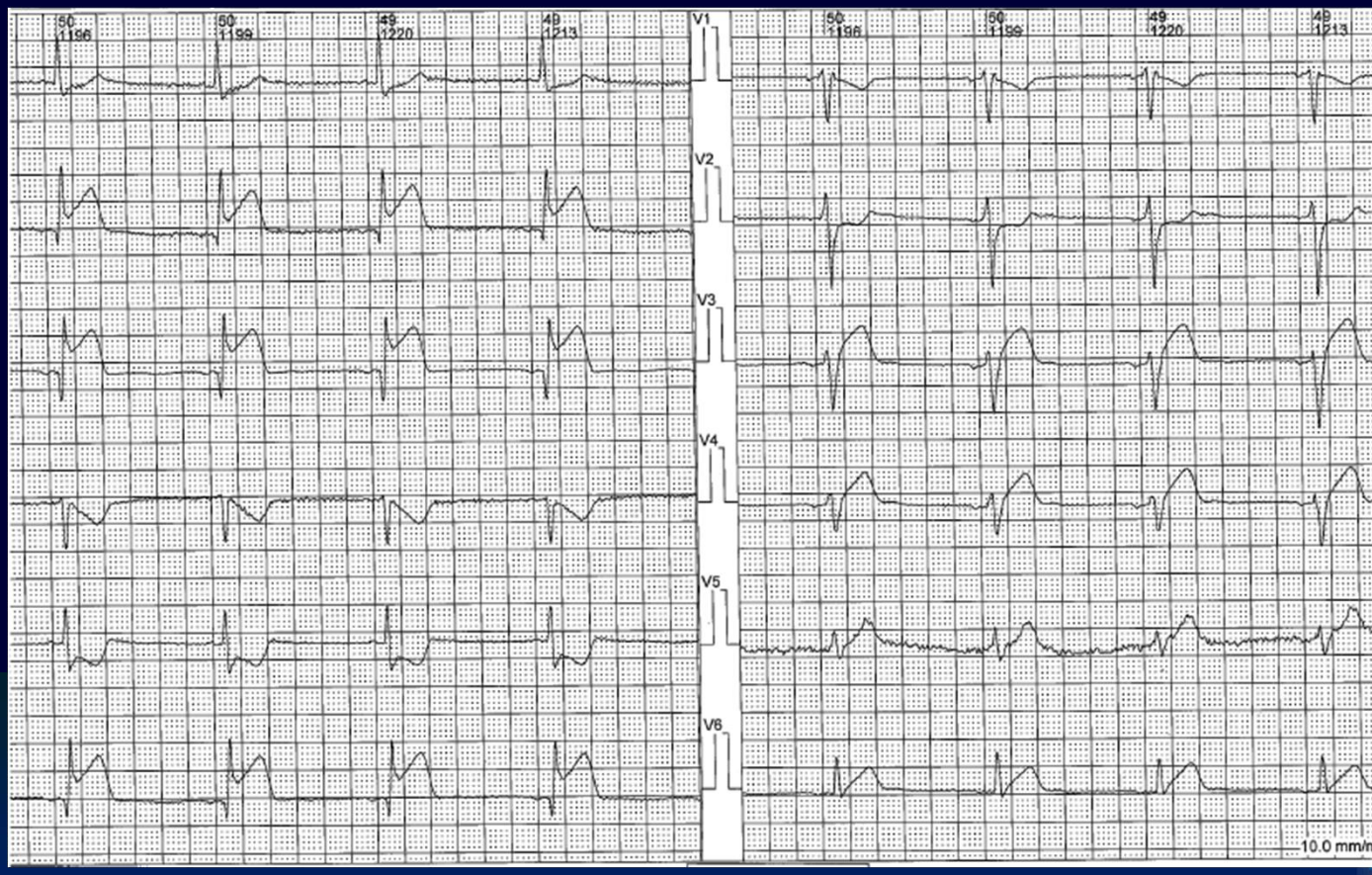
rvals	Time targets
um time from FMC to ECG and diagnosis[a]	≤10 min
um expected delay from STEMI diagnosis nary PCI (wire crossing) to choose primary rategy over fibrinolysis (if this target time be met, consider fibrinolysis)	≤120 min
um time from STEMI diagnosis to wire g in patients presenting at primary PCI als	≤60 min
um time from STEMI diagnosis to wire g in transferred patients	≤90 min
um time from STEMI diagnosis to bolus or n start of fibrinolysis in patients unable to rimary PCI target times	≤10 min
lelay from start of fibrinolysis to evaluation fficacy (success or failure)	60–90 min
lelay from start of fibrinolysis to raphy (if fibrinolysis is successful)	2–24 hours



CASO CLINICO

on, 58 años
antecedentes
gina tipica, 1 h evolucion
mada al SEM 12:20 hs
ivo SEM 12:37 hs
G: 12:41 hs
ivación Centro 24/7: 12:51hs
reso sala hemodinamia 13: 24 hs





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ANTIAGREGACIÓN PLAQUETARIA

Todo paciente derivado a PPCI debe recibir DAPT

- AAS + inhibidor P2Y12

AAS:

- Oral: 150 – 300 mg
- IV: 250 – 500 mg

ACUTE Trial. Thromb Haemost 2017;117(3):625–635.

P2Y12:

Ticagrelor 180 mg ud + 90 mg cada 12 hs

No diferencia en administrar en ambulacion vs sala hemodi
Estudio ATLANTIC. N Engl J Med 2014;371(11):1016–10

Prasugrel 60 mg ud + 10 mg dia

Clopidogel 600 mg ud + 150 o 75 mg dia

CURRENT-OASIS 7. Lancet . 2010;376(9748):1233–124

Cangrelor IV (no recomedado)

Inhibidores GPIIbIIIa: no en forma rutinaria. Solo como rescate

ANTIAGREGACIÓN PLAQUETARIA

Recommendations	Class[b]	Level[c]
Antiplatelet therapy		
A potent $P2Y_{12}$ inhibitor (prasugrel or ticagrelor), or clopidogrel if these are not available or are contraindicated, is recommended before (or at latest at the time of) PCI and maintained over 12 months, unless there are contraindications such as excessive risk of bleeding.[186,187]	I	A
Aspirin (oral or i.v. if unable to swallow) is recommended as soon as possible for all patients without contraindications.[213,214]	I	B
GP IIb/IIIa inhibitors should be considered for bailout if there is evidence of no-reflow or a thrombotic complication.	IIa	C
Cangrelor may be considered in patients who have not received $P2Y_{12}$ receptor inhibitors.[192–194]	IIb	A

Antiplatelet therapies	
Aspirin	Loading dose of 150–300 mg orally or of 75–250 mg i.v. if oral ingestion is not possible, followed by a maintenance dose of 75–100 mg/day
Clopidogrel	Loading dose of 600 mg orally, followed by a maintenance dose of 75 mg/day
Prasugrel	Loading dose of 60 mg orally, followed by a maintenance dose of 10 mg/day In patients with body weight ≤60 kg, a maintenance dose of 5 mg/day is recommended Prasugrel is contra-indicated in patients with previou stroke. In patients ≥75 years, prasugrel is generally not recommended, but a dose of 5 mg/day should be used if treatment is deemed necessary
Ticagrelor	Loading dose of 180 mg orally, followed by a maintenance dose of 90 mg *b.i.d.*
Abciximab	Bolus of 0.25 mg/kg i.v. and 0.125 µg/kg/min infusion (maximum 10 µg/min) for 12 hours
Eptifibatide	Double bolus of 180 µg/kg i.v. (given at a 10-min interval) followed by an infusion of 2.0 µg/kg/min for up to 18 hours
Tirofiban	25 µg/kg over 3 min i.v., followed by a maintenance infusion of 0.15 µg/kg/min for up to 18 hours

www.icronline.com

2017 Guidelines STEMI. European Heart Journal (2018) 39, 119

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ACCESOS

- Radial
- Femoral

ACCESOS

- Radial
- Femoral

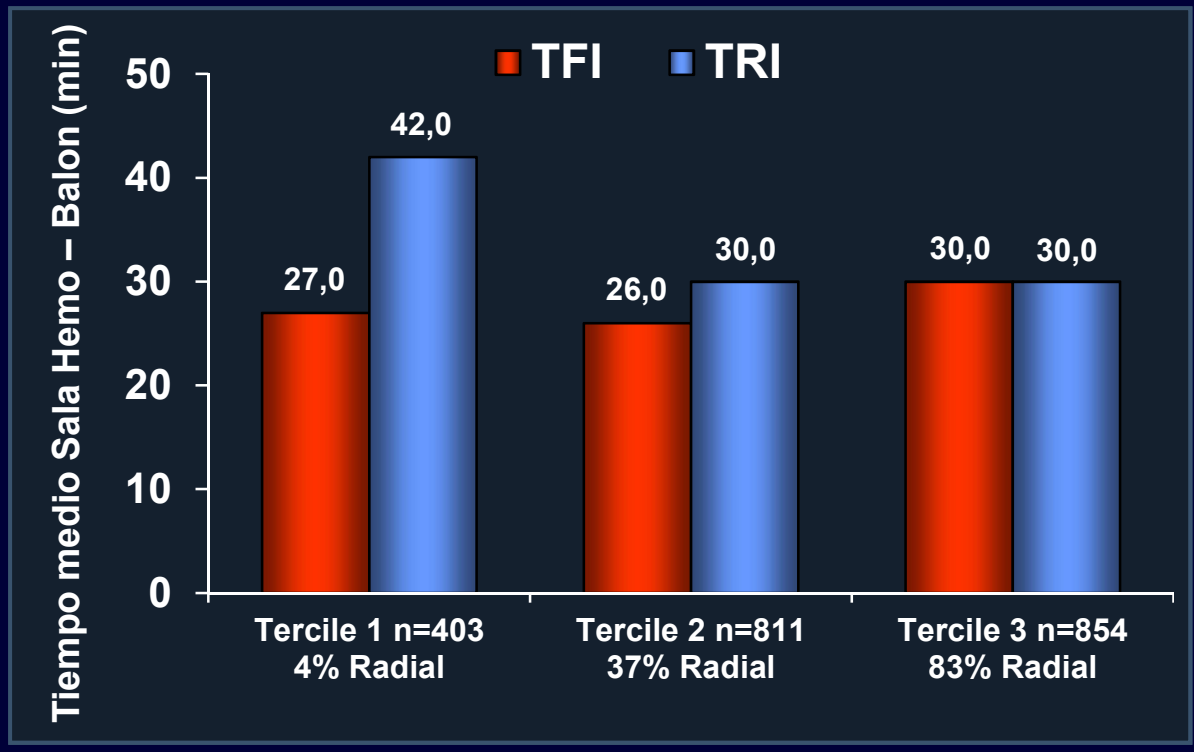
Desventajas del acceso Transradial en la PPCI

- Tasa de Crossover 5-7% en Radial STEMI Trials
  - espasmo, tortuosidad, soporte guia
- Aumento tiempo de fluoroscopia
- Aumento volumen de contraste
- Retraso en la reperfusión
- Todas las medidas y resultados dependen de la experiencia del centro y del volumen

Curva de aprendizaje

ACCESOS

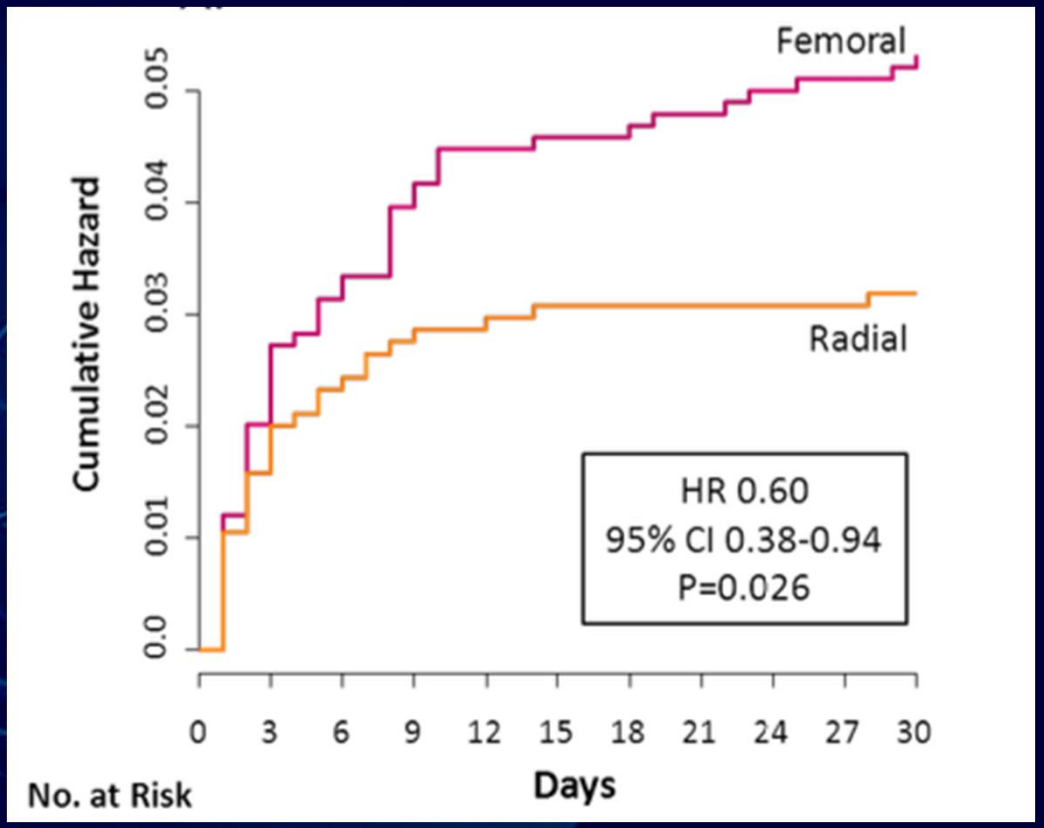
- **Tiempo de reperfusión en PPCI segun la experiencia del centro en TRI**

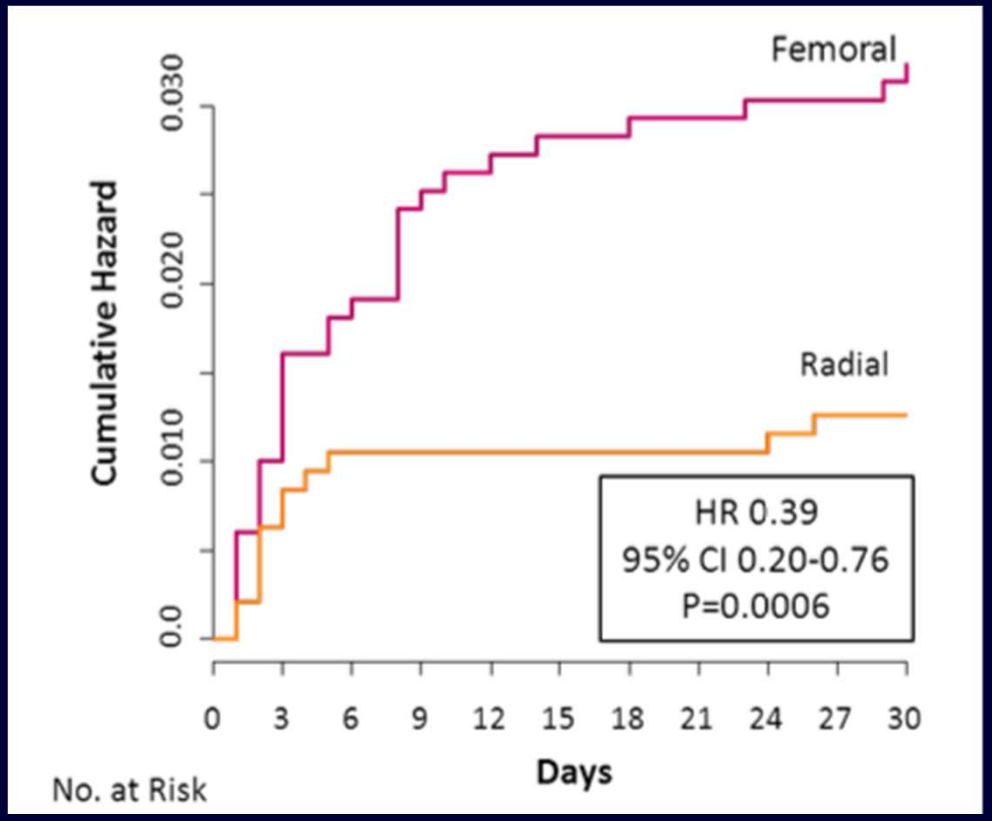


Cantor W, et al. *Circ Cardiovasc Interv*. 2015;8:e002097

Evidencia TRI en PPCI

RIVAL Trial. Menor tasa de MACE y Mortalidad



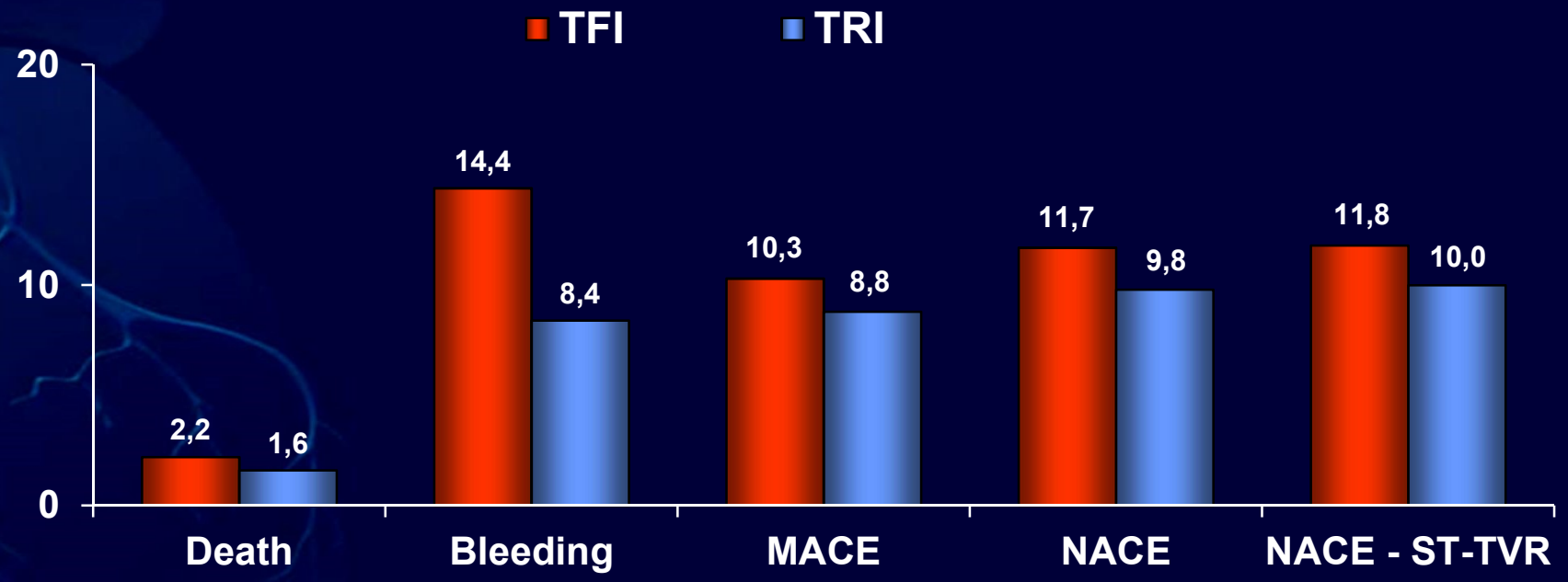


Muerte CV, IAM, ACV, Major Bleeding

Metha S, et al. RIVAL study. J Am Coll Cardiol 2012;60:2490–9

Evidencia TRI en PPCI

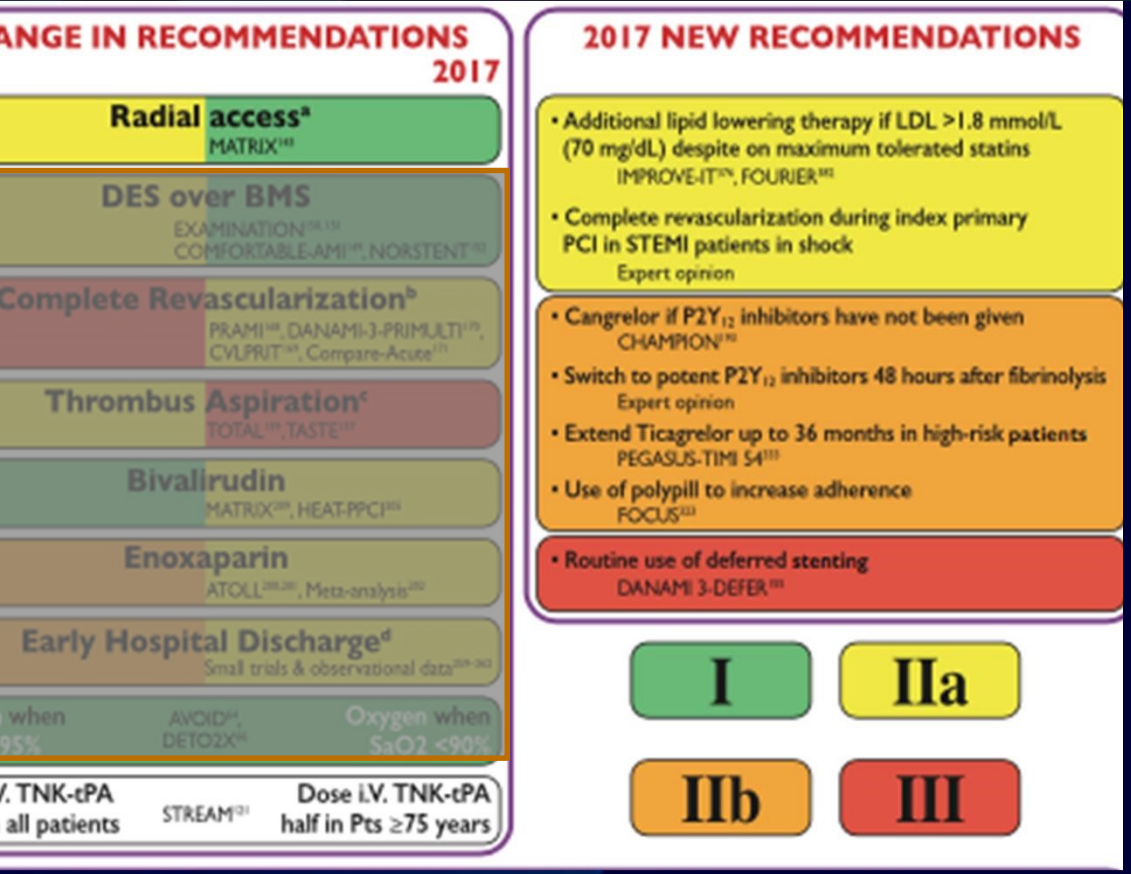
MATRIX Trial. 8,404 pts. Menor tasa de eventos a 30 días



MACE (Major Adverse Cardiovascular Events) : All cause mortality - Myocardial infarction - Stroke.
NACE (Net Adverser Clinical Events): MACE +BARC 3 or 5 bleeding.
ST: Stent Thrombosis. TVR: Urgent Target Vessel Revascularization

Valgimigli M, et al. MATRIX trial. Lancet 2015; 385: 2465–76

– ACCESOS



IRA technique		
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Stenting with new-generation DES is recommended over BMS for primary PCI.[148–151,178,179]	I	
Radial access is recommended over femoral access if performed by an experienced radial operator.[143–145,180]	I	
Routine use of thrombus aspiration is not recommended.[157,159]	III	
Routine use of deferred stenting is not recommended.[153–155]	III	

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– ANTICOAGULACIÓN

- ✓ Heparina no fraccionada
- ✓ Heparina Bajo Peso Molecular – Enoxaparina. ATOLL Trial
- ✓ Bivalirudina

– ANTICOAGULACIÓN

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- ✓ Heparina Bajo Peso Molecular – Enoxaparina. ATOLL Trial
- ✓ Bivalirudina

– ANTICOAGULACIÓN

Bivalirudina: beneficios potenciales

1- Disminur eventos isquémicos y mortalidad
   - Trombosis stent
2- Disminur Sangrado

– ANTICOAGULACIÓN

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EAT- PPCI

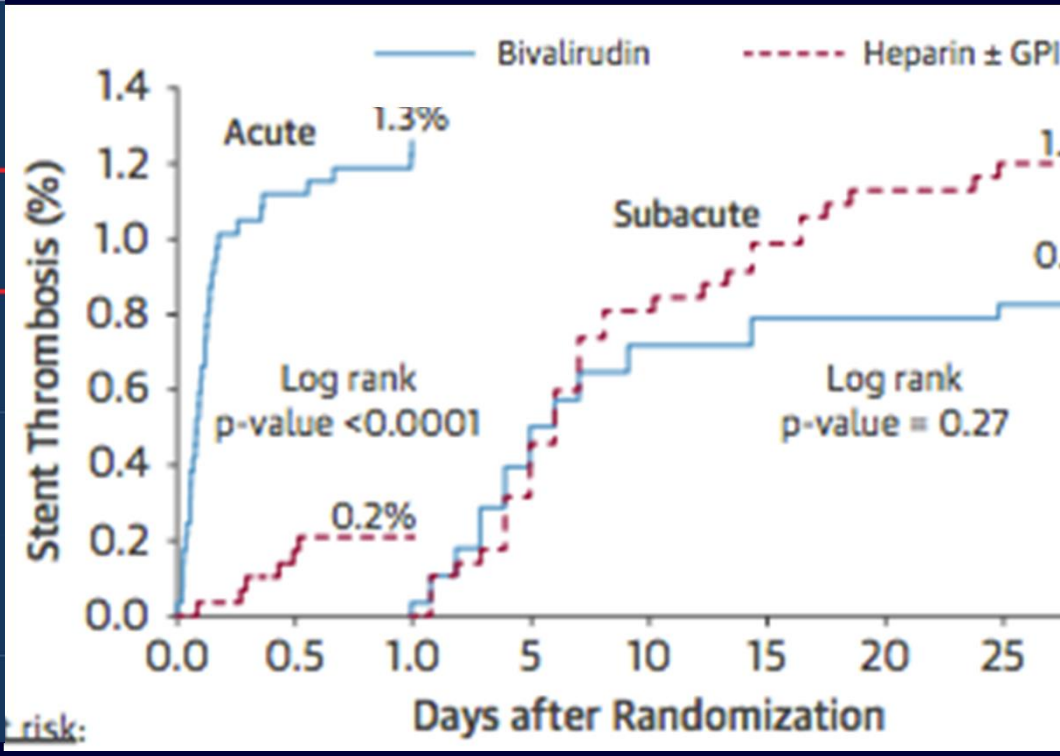
9 Ptes STEMI - HNF 70 U/k vs Bivalirudina // GPI bailout (15y13%) // 80% Ra
MACE 30 ds - PFS: sangrado mayor

	Bivalirudin group (n=905)	Heparin group (n=907)	p value
ary efficacy outcomes measures	79/905 (8·7%)	52/907 (5·7%)	0·01
ath	46/905 (5·1%)	39/907 (4·3%)	0·43
ebrovascular accident	15/905 (1·6%)	11/907 (1·2%)	0·43
w myocardial infarction or reinfarction	24/905 (2·7%)	8/907 (0·9%)	0·004
ditional unplanned target lesion revascularisation	24/905 (2·7%)	6/907 (0·7%)	0·001
nt thrombosis rate	24/697 (3·4%)	6/682 (0·9%)	0·001
efinite	23/697 (3·3%)	5/682 (0·7%)	0·001
obable	1/697 (0·1%)	1/682 (0·1%)	>0·99
cute (≤24 h)	20/697 (2·9%)	6/682 (0·9%)	0·007
ubacute (>24 h to 28 days)	4/697 (0·6%)	0/682 (0·0%)	0·12

ORIZONS-AMI HORIZONS + EUROMA

TROMBOSIS STENT

	UFH + GP IIb/IIIa (N=1553)	Bivalirudin (N=1571)	P Value
definite or probable*	1.9%	2.5%	0.33
efinite	1.4%	2.2%	0.11
robable	0.5%	0.3%	0.26
cute (≤24 hrs)	0.3%	1.3%	0.0009
ubacute (>24 hrs – 30d)	1.7%	1.2%	0.30



Stone, G.W. et al. J Am Coll Cardiol. 2015; 65(1):27–

Metanalisis.

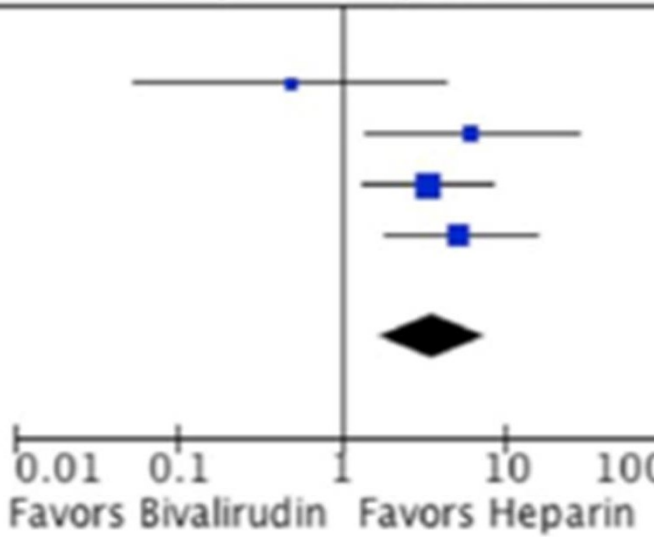
TROMBOSIS STENT

(c) Definite or probable acute stent thrombosis (0-24 hours)

udy or Subgroup	Bivalirudin Events	Total	Heparin Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
AVE 4	0	0	0	0		Not estimable
IGHT	1	629	4	1229	10.4%	0.49 [0.05, 4.37]
ROMAX	12	1089	2	1109	19.7%	6.17 [1.38, 27.62]
AT-PPCI	20	697	6	682	38.2%	3.33 [1.33, 8.34]
RIZONS-AMI	21	1571	4	1553	31.7%	5.25 [1.80, 15.32]
tal (95% CI)		**3986**		**4573**	**100.0%**	**3.55 [1.67, 7.56]**
tal events	54		16			

terogeneity: $Tau^2 = 0.17$; $Chi^2 = 4.18$, df = 3 (P = 0.24); $I^2 = 28\%$

st for overall effect: Z = 3.29 (P = 0.001)



Capodano, E. et al. E H Journal. 2016, Vol. 5(3) 253–262

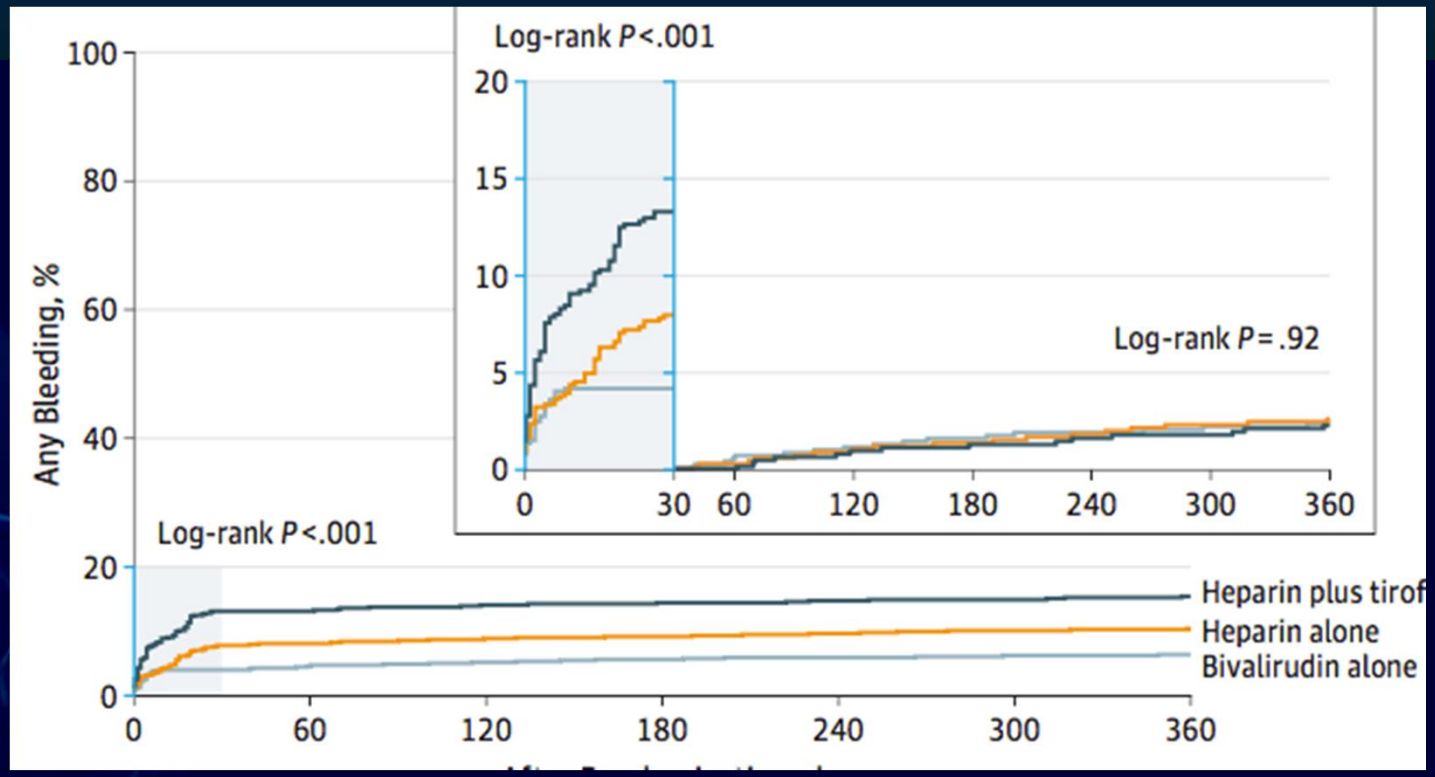
– ANTICOAGULACIÓN

Bivalirudina: beneficios potenciales

1- Disminur eventos isquémicos y mortalidad
   - Trombosis stent
2- Disminur Sangrado

BRIGHT

CUALQUIER SANGRADO (BARC 2-5)



	BIVAL	HEPAR	HEPA+GPI			
bleeding	30 (4.1)	55 (7.5)	90 (12.3)	−3.5 (−5.9 to −1.1)	−8.2 (−11.0 to −5.5)	−4.8 (−7.8 to −1
BARC 2-5	9 (1.2)	26 (3.6)	37 (5.1)	−2.3 (−3.9 to −0.8)	−3.8 (−5.6 to −2.1)	−1.5 (−3.6 to 0.6
BARC 3-5	4 (0.5)	11 (1.5)	15 (2.1)	−1.0 (−2.0 to 0.1)	−1.5 (−2.7 to −0.4)	−0.5 (−0.2 to 0.8

ALIDATE-SWEDEHEART

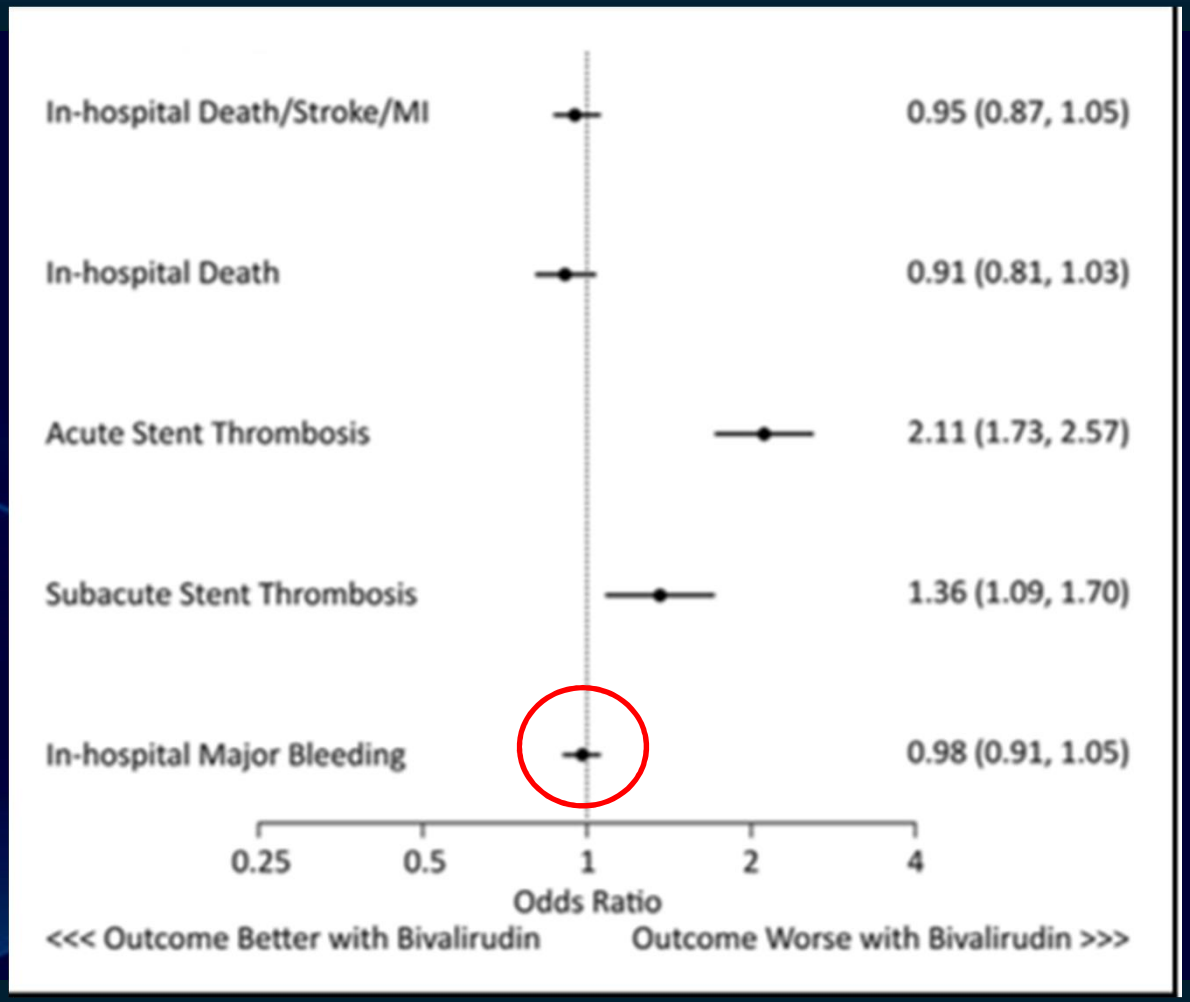
6006 Ptes STEMI - HNF 70 U/k vs Bivalirudina // 90% Radial

PFP: Muerte, IAM, sangrado, ACV

Outcome	Bivalirudin Group (N=3004)	Heparin Group (N=3002)	Hazard Ratio (95% CI)	P Value
	no. (%)			
Primary end point: death from any cause, myocardial infarction, or major bleeding	216 (7.2)	241 (8.0)	0.89 (0.74–1.07)	0.21
Death from any cause	57 (1.9)	52 (1.7)	1.10 (0.75–1.60)	0.63
Death from cardiovascular causes	54 (1.8)	49 (1.6)	1.10 (0.75–1.62)	0.62
Myocardial infarction	23 (0.8)	33 (1.1)	0.70 (0.41–1.18)	0.18
Major bleeding	152 (5.1)	169 (5.6)	0.89 (0.72–1.11)	0.32
BARC type 2	100 (3.3)	114 (3.8)		
BARC type 3	53 (1.8)	53 (1.8)		
BARC type 5	4 (0.1)	3 (0.1)		
Stent thrombosis†	50 (1.7)	53 (1.8)	0.94 (0.64–1.39)	0.77
Definite	8 (0.3)	20 (0.7)	0.40 (0.18–0.91)	0.03
Probable	11 (0.4)	11 (0.4)		
Stroke	21 (0.7)	23 (0.8)	1.00 (0.52–1.92)	1.00
Primary hemorrhagic stroke	5 (0.2)	0		
Death, myocardial infarction, major bleeding, or stroke	226 (7.5)	253 (8.4)	0.89 (0.74–1.06)	0.19
Death, myocardial infarction, or BARC type 3 or 5 bleeding	124 (4.1)	131 (4.4)	0.94 (0.74–1.21)	0.64

Erlinge D, et al.N Engl J Med 2017;377:1132-42

Bivalirudina vs Heparina. STEMI via Radial



Jovin I, et al. JAmCollCardiolIntv2017;10:1102–11

Anticoagulant therapy		
Anticoagulation is recommended for all patients in addition to antiplatelet therapy during primary PCI.	I	C
Routine use of UFH is recommended.	I	C
In patients with heparin-induced thrombocytopenia, bivalirudin is recommended as the anticoagulant agent during primary PCI.	I	C
Routine use of enoxaparin i.v. should be considered.[200–202]	IIa	A
Routine use of bivalirudin should be considered.[209,215]	IIa	A
Fondaparinux is not recommended for primary PCI.[199]	III	B

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– TROMBOASPIRACIÓN

- ✓Estudios pequeños o de centros únicos demostraron cierto beneficio en la tromboaspiracion manual
- ✓2 ECR con poder estadístico para superioridad no demostraron beneficios en la aspiracion de rutina (TASTE y TOTAL)
  - ✓TOTAL (10732 pts): Aumento de ACV en rama TBA
- ✓En el subgrupo con alta carga de trombo, la TBA se asoció con:
  - ✓Menor tasa de mortalidad (HR 0.80)
  - ✓Mayor tasa de AIT y ACV (OR 1,56)

– TROMBOASPIRACIÓN

- TBA no es recomendada de forma rutinaria
- En caso de gran carga trombótica puede ser considerado

IRA technique		
Stenting is recommended (over balloon angioplasty) for primary PCI.[146,147]	I	A
Stenting with new-generation DES is recommended over BMS for primary PCI.[148–151,178,179]	I	A
Radial access is recommended over femoral access if performed by an experienced radial operator.[143–145,180]	I	A
Routine use of thrombus aspiration is not recommended.[157,159]	III	A
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– STENT

- ✓Implante de Stent es el procedimiento indicado en la PPCI
- ✓BMS superior a Balon: menor reinfarto y TVR, sin alteraciones mortalidad
- ✓DES 1º Generación superior a BMS: menor tasa de TVR
- ✓DES 2º Generación superior a BMS: menor tasa de TVR, Trombosis stent mortalidad a 5 años
  - ✓CONFORTABLE-AMI (Biolimus polimero bioabsorb vs BMS)
  - ✓EXAMINATION (Everolimus vs BMS)
  - ✓NORDIC (Biolimus vs BMS)
- ✓DES segunda generación superior a DES 1ºG: menor tasa Trombosis y ReIAM

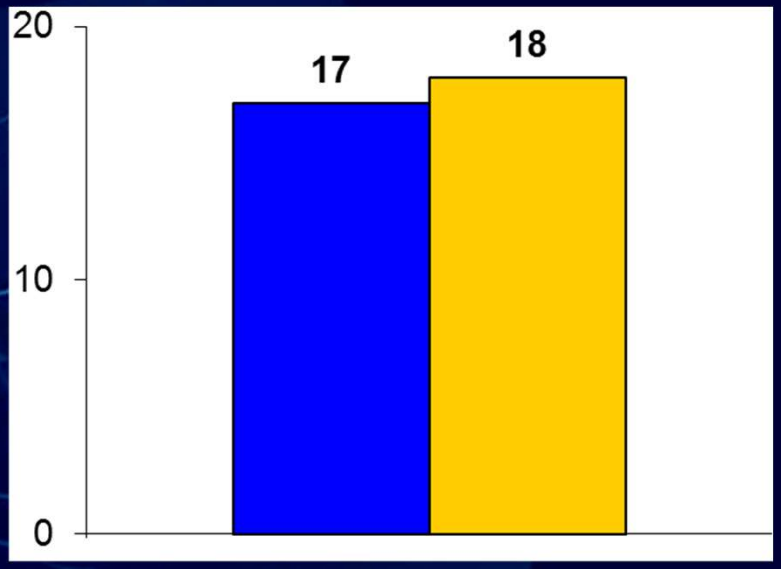
COMFORTABLE AMI randomized trial. JAMA 2012;308(8):777–787

EXAMINATION Trial. Lancet 2012;380(9852):1482–1490.

NORSTENT . Investigators. Drug-eluting or bare-metal stents for coronary artery

– STENT DIFERIDO

✓ Estudio DANAMI 3 DEFER: Pts con IAM con flujo TIMI 2-3 espontáneo o conseguido por el operador, randomizado a implante inmediato o diferido a 48 hs. FUP 4 años

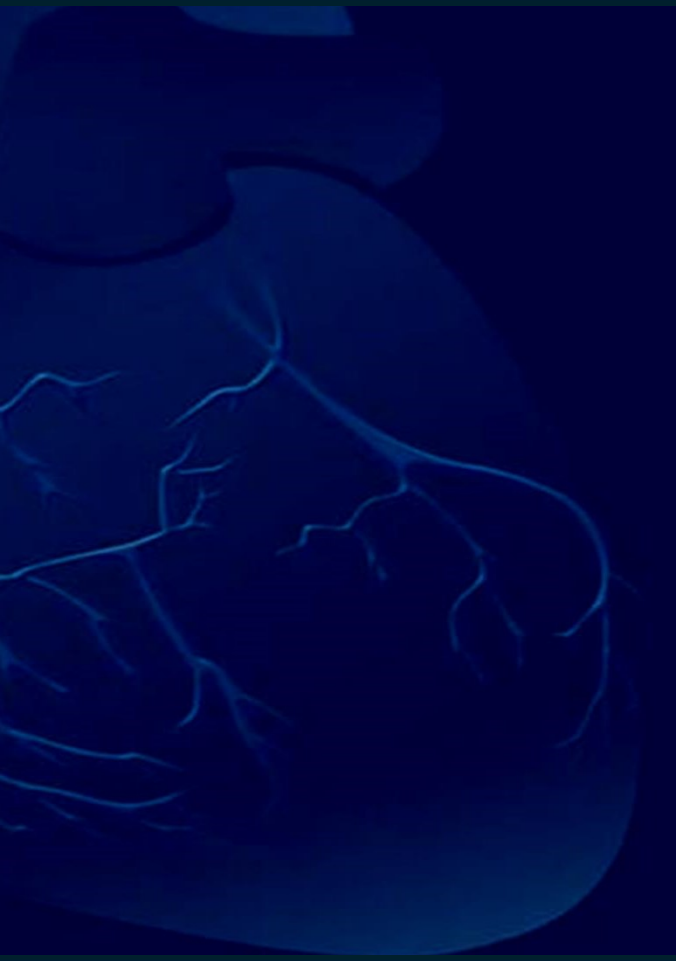


Resultados: Diferido vs Inmediato:

- MACE: 17% vs. 18%; p = 0.92
- Mortalidad: 7% vs. 9%, p = 0.37;
- MI: 7% vs. 7%, p = 0.77;
- TVR: 7% vs. 4%, p = 0.03

Kelbæk H, et al. Lancet 2016;387:2199-2206

– STENT



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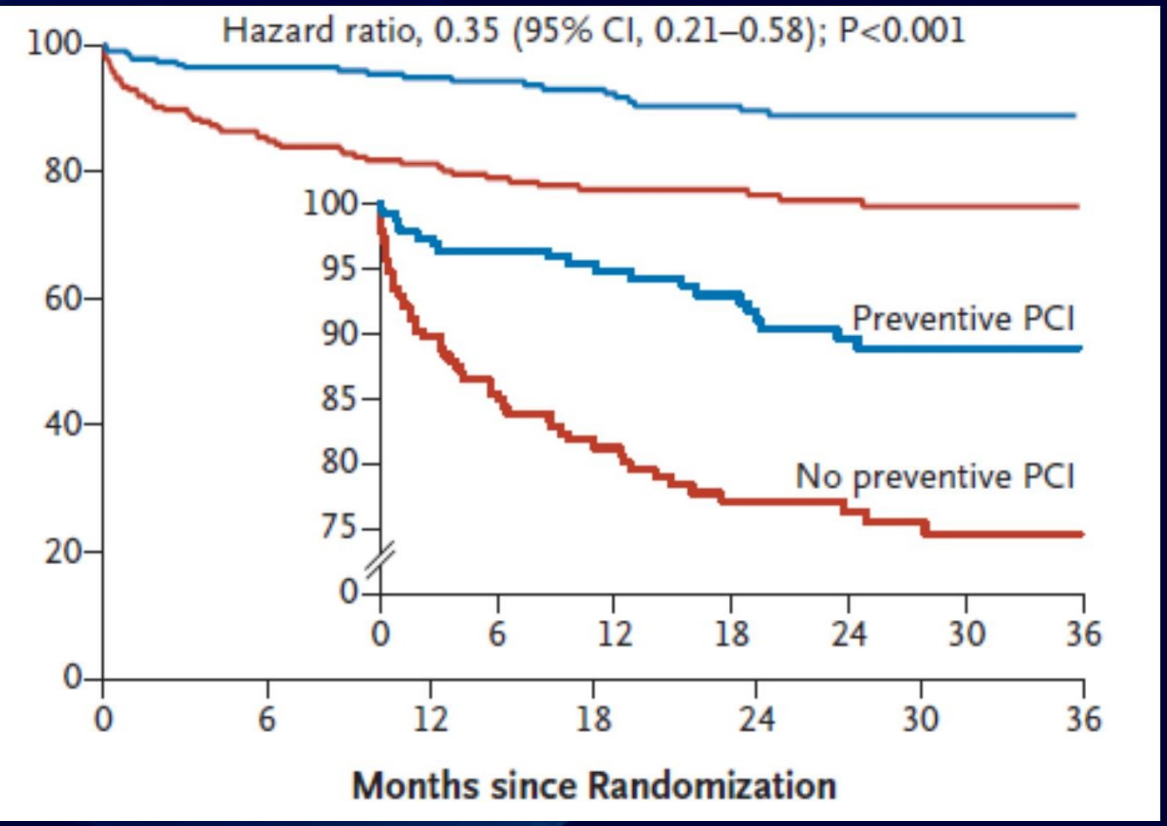
– ARI vs REVASC COMPLETA

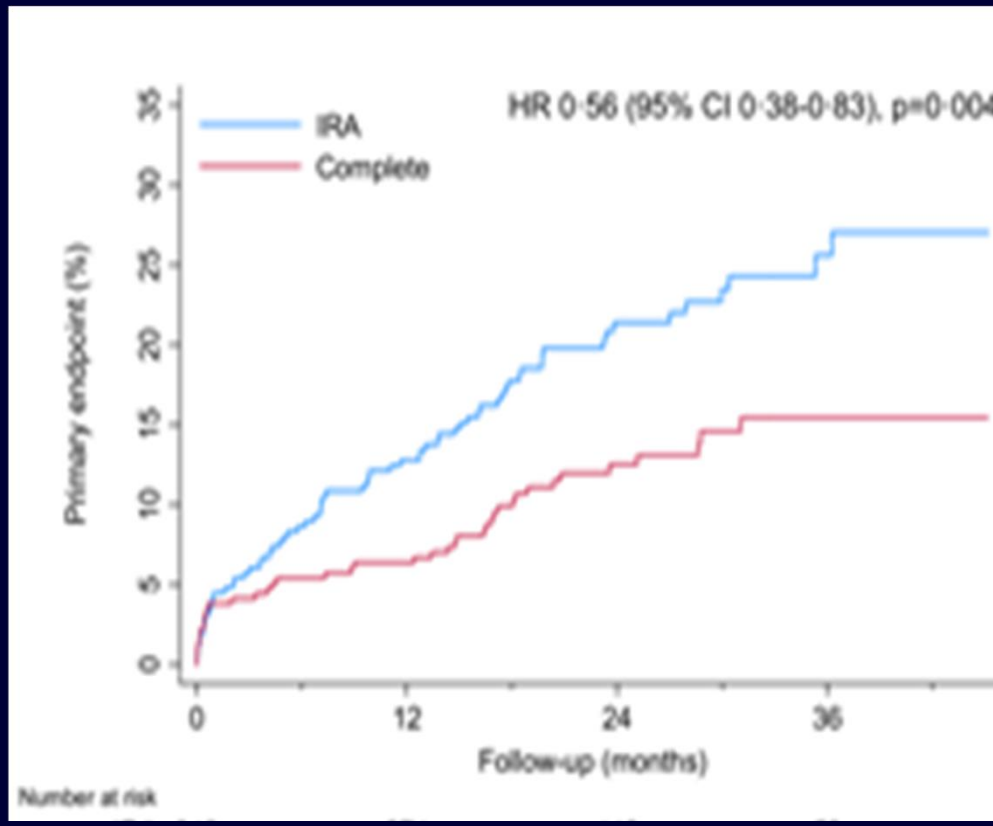
- ✓Aprox el 50% de los pts con IAM tienen enfermedad de multiples vaso
- ✓Siempre tratar la ARI
- ✓La revascularización completa es recomendable
  - ✓No durante el procedimiento índice
  - ✓Antes del alta, inmediata o diferida
  - ✓Guiada por Angio o isquemia
- ✓PRAMI (465 pts)
- ✓CvLPRIT (296 pts)
- ✓DANAMI 3 PRIMULTI (627 pts) - FFR
- ✓COMPARE Acute (885 pts) - FFR

– ARI vs REVASC COMPLETA

PRAMI



DANAMI 3 PRIMULTI



Wald D. N Engl J Med 2013;369:1115-23.

ACC 2015
EuoPCR 2015

– ARI vs REVASC COMPLETA

Non-IRA strategy		
Routine revascularization of non-IRA lesions should be considered in STEMI patients with multivessel disease before hospital discharge.[167–173]	IIa	A
Non-IRA PCI during the index procedure should be considered in patients with cardiogenic shock.	IIa	C
CABG should be considered in patients with ongoing ischaemia and large areas of jeopardized myocardium if PCI of the IRA cannot be performed.	IIa	C

2017 Guidelines STEMI. European Heart Journal (2018) 39, 119–177

CONCLUSIONES

atos para una reperfusión efectiva

1- Tiempos
2- DAPT
3- Vía de Acceso
4- Anticoagulación – Antitrombosis
5- Tromboaspiracion
6- STENT: DES vs BMS – Directo vs Diferido
7- Solo ARI o MV?

CONCLUSIONES

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Muchas gracias