SAC 27 y 28 mayo 2022

SOCIEDAD ASTURIANA DE CARDIOLOGÍA

Congreso de la Sociedad Asturiana de Cardiología
Cangas de Narcea

SOCIEDAD ASTURIANA DE CARDIOLOGÍA

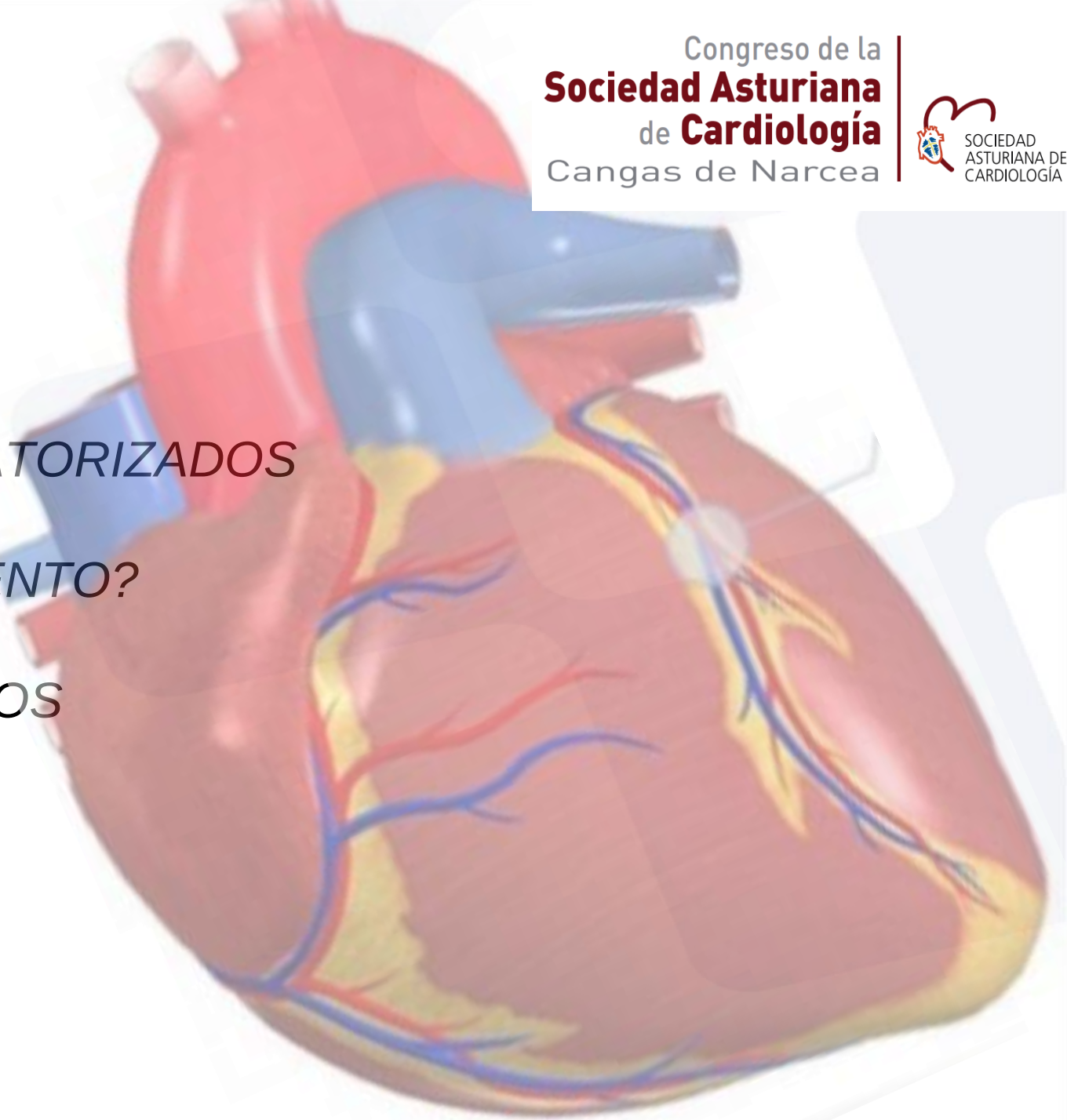
MANEJO DE **LESIONES NO CULPABLES** EN EL **SCACEST**

¿DÓNDE ESTAMOS?

Cangas del Narcea
28-05-2022

Rut Álvarez Velasco
FEA Cardiología HUCA

INDICE



INTRODUCCION AL PROBLEMA

- Es un problema frecuente. Entre un 30-50% de los pacientes con STEMI → Enfermedad Multivaso
- Son pacientes con peor pronóstico.
- Tema controvertido.

¿Pero es necesario revascularizar esas lesiones?

Guias mas antiguas: Recomendación Class III. (2012)

Guías actuales 2017: Recomiendan revascularización completa previo al alta IIa.

¿Son todos los pacientes iguales? ¿Todas las lesiones son iguales?

En nuestro centro…

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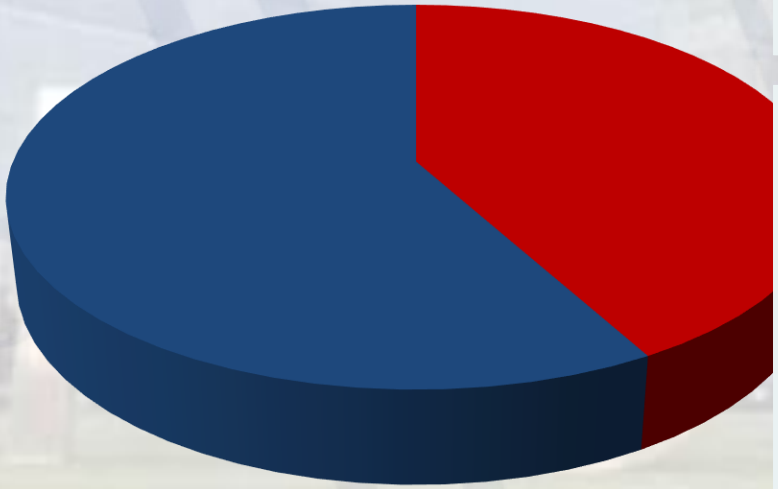
Cangas de Narcea

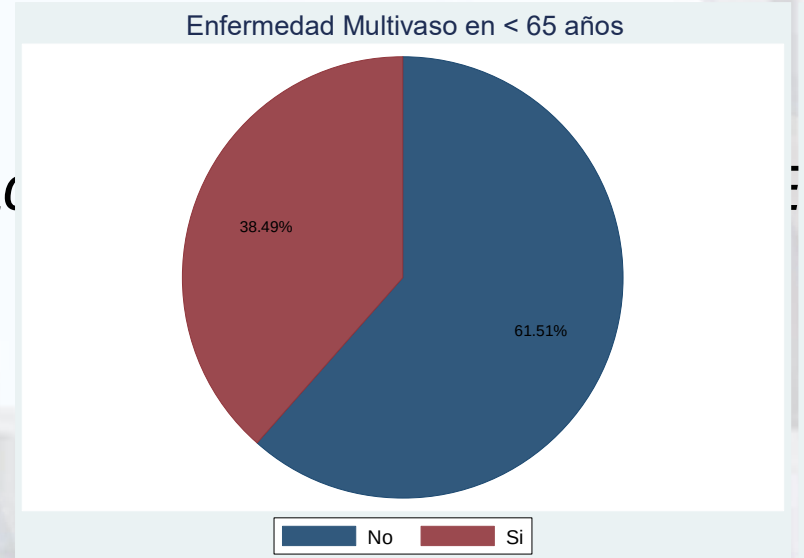
SOCIEDAD ASTURIANA DE CARDIOLOGÍA

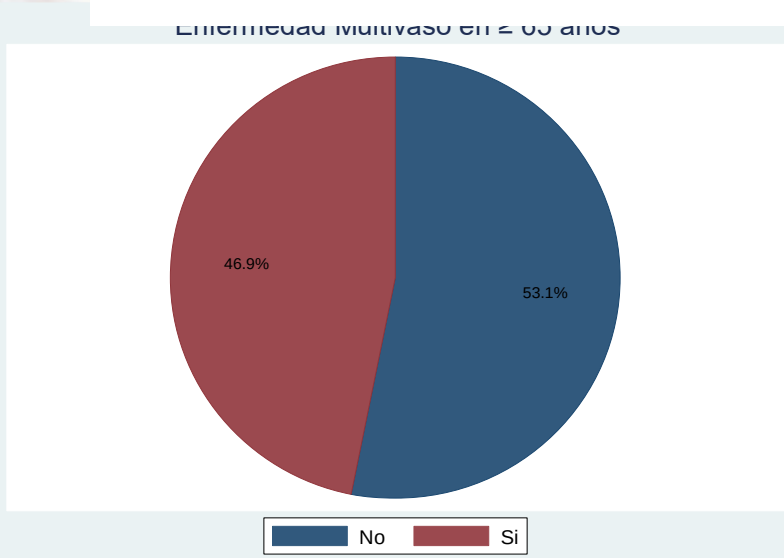
Desde 2014 a 2020 : 1722 pac

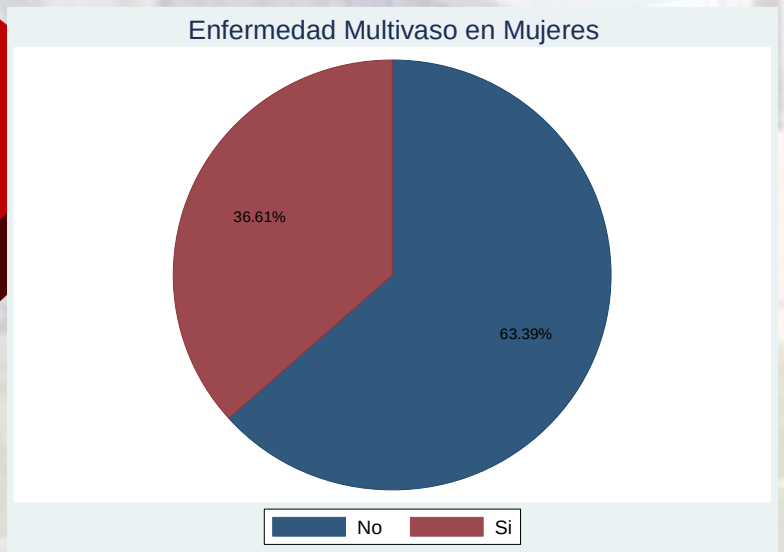
42,51 % Enf. Multivaso

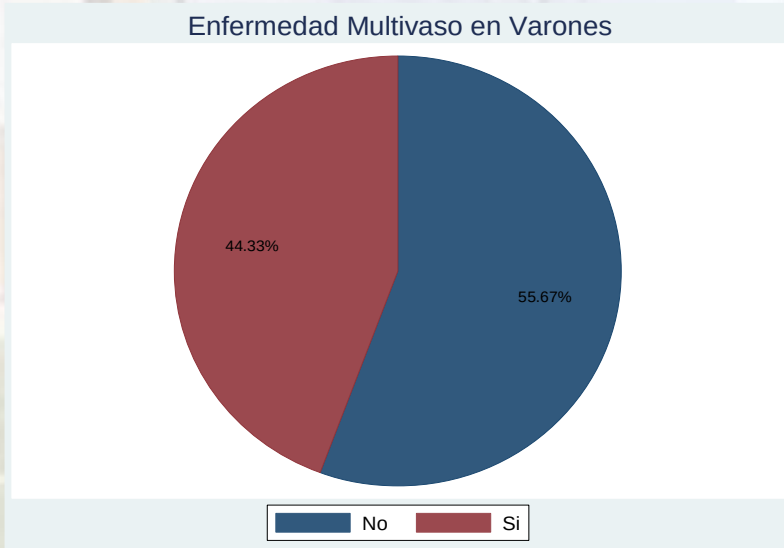
lesiones > 70% distinta arteria responsable











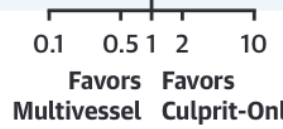
JACC: CARD

Mult
Rev
Mult
Meta-

All-Cause Mortality

Study	Multivessel Events	Multivessel Total	Culprit-Only Events	Culprit-Only Total	RR	95% CI	Weight
HELP AMI, 2004	1	52	0	17	1.00	0.04-23.44	0.5%
Politi, 2010	10	130	13	84	0.50	0.23-1.08	7.5%
Ghani, 2012	4	79	0	40	4.58	0.25-83.09	0.5%
PRAMI, 2013	12	234	16	231	0.74	0.36-1.53	8.6%
DANAMI-3-PRIMULTI, 2015	15	314	11	313	1.36	0.63-2.91	7.8%
PRAGUE-13, 2015	6	106	7	108	0.87	0.30-2.51	4.1%
CvLPRIT, 2015	4	150	10	146	0.39	0.12-1.21	3.5%
Hamza, 2016	1	50	4	50	0.25	0.03-2.16	1.0%
COMPARE ACUTE, 2017	4	295	10	590	0.80	0.25-2.53	3.4%
COMPLETE, 2019	96	2,016	106	2,025	0.91	0.70-1.19	62.9%
Random effects model		**3,426**		**3,604**	**0.85**	**0.68-1.05**	**100.0%**

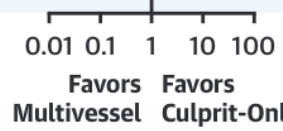
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.53



Reinfarction

Study	Multivessel Events	Multivessel Total	Culprit-Only Events	Culprit-Only Total	RR	95% CI	Weight
HELP AMI, 2004	1	52	1	17	0.33	0.02-4.95	1.3%
Politi, 2010	6	130	7	84	0.55	0.19-1.59	7.6%
Ghani, 2012	14	79	0	40	14.77	0.90-241.42	1.3%
PRAMI, 2013	7	234	20	231	0.35	0.15-0.80	11.0%
CvLPRIT, 2015	2	150	4	146	0.49	0.09-2.62	3.3%
DANAMI-3-PRIMULTI, 2015	15	314	16	313	0.93	0.47-1.86	14.7%
PRAGUE-13, 2015	11	106	8	108	1.40	0.59-3.35	10.4%
Hamza, 2016	1	50	2	50	0.50	0.05-5.34	1.8%
COMPARE ACUTE, 2017	7	295	28	590	0.50	0.22-1.13	11.5%
COMPLETE, 2019	109	2,016	160	2,025	0.68	0.54-0.87	37.0%
Random effects model		**3,426**		**3,604**	**0.69**	**0.50-0.95**	**100.0%**

Heterogeneity: I^2 = 24%, τ^2 = 0.0575, p = 0.22



A Stroke

Study	Multivessel Events	Multivessel Total	Culprit-only Events	Culprit-only Total	RR	95%-CI	Weight
CvLPRIT, 2015	2	150	2	146	0.97	[0.14; 6.82]	7.9%
DANAMI-3-PRIMULTI, 2015	4	314	1	313	3.99	[0.45; 35.47]	6.4%
PRAGUE-13, 2015	0	106	3	108	0.15	[0.01; 2.78]	3.5%
Hamza, 2016	0	50	1	50	0.33	[0.01; 7.99]	3.1%
COMPARE ACUTE, 2017	0	295	4	590	0.22	[0.01; 4.11]	3.6%
COMPLETE, 2019	38	2016	29	2025	1.32	[0.81; 2.13]	75.5%
Random effects model		**2931**		**3232**	**1.15**	**[0.65; 2.01]**	**100.0%**

Heterogeneity: I^2 = 5%, τ^2 = 0.0489, p = 0.38

Risk Ratio

0.01 0.1 1 10 100

Favors multivessel Favors culprit-only

B Contrast induced nephropathy

Study	Multivessel Events	Multivessel Total	Culprit-only Events	Culprit-only Total	RR	95%-CI	Weight	95%-CI	Weight
Politi, 2010	3	130	3	84	0.65	[0.13; 3.13]	8.1%	04; 23.44]	1.2%
PRAMI,2013	1	234	3	231	0.33	[0.03; 3.14]	3.9%	.15; 1.03]	11.3%
CvLPRIT, 2015	2	150	2	146	0.97	[0.14; 6.82]	5.3%	.13; 1.24]	8.4%
DANAMI-3-PRIMULTI,2015	6	314	7	313	0.85	[0.29; 2.51]	17.2%	.06; 1.32]	4.7%
Hamza, 2016	3	50	1	50	3.00	[0.32; 27.87]	4.0%	.19; 1.63]	9.3%
COMPLETE	30	2016	19	2025	1.59	[0.90; 2.81]	61.4%	.25; 3.97]	5.9%
								.65; 1.31]	59.3%
Random effects model		**2894**		**2849**	**1.25**	**[0.80; 1.95]**	**100.0%**		
								.50; 1.00]	**100.0%**

Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.58

Risk Ratio

0.1 0.5 1 2 10

Favors multivessel Favors culprit-only

B Rep

Major bleeding

Study	Multivessel Events	Multivessel Total	Culprit-only Events	Culprit-only Total	RR	95%-CI	Weight	RR	95%-CI	Weight
CvLPRIT, 2015	4	150	7	146	0.56	[0.17; 1.86]	18.6%	0.49	[0.20; 1.18]	7.3%
DANAMI-3-PRIMULTI, 2015	1	314	4	313	0.25	[0.03; 2.22]	6.8%	0.32	[0.18; 0.58]	12.4%
Hamza, 2016	0	50	0	50			0.0%	0.58	[0.31; 1.11]	11.1%
COMPARE ACUTE, 2017	3	295	8	590	0.75	[0.20; 2.81]	16.2%	0.34	[0.20; 0.59]	13.4%
COMPLETE, 2019	58	2016	44	2025	1.32	[0.90; 1.95]	58.4%	0.49	[0.21; 1.10]	8.1%
								0.33	[0.19; 0.55]	13.7%
								0.17	[0.02; 1.33]	1.7%
								0.35	[0.22; 0.57]	14.9%
								0.18	[0.12; 0.27]	17.6%
Random effects model		**2825**		**3124**	**0.92**	**[0.50; 1.67]**	**100.0%**	**0.34**	**[0.25; 0.44]**	**100.0%**

Heterogeneity: I^2 = 28%, τ^2 = 0.1203, p = 0.24

Risk Ratio

0.1 0.5 1 2 10

Favors multivessel Favors culprit-only

rit-only

ORIGINAL ARTICLE

Complete Revascularization with Multivessel PCI for Myocardial Infarction

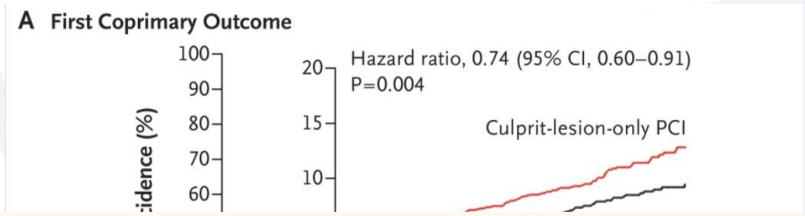
Shamir R. Mehta, M.D., David A. Wood, M.D., Robert F. Storey, M.D., Roxana Mehran, M.D., Kevin R. Bainey, M.D., Helen Nguyen, B.Sc., Brandi Meeks, M.Sc., Giuseppe Di Pasquale, M.D., Jose López-Sendón, M.D., David P. Faxon, M.D., Laura Mauri, M.D., Sunil V. Rao, M.D., et al., for the COMPLETE Trial Steering Committee and Investigators*

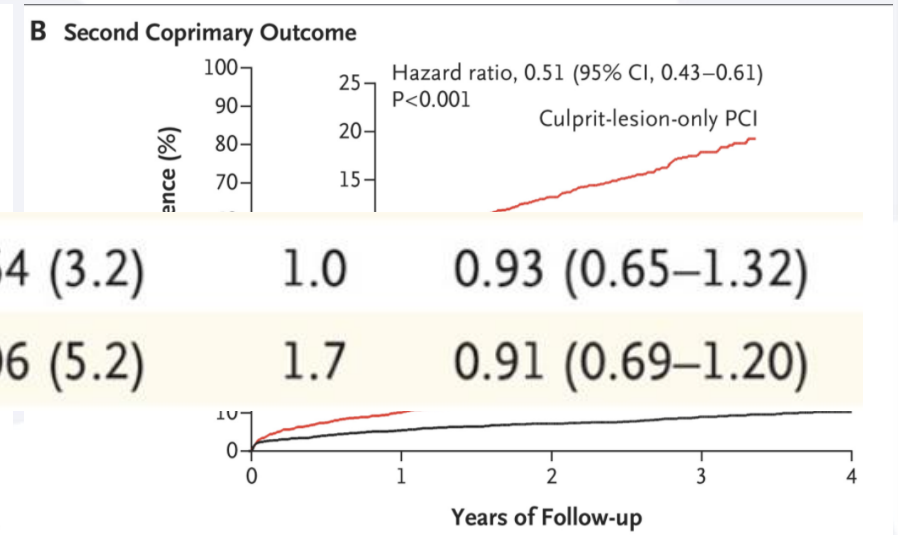
Pacientes **estenosis >70 %** o FFR +
Arterias >2,5 mm

4041 pacientes

Edad media: 62 a (SD: 10)
80% varones
20 % DM

Tratamiento: >99% Doble AA; 98% estatinas; 80 % BB e IECAS





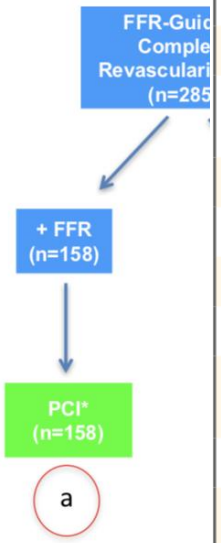
	59 (2.9)	1.0	64 (3.2)	1.0	0.93 (0.65–1.32)
	96 (4.8)	1.6	106 (5.2)	1.7	0.91 (0.69–1.20)
	109 (5.4)	1.9	160 (7.9)	2.8	0.68 (0.53–0.86)
	29 (1.4)	0.5	160 (7.9)	2.8	0.18 (0.12–0.26)
	70 (3.5)	1.2	130 (6.4)	2.2	0.53 (0.40–0.71)

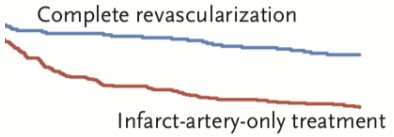
						P Value
Cardiovascular death or myocardial infarction	158 (7.8)	2.7	213 (10.5)	3.7	0.74 (0.60–0.91)	0.004
Cardiovascular death, myocardial infarction, or ischemia-driven revascularization	179 (8.9)	3.1	339 (16.7)	6.2	0.51 (0.43–0.61)	<0.001

Location of culprit lesion — no./total no. (%)†		
Left main coronary artery	3/1918 (0.2)	4/1940 (0.2)
Left anterior descending artery	660/1918 (34.4)	657/1940 (33.9)
Circumflex artery	346/1918 (18.0)	307/1940 (15.8)
Right coronary artery	909/1918 (47.4)	972/1940 (50.1)
No. of residual diseased vessels — no./total no. (%)†		
1	1458/1917 (76.1)	1492/1934 (77.1)
≥2	459/1917 (23.9)	442/1934 (22.9)
Location of nonculprit lesions — no./total no. of lesions (%)†		
Left main coronary artery	10/2731 (0.4)	3/2624 (0.1)
Left anterior descending artery	1037/2731 (38.0)	1080/2624 (41.2)
Proximal	267/2731 (9.8)	274/2624 (10.4)
Middle	592/2731 (21.7)	621/2624 (23.7)
Circumflex artery	993/2731 (36.4)	933/2624 (35.6)
Proximal left circumflex artery, obtuse marginal branch, and ramus intermedius artery	744/2731 (27.2)	697/2624 (26.6)
Distal left circumflex artery and posterior left ventricular branch	249/2731 (9.1)	236/2624 (9.0)
Right coronary artery	691/2731 (25.3)	608/2624 (23.2)

Table 3. Prespecified Clinical End Points at 1 Year.

End Point	Complete Revascularization (N=295)	Infarct-Artery-Only Treatment (N=590)	Hazard Ratio (95% CI)	P Value
	number (percent)			
Primary				
MACCE*	23 (7.8)	121 (20.5)	0.35 (0.22–0.55)	<0.001
Death from any cause	4 (1.4)	10 (1.7)	0.80 (0.25–2.56)	0.70
Cardiac event	3 (1.0)	6 (1.0)	1.00 (0.25–4.01)	1.00
Myocardial infarction	7 (2.4)	28 (4.7)	0.50 (0.22–1.13)	0.10
Spontaneous event	5 (1.7)	17 (2.9)	0.59 (0.22–1.59)	0.29
Periprocedural event	2 (0.7)	11 (1.9)	0.36 (0.08–1.64)	0.19
Revascularization	18 (6.1)	103 (17.5)	0.32 (0.20–0.54)	<0.001
PCI	15 (5.1)	98 (16.6)	0.37 (0.24–0.57)	<0.001
Coronary-artery bypass graft	3 (1.0)	5 (0.8)	1.20 (0.29–5.02)	0.80
Cerebrovascular event	0	4 (0.7)	NA	NA
Secondary				
NACE (any first event)	25 (8.5)	174 (29.5)	0.25 (0.16–0.38)	<0.001
Death from any cause) or myocardial infarction	11 (3.7)	38 (6.4)	0.57 (0.29–1.12)	0.10
Major bleeding	3 (1.0)	8 (1.4)	0.75 (0.20–2.84)	0.67
Any bleeding				
At 12 mo	9 (3.1)	28 (4.7)	0.64 (0.30–1.36)	0.25
At 48 hr	5 (1.7)	8 (1.4)	1.25 (0.41–3.83)	0.69
Hospitalization for heart failure, unstable angina, or chest pain	13 (4.4)	47 (8.0)	0.54 (0.29–0.99)	0.04
Any revascularization†	19 (6.4)	161 (27.3)	0.47 (0.29–0.76)	0.002
Stent thrombosis	2 (0.7)	1 (0.2)	0.58 (0.12–2.80)	0.50





Hazard ratio, 0.35 (95% CI, 0.22–0.55)
P<0.001 by log-rank test

3 6 9 12

Months

286 281 264 215

512 492 457 371

eier Event Curves of the Combined

composite of all-cause mortality, infarction, any revascularization, events.

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Multivessel PCI Guided by FFR or Angiography for Myocardial Infarction

Etienne Puymirat, M.D., Ph.D., Guillaume Cayla, M.D., Ph.D., Tabassome Simon, M.D., Ph.D., Philippe G. Steg, M.D., Gilles Montalescot, M.D., Ph.D., Isabelle Durand-Zaleski, M.D., Ph.D., Alicia le Bras, M.D., Romain Gallet, M.D., Ph.D., Khalife Khalife, M.D., Jean-François Morelle, M.D., Pascal Motreff, M.D., Ph.D., Gilles Lemesle, M.D., Ph.D., Jean-Guillaume Dillinger, M.D., Ph.D., Thibault Lhermusier, M.D., Ph.D., Johanne Silvain, M.D., Ph.D., Vincent Roule, M.D., Ph.D., Jean-Noel Labèque, M.D., Grégoire Rangé, M.D., Grégory Ducrocq, M.D., Ph.D., Yves Cottin, M.D., Didier Blanchard, M.D., Anaïs Charles Nelson, N.D., Bernard De Bruyne, M.D., Ph.D., Gilles Chatellier, M.D., and Nicolas Danchin, M.D., for the FLOWER-MI Study Investigators*

Table 3. Prespecified Clinical Outcomes at 1 Year.*

Any hospitalization in a cardiology department or service	68 (11.6)	46 (8.0)	1.49 (1.03–2.17)
Functional status			
Mean no. of antianginal medications used per patient‖	1.0±0.5	1.0±0.5	1.01 (0.90–1.14)**
QALY based on EQ-5D-5L score††	0.86±0.19	0.87±0.18	0.01 (0.00–0.01)**
Recurrent ischemia			
Patients with condition — no. (%)	32 (5.5)	19 (3.3)	0.82 (0.21–3.24)‡‡
Patients with CCS class ≥II — no./total no. (%)§§	20/32 (62.5)	13/19 (68.4)	—

Randomized Trial of Complete Versus Lesion-Only Revascularization in Patients Undergoing Primary Percutaneous Coronary Intervention for STEMI and Multivessel Disease

The CvLPRIT Trial

Long-Term Follow-Up of Complete Versus Lesion-Only Revascularization in STEMI and Multivessel Disease

The CvLPRIT Trial

Tiempo medio seguimiento: 5,6 años

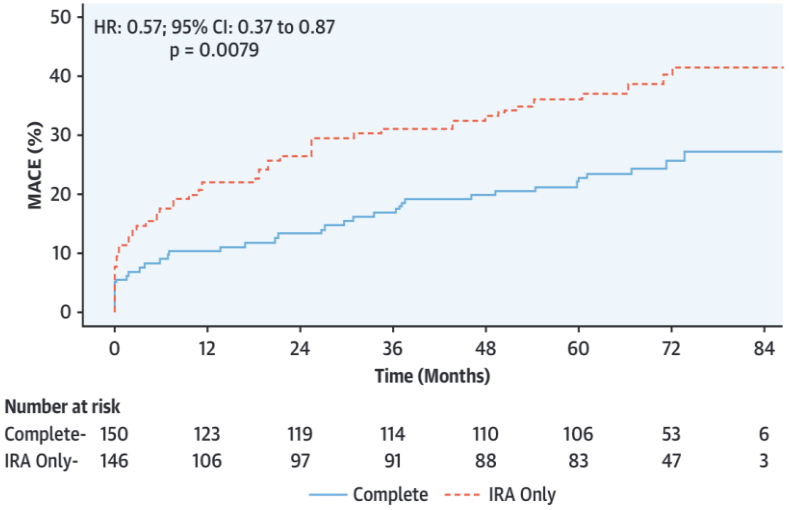
TABLE 1 Individual Components of MACE: Randomization to End of Long-Term Follow-Up

	Complete (n = 150)	IRA-Only (n = 146)	HR (95% CI)	p Value
Total MACE	36 (24.0)	55 (37.7)	0.57 (0.37-0.87)	0.0079
Death (all-cause)	9 (6.0)	15 (10.3)	0.51 (0.22-1.16)	0.1001
Recurrent MI	6 (4.0)	12 (8.2)	0.43 (0.16-1.15)	0.0837
Heart failure	4 (2.7)	9 (6.2)	0.42 (0.13-1.37)	0.1383
Ischemia-driven revascularization	17 (11.3)	19 (13.0)	0.76 (0.40-1.49)	0.4447
Death/MI	15 (10.0)	27 (18.5)	0.47 (0.25-0.89)	0.0175

Values are n (%) unless otherwise indicated.

CI = confidence interval; HR = hazard ratio; IRA = infarct-related artery; MACE = major adverse cardiovascular events; MI = myocardial infarction.

FIGURE 2 MACE for Randomization to Long-Term Follow-Up (First Event, Intention-to-Treat Analysis)



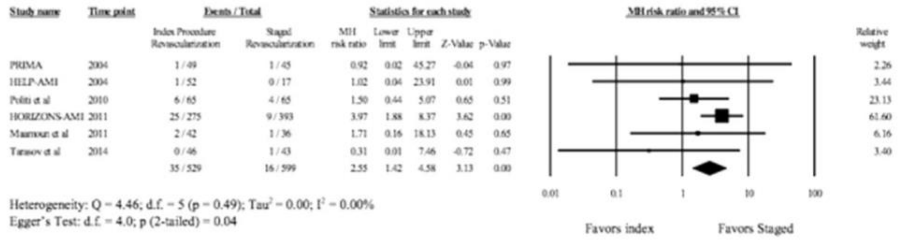
Kaplan-Meier curves indicating composite MACE (all-cause death, myocardial infarction, heart failure, and ischemia-driven revascularization) in the complete revascularization **(blue line)** and IRA-only **(red line)** groups, from randomization until end of longer-term follow-up. There is a significant reduction in MACE with the complete revascularization group compared with IRA-only PCI group (HR: 0.57; 95% CI: 0.37 to 0.87; p = 0.0079, log-rank test). CI = confidence interval; HR = hazard ratio; other abbreviations as in Figure 1.

¿CUÁNDO?

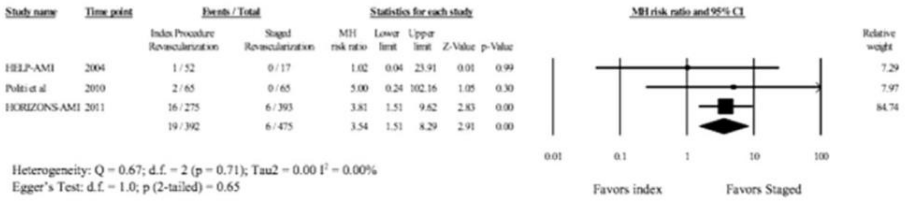
TABLE 2 Demographic Characteristics

	Tarasov et al[20]		Maamoun et al[19]		Politi et al[22]		PRIMA		HELP-AMI		HORIZONS-AMI	
Character (%)	MVI-I	MVI-S	MVI-I	MVI-S	MVI-I	MVI-S	MVI-I	MVI-S	MVI-I	MVI-S	MVI-I	MVI-S
Total (*n*)	46	43	42	36	65	65	48	44	52	17	275	393

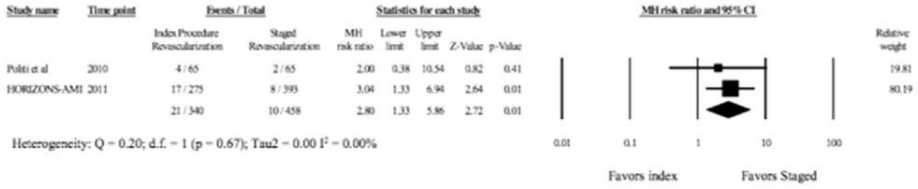
Incidence of all cause mortality



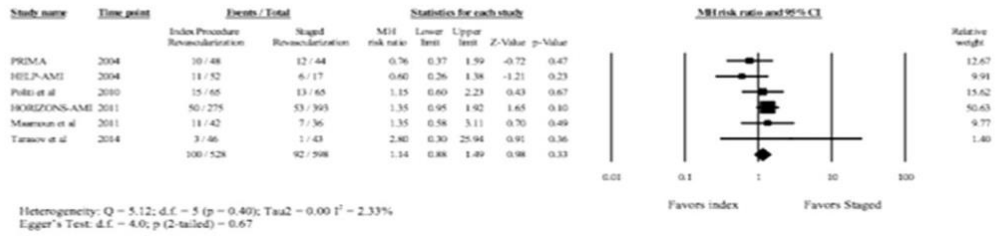
Incidence of short term mortality



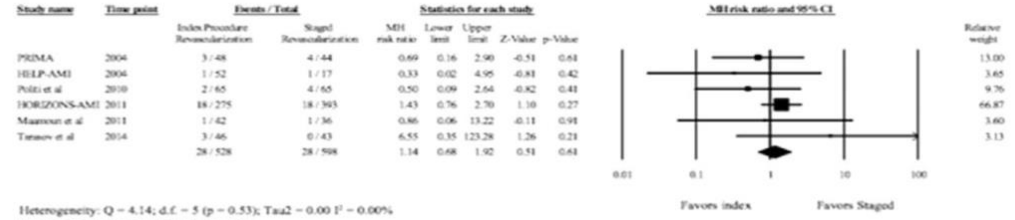
Incidence of cardiovascular mortality



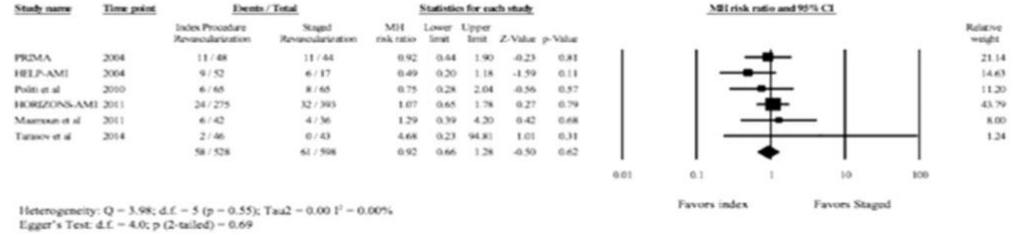
Incidence of MACE



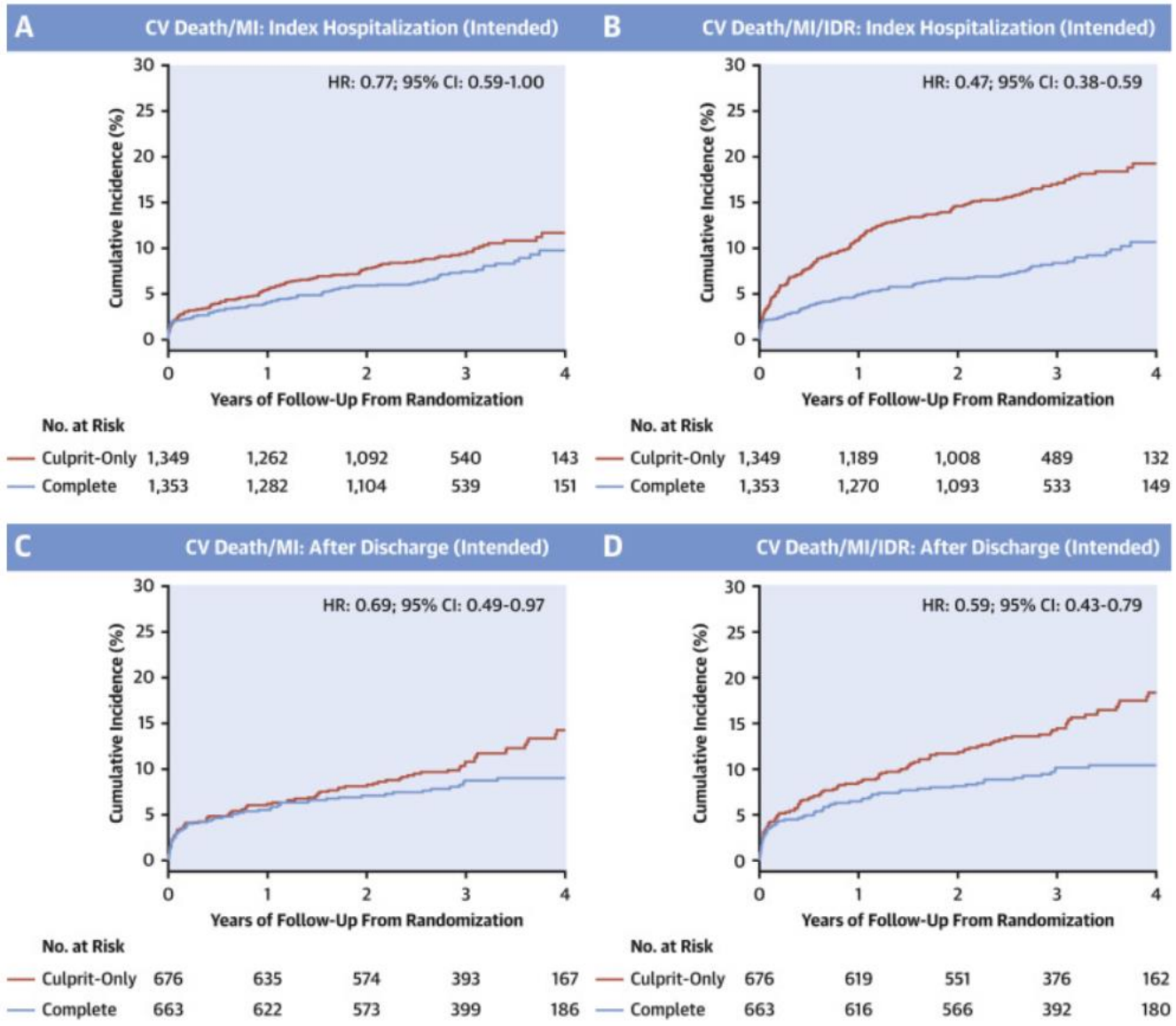
Incidence of repeat myocardial infarction



Incidence of repeat revascularization



No hay pulicados estudios aleatorizados index vs staged → Estudios en marcha: BioVasc FRAME-AMI (además incluye FFR guided revasc)


A
CV Death/MI: Index Hospitalization (Intended)
HR: 0.77; 95% CI: 0.59-1.00
Cumulative Incidence (%)
Years of Follow-Up From Randomization
No. at Risk
Culprit-Only 1,349 1,262 1,092 540 143
Complete 1,353 1,282 1,104 539 151
B
CV Death/MI/IDR: Index Hospitalization (Intended)
HR: 0.47; 95% CI: 0.38-0.59
Cumulative Incidence (%)
Years of Follow-Up From Randomization
No. at Risk
Culprit-Only 1,349 1,189 1,008 489 132
Complete 1,353 1,270 1,093 533 149
C
CV Death/MI: After Discharge (Intended)
HR: 0.69; 95% CI: 0.49-0.97
Cumulative Incidence (%)
Years of Follow-Up From Randomization
No. at Risk
Culprit-Only 676 635 574 393 167
Complete 663 622 573 399 186
D
CV Death/MI/IDR: After Discharge (Intended)
HR: 0.59; 95% CI: 0.43-0.79
Cumulative Incidence (%)
Years of Follow-Up From Randomization
No. at Risk
Culprit-Only 676 619 551 376 162
Complete 663 616 566 392 180

LIMITACIONES DE LOS ESTUDIOS

Los estudios van **a favor de un beneficio de la resvascularización**

-Menos eventos seguimiento (menos reinfartos y revascularización)

-Pero **SIN diferencias en mortalidad**

*Los estudios no detallan bien el tipo de lesiones que se incluyen

*No incluyen pacientes frágiles, ni de edad avanzada.

Estudios fisiológicos prometían similares resultados pero con menor número de revascularizaciones. El FFR en el IAM agudo no ha demostrado mejorar los resultados.

CONCLUSIONES

La revascularización completa en la enfermedad multivaso ha demostrado **una disminución de las revascularizaciones** durante el seguimiento, **sin demostrar mejoría mortalidad total ni cardiovascular.**

Los **pacientes** de los estudios **son muy seleccionados**: *Edad media baja, no dan detalles del tipo del lesiones, no representan pacientes frágiles*.

No esta claro cuál es el mejor momento de realizar la revascularización completa (agudo, subagudo o diferido). Actualmente ensayos aleatorizados en marcha.

La revascularización guiada por **estudios fisiológicos** (FFR) **no ha demostrado ser superior a la guiada por angiografía** en el SCACEST.


Gracias!