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TRATAMIENTO PERCUTÁNEO DEL FORAMEN OVAL PERMEABLE EN EL ICTUS CRIPTOGÉNICO

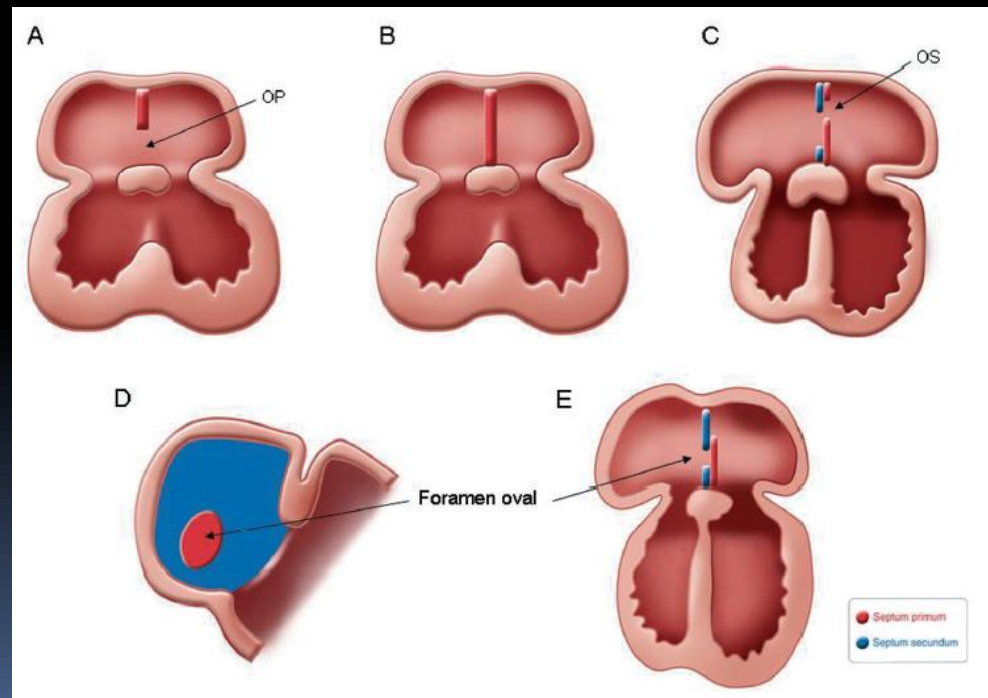


Agenda

- Introducción
 - Diagnóstico
 - Asociación del FOP y EVC
 - Evidencia tratamiento médico
 - Evidencia tratamiento percutáneo
 - Evidencia más reciente
 - Migraña y FOP
 - Pacientes CHUVI
- 

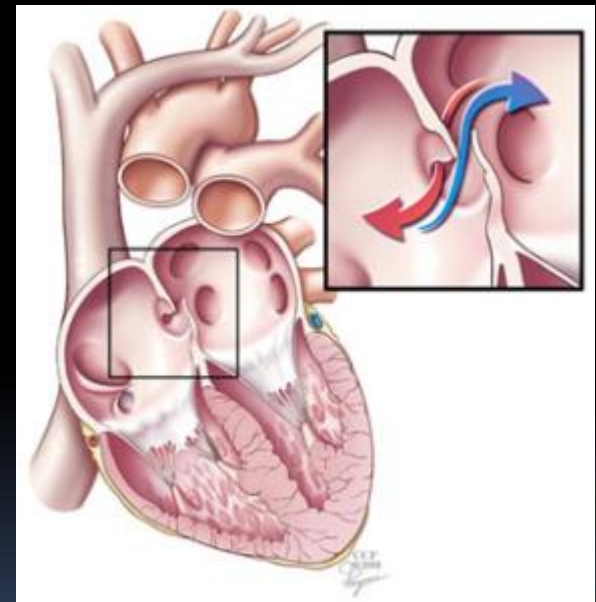
Introducción

- Falta de fusión del septums
- 25% de incidencia en el adulto



Introducción

- Relación con:
 - **Ictus criptogénico**
 - Migraña
 - Sd. Platipnea ortodesoxia
 - Enf. por descompresión

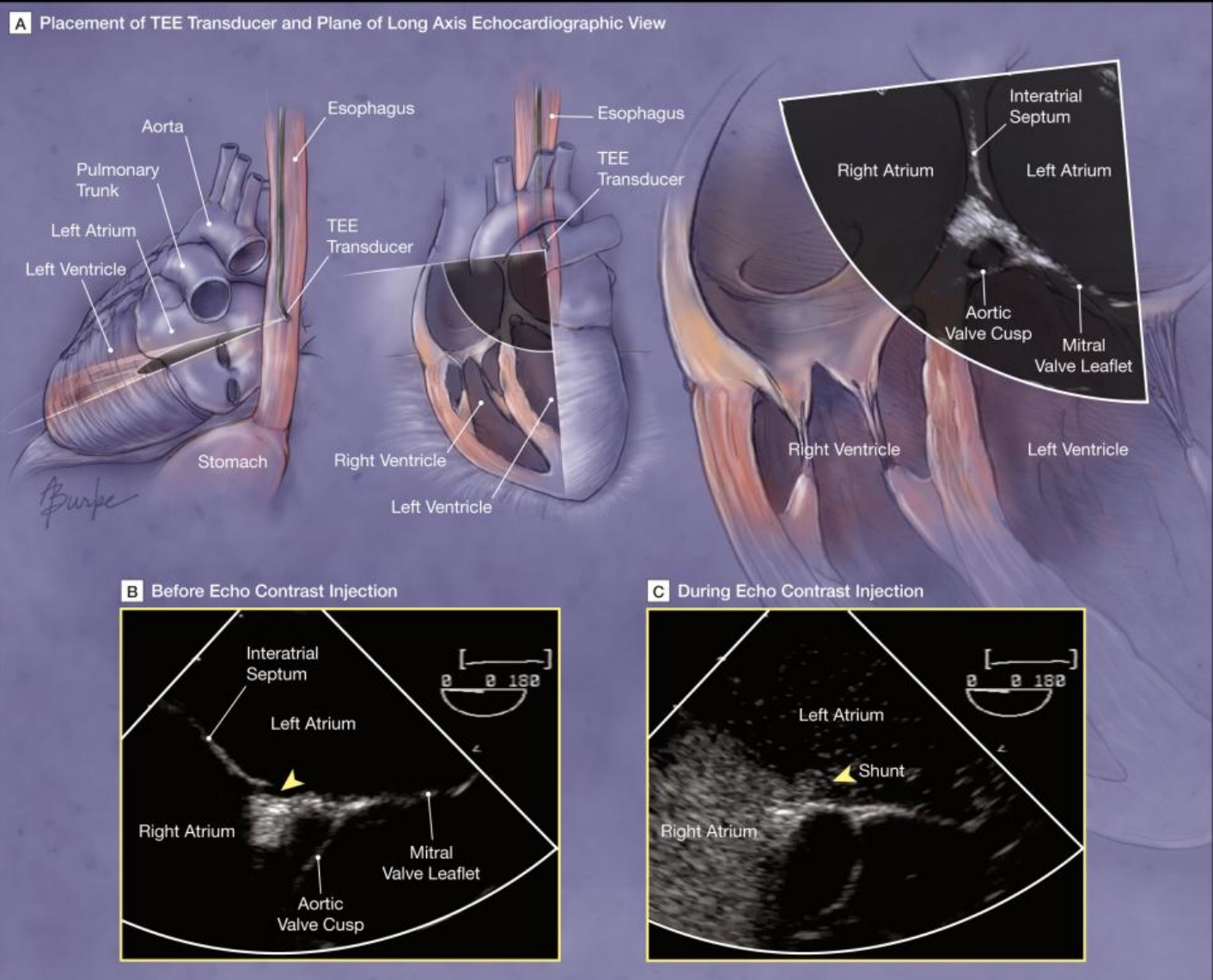


Introducción

- FOP papel importante en la circulación fetal
- Morfología variable
- Mayor riesgo de embolia
 - Defectos > 5mm
 - Aneurisma del septo (35% de los FOP)
 - V. de Eustaquio prominente

Diagnóstico

- Eco Dop
- Inyección
- Maniobra
- Sensibilización



Morfología del FOP



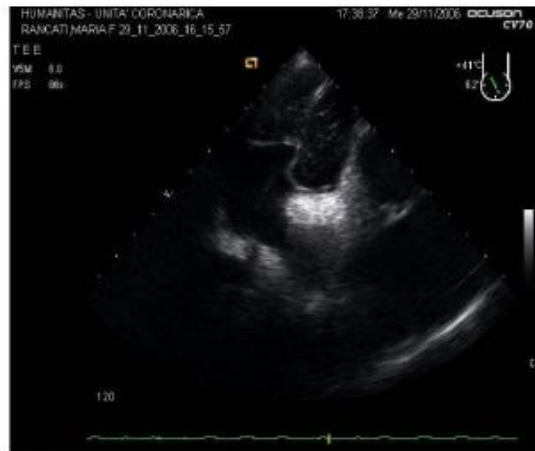
SIMPLE: 150 (32.82%)



TUNNEL: 154 (33.70%)



CRIBRIFORM: 15 (3.28%)

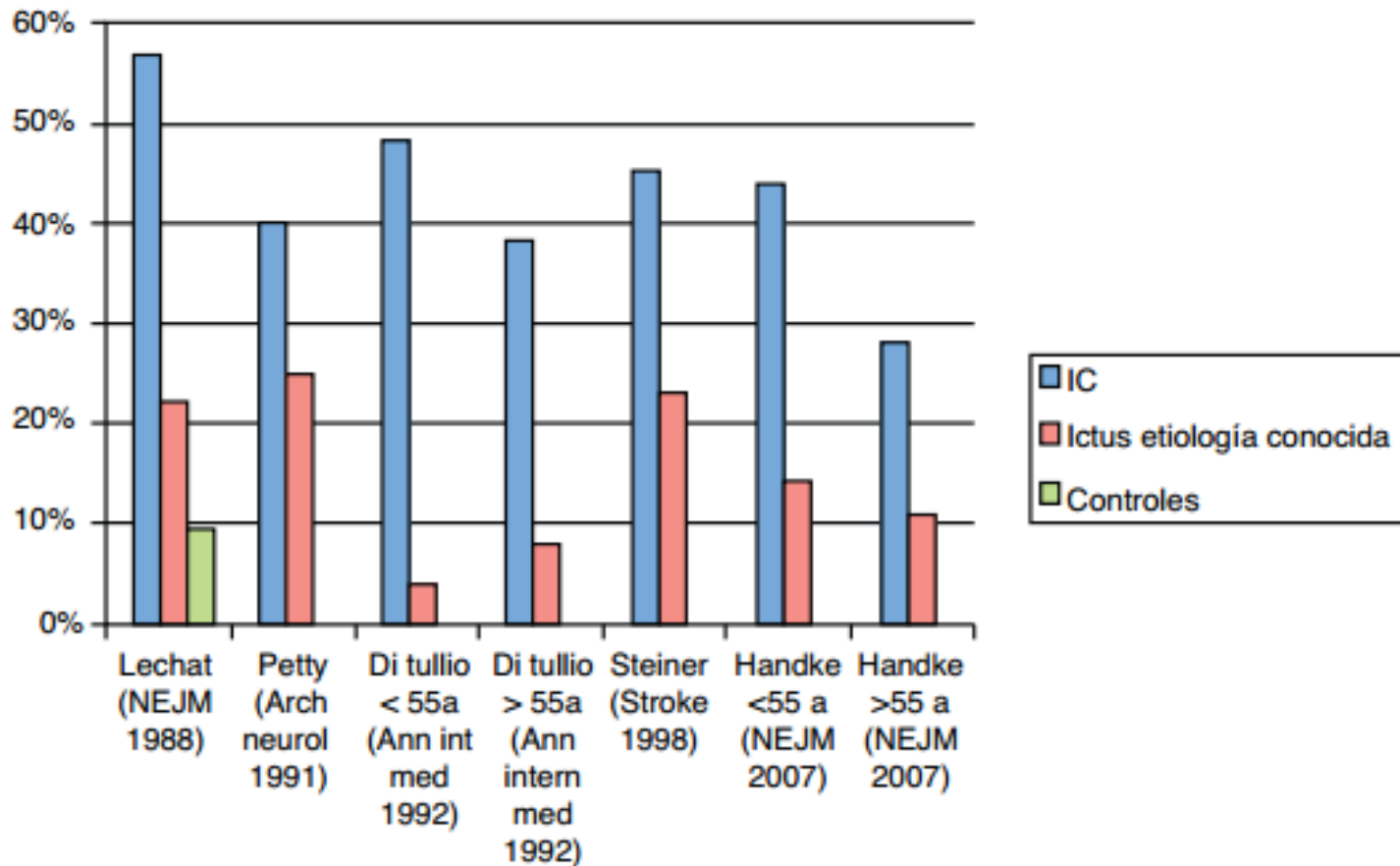


ASA: 169 (36.98%)



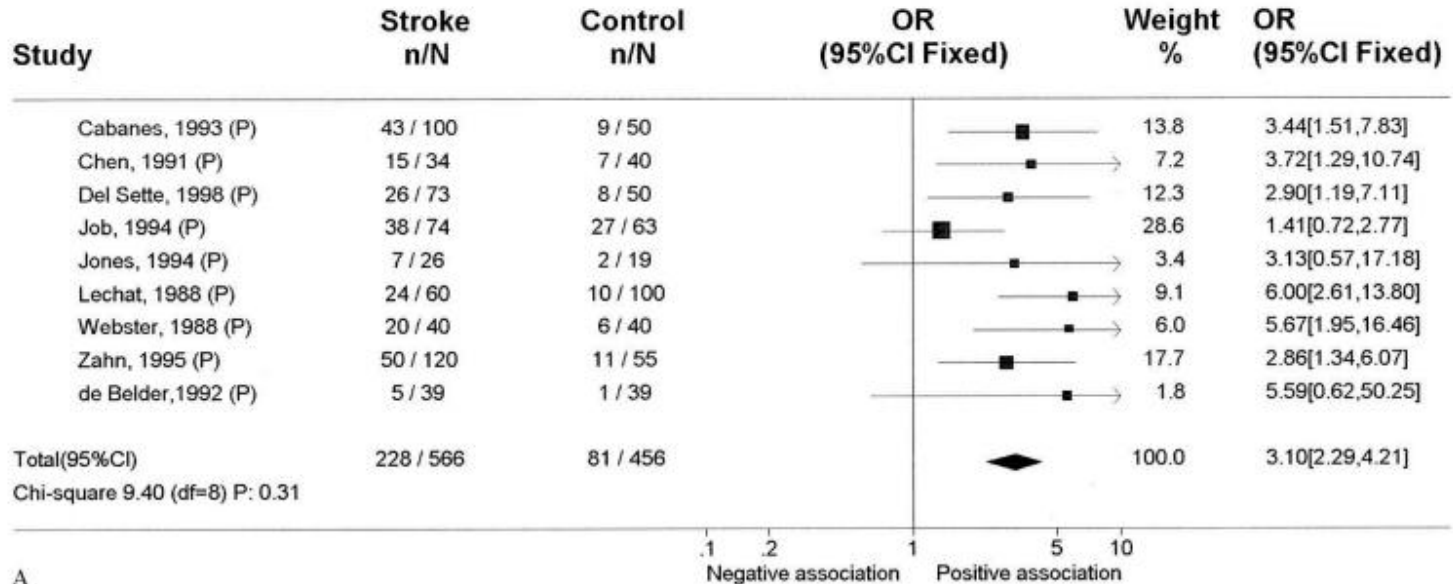
Redundant IAS: 51 (11.16%)

Relación del FOP y ACV

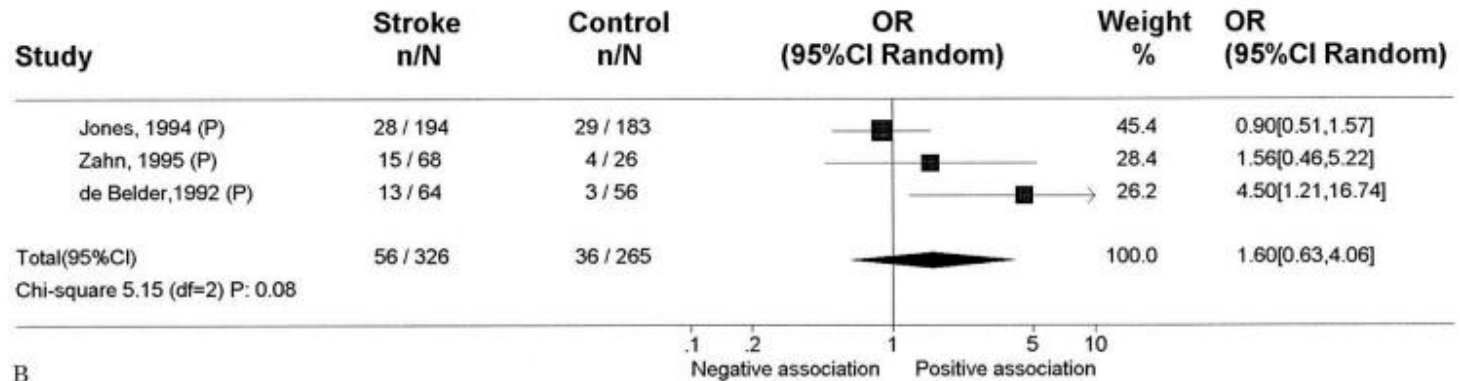


Asociación de EVC y FOP

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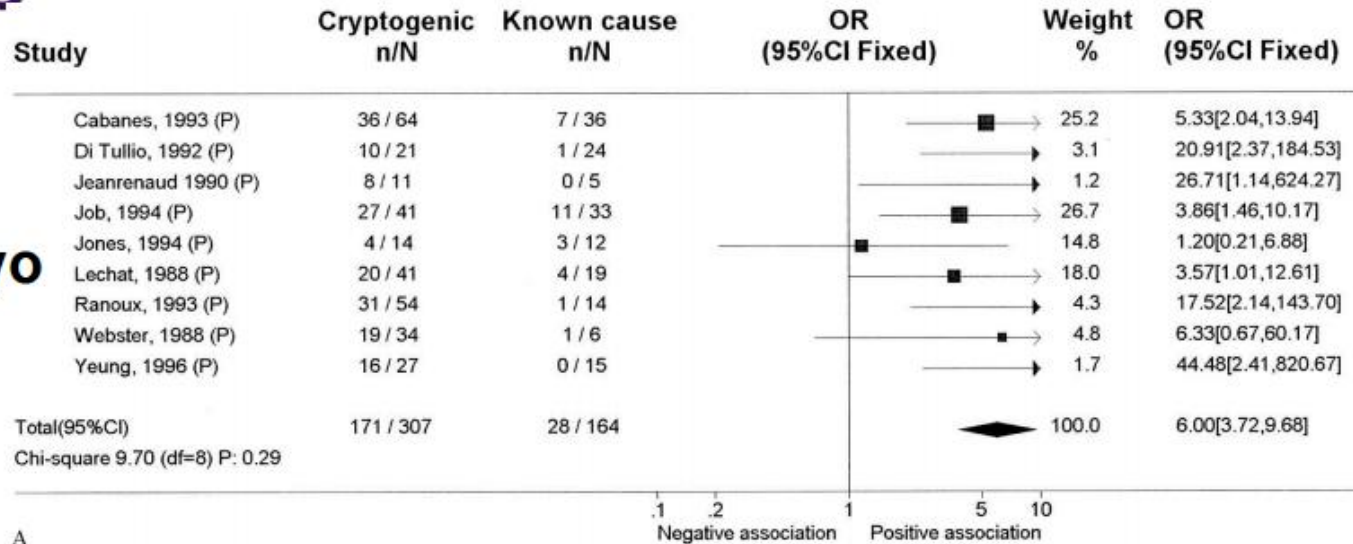


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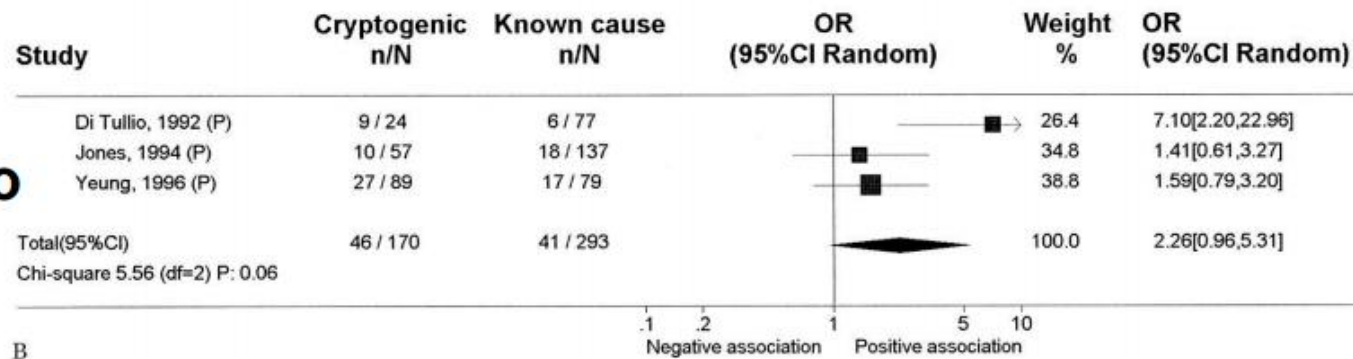


Asociación de EVC Criptogénico y FOP

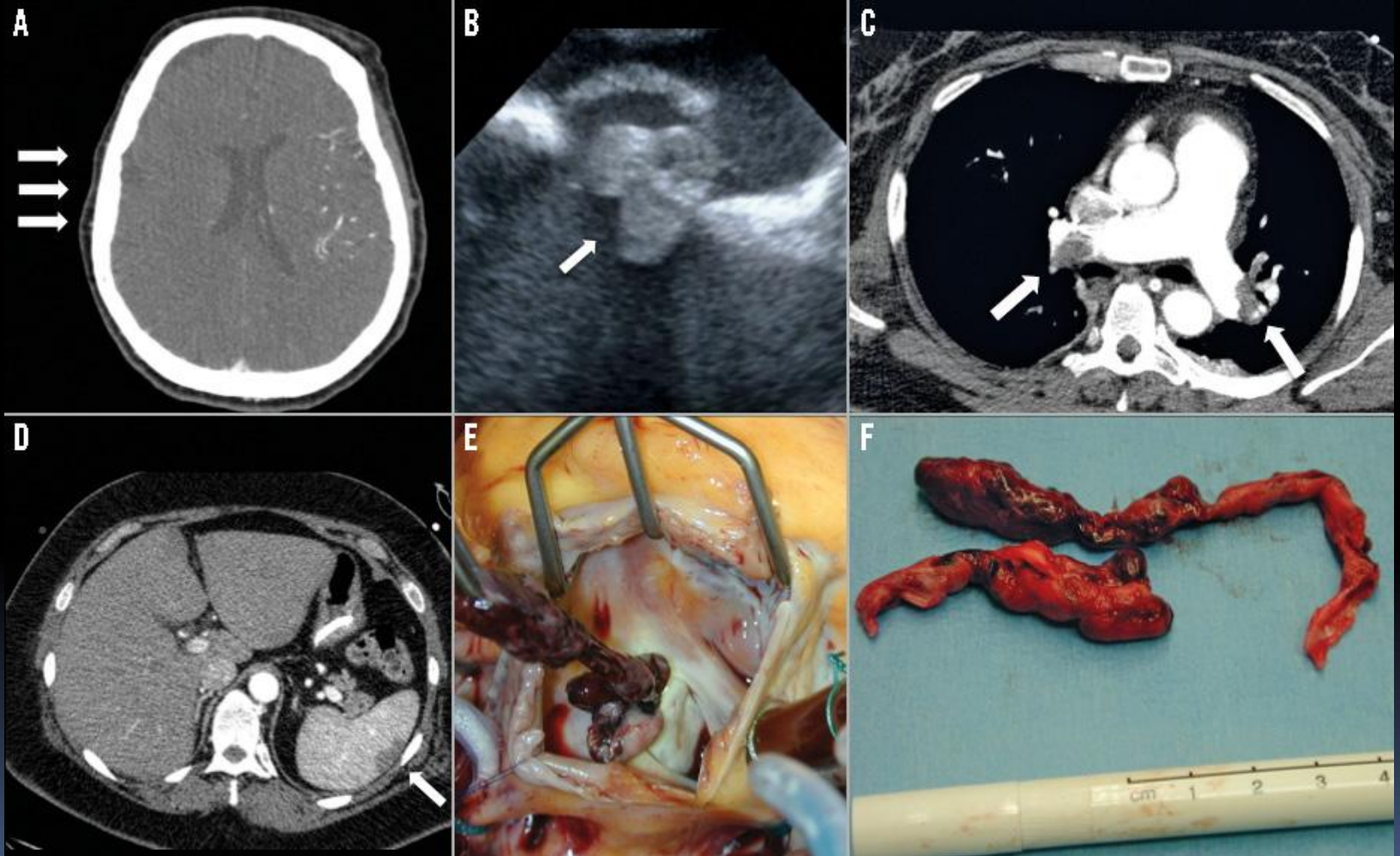
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Relación del FOP y ACV



Tratamiento



The New England Journal of Medicine

**A COMPARISON OF WARFARIN AND ASPIRIN FOR THE PREVENTION
OF RECURRENT ISCHEMIC STROKE**

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J.P. KISTLER, M.D., G.W. ALBERS, M.D., L.C. PETTIGREW, M.D., H.P. ADAMS, JR., M.D., C.M. JACKSON, M.D.,
AND P. PULLICINO, M.D., FOR THE WARFARIN-ASPIRIN RECURRENT STROKE STUDY GROUP*

WARSS

CHARACTERISTIC	WARFARIN (N=1103)	ASPIRIN (N=1103)	CHARACTERISTIC	WARFARIN (N=1103)	ASPIRIN (N=1103)
Clinical and demographic characteristics			Characteristics of initial stroke		
Age — yr	63.3±11.2	62.6±11.4	Duration of symptoms — no. (%)		
Female sex — no. (%)	447 (40.5)	450 (40.8)	≤24 hr, with clinically relevant infarct on CT or MRI	74 (6.7)	66 (6.0)
Race or ethnic group — no. (%)			>24 hr, with clinically relevant infarct on CT or MRI	729 (66.1)	769 (69.7)
White	627 (56.8)	626 (56.8)	>24 hr, without clinically relevant infarct on CT or MRI	300 (27.2)	268 (24.3)
Black	338 (30.6)	325 (29.5)	Presumed cause of prior stroke — no. (%)		
Hispanic	105 (9.5)	118 (10.7)	Cryptogenic	281 (25.5)	295 (26.7)
Other	33 (3.0)	34 (3.1)	Small-vessel or lacunar	612 (55.5)	625 (56.7)
Education — no. (%)			Large-artery, severe stenosis, or occlusion	144 (13.1)	115 (10.4)
High school or less	805 (73.0)	796 (72.2)	Other determined cause	30 (2.7)	33 (3.0)
After high school	287 (26.0)	295 (26.7)	Conflicting mechanism	36 (3.3)	35 (3.2)
Unknown	11 (1.0)	12 (1.1)	Lesion found on brain imaging — no. (%)		
Hypertension — no. (%)			Superficial, cortical, or cerebellar	143 (13.0)	137 (12.4)
Yes	746 (67.6)	753 (68.3)	Large deep (basal ganglia and other)	77 (7.0)	102 (9.2)
No	343 (31.1)	338 (30.6)	Superficial and deep combined	126 (11.4)	110 (10.0)
Unknown	14 (1.3)	12 (1.1)	Small deep	315 (28.6)	333 (30.2)
Diabetes mellitus — no. (%)			Brain stem	110 (10.0)	134 (12.1)
Yes	367 (33.3)	338 (30.6)	No primary lesion visible on scan	304 (27.6)	264 (23.9)
No	733 (66.5)	763 (69.2)	Unknown	28 (2.5)	23 (2.1)
Unknown	3 (0.3)	2 (0.2)	Glasgow score — no. (%)‡		
Any cardiac disease — no. (%)†			2	0	0
Yes	250 (22.7)	254 (23.0)	3	78 (7.1)	90 (8.2)
No	822 (74.5)	824 (74.7)	4	327 (29.6)	319 (28.9)
Unknown	31 (2.8)	25 (2.3)	5	698 (63.3)	694 (62.9)
History of transient ischemic attack, amaurosis fugax, or stroke — no. (%)			Barthel Index§		
Yes	321 (29.1)	308 (27.9)	95 to 100 — no. (%)	806 (73.1)	765 (69.4)
No	731 (66.3)	740 (67.1)	65 to 90 — no. (%)	214 (19.4)	246 (22.3)
Unknown	51 (4.6)	55 (5.0)	0 to 60 — no. (%)	83 (7.5)	92 (8.3)
Current smoking — no. (%)			Mean score	91.8±15.3	90.8±16.4
Yes	306 (27.7)	337 (30.6)			
No	792 (71.8)	761 (69.0)			
Unknown	5 (0.5)	5 (0.5)			
Heavy alcohol intake (≥4 drinks/day) — no. (%)					
Yes	40 (3.6)	34 (3.1)			
No	1060 (96.1)	1060 (96.1)			
Unknown	3 (0.3)	9 (0.8)			

WARSS

TABLE 2. RESULTS OF PRIMARY AND SECONDARY ANALYSES.

ANALYSIS	EVENTS		PROBABILITY OF EVENT AT 2 Yr*		HAZARD RATIO (95% CI)†	P VALUE‡
	WARFARIN	ASPIRIN	WARFARIN	ASPIRIN		
	no. with events/total no.					
Primary and secondary analyses						
Recurrent ischemic stroke or death	196/1103	176/1103	17.8	16.0	1.13 (0.92–1.38)	0.25
Recurrent ischemic stroke or death or major hemorrhage	222/1103	196/1103	20.0	17.8	1.15 (0.95–1.39)	0.16
Recurrent ischemic stroke or death, with data from patients lost to follow-up censored	195/1103	174/1103	17.6	15.9	1.13 (0.92–1.39)	0.24
Recurrent ischemic stroke or death (model including interaction of treatment assignment and interruption of treatment)	196/1103	176/1103				
Subgroup analyses for primary end point						
Sex						
Male	122/656	101/653	18.5	15.4	1.23 (0.95–1.61)	0.12
Female	74/447	75/450	16.2	16.8	0.98 (0.71–1.36)	0.92
Race or ethnic group						
Black	70/338	59/325	20.2	18.4	1.14 (0.81–1.62)	0.45
White	98/627	90/626	15.5	14.3	1.10 (0.83–1.47)	0.50
Hispanic	21/105	21/118	20.1	17.9	1.14 (0.62–2.09)	0.66
Other	7/33	6/34	21.2	17.6	1.18 (0.40–3.50)	0.77
Cause of prior stroke						
Cryptogenic	42/281	48/295	15.0	16.5	0.92 (0.61–1.39)	0.68
Small vessel or lacunar	107/612	95/625	17.1	15.2	1.15 (0.88–1.52)	0.31
Large artery, severe stenosis, or occlusion	27/144	18/115	18.8	15.7	1.22 (0.67–2.22)	0.51
Other determined cause	11/30	7/33	36.7	21.2	1.99 (0.77–5.15)	0.15
Conflicting mechanism	9/36	8/35	25.0	23.0	1.14 (0.44–2.96)	0.79

WARSS

TABLE 3. ADVERSE EVENTS ACCORDING TO TREATMENT ASSIGNMENT.*

EVENT	WARFARIN (N=1103)	ASPIRIN (N=1103)	ODDS RATIO (95% CI)	P VALUE ^T
	no. (%)			
Death	47 (4.3)	53 (4.8)	0.88 (0.58–1.32)	0.61
Related to hemorrhage	7 (0.6)	5 (0.4)	1.40 (0.42–5.13)	0.77
First hemorrhage [‡]				
Major	38 (3.4)	30 (2.7)	1.28 (0.78–2.10)	0.39
Minor	261 (23.7)	188 (17.0)	1.51 (1.22–1.87)	<0.001
			RATE RATIO (95% CI)	P VALUE [§]
	no. of events (rate/100 patient-yr)			
All hemorrhages [¶]				
Major	44 (2.2)	30 (1.5)	1.48 (0.93–2.44)	0.10
Minor	413 (20.8)	259 (12.9)	1.61 (1.38–1.89)	<0.001

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Closure or Medical Therapy for Cryptogenic Stroke with Patent Foramen Ovale

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Laura Mauri, M.D., Harold Adams, M.D., Gregory W. Albers, M.D.,
Robert Felberg, M.D., Howard Herrmann, M.D., Saibal Kar, M.D.,
Michael Landzberg, M.D., Albert Raizner, M.D.,
and Lawrence Wechsler, M.D., for the CLOSURE I Investigators*

Closure I

Table 1. Baseline Characteristics of the Patients.*

Characteristic	Closure (N = 447)	Medical Therapy (N = 462)	P Value	
Age — yr				
Mean†	46.3±9.6	45.7±9.1	0.39	
Range	18–60	18–60		
Male sex — no. of patients (%)	233 (52.1)	238 (51.5)	0.89	
Race or ethnic group — no. of patients (%)‡			0.53	
Asian	7 (1.6)	8 (1.7)		
Black	19 (4.2)	26 (5.6)		
White	398 (89.0)	414 (89.6)		
Hispanic or Latino				
Cigarette smoking during the previous year — no. of patients/total no. (%)				
Myocardial infarction		7 (1.6)	5 (1.1)	0.57
Valvular dysfunction		49 (11.0)	45 (9.7)	0.59
Arrhythmia		26 (5.8)	19 (4.1)	0.28
Catheterization		23 (5.1)	17 (3.7)	0.33
PTCA		6 (1.3)	2 (0.4)	0.17
Peripheral vascular disease		5 (1.1)	7 (1.5)	0.77
Stokes–Adams syndrome		4 (0.9)	3 (0.6)	0.72
Pulmonary embolus		0	4 (0.9)	0.12
Pericarditis		2 (0.4)	3 (0.6)	1.00
Cardiomyopathy		1 (0.2)	0	0.49
Index neurologic event for study entry — no. of patients/total no. (%)				0.71
Cryptogenic stroke		324/446 (72.6)	329/461 (71.4)	
TIA		122/446 (27.4)	132/461 (28.6)	
Result on TEE — no. of patients (%)				
Moderate or substantial shunt		250 (55.9)	231 (50.0)	0.07
Atrial septal aneurysm ≥10 mm		168 (37.6)	165 (35.7)	0.56

Closure I

Table 2. Kaplan–Meier Event Rates for Primary End Point at 2 Years.*

End Point	Closure (N = 447)	Medical Therapy (N = 462)	Hazard Ratio (95% CI)†‡	P Value†
Intention-to-treat population				
Composite end point — no. (%)	23 (5.5)	29 (6.8)	0.78 (0.45–1.35)	0.37
Stroke — no. (%)	12 (2.9)	13 (3.1)	0.90 (0.41–1.98)	0.79
TIA — no. (%)	13 (3.1)	17 (4.1)	0.75 (0.36–1.55)	0.44
Modified intention-to-treat population				
Composite end point — no./total no. (%)	22/400 (5.6)			
Stroke — no./total no. (%)	12/400 (3.1)			
TIA — no./total no. (%)	12/400 (3.0)			
Per-protocol population				
Composite end point — no./total no. (%)	22/378 (5.8)			
Stroke — no./total no. (%)	12/378 (3.2)			
TIA — no./total no. (%)	12/378 (3.2)			

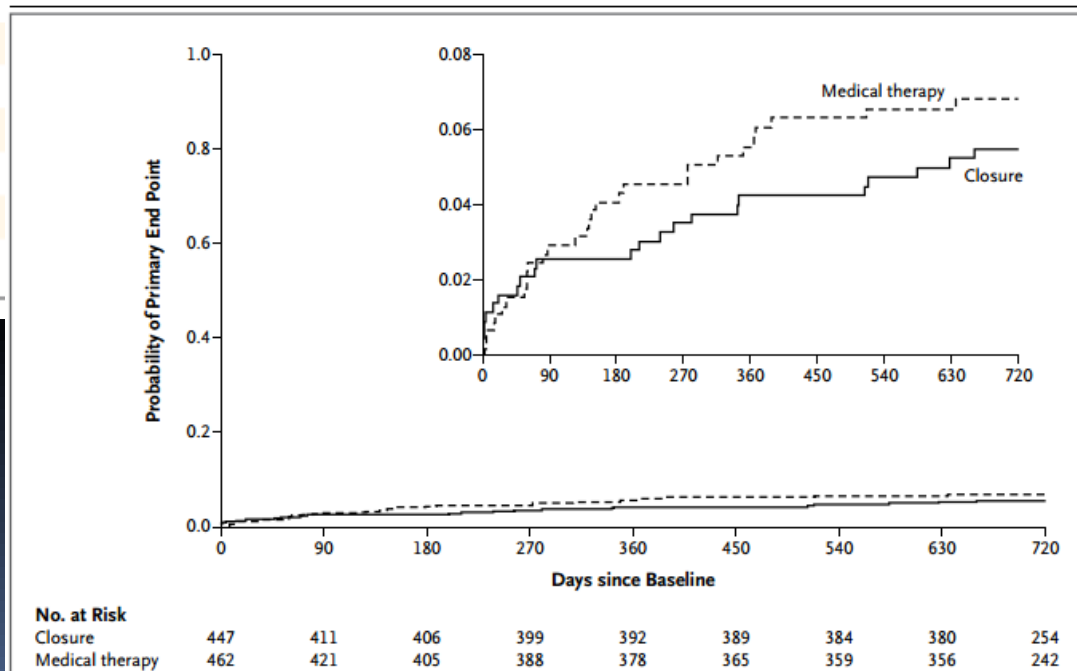


Figure 1. Kaplan–Meier Curve of Time to Primary End Point through 2 Years of Follow-up in the Closure and Medical-Therapy Groups.

Closure I

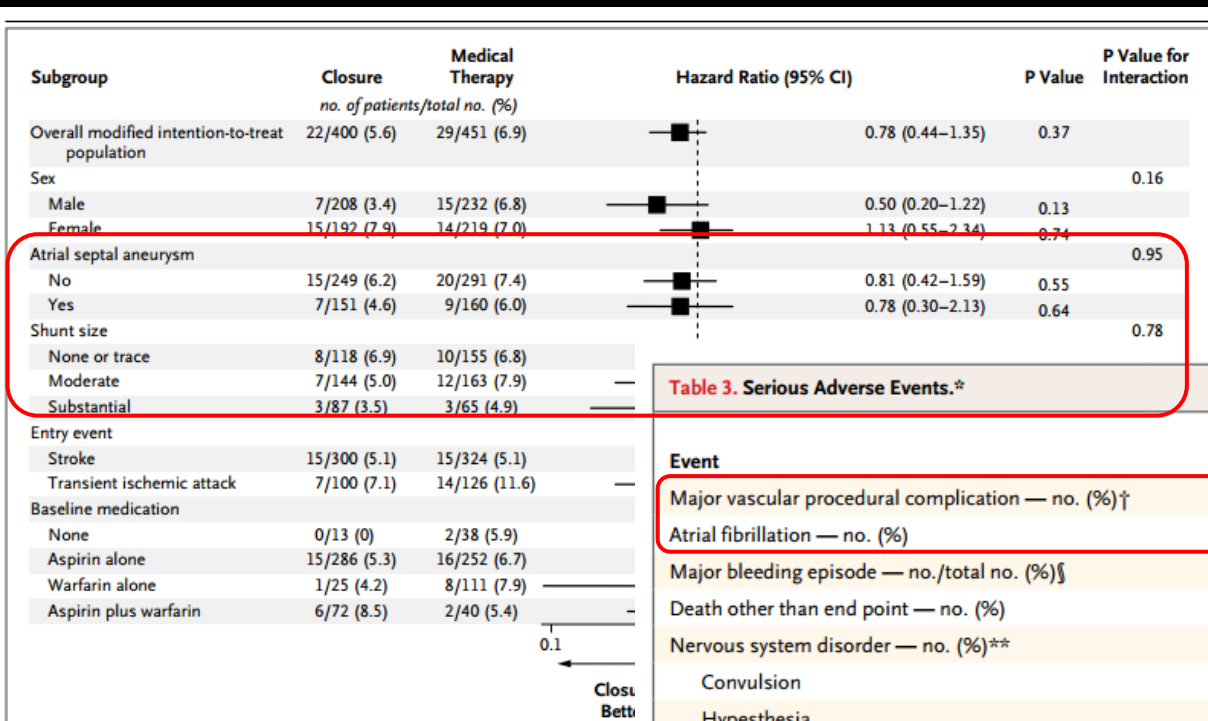


Table 3. Serious Adverse Events.*

Event	Closure (N = 402)	Medical Therapy (N = 458)	P Value
Major vascular procedural complication — no. (%)†	13 (3.2)	0	<0.001
Atrial fibrillation — no. (%)	23 (5.7)‡	3 (0.7)	<0.001
Major bleeding episode — no./total no. (%)§	10/378 (2.6)	4/374 (1.1)	0.11
Death other than end point — no. (%)	2 (0.5)¶	4 (0.9) ||	0.51
Nervous system disorder — no. (%)**	6 (1.5)	16 (3.5)	0.15
Convulsion	1	3	
Hypesthesia	2	2	
Migraine	1	3	
Headache	0	2	
Syncope	0	2	
Amyotrophic lateral sclerosis	0	1	
Brain abscess	0	1	
Facial palsy	1	0	
Loss of consciousness	0	1	
Paresthesia	0	1	
Parkinson's disease	1	0	
Any serious adverse event — no. (%)	68 (16.9)	76 (16.6)	0.90

Figure 2. Results of Primary-End-Point Analysis at 2 Years, According to Baseline Medication. Percentages in parentheses are Kaplan–Meier estimates of the event rate.

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Percutaneous Closure of Patent Foramen Ovale
in Cryptogenic Embolism

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PC Trial

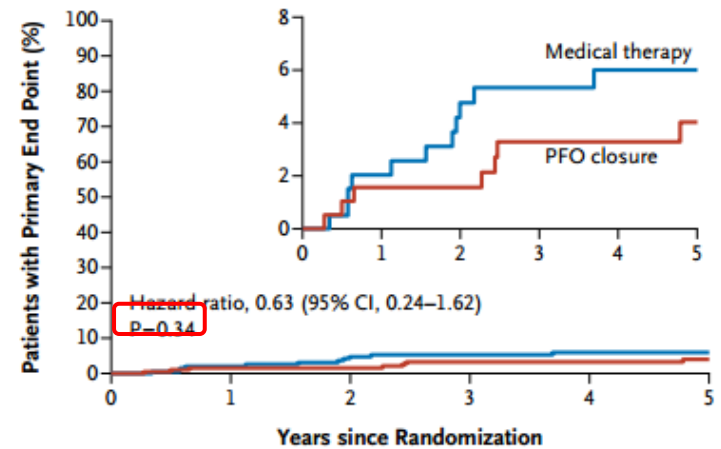
Table 1. Baseline Characteristics of the Patients.*

Characteristic	PFO Closure (N= 204)	Medical Therapy (N= 210)
Age — yr	44.3±10.2	44.6±10.1
Male sex — no. (%)	92 (45.1)	114 (54.3)
Body-mass index†	26.6±5.6	26.3±4.8
Family history of cerebrovascular event — no. (%)	53 (26.0)	40 (19.0)
Current smoker — no. (%)	52 (25.5)	
Arterial hypertension — no. (%)	49 (24.0)	
Diabetes mellitus — no. (%)	5 (2.5)	
Hypercholesterolemia — no. (%)	50 (24.5)	
Valvular heart disease — no. (%)	8 (3.9)	
Peripheral vascular disease — no. (%)	3 (1.5)	
Coronary artery disease — no. (%)	4 (2.0)	
History of myocardial infarction — no. (%)	3 (1.5)	
Migraine — no. (%)		47 (23.0)
Cerebrovascular index event — no. (%)		
Peripheral embolism		6 (2.9)
Transient ischemic attack		33 (16.2)
Stroke		165 (80.9)
>1 Previous cerebrovascular event — no. (%)		76 (37.3)
Time from index event to randomization — mo		
Median		4.3
Interquartile range		1.1–8.2
Atrial septal aneurysm — no. (%)		47 (23.0)
Interatrial right-to-left shunt — no./total no. (%)‡		
Small		55/185 (29.7)
Medium		87/185 (47.0)
Large		43/185 (23.2)

PC Trial

Table 2. Clinical Outcomes.*

Outcome	PFO Closure (N=204)	Medical Therapy (N=210)	Hazard Ratio or Relative Risk (95% CI) [†]	P Value
<i>no. of patients (%)</i>				
Primary composite outcome of death, stroke, TIA, or peripheral embolism	7 (3.4)	11 (5.2)	0.63 (0.24–1.62)	0.34
Death‡	2 (1.0)	0	5.20 (0.25–107.61)	0.24
Cardiovascular	0	0	NA	
Noncardiovascular	2 (1.0)	0	5.20 (0.25–107.61)	0.24
Thromboembolic event				
Stroke§	1 (0.5)	5 (2.4)	0.20 (0.02–1.72)	0.14
TIA	5 (2.5)	7 (3.3)	0.71 (0.23–2.24)	0.56
Peripheral embolism	0	0	NA	
Secondary composite outcome of stroke, TIA, or peripheral embolism	5 (2.5)	11 (5.2)	0.45 (0.16–1.29)	



No. at Risk	0	1	2	3	4	5
Medical therapy	210	185	170	159	131	90
PFO closure	204	186	181	163	142	110

Figure 1. Kaplan–Meier Cumulative Estimates of the Rate of the Primary End Point.

PC Trial

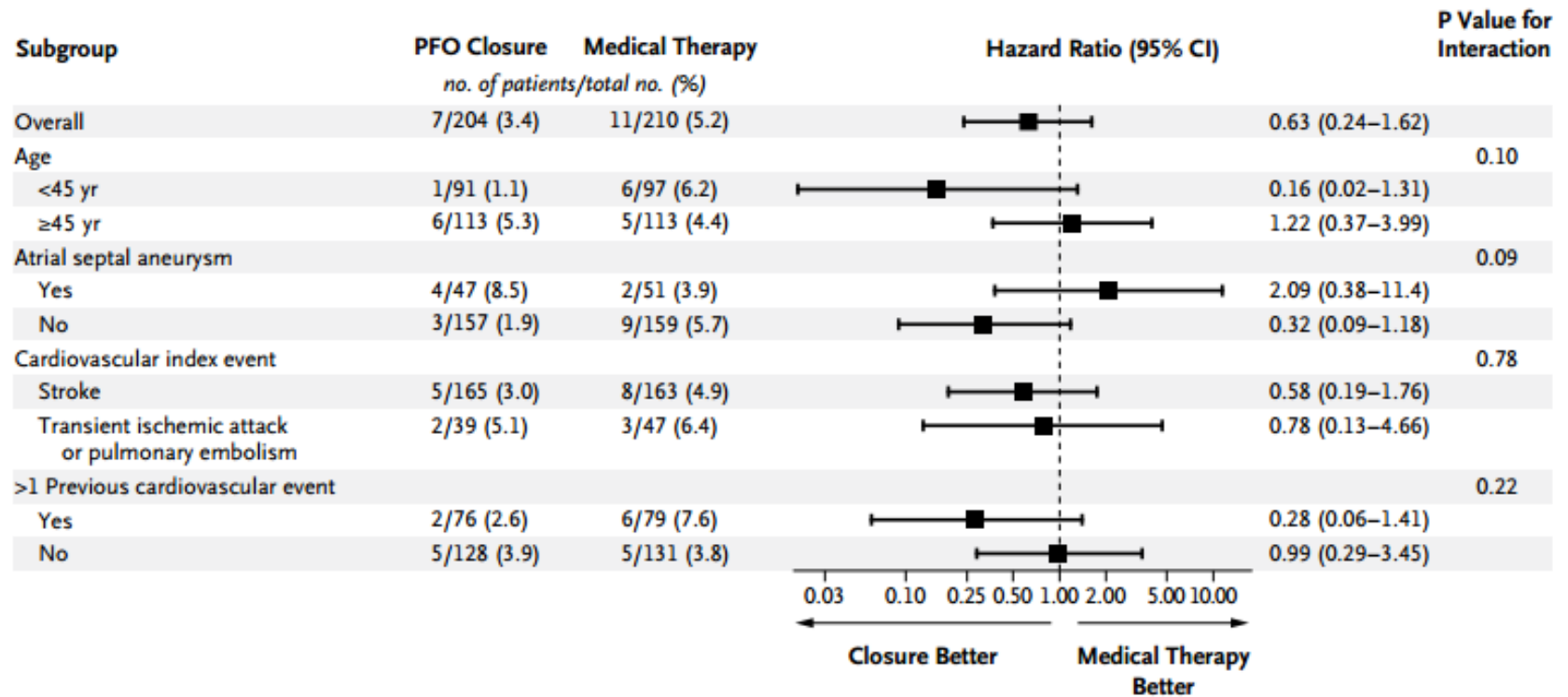


Figure 2. Subgroup Analyses of the Primary End Point.

Hazard ratios were calculated with the use of a Cox proportional-hazards model.

RESPECT

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Closure of Patent Foramen Ovale versus Medical Therapy after Cryptogenic Stroke

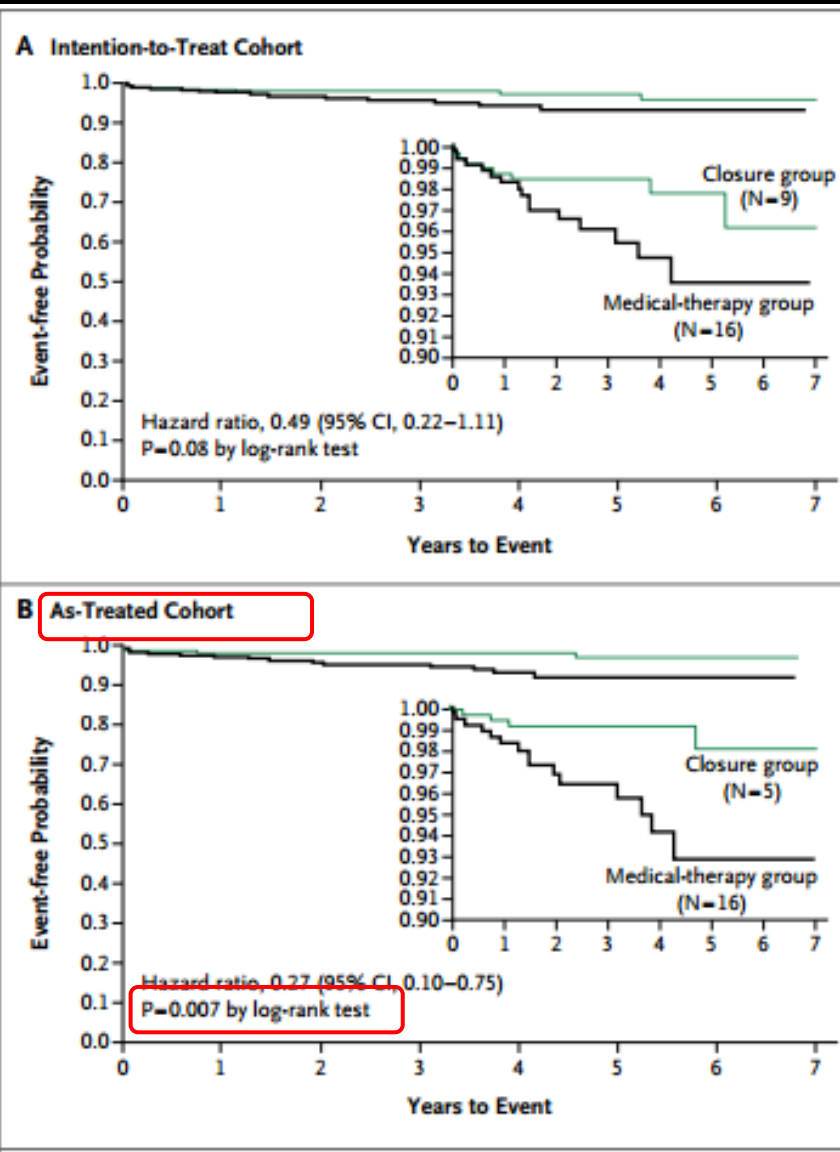
John D. Carroll, M.D., Jeffrey L. Saver, M.D., David E. Thaler, M.D., Ph.D.,
Richard W. Smalling, M.D., Ph.D., Scott Berry, Ph.D., Lee A. MacDonald, M.D.,
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for the RESPECT Investigators*

RESPECT

Table 1. Characteristics of the Patients at Baseline.*

Characteristic	Closure Group (N = 499)	Medical Group (N = 481)	All Patients (N = 980)
Age — yr	45.7±9.7	46.2±10.0	45.9±9.9
Male sex — no. (%)	268 (53.7)	268 (55.7)	536 (54.7)
Medical history — no./total no. (%)			
Diabetes mellitus	33/499 (6.6)	40/481 (8.3)	73/980 (7.4)
Systemic hypertension	158/499 (31.7)	150/481 (31.2)	308/980 (31.4)
Smoking status			
Current smoker	75/499 (15.0)	55/481 (11.4)	130/980 (13.3)
Former smoker	134/499 (26.9)	143/481 (29.7)	277/980 (28.3)
Hypercholesterolemia	194/499 (38.9)	193/481 (40.1)	387/980 (39.5)
Coronary artery disease	19/499 (3.8)	9/481 (1.9)	28/980 (2.9)
Previous myocardial infarction	5/499 (1.0)	2/481 (0.4)	7/980 (0.7)
Peripheral vascular disease	5/499 (1.0)	1/481 (0.2)	6/980 (0.6)
Previous transient ischemic attack	58/499 (11.6)	61/481 (12.7)	119/980 (12.1)
Previous stroke	53/498 (10.6)	51/481 (10.6)	104/979 (10.6)
Family history of stroke	135/495 (27.3)	108/480 (22.5)	243/975 (24.9)
Migraine	195/499 (39.1)	185/481 (38.5)	380/980 (38.8)
Deep-vein thrombosis	20/499 (4.0)	15/481 (3.1)	35/980 (3.6)
Congestive heart failure	3/499 (0.6)	0/481 (0)	3/980 (0.3)
Chronic obstructive pulmonary disease	4/499 (0.8)	7/481 (1.5)	11/980 (1.1)
Birth control or hormone-replacement therapy	41/499 (8.2)	52/481 (10.8)	93/980 (9.5)
Patent foramen ovale — no. (%)			
Maximum right-to-left shunt grade at rest or during Valsalva release†			
Grade 1	108 (21.6)	114 (23.7)	222 (22.7)
Grade 2	138 (27.7)	121 (25.2)	259 (26.4)
Grade 3	247 (49.5)	231 (48.0)	478 (48.8)
Atrial septal aneurysm	180 (36.1)	169 (35.1)	349 (35.6)

RESPECT



RESPECT

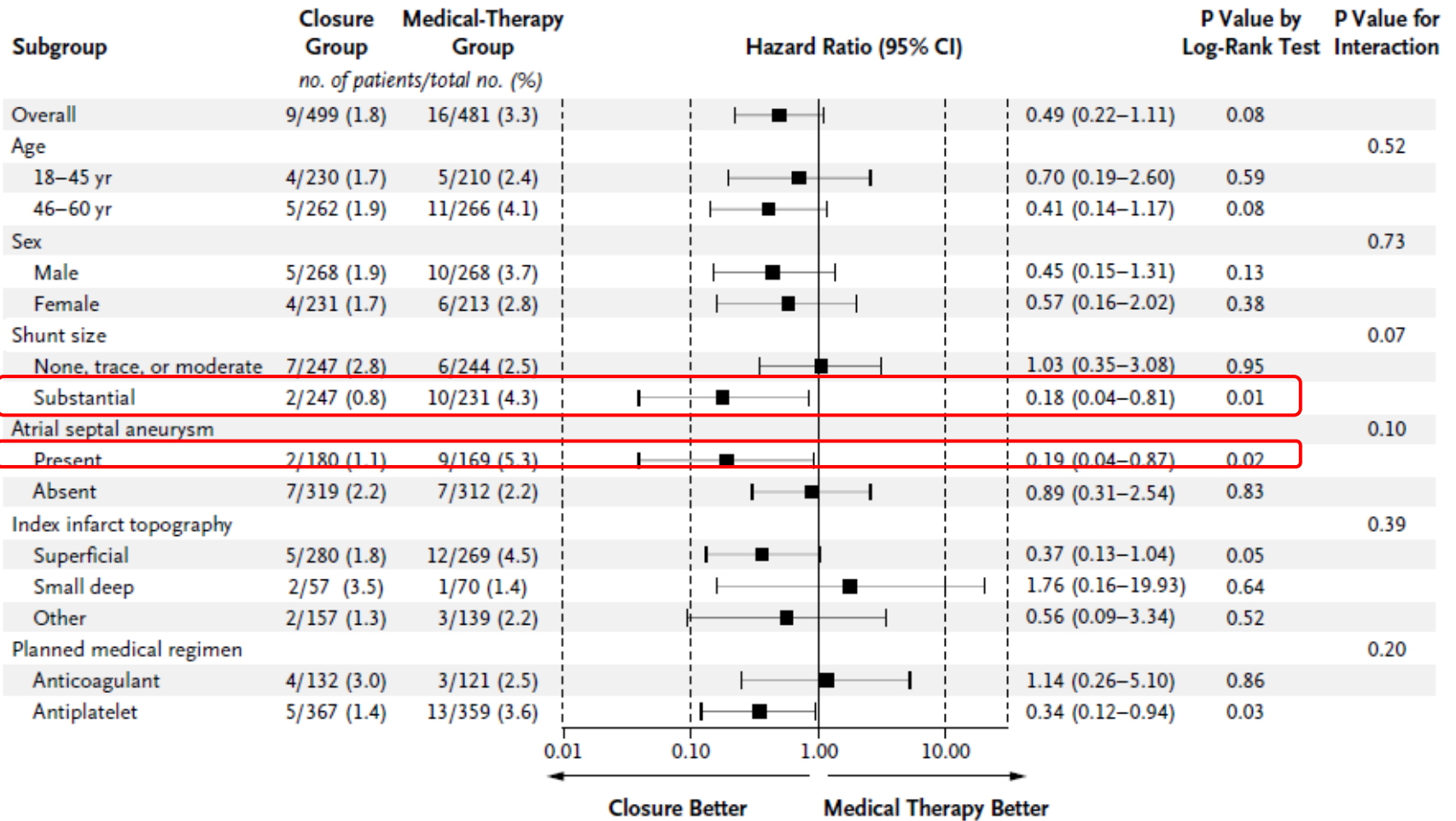
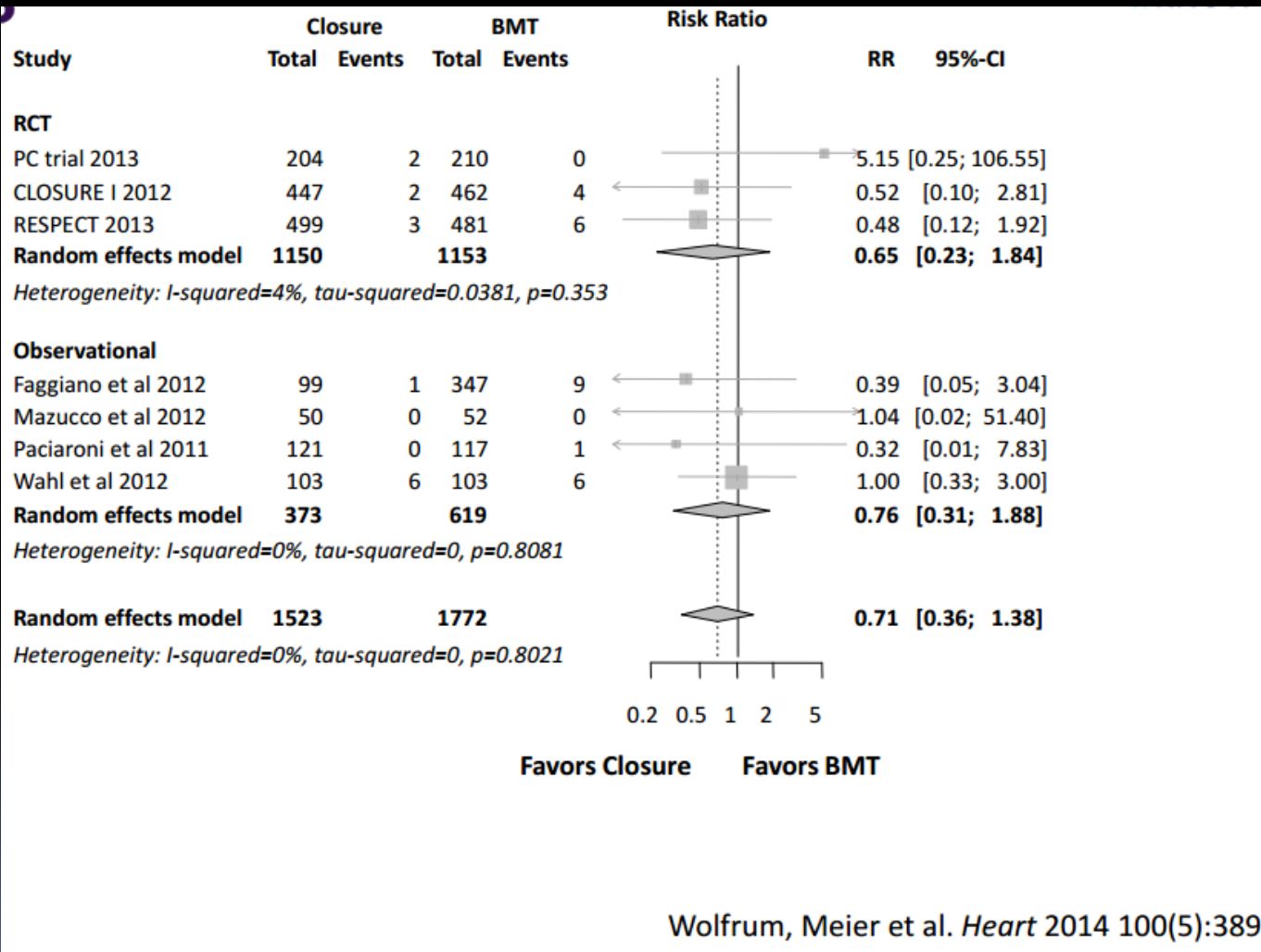


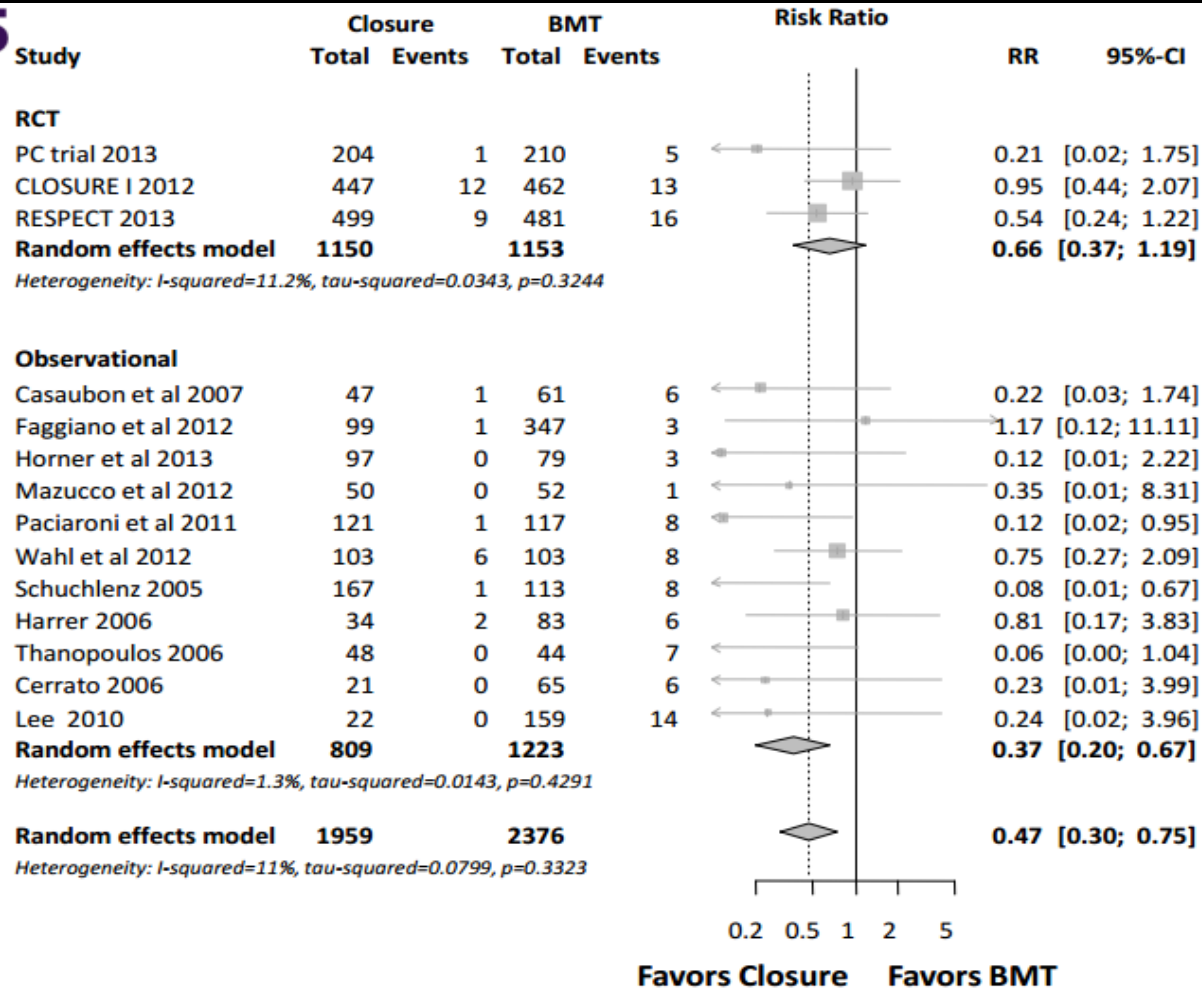
Figure 2. Analysis of the Primary End-Point According to Subgroup, in the Intention-to-Treat Cohort.

Meta-análisis Mortalidad

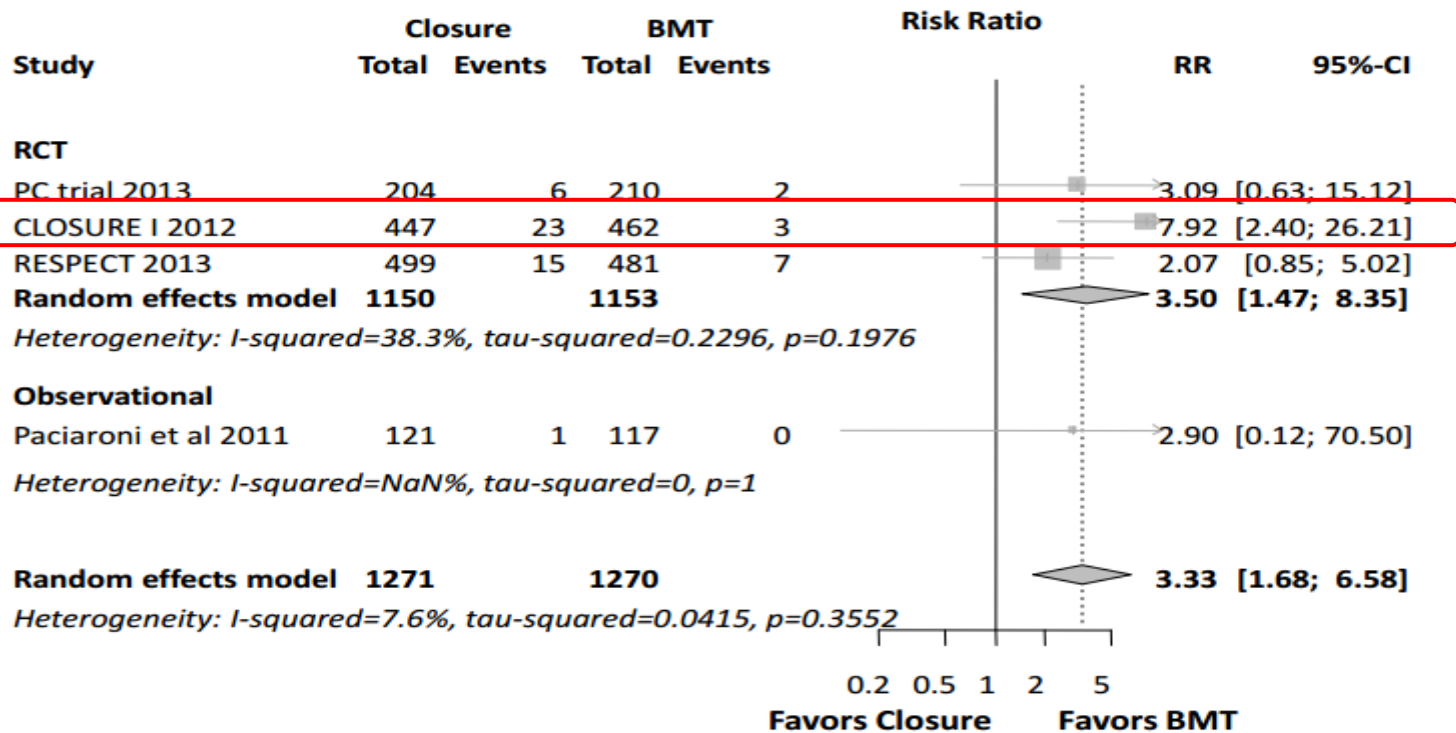


Meta-análisis Riesgo de ACV

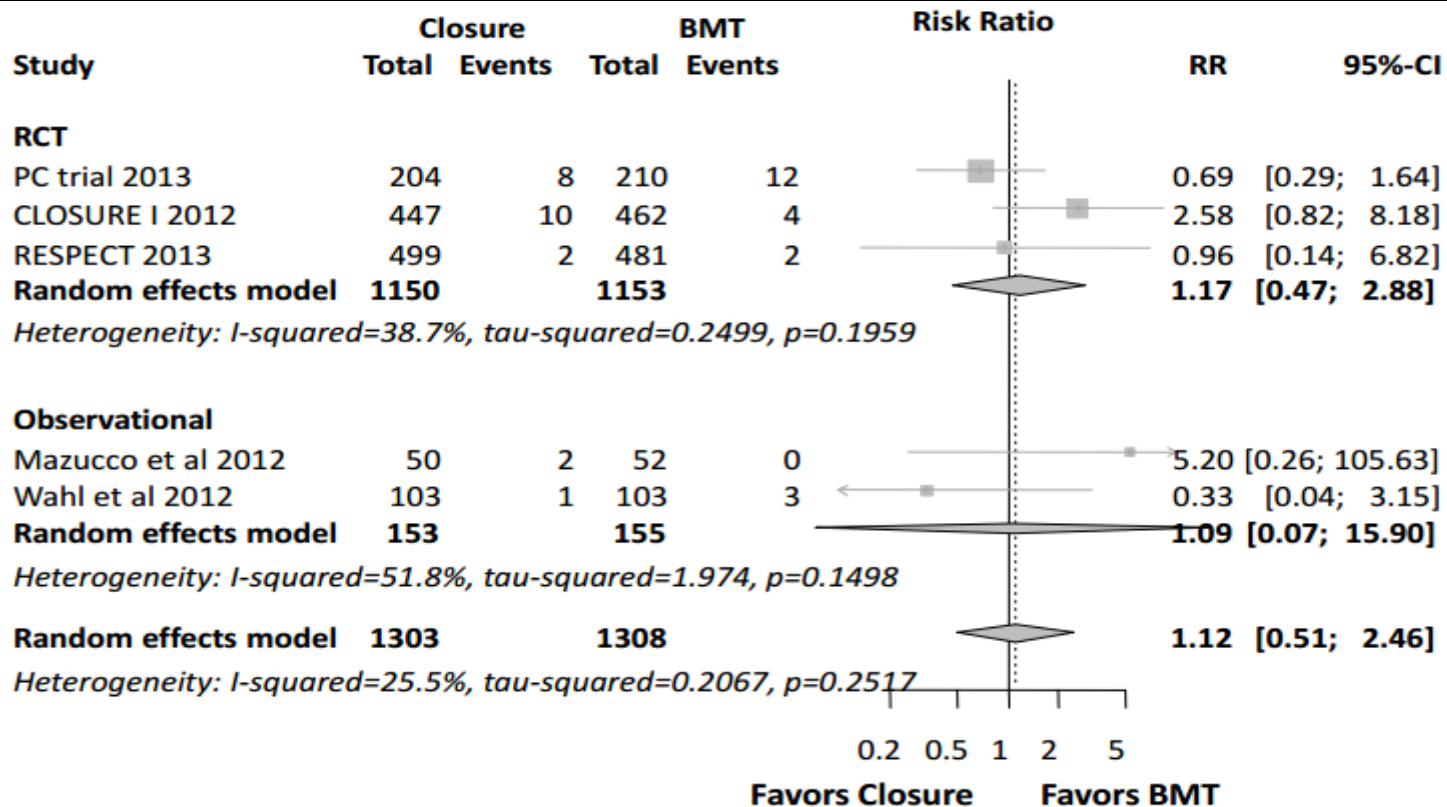
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Meta-análisis Fibrilación Auricular



Meta-análisis Sangrado



AHA/ASA Guideline

Guidelines for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack

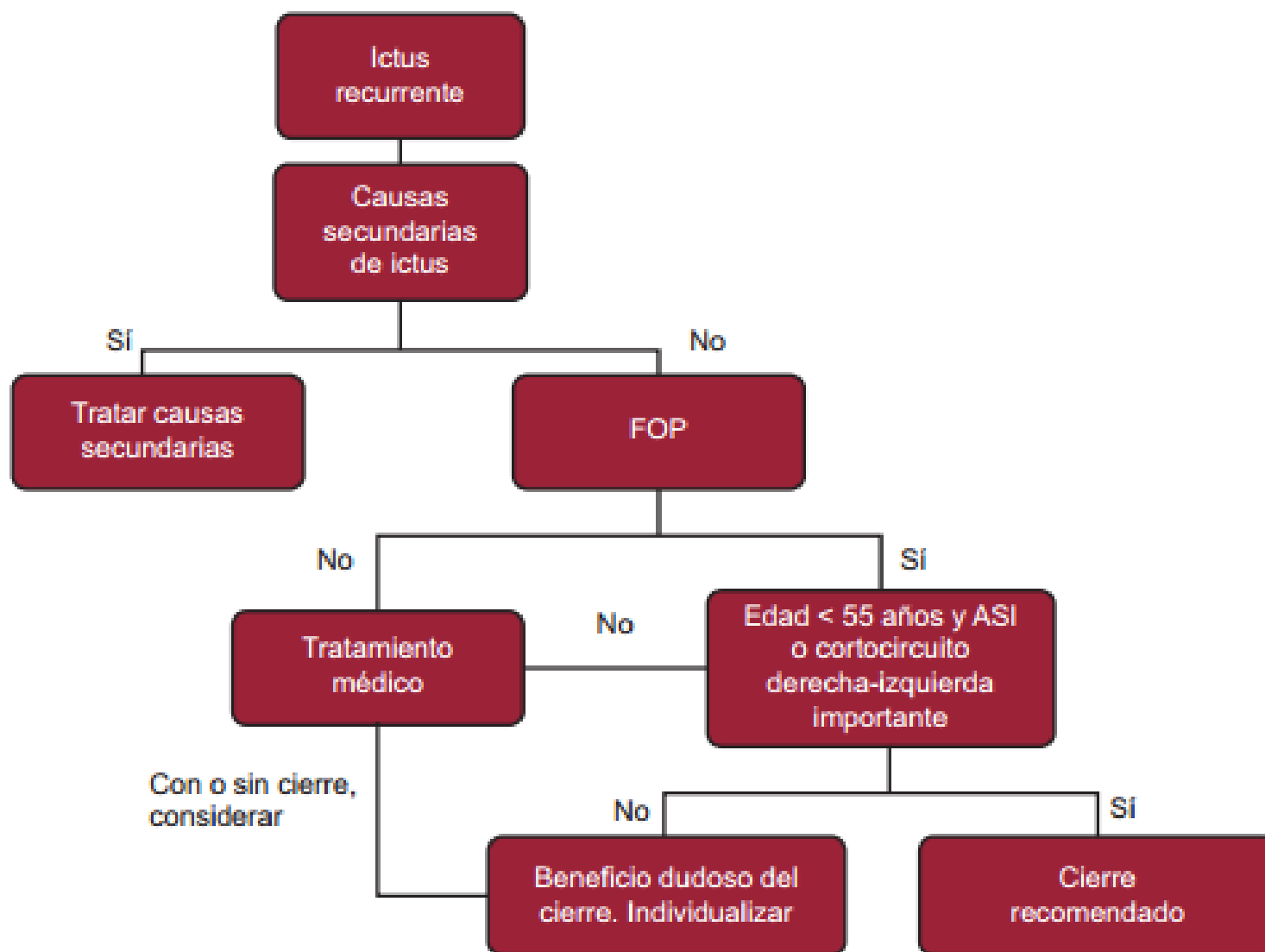
A Guideline for Healthcare Professionals From the American Heart Association/American Stroke Association

*The American Academy of Neurology affirms the value of this guideline as an educational tool for neurologists.
Endorsed by the American Association of Neurological Surgeons and Congress of Neurological Surgeons*

Walter N. Kernan, MD, Chair; Bruce Ovbiagele, MD, MSc, MAS, Vice Chair; Henry R. Black, MD; Dawn M. Bravata, MD; Marc I. Chimowitz, MBChB, FAHA; Michael D. Ezekowitz, MBChB, PhD; Margaret C. Fang, MD, MPH; Marc Fisher, MD, FAHA; Karen L. Furie, MD, MPH, FAHA; Donald V. Heck, MD; S. Claiborne (Clay) Johnston, MD, PhD; Scott E. Kasner, MD, FAHA; Steven J. Kittner, MD, MPH, FAHA; Pamela H. Mitchell, PhD, RN, FAHA; Michael W. Rich, MD; DeJuran Richardson, PhD; Lee H. Schwamm, MD, FAHA; John A. Wilson, MD; on behalf of the American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Peripheral Vascular Disease

AHA Guidelines

For patients with an ischemic stroke or TIA and a PFO who are not undergoing anticoagulation therapy, antiplatelet therapy is recommended (<i>Class I; Level of Evidence B</i>).	Class changed from IIa to I
For patients with an ischemic stroke or TIA and both a PFO and a venous source of embolism, anticoagulation is indicated, depending on stroke characteristics (<i>Class I; Level of Evidence A</i>). When anticoagulation is contraindicated, an inferior vena cava filter is reasonable (<i>Class IIa; Level of Evidence C</i>).	New recommendations
For patients with a cryptogenic ischemic stroke or TIA and a PFO without evidence for DVT, available data do not support a benefit for PFO closure (<i>Class III; Level of Evidence A</i>).	Class changed from IIb to III
In the setting of PFO and DVT, PFO closure by a transcatheter device might be considered, depending on the risk of recurrent DVT (<i>Class IIb; Level of Evidence C</i>).	New recommendation



ROPE

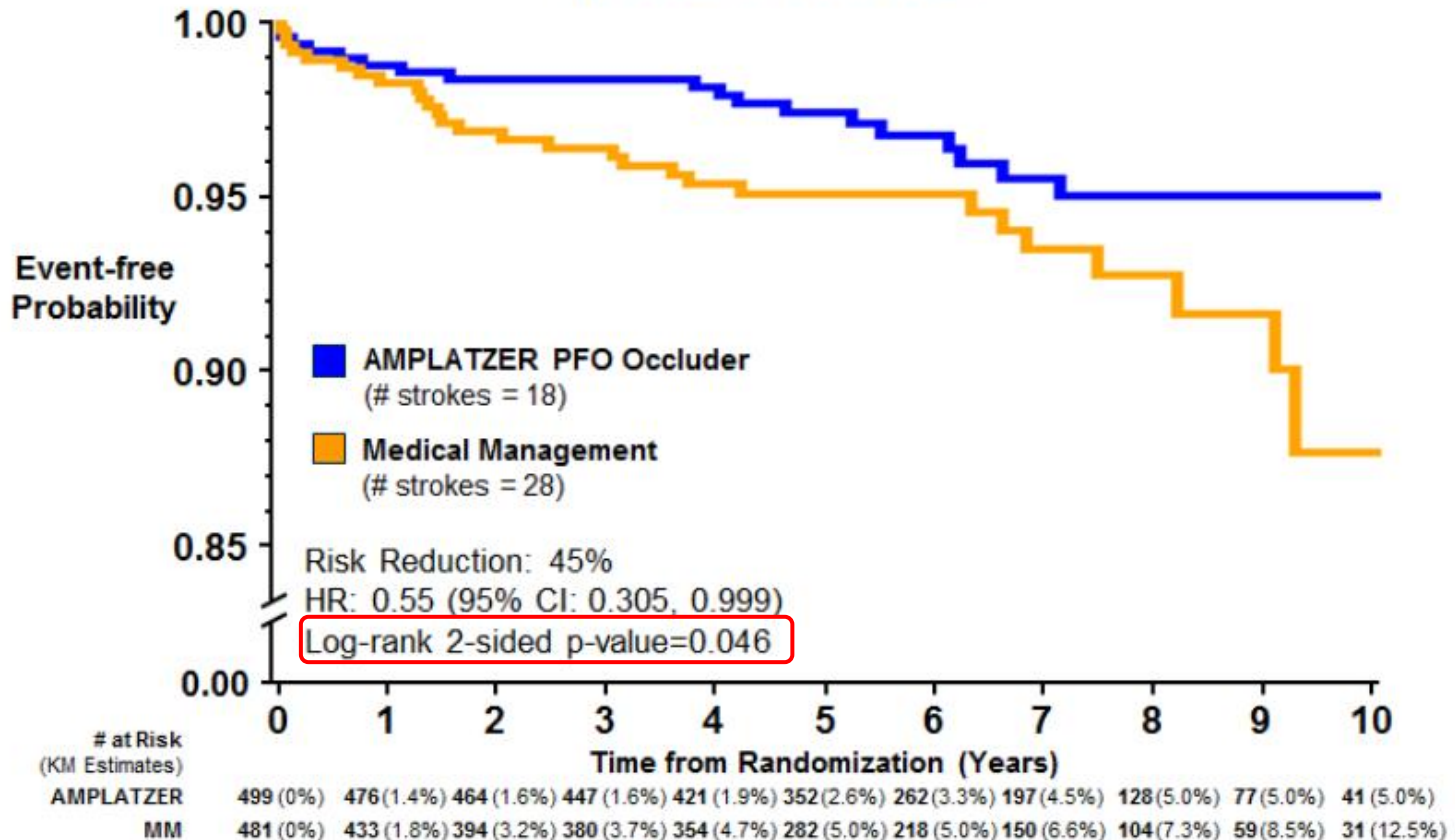
Table 4 RoPE score calculator

Characteristic	Points	RoPE score
No history of hypertension	1	
No history of diabetes	1	
No history of stroke or TIA	1	
Nonsmoker	1	
Cortical infarct on imaging	1	
Age, y		
18-29	5	
30-39	4	
40-49	3	
50-59	2	
60-69	1	
≥70	0	
Total score (sum of individual points)		
Maximum score (a patient <30 y with no hypertension, no diabetes, no history of stroke or TIA, nonsmoker, and cortical infarct)		10
Minimum score (a patient ≥70 y with hypertension, diabetes, prior stroke, current smoker, and no cortical infarct)		0

Abbreviation: RoPE = Risk of Paradoxical Embolism.

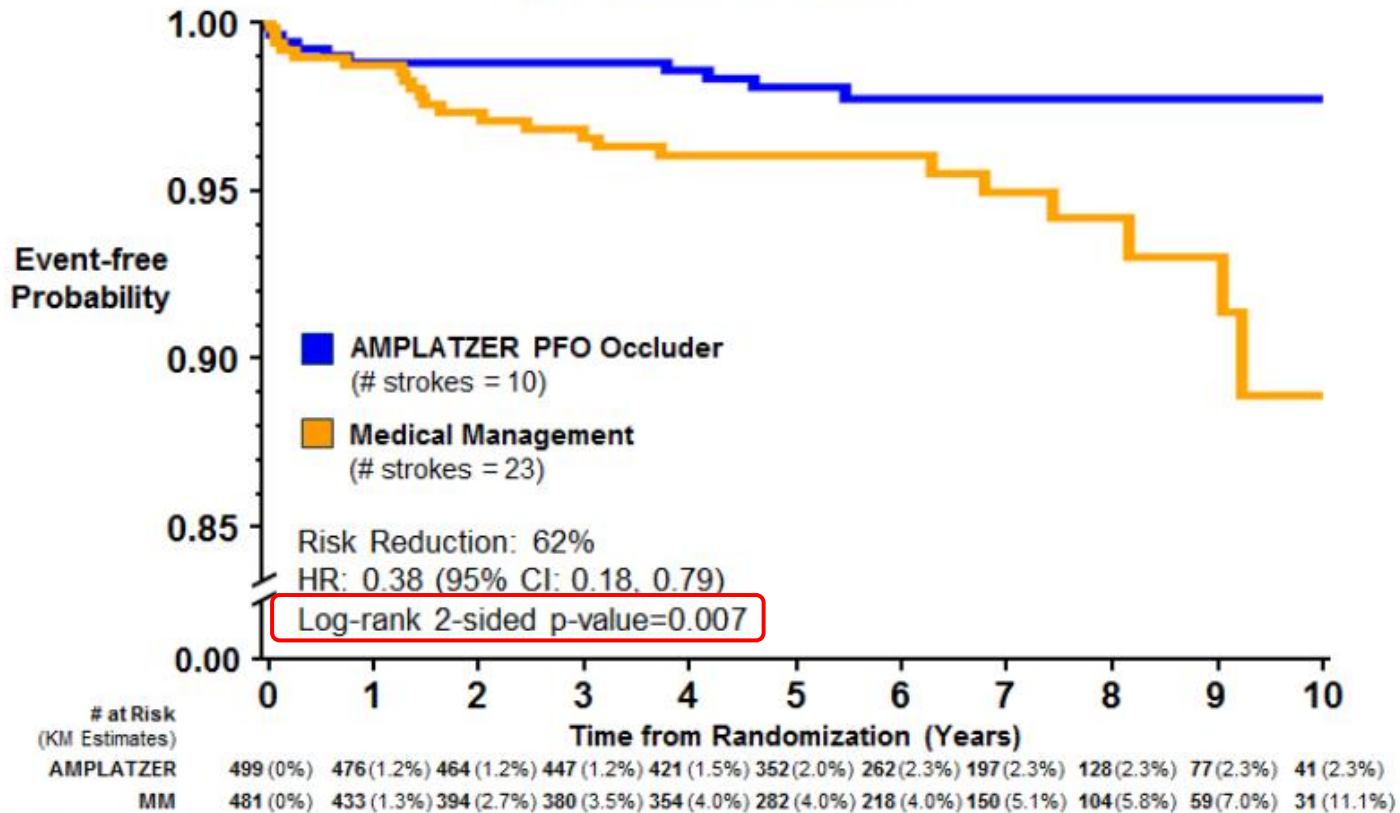
RESPECT Final Results

Freedom from Recurrent Ischemic Stroke (Intention to Treat)



RESPECT Final Results

Freedom from Recurrent Ischemic Stroke of Unknown Mechanism (Intention to Treat)



Migraña y FOP

Table 4. Efficacy Analyses: Per-Protocol Population

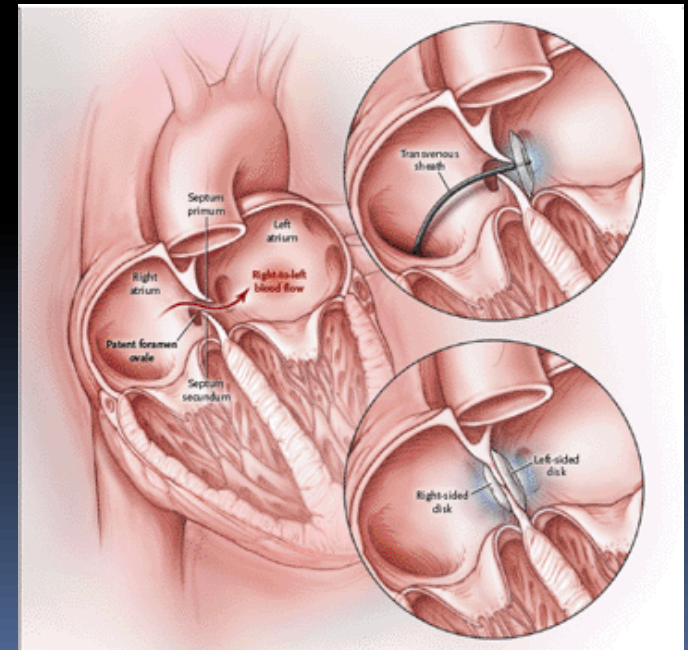
	Implant (n=64)*		Sham (n=71)		Statistical Analyses	
	Baseline	Analysis Phase	Baseline	Analysis Phase	Difference Between Implant and Sham Arms (95% CI)	P
Patients with no migraine attacks, n	0	3	1	3	0.46% (-6.50-7.42)	1.0
Frequency of migraine attacks/mo, mean±SD	4.88±2.43	3.26±1.82	4.55±2.18	3.55±2.14	0.47 (-0.15-1.08)	0.13
n	64	64	71	71	...	...
Total MIDAS score, median (range)	40 (3-108)	16 (0-270)	34 (2-189)	18 (0-240)	1 (-10-10)	0.89
n	57	64	67	71	...	...
Headache d/3 mo (MIDAS), median (range)	26 (0-70)	19 (0-90)	30 (5-80)	21 (0-80)	1 (-5-6)	0.85
n	57	64	67	70	...	...
HIT-6 total score, mean±SD	67±4.6	60±10	66±4.9	59±8.8	0 (-3-2)	0.79
n	57	64	67	71	...	...
Total migraine headache d/m,† median (range)	6.0 (1-17.0)	3.8 (0-13.3)	5.0 (0-20.0)	3.7 (0-16.7)	1.3 (0-2.3)	0.027
n	62	62	70	71	...	...

Table 2 Primary endpoint, change in migraine with and without aura days, and secondary endpoints, change in migraine attacks with aura or without aura, and change of days with acute migraine medication use

Type of endpoint	Randomization assignment	Number	Mean at baseline	Mean at months 10-12	Mean reduction, [95% CI] ^a	SD (min., max.)	P-Value
Migraine with and without aura days (= primary endpoint)	PFO closure	40	8.0	5.1	-2.9 [-4.4, -1.4]	4.7 (-11.7, 9)	0.1682
	Control	41	8.3	6.5	-1.7 [-2.5, -1.0]	2.4 (-6.3, 3.5)	
Migraine attacks with or without aura ^b	PFO closure	40	5.2	3.1	-2.1 [-2.8, -1.3]	2.4 (-7.8, 2.00)	0.0970
	Control	41	5.3	4.0	-1.3 [-1.8, -0.8]	1.7 (-5.0, 1.7)	
Days with acute migraine medication use	PFO closure	50	29.4	15.6	-13.9 [-19.1, -8.7]	18.3 (-70.0, 24.0)	0.1232
	Control	52	28.1	19.8	-8.3 ± [-13.3, -3.4]	17.8 (-51.0, 42)	

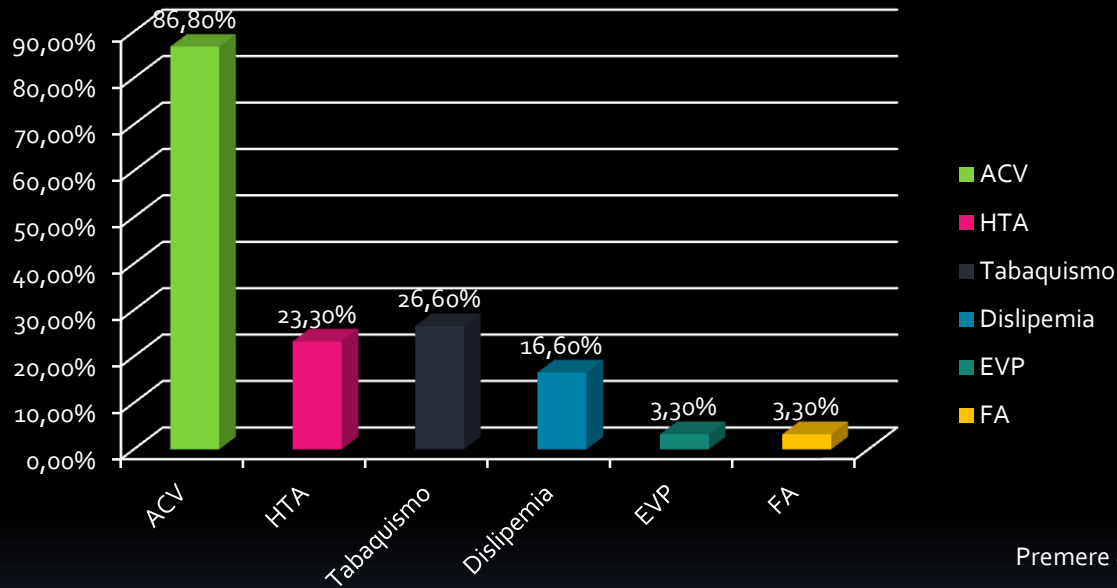
Pacientes CHUVI

- 30 pacientes
- 48.3% hombres
- 46.9 (25 -76) años de edad
- Seguimiento a 6.4 años



Pacientes CHUVI

Pacientes CHUVI



- ACV
- HTA
- Tabaquismo
- Dislipemia
- EVP
- FA

Dispositivos

