

I JORNADA CONJUNTA DE LAS ESTRATEGIAS DE
SALUD CARDIOVASCULAR e ICTUS DE LAS ILLES BALEARS
Hospital Universitario Son Espases, viernes 8 de marzo de 2024

Tratamiento tras la hemorragia cerebral asociada a anticoagulación por fibrilación auricular. ¿Anticoagulantes o cerramos la orejuela?



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Hospital de
la Santa Creu i
Sant Pau

Joan Martí Fàbregas
Servei Neurologia

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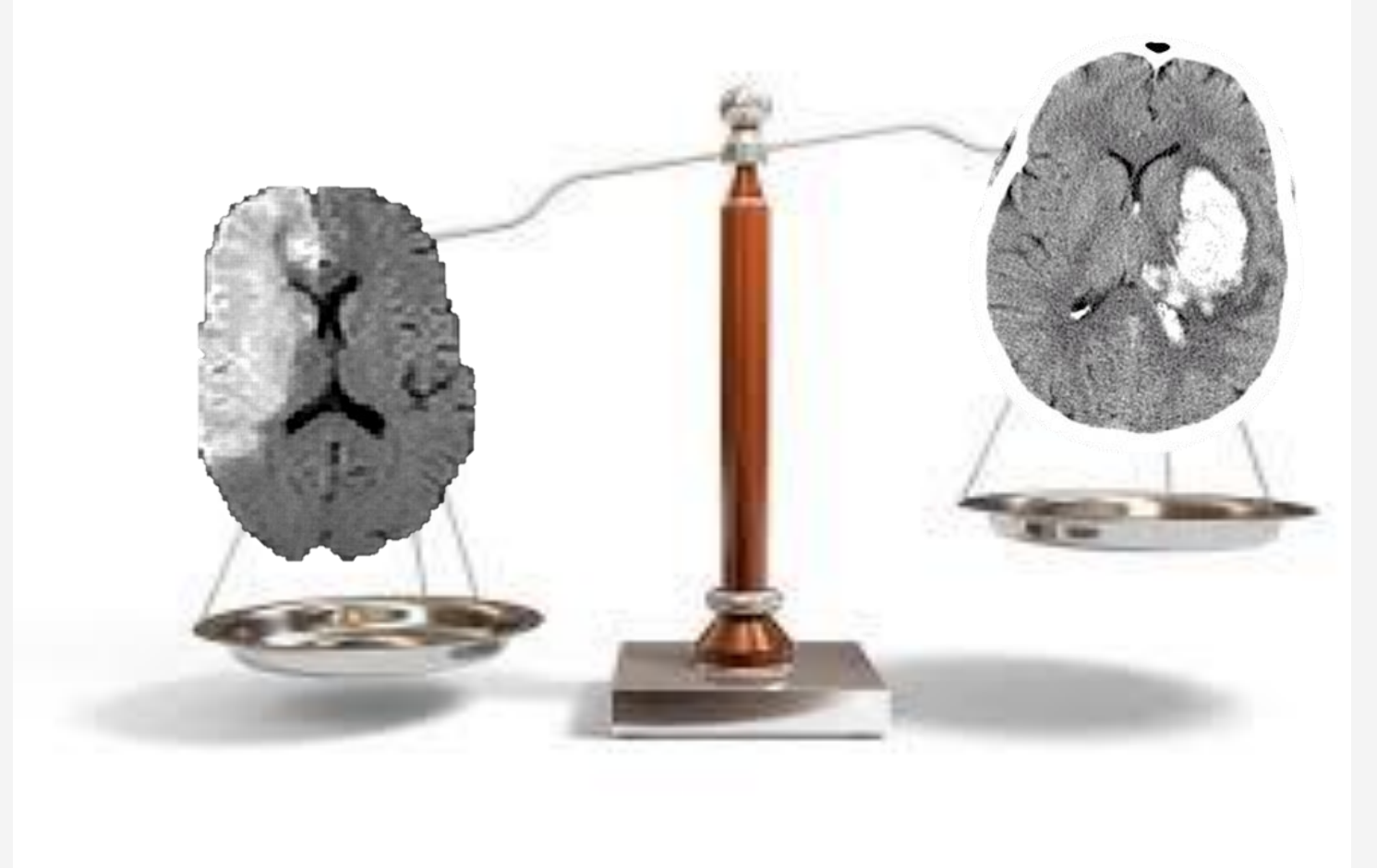


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El problema clínico



«The Doctor» de Sir Luke Fildes



Un caso clínico

Hombre
87 años

Antecedentes

FA en tratamiento
anticoagulante
(AVK)

Quejas subjetivas
de pérdida de
memoria para
hechos recientes

Tratamiento

Cumarínicos,
amiodarona

Estado funcional

Independiente
para las
actividades de la
vida diaria,
marcha normal,
Rankin=1
(problemas de
memoria)



Cambiaría tu opinión si...

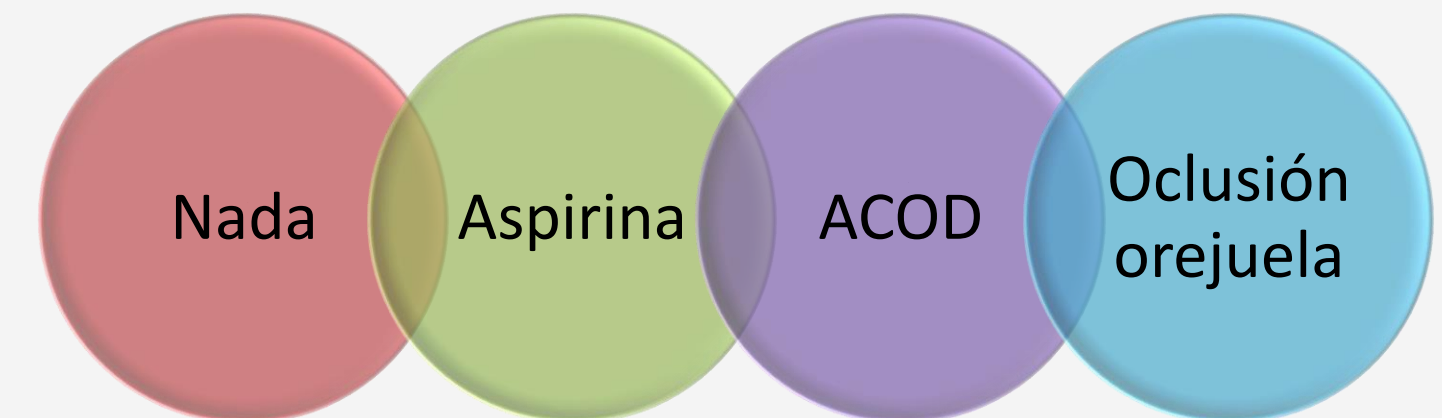
Si el hematoma fuera **profundo**?

Si el Rankin fuera de **3**?

Si tuviera **microsangrados** en la RM?

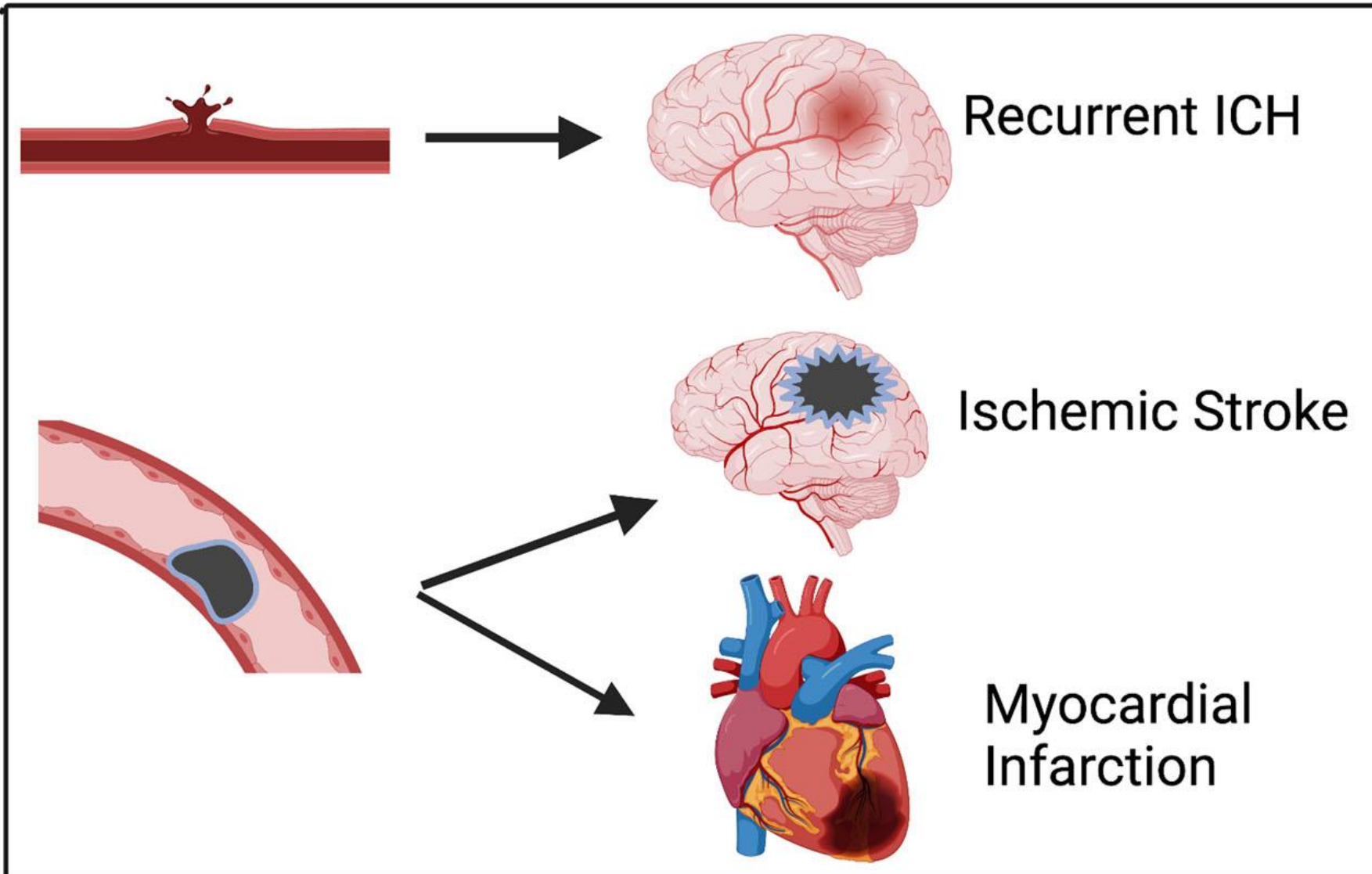
Si tuviera **67 años**?

Si tuviera **insuficiencia renal**?



Cardiovascular Events after ICH

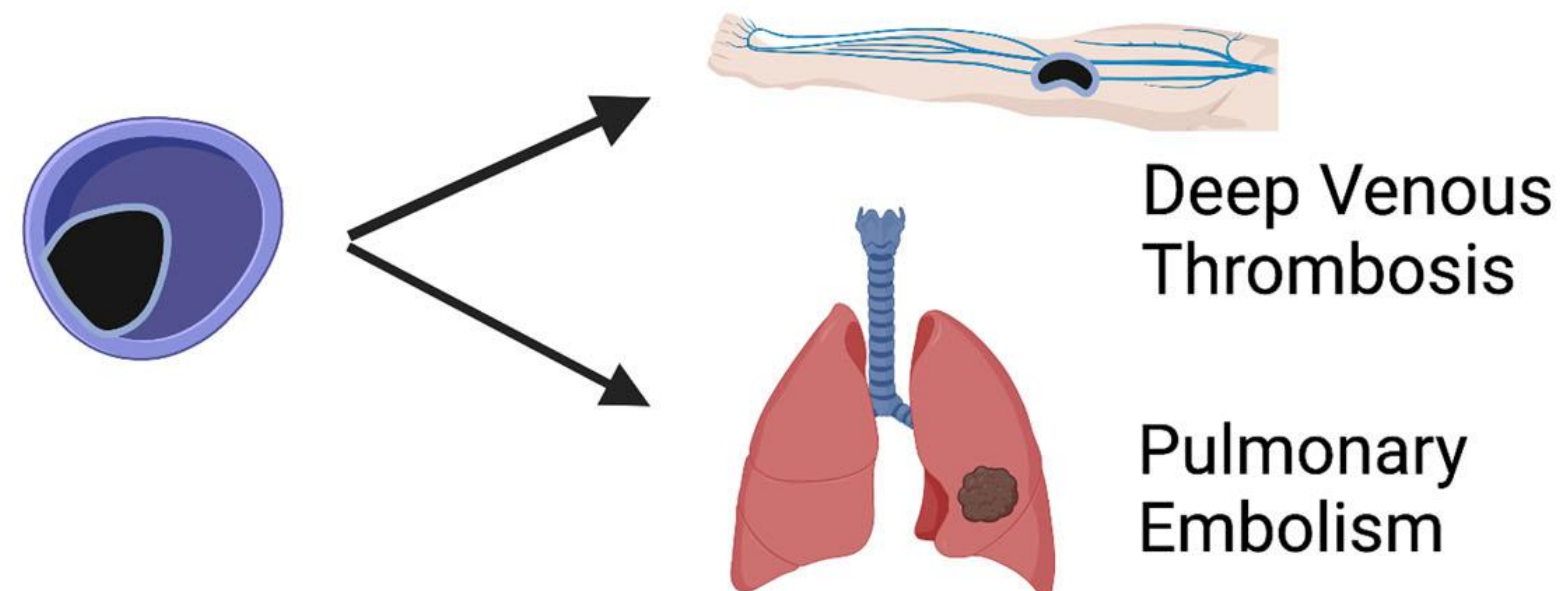
Arterial Events



Lobular 5.1% / año
Profunda 1.8% año

1-6% / año

Venous Events

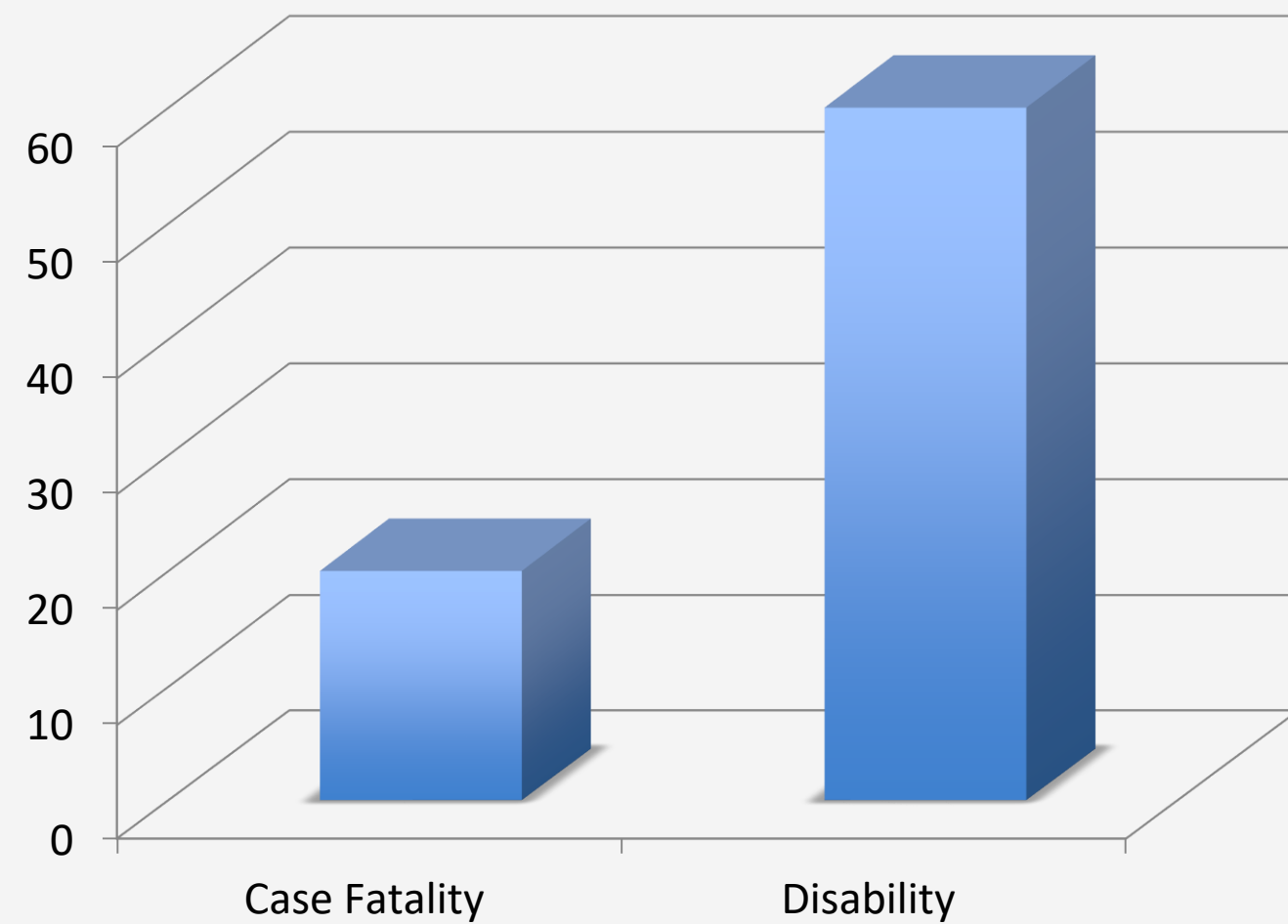


2-5% / año

All ICH patients

	Afib	No Afib	HR
Recurrent ICH	3·3 per 100 patient-years	3·2 per 100 patient-years	HR 0·9, 95%CI: 0·4–2·1
Ischemic stroke	6·3 per 100 patient-years	0·7 per 100 patient-years	HR 8·2, 95%CI: 3·3–20·3;
Serious vascular events*	15·5 per 100 patient-years	6·8 per 100 patient-years	HR 1·78, 95%CI: 1·16–2·74

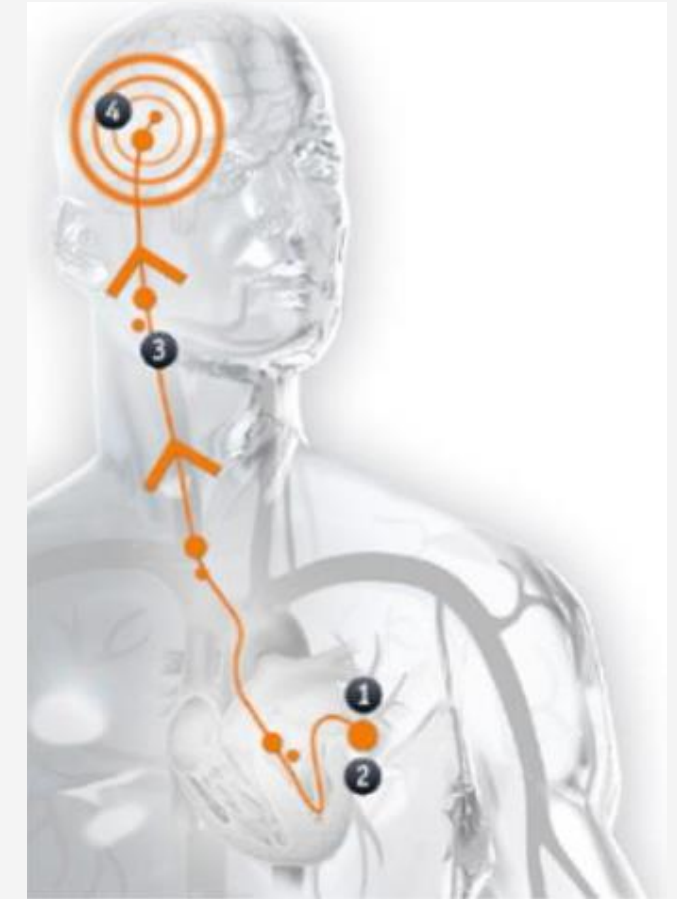
**nonfatal stroke, non-fatal myocardial infarction, or vascular death*



Ictus isquémico relacionado con FA

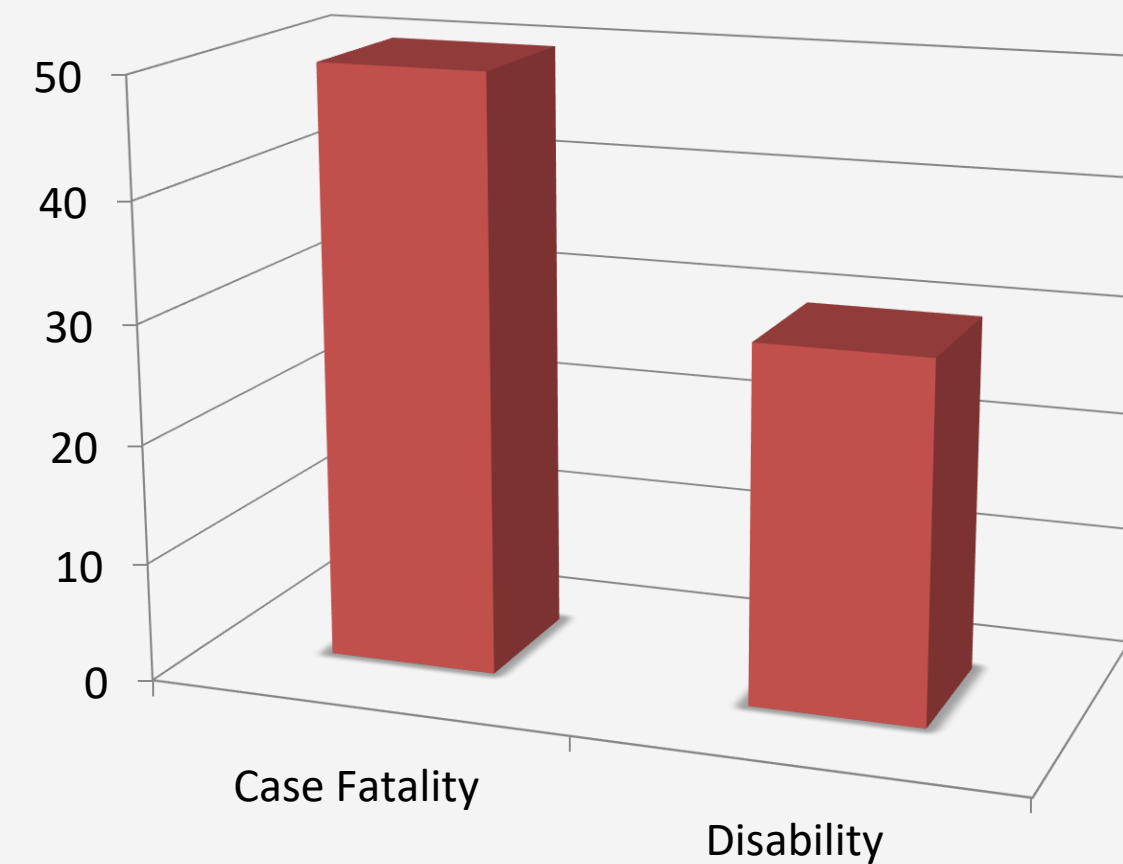
80% muerte o discapacidad

Gladstone DJ et al. *Stroke* 2009; 40:235-240



HIC relacionada con anticoagulante

80% Muerte o discapacidad



Lancet Neurol 2010;9: 167-76

Prevalence of atrial fibrillation in intracerebral hemorrhage

S. Horstmann^a, T. Rizos^a, E. Jenetzky^b, C. Gumbinger^a, W. Hacke^a and R. Veltkamp^a

Background and purpose: Oral anticoagulation (OAC) is an effective preventive therapy for ischemic stroke in atrial fibrillation (AF). The management of anticoagulation in AF patients with previous intracerebral hemorrhage (ICH) is challenging. The aim of this study was to determine the prevalence of AF after acute ICH in a consecutive monocenter cohort, and to document the subsequent management with respect to OAC.

Methods: Consecutive patients with spontaneous ICH were prospectively included within 19 months. Diagnosis of AF was based on medical history, 12-lead electrocardiogram (ECG), 24-h and continuous ECG monitoring. CHADS₂ scores and patient medication were recorded at admission and after 3 months. Additionally, after 3 months mortality, the management of anticoagulation and a newly detected AF were assessed.

Results: In total, 206 ICH patients were eligible for data analysis. After 3 months, AF had been diagnosed in 64/206 ICH patients (31.1%). Mortality after 3 months was higher in patients with AF in univariate analysis (45.3% vs. 31.0%). After adjusting for comorbidities and OAC use, AF did not remain an independent predictor for mortality. In total, 35 patients with AF survived 3 months. Of these, CHADS₂ score was 2 (2/3, median, interquartile range (IQR)) and 27/35 patients had an indication for OAC with respect to the CHADS₂ score, but only 25.7% had been (re-)started on OAC. No consistent factors for deciding whether to initiate OAC treatment could be identified.

Conclusions: Atrial fibrillation is a frequent comorbidity in patients suffering an ICH. Our findings underline the prevailing uncertainty regarding the anticoagulation management of AF after ICH.

13% (27/206)

De pacientes que sobreviven a una HIC son candidatos a iniciar o reiniciar el tratamiento anticoagulante oral

Valor predictivo modesto

No ideado para predecir HIC

Predicting Major Bleeding in Ischemic Stroke Patients With Atrial Fibrillation

Nina A. Hilkens, MD; Ale Algra, MD, PhD; Jacoba P. Greving, PhD

Conclusions—Performance of prediction models for major bleeding in patients with cerebral ischemia and atrial fibrillation is modest but comparable with performance in patients with only atrial fibrillation. Bleeding risk scores cannot guide treatment decisions for oral anticoagulants but may still be useful to identify modifiable risk factors for bleeding. Clinical usefulness may be best for ORBIT, which is based on a limited number of easily obtainable variables and showed reasonable performance. (*Stroke*. 2017;48:3142-3144. DOI: 10.1161/STROKEAHA.117.019183.)

HAS-BLED

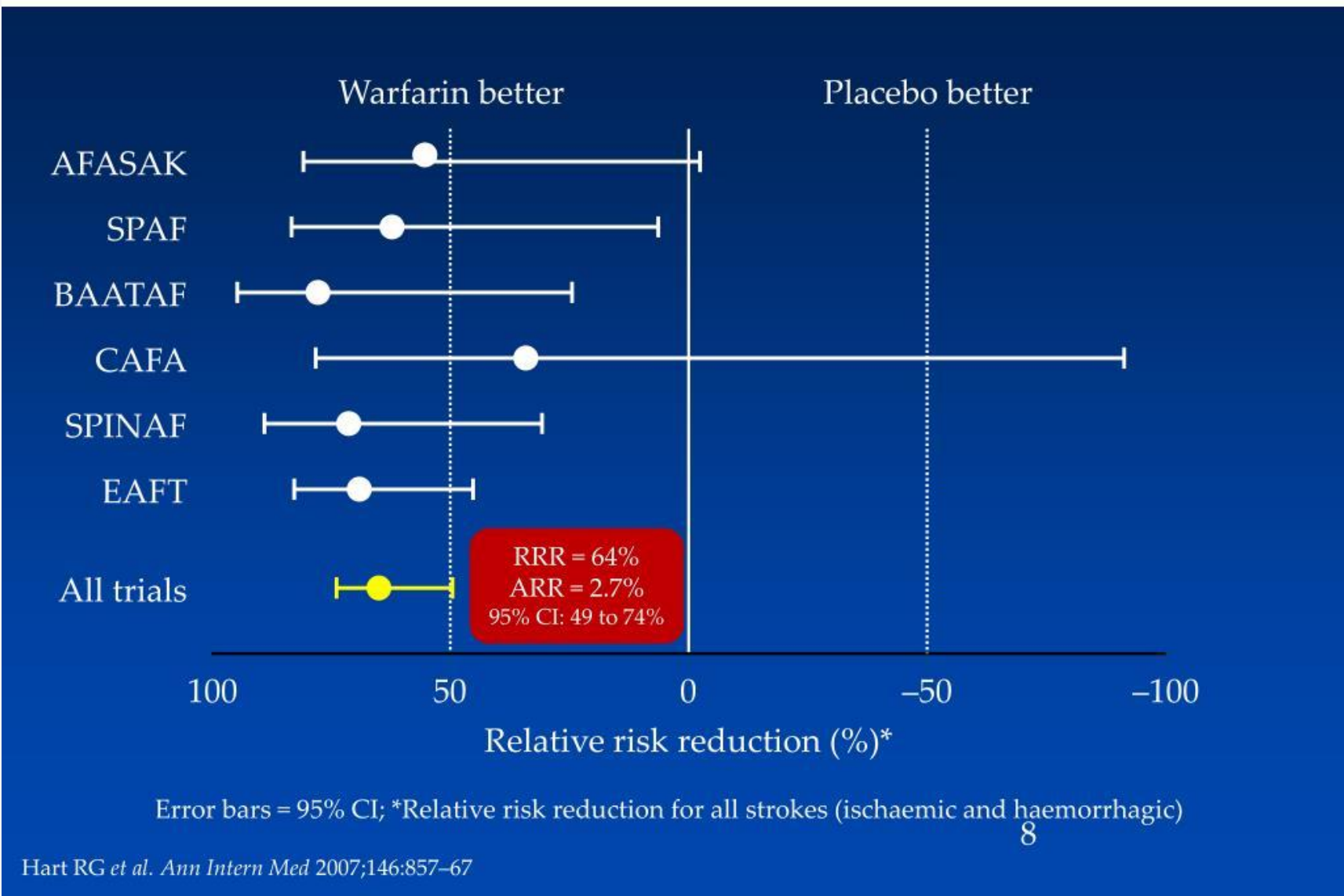
Letter	Clinical Characteristic	Points
H	Hypertension	1
A	Abnormal Liver or Renal Function	1 or 2
S	Stroke	1
B	Bleeding	1
L	Labile INR	1
E	Elderly (age > 65)	1
D	Drugs or Alcohol	1 or 2
Maximum Score		9

Table. C Statistic (95% Confidence Interval) of Risk Scores in Patients With a Previous Transient Ischemic Attack or Ischemic Stroke on Oral Anticoagulants at 1 Year

	All Patients (n=3623)	Warfarin (n=1195)	Dabigatran (n=2428)
HEMORR ₂ HAGES	0.65 (0.61–0.69)	0.58 (0.51–0.65)	0.69 (0.64–0.75)
Shireman	0.62 (0.58–0.66)	0.57 (0.50–0.63)	0.66 (0.61–0.71)
HAS-BLED	0.64 (0.60–0.68)	0.57 (0.51–0.64)	0.68 (0.63–0.73)
ATRIA	0.67 (0.62–0.71)	0.56 (0.49–0.63)	0.74 (0.68–0.79)
ORBIT (score)	0.66 (0.62–0.71)	0.56 (0.48–0.64)	0.73 (0.68–0.78)
ORBIT (equation)	0.66 (0.62–0.71)	0.56 (0.48–0.64)	0.73 (0.68–0.78)

Los pacientes con hemorragia cerebral se han **excluido** de los ensayos clínicos con anticoagulantes

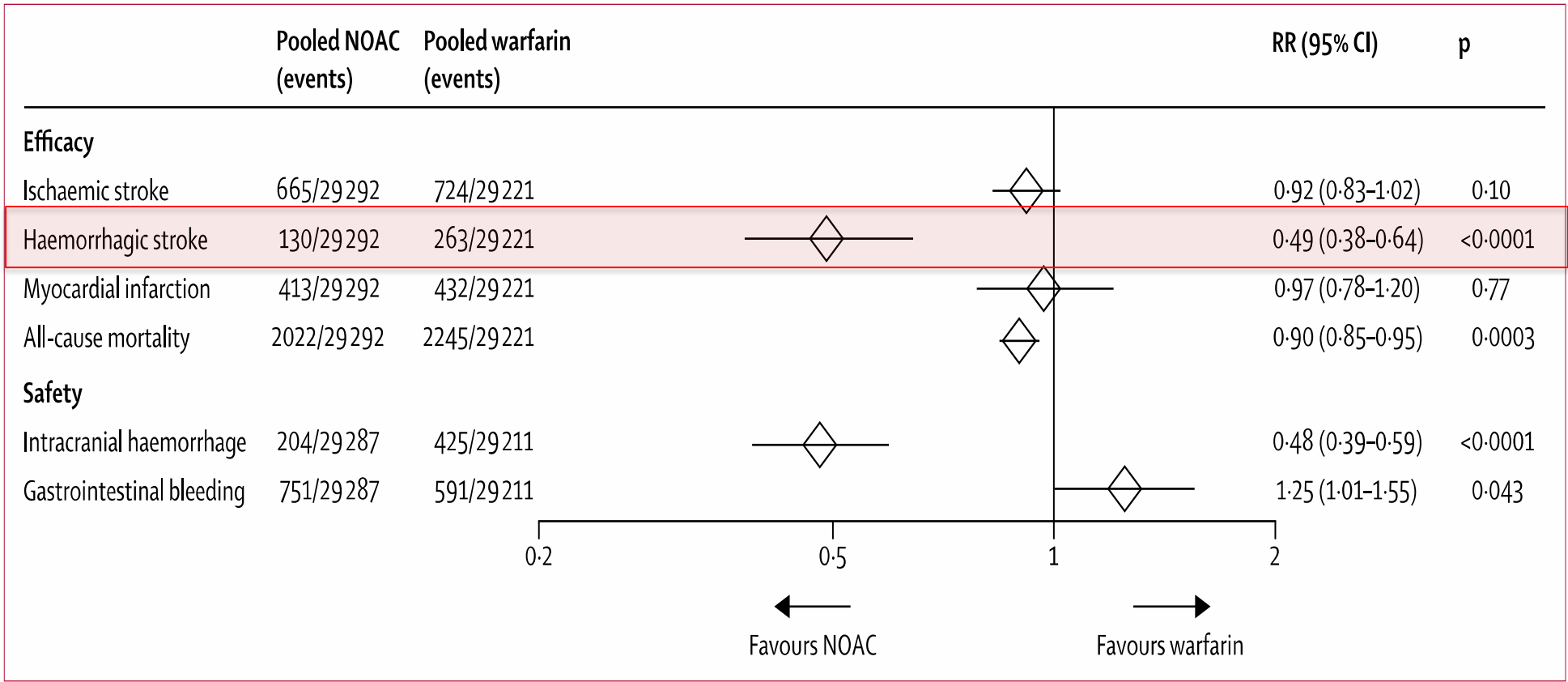
Warfarin reduces the risk of stroke in AF



Comparison of the efficacy and safety of new oral anticoagulants with warfarin in patients with atrial fibrillation: a meta-analysis of randomised trials

Christian T Ruff, Robert P Giugliano, Eugene Braunwald, Elaine B Hoffman, Naveen Deenadayalu, Michael D Ezekowitz, A John Camm, Jeffrey I Weitz, Basil S Lewis, Alexander Parkhomenko, Takeshi Yamashita, Elliott M Antman

Lancet 2014; 383: 955-62



51% disminución en el riesgo de hemorragia cerebral

ESTUDIOS OBSERVACIONALES



01 El problema clínico



02 **Estudios observacionales**



03 Ensayos clínicos aleatorizados finalizados



04 Ensayos clínicos aleatorizados en marcha

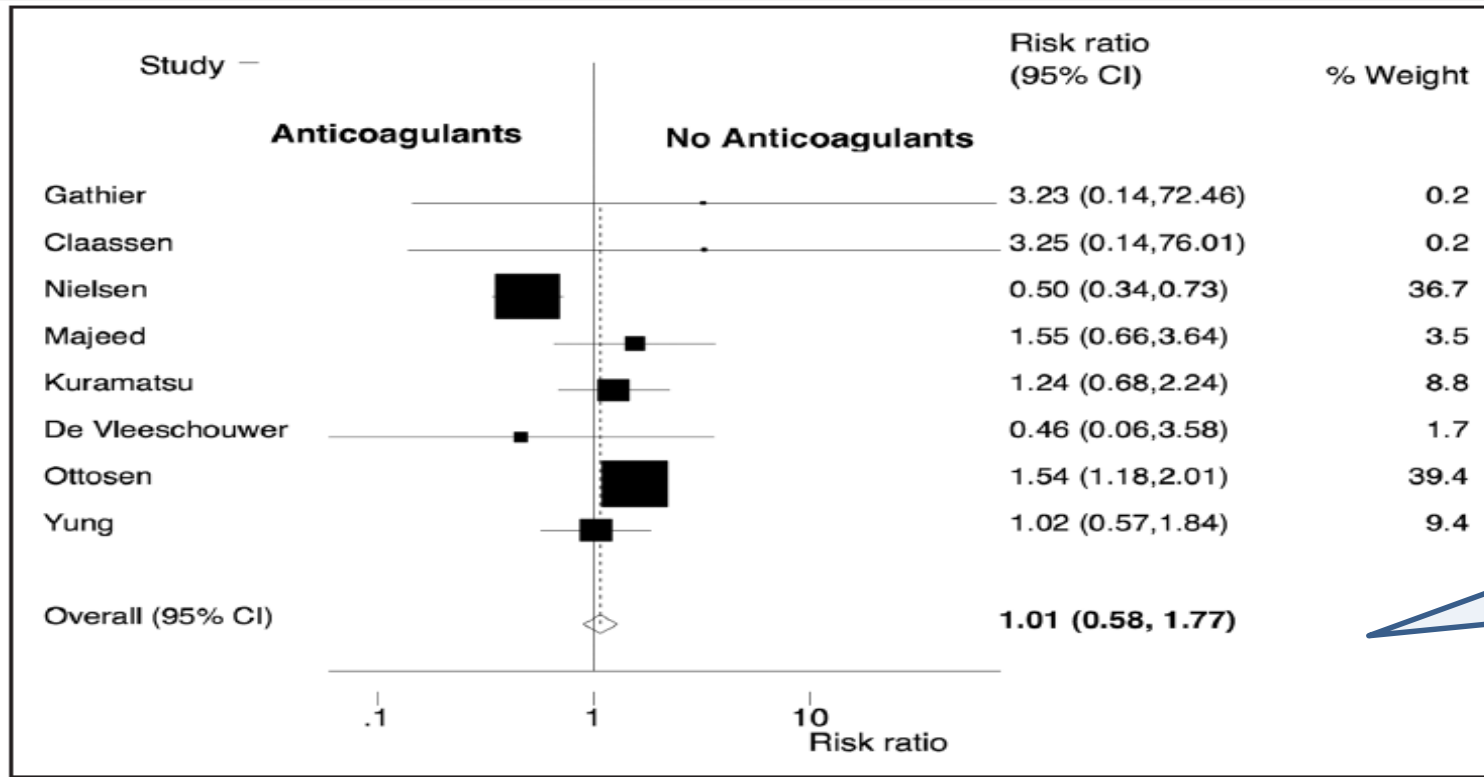
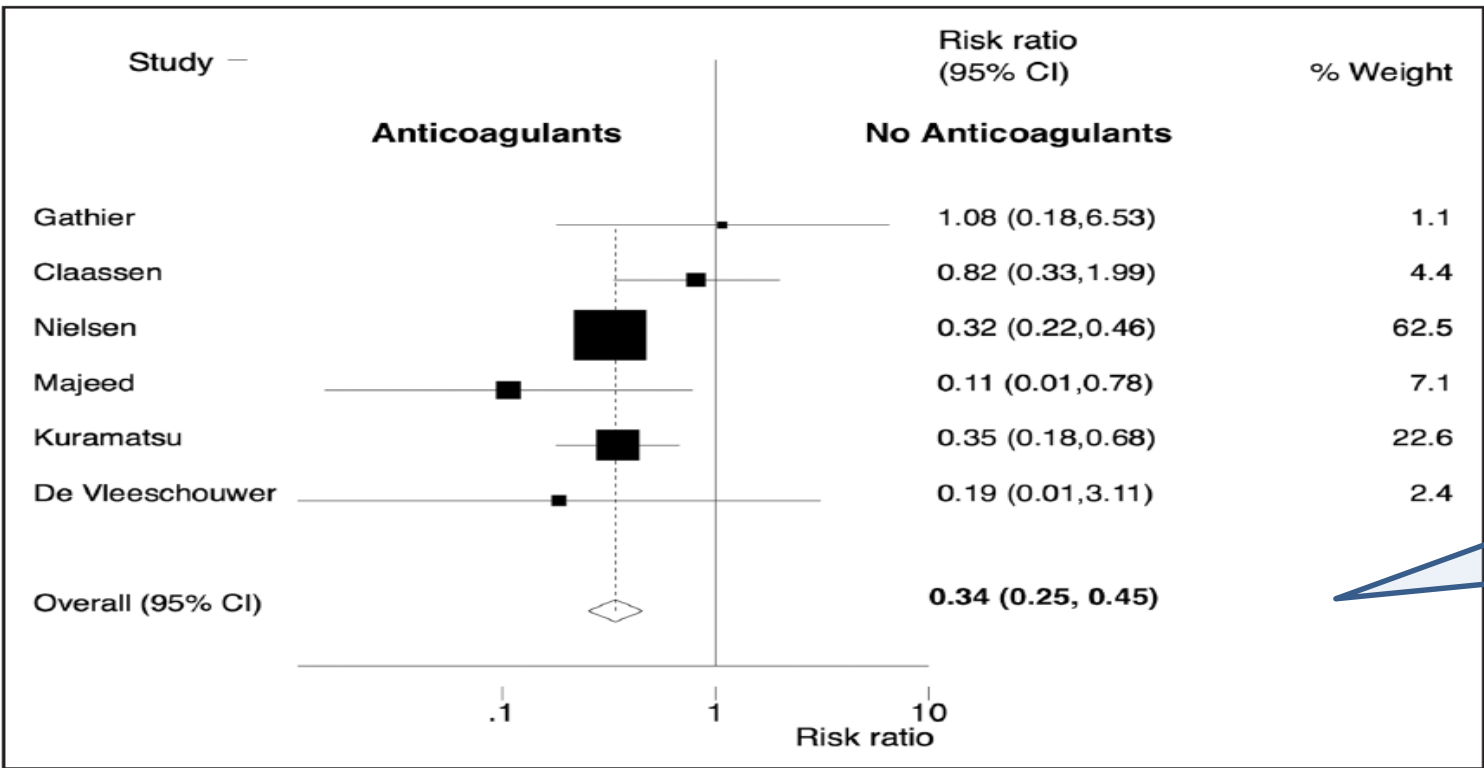


05 Y mientras tanto qué hacemos?



06 Conclusiones





Restarting Anticoagulant Therapy After Intracranial Hemorrhage

A Systematic Review and Meta-Analysis

Santosh B. Murthy, MD, MPH; Ajay Gupta, MD; Alexander E. Merkler, MD; Babak B. Navi, MD, MS; Pitchaiah Mandava, MD, PhD, MSEE; Costantino Iadecola, MD; Kevin N. Sheth, MD; Daniel F. Hanley, MD; Wendy C. Ziai, MD, MPH; Hooman Kamel, MD

Eventos isquémicos
0.34 (0.25-0.45)

>5000 pacientes
Mediana de días de reinicio: 10 a 39

Recurrencia HIC
1.01 (0.58-1.77)

- **Momento** de inicio del tratamiento
- Poca información sobre **ACODs**
- **Seguimiento** insuficiente
- Muchos son **retrospectivos**
- Algunos incluyen **HSA/subdural**
- **INR**
- **Subtipo de ictus** recurrente

Conclusions—In observational studies, reinstitution of anticoagulation after ICH was associated with a lower risk of thromboembolic complications and a similar risk of ICH recurrence. Randomized clinical trials are needed to determine the true risk–benefit profile of anticoagulation resumption after ICH. (*Stroke*. 2017;48:1594-1600. DOI: 10.1161/STROKEAHA.116.016327.)

Comentarios sobre los estudios observacionales:

Sesgo de prescripción



Mejor ACODs que AVK

Oral Anticoagulation in Asian Patients With Atrial Fibrillation and a History of Intracranial Hemorrhage

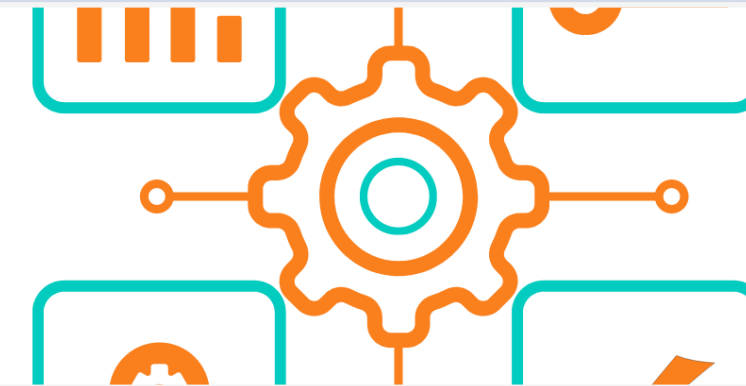
So-Ryoung Lee, MD; Eue-Keun Choi, MD; Soonil Kwon, MD; Jin-Hyung Jung, BSc; Kyung-Do Han, PhD; Myung-Jin Cha, MD; Seil Oh, MD, PhD; Gregory Y.H. Lip, MD

Stroke. 2020;51:416-423



5172 pacientes con HIC + FA

- 2434 Warfarina
- 3278 ACOD



Características basales bien equilibradas mediante
propensity score

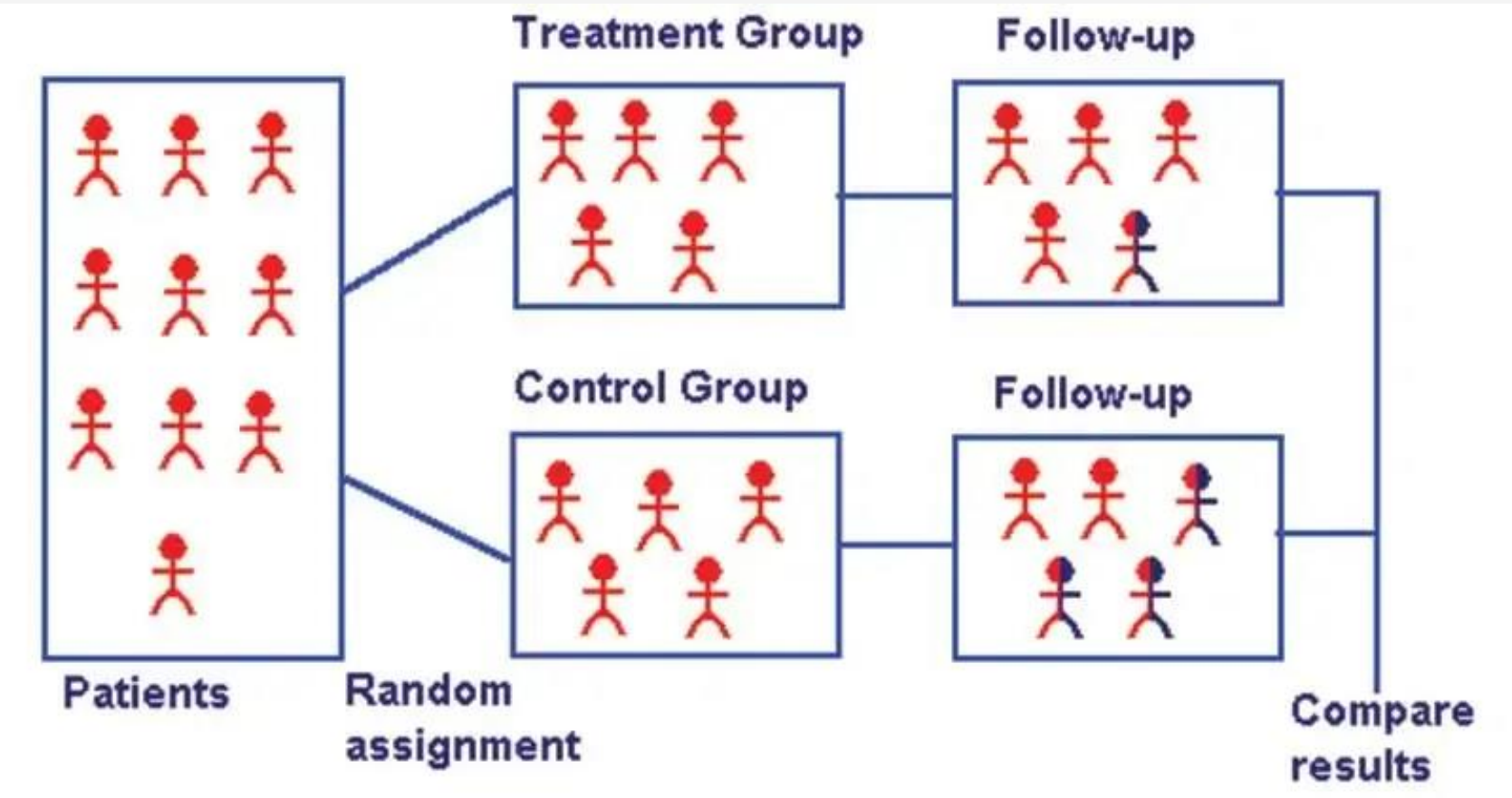
Mejor ACODs que AVK?

Total study population (n=5,712)

NOAC (n=3,278) vs. Warfarin (n=2,434)	HR (95% CI)	P-value	
Ischemic stroke	0.769 (0.610-0.968)	0.025	
Intracranial hemorrhage	0.657 (0.466-0.920)	0.015	
Composite outcome (stroke + ICH)	0.728 (0.599-0.882)	0.001	
Fatal ischemic stroke	0.539 (0.320-0.894)	0.017	
Fatal intracranial hemorrhage	0.472 (0.201-1.034)	0.068	
Death from composite outcome	0.525 (0.338-0.805)	0.003	
All-cause death	0.833 (0.694-0.999)	0.049	

Conclusions—NOAC was associated with a significant lower risk of ICH and ischemic stroke compared with warfarin. NOAC might be a more effective and safer treatment option for Asian patients with nonvalvular AF and a prior history of ICH. (*Stroke*. 2020;51:416-423. DOI: 10.1161/STROKEAHA.119.028030.)

ENSAYOS CLÍNICOS (FINALIZADOS)



01

El problema clínico



02

Estudios observacionales



03

Ensayos clínicos aleatorizados finalizados



04

Ensayos clínicos aleatorizados en marcha



05

Y mientras tanto qué hacemos?



06

Conclusiones



Results: RCTs providing data for this IPDMA

RCT	Participants	Intervention (start OAC)	Comparator (avoid OAC)	Ratio	Primary outcome	Follow- up
 SoSTART? Start or Stop Anticoagulants Randomised Trial	ICrH >24h after onset, age >17y, AF, CHA ₂ DS ₂ -VASc score ≥2 (n=201)	NOAC or vitamin K antagonist (n=100)	Antiplatelet agents or no antithrombotic agents (n=101)	1:1	Recurrent symptomatic ICH	≥12m
 APACHE-AF	Anticoagulant-associated ICH 7-90d after onset, age >17y, AF, mRS<5, CHA ₂ DS ₂ -VASc score ≥2 (n=101)	Apixaban (n=50)	Antiplatelet agent or no antithrombotic agents (n=51)	1:1	Vascular death or non-fatal stroke	≥6m
NASPAF-ICH 	ICH >14d after onset, age >44y, AF indicating OAC by CHADS ₆₅ score (n=30)	NOAC (n=21)	Aspirin (n=9)	2:1	Recurrent stroke	≥6m



Effects of oral anticoagulation in people with atrial fibrillation after spontaneous intracranial haemorrhage (COCROACH): prospective, individual participant data meta-analysis of randomised trials



Rustam Al-Shahi Salman, Jacqueline Stephen, Jayne F Tierney, Steff C Lewis, David E Newby, Adrian R Parry-Jones, Philip M White, Stuart J Connolly, Oscar R Benavente, Dar Dowlathshahi, Charlotte Cordonnier, Catherine M Viscoli, Kevin N Sheth, Hooman Kamel, Roland Veltkamp, Kristin T Larsen, Jeannette Hofmeijer, Henk Kerkhoff, Floris H B M Schreuder, Ashkan Shoamanesh, Catharina J M Klijn*, H Bart van der Worp*, for the Collaboration of Controlled Randomised Trials of Long-Term Oral Antithrombotic Agents After Spontaneous Intracranial Haemorrhage (COCROACH)†*

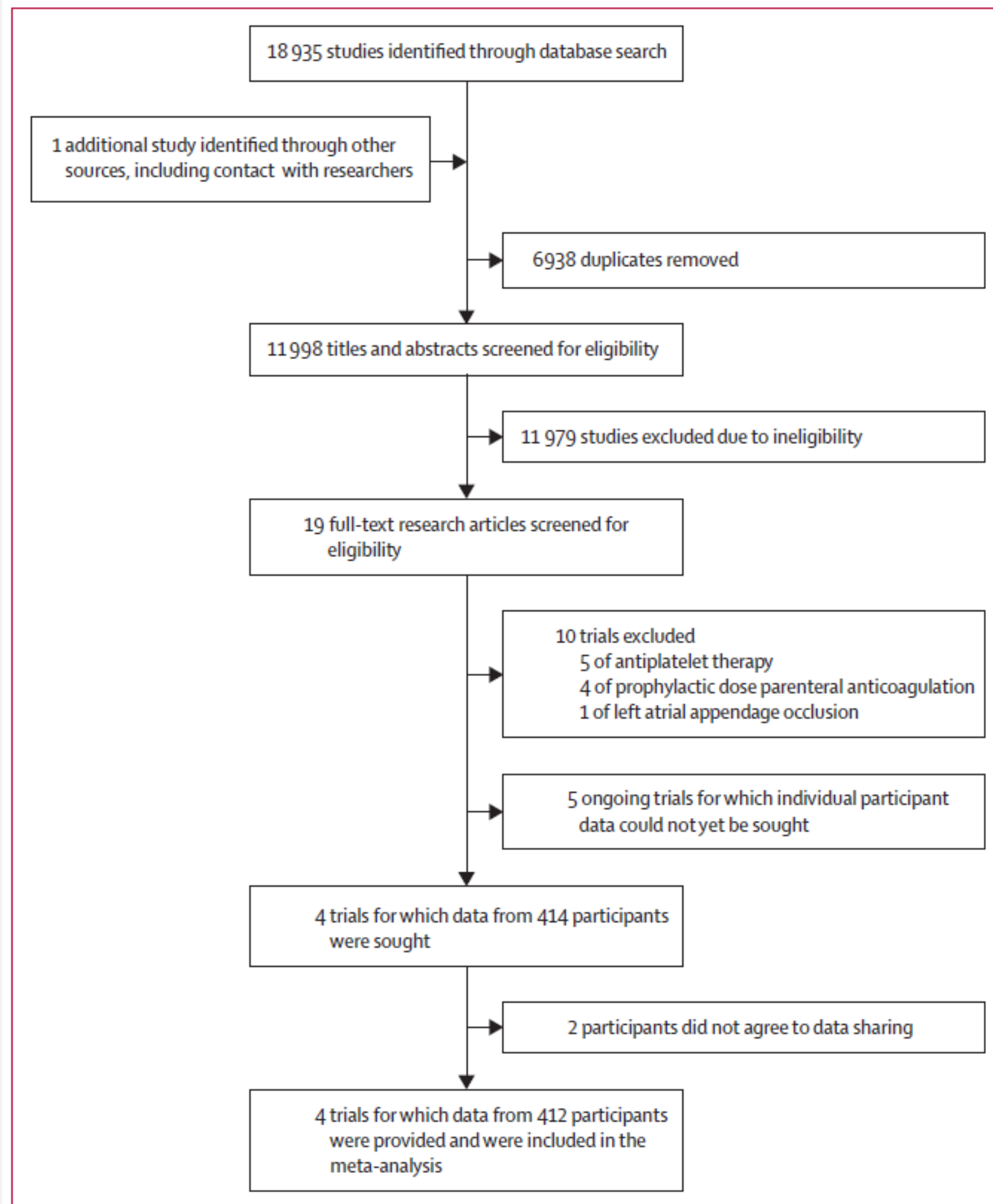


Figure 1: Study selection

	Start oral anticoagulation	Avoid oral anticoagulation
Participants in all included trials		
Number of participants	212	200
Age group, years		
<75	46 (22%)	56 (28%)
75–85	109 (51%)	87 (44%)
>85	57 (27%)	57 (29%)
CHA ₂ DS ₂ -VASc score*		
≤4	131 (62%)	118 (59%)
>4	81 (38%)	82 (41%)
Participants in SoSTART, APACHE-AF, and NASPAF-ICH†		
Number of participants	171	161
Age, years	78.2 (74.0–84.7)	78.7 (73.4–83.6)
Sex		
Male	101 (59%)	97 (60%)
Female	70 (41%)	64 (40%)
Ethnicity		
White	161 (94%)	154 (96%)
All other ethnic groups	10 (6%)	7 (4%)
Lobar intracerebral haemorrhage‡	55 (32%)	51 (32%)
Non-lobar intracerebral haemorrhage§	107 (63%)	101 (63%)
Supratentorial deep origin	81/107 (76%)	76/101 (75%)
Cerebellar origin	20/107 (19%)	21/101 (21%)
Brainstem origin	6/107 (6%)	4/101 (4%)
Other	9 (5%)	9 (6%)
Intraventricular	5/9 (56%)	1/9 (11%)
Subarachnoid	2/9 (22%)	3/9 (33%)
Subdural	2/9 (22%)	5/9 (56%)
Time from qualifying intracranial haemorrhage symptom onset to randomisation, days	77 (34–169)	75 (36–179)
CHA ₂ DS ₂ -VASc score*		
1	2 (1%)	1 (1%)
2	31 (18%)	26 (16%)
3	35 (20%)	31 (19%)
4	49 (29%)	46 (29%)
5	33 (19%)	25 (16%)
6	14 (8%)	22 (14%)
7	6 (4%)	9 (6%)
8	1 (1%)	1 (1%)

	Start oral anticoagulation (n=212)	Avoid oral anticoagulation (n=200)
Primary outcome		
Any stroke or cardiovascular death	29 (14%)	43 (22%)
Secondary outcomes		
Ischaemic major adverse cardiovascular events	9 (4%)	38 (19%)
Ischaemic stroke	9 (4%)	31 (16%)
Systemic arterial embolism	0	0
Pulmonary embolism	0	4 (2%)
Myocardial infarction	0	4 (2%)
Haemorrhagic major adverse cardiovascular events	15 (7%)	9 (5%)
Intracranial haemorrhage	12 (6%)	5 (3%)
Major extracranial haemorrhage	3 (1%)	4 (2%)
Death from any cause	38 (18%)	29 (15%)
Cardiovascular death	17 (8%)	12 (6%)
Death from any other cause	21 (10%)	17 (9%)
Death or dependence (modified Rankin Scale score 3–6) after 1 year*	78 (53%)	74 (51%)

Data are n (%). *Data were available for 147 participants who started oral anticoagulation and 145 participants who avoided oral anticoagulation in APACHE-AF, NASPAF-ICH, and SoSTART (appendix p 16).

Table 2: Frequencies of the first occurrence of outcome events during follow-up in all included trials

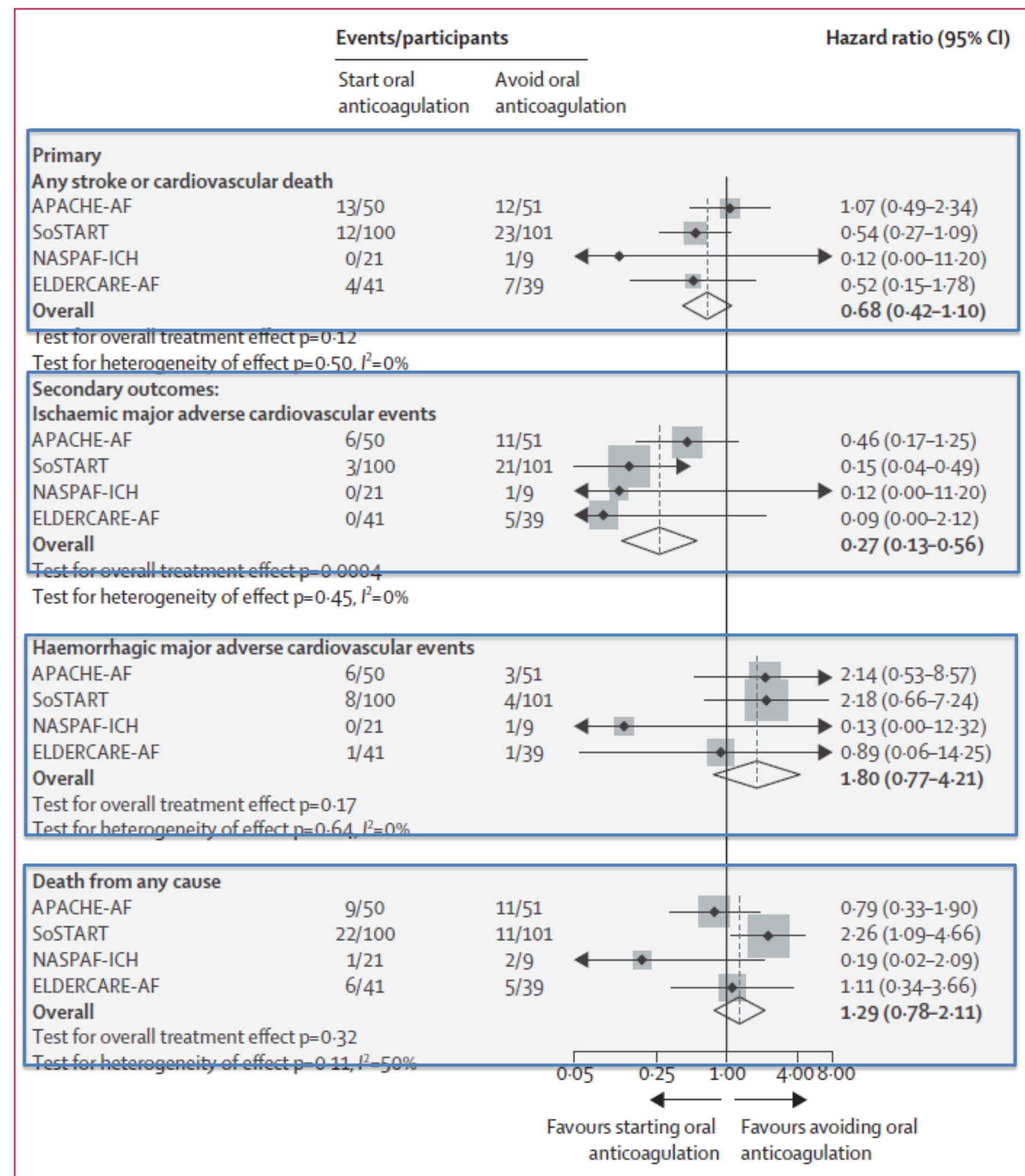
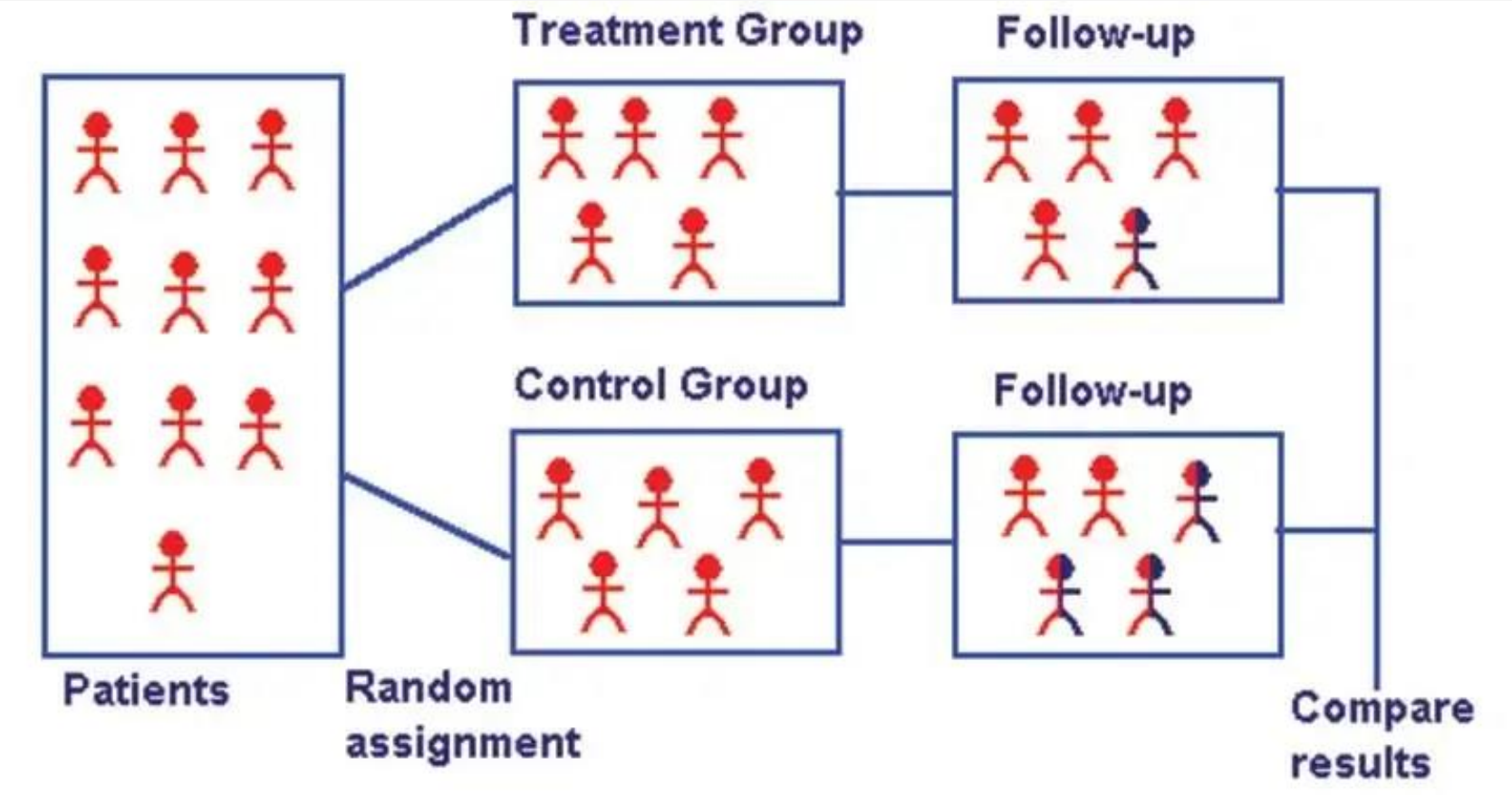


Figure 2: Effect of starting versus avoiding oral anticoagulation for atrial fibrillation after intracranial haemorrhage on primary and secondary outcomes, using individual participant data from four trials

ENSAYOS CLÍNICOS ALEATORIZADOS (EN MARCHA)



01 El problema clínico →

02 Estudios observacionales →

03 Ensayos clínicos aleatorizados finalizados →

04 **Ensayos clínicos aleatorizados en marcha** →

05 Y mientras tanto qué hacemos? →

06 Conclusiones →

Let's resolve this uncertainty by recruiting patients to the ongoing RCTs of OAC for AF after ICrH (2 May 2022)

	RCT	Stroke	Intervention vs. comparator	Recruited / target	Contact
	STATICH	ICH	OAC vs no OAC	57 / 250	Rønning/Sandset
	A₃ICH	ICH	Apixaban vs LAAO vs no antithrombotic therapy	60 / 300	Cordonnier
	PRESTIGE-AF	ICH	NOAC vs no OAC	125 / 654	Veltkamp
	ASPIRE	ICH	Apixaban vs aspirin	84 / 700	Sheth/Kamel
	ENRICH-AF	ICrH	Edoxaban vs no OAC	330 / 1,200	Shoamanesh

Anticoagulation in patients with cerebral amyloid angiopathy

Survivors of intracranial haemorrhage with atrial fibrillation are a population that have a heightened risk of future ischaemic stroke and recurrent intracranial haemorrhage.¹ In the absence of definitive randomised evidence to guide antithrombotic prophylaxis in these patients, current guidelines recommend individualised decisions that weigh a patient's absolute risks of thromboembolism and recurrent haemorrhage.² Intracranial haemorrhage can occur from different underlying causes, with different rates of disease progression and intracranial haemorrhage recurrence. Lobar intracerebral haemorrhage and spontaneous convexity subarachnoid haemorrhage are likely to result from underlying cerebral amyloid angiopathy in patients aged older than 50 years; these types of haemorrhage carry a two to four times higher risk of recurrence compared with non-lobar intracerebral haemorrhage resulting from arteriolosclerosis.³ Although observational data have suggested net benefit from anticoagulation in intracranial haemorrhage survivors with atrial fibrillation, including those with lobar and cerebral amyloid angiopathy-related intracerebral haemorrhage,⁴ the propensity for confounding by indication and immortal time bias limit their interpretation.

Three large main-phase randomised trials comparing anticoagulation with no anticoagulation in survivors of intracranial haemorrhage with atrial fibrillation are ongoing (appendix). The Edoxaban for Intracranial Haemorrhage Survivors with Atrial Fibrillation trial (ENRICH-AF; NCT03950076) is assessing standard dosing edoxaban (60 mg daily; dose reduced to 30 mg daily in patients with moderate renal impairment, bodyweight of ≤60 kg, or concomitant use of potent P-glycoprotein inhibitors) compared

with non-anticoagulant medical treatment for stroke prevention in survivors of intracranial haemorrhage with atrial fibrillation. ENRICH-AF is currently enrolling patients at 239 hospitals in 20 countries. Following a safety review of the first 699 patients (174 [25%] of 699 with lobar intracranial haemorrhage and 34 [5%] of 699 with convexity subarachnoid haemorrhage), the ENRICH-AF data safety monitoring board (DSMB) recommended that participants with lobar intracranial haemorrhage and convexity subarachnoid haemorrhage stop receiving the drug as soon as possible and that no further patients with these intracranial haemorrhage subtypes be enrolled. The DSMB indicated that these recommendations were based on observations of unacceptably high risks of recurrent haemorrhagic stroke among patients with lobar intracerebral haemorrhage and convexity subarachnoid haemorrhage assigned to the edoxaban arm. The ENRICH-AF steering committee has accepted the DSMB recommendations and remains masked to these results (two members who were unmasked to interact with the DSMB are recused from further participation). The ENRICH-AF trial is continuing to recruit the remainder of the eligible population, and the results for the participants with lobar intracerebral haemorrhage and convexity subarachnoid haemorrhage will not be available until after study completion. In the interim, we write to make physicians aware of these ENRICH-AF DSMB recommendations as survey data indicate that 30–70% of specialists are currently resuming anticoagulation in survivors of lobar and cerebral amyloid angiopathy-related intracerebral haemorrhage with atrial fibrillation.⁵ On the basis of emerging information from the ENRICH-AF trial, caution is warranted regarding the use of standard-dose anticoagulation in survivors of lobar intracerebral haemorrhage and

convexity subarachnoid haemorrhage with atrial fibrillation outside of ongoing randomised trials until more data become available on the net benefit of anticoagulation in these high-risk subgroups of patients.

AS reports research funding from the National Institutes of Health, Canadian Institutes of Health Research, Heart and Stroke Foundation of Canada, Brain Canada, British Heart Foundation, Medical Research Future Fund, Marta and Owen Boris Foundation, Daiichi Sankyo, Bayer, Servier Canada, and Octapharma; and reports consultancy honoraria from AstraZeneca, Bayer AG, Biocodes, Daiichi Sankyo, Servier Canada, and Takeda Pharmaceuticals. The ENRICH-AF trial is an Investigator Initiated study that is supported by an unrestricted grant-in-aid from Daiichi Sankyo Company. *Members of the ENRICH-AF Steering Committee are listed in the appendix.

Ashkan Shoamanesh, on behalf of the *ENRICH-AF Steering Committee
ashkan.shoamanesh@phri.ca

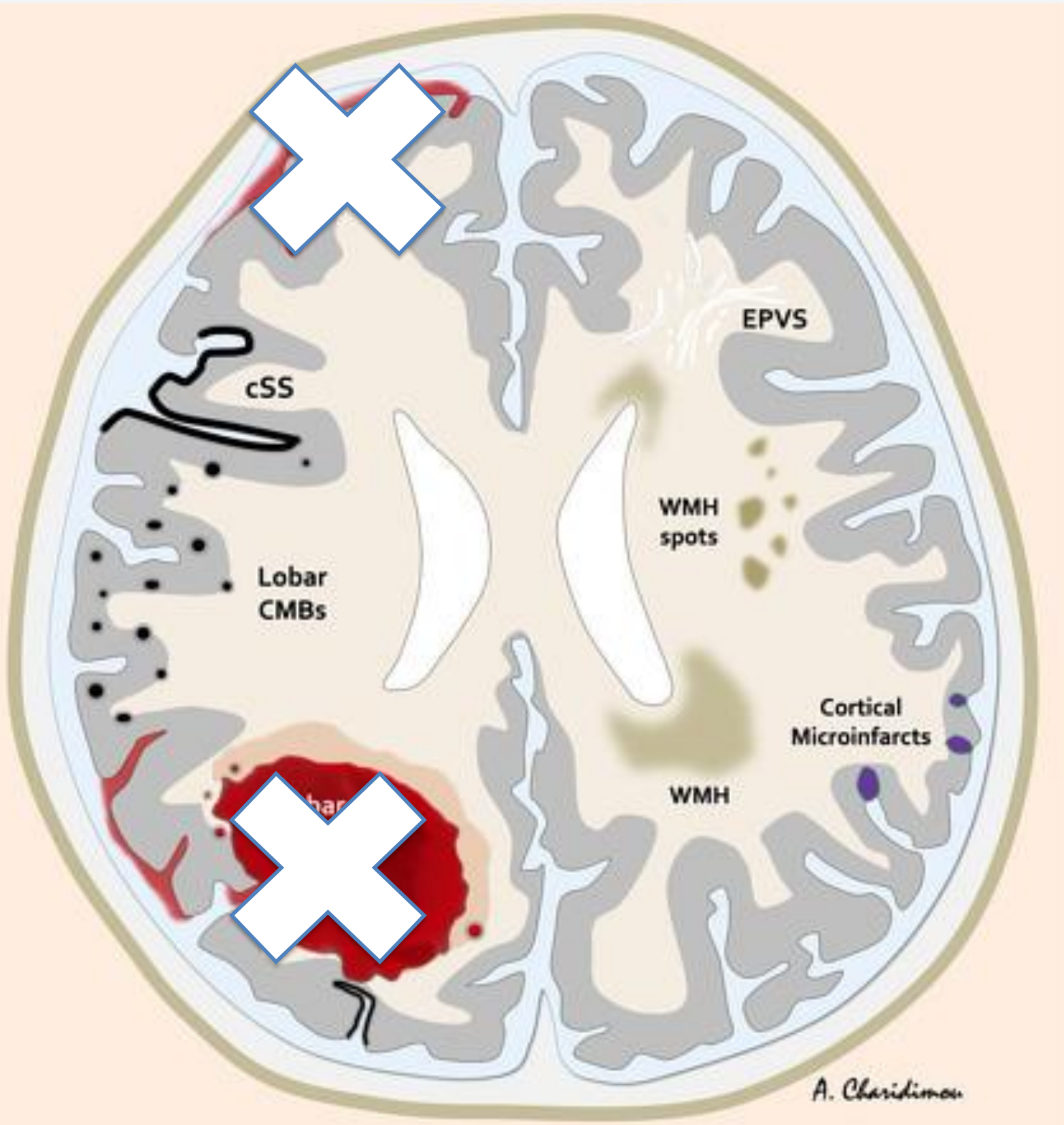
Department of Medicine, Population Health Research Institute, McMaster University, Hamilton, Canada

1. Li L, Poon MTC, Samarasekera NE, et al. Risks of recurrent stroke and all serious vascular events after spontaneous intracerebral haemorrhage: pooled analyses of two population-based studies. *Lancet Neurol* 2021; 20: 437–47.
2. Shoamanesh A, Patrice Lindsay M, Castellucci LA, et al. Canadian stroke best practice recommendations: management of spontaneous intracerebral hemorrhage, 7th edition update 2020. *Int J Stroke* 2021; 16: 321–41.
3. Charidimou A, Imatzumi T, Moulin S, et al. Brain hemorrhage recurrence, small vessel disease type, and cerebral microbleeds: a meta-analysis. *Neurology* 2017; 89: 820–29.
4. Biffi A, Kuramatsu JB, Leasure A, et al. Oral anticoagulation and functional outcome after intracerebral hemorrhage. *Ann Neurol* 2017; 82: 755–65.
5. Xu Y, Shoamanesh A, Schulman S, et al. Oral anticoagulant re-initiation following intracerebral hemorrhage in non-valvular atrial fibrillation: global survey of the practices of neurologists, neurosurgeons and thrombosis experts. *PLoS One* 2018; 13: e0191137.

See Online for appendix



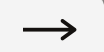
Published Online
October 12, 2023
[https://doi.org/10.1016/S0140-6736\(23\)00205-1](https://doi.org/10.1016/S0140-6736(23)00205-1)





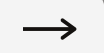
01

El problema clínico



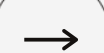
02

Estudios observacionales



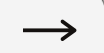
03

Ensayos clínicos aleatorizados finalizados



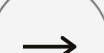
04

Ensayos clínicos aleatorizados en marcha



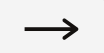
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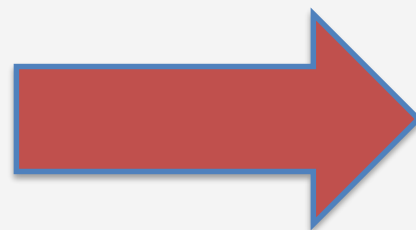
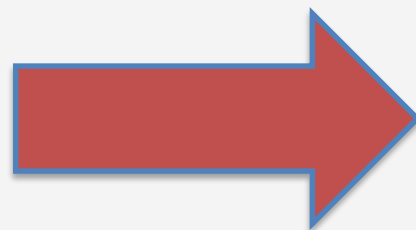
Y mientras tanto qué hacemos?



06

Conclusiones





Recommendations for Management of Antithrombotic Agents Referenced studies that support recommendations are summarized in Data Supplements 77 through 79.		
COR	LOE	Recommendations
2a	C-LD	1. In patients with spontaneous ICH and conditions placing them at high risk of thromboembolic events, for example, a mechanical valve or LVAD, early resumption of anticoagulation to prevent thromboembolic complications is reasonable. ^{586,587}
2b	B-R	2. In patients with spontaneous ICH with an indication for antiplatelet therapy, resumption of antiplatelet therapy may be reasonable for the prevention of thromboembolic events based on consideration of benefit and risk. ^{588,589}
2b	B-NR	3. In patients with nonvalvular atrial fibrillation (AF) and spontaneous ICH, the resumption of anticoagulation to prevent thromboembolic events and reduce all-cause mortality may be considered based on weighing benefit and risk. ^{590–595}
2b	C-LD	4. In patients with AF and spontaneous ICH in whom the decision is made to restart anticoagulation, initiation of anticoagulation ≈7 to 8 weeks after ICH may be considered after weighing specific patient characteristics to optimize the balance of risks and benefits. ^{596,597}
2b	C-LD	5. In patients with AF and spontaneous ICH deemed ineligible for anticoagulation, left atrial appendage closure may be considered to reduce the risk of thromboembolic events. ^{598–602}

Greenberg
Guidelines ICH
AHA

Recommendations.

In patients with AF who have experienced an ICH, **we cannot make recommendations** regarding whether or not oral anticoagulation should be (re-)started or not.

Quality of evidence: *Low*

Strength of recommendation: *Weak*

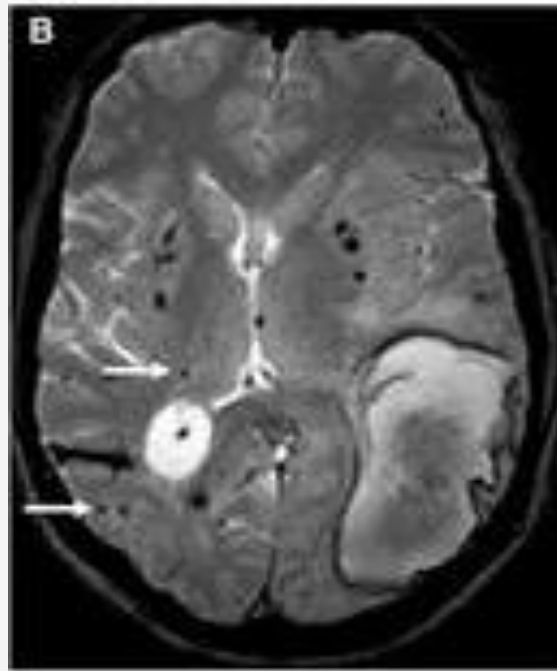
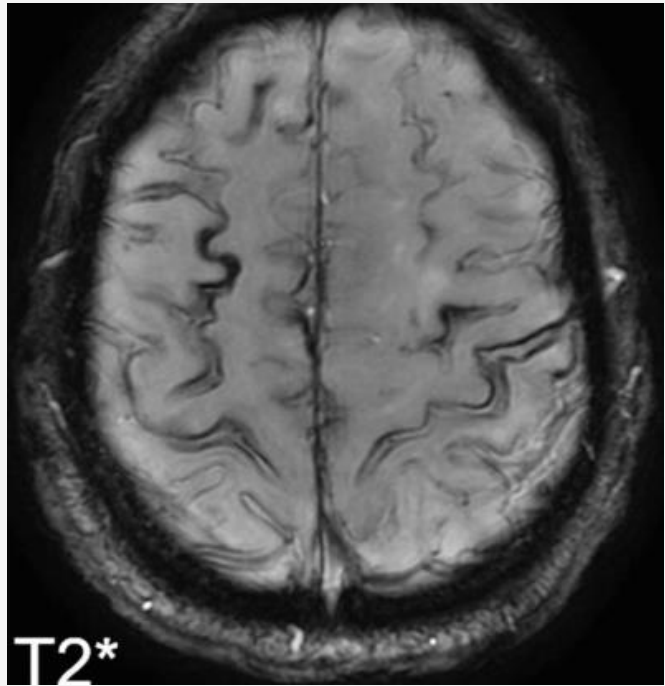
Expert opinion (Delphi vote: 7/7 agree).

In patients with AF who have experienced an ICH, **restarting** oral anticoagulation **can be considered** after careful weighing of risks and benefits.



Klijn
Eur Stroke J
2019

Algunos factores a considerar Individualizar beneficio / riesgo



- Edad
- Localización (lobular vs profundo)
 - Microsangrados, Siderosis cortical superficial
 - Alelos ApoE
 - Grado de control de presión arterial
 - Puntuaciones de riesgo: MICON
- Estado funcional y cognitivo
- Tipo de ACO
- Primera o segunda HIC
- Riesgo de caídas
- Función renal y hepática
- Preferencias del paciente y su familia



Left atrial appendage occlusion in patients with spontaneous intracerebral hemorrhage: An observational study

Carlos Moliner-Abós, M.D.^a, Blanca Albertí-Vall, M.D.^b, Xavier Millan-Álvarez, M.D., PhD.^a, Pol Camps-Renom, M.D., PhD.^{b,*}, Marina Guasch-Jiménez, M.D.^b, Lluís Asmarats-Serra, M.D., PhD.^a, Álvaro Lambea-Gil, M.D.^b, Garbiñe Ezcurra-Díaz, M.D.^b, Dabit Arzamendi-Aizpurua, M.D., PhD.^a, Joan Martí-Fàbregas, M.D., PhD.^b

Journal of Stroke and Cerebrovascular Diseases 33 (2024) 107481

Median follow-up 46 months

Table 6
Events during follow up.

Event	Overall (n=40)
Primary endpoint	16 (40)*
Death	10 (25)
- ICrH**	2 (20)
- Major bleeding	2 (20)
- Other Cardiovascular	2 (20)
- Non cardiovascular	4 (40)
Non-fatal events	7 (18)*
- ICrH*	4 (57)*
- Ischemic stroke	3 (43)*
- Major extracranial bleeding	0
- Systemic embolism	0

ICrH: intracranial hemorrhage.

* One patient had both an ICH and an ischemic stroke in the follow up.

** 6 ICrH includes 5 intracerebral hemorrhage and 1 subdural hematoma.

Table 7
Comparison of baseline characteristics between patients with and without a recurrent ICH.

	Recurrent ICH (n=6)	No recurrent ICH (n=34)	p
Age (mean ± SD; years)	73.5 (4.5)	77.1 (8.0)	0.29
Male gender	4 (67)	25 (74)	0.74
CHA2DS2-VASC score (median [IQR])	4 [3-4]	4 [3-4]	0.95
HASBLED score (median [IQR])	2.5 [2-3]	3 [2-3]	0.27
MICON score (median [IQR]) n=24	6 [3-12] (n=5)	8 [6-12] (n=19)	0.62
Previous ICH	2 (33)	5 (15)	0.28
Index ICH lobar location	6 (100)	19 (56)	0.04
Recurrent ICH location			
- Lobar	2		
- Deep	2		
- Subdural/ Subarachnoid	1		
- Unknown	1		
MR study	5 (83)	21 (62)	0.34
CMB presence	4/5 (80)	11/17 (65)	0.52
CMB or superficial siderosis presence	5/5 (100)	11/17 (65)	0.13
CMB burden (median [IQR])	7 [1-11]	2 [0-3]	0.28
CMB location			
- Lobar	1	8	
- Deep	0	1	
- Mixed	3	2	
GFR (median [IQR]; mL/min/ 1.73m2	80.8 (23.6)	63 (22.0)	0.08
Platelet count (mean ± SD; n° × 10 ⁹ /L)	252 (143)	248 (137)	0.94

ICH: intracranial hemorrhage, MR: magnetic resonance, CMB: cerebral micro-bleed, GFR: glomerular filtration rate

CONCLUSIONES

01 El problema clínico



02 Estudios observacionales



03 Ensayos clínicos aleatorizados finalizados



04 Ensayos clínicos aleatorizados en marcha



05 Y mientras tanto qué hacemos?



06 **Conclusiones**



CONCLUSIONES

- En pacientes que sobreviven a una hemorragia intracerebral y que además tienen FA, hay **argumentos a favor y en contra** de iniciar/reiniciar el tratamiento anticoagulante
- Estudios **observacionales** sugieren que es **preferible iniciar/reiniciar** el tratamiento anticoagulante en comparación con el tratamiento antiagregante, aunque existen sesgos de prescripción
- Los **ensayos clínicos** publicados hasta la fecha y los meta-análisis de los mismos **no son concluyentes**. Disminuye el riesgo isquémico y aumenta el riesgo hemorrágico en el grupo anticoagulado.
- Se encuentran **en marcha diversos ensayos** con potencia suficiente para dar respuesta definitiva a este dilema clínico
- **Otras variables** pueden influir en la decisión de iniciar/reiniciar el tratamiento anticoagulante o de no hacerlo
- En casos con elevado riesgo hemorrágico o contraindicaciones para el tratamiento anticoagulante, el **cierre de la orejuela auricular** podría ser una buena alternativa

Gràcies



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