

Challenging clinical scenarios in
anticoagulation for stroke
prevention in atrial fibrillation.
Recent serious bleeding event –
Intracranial bleeds

Assoc. Prof. Farid Aliyev, FESC

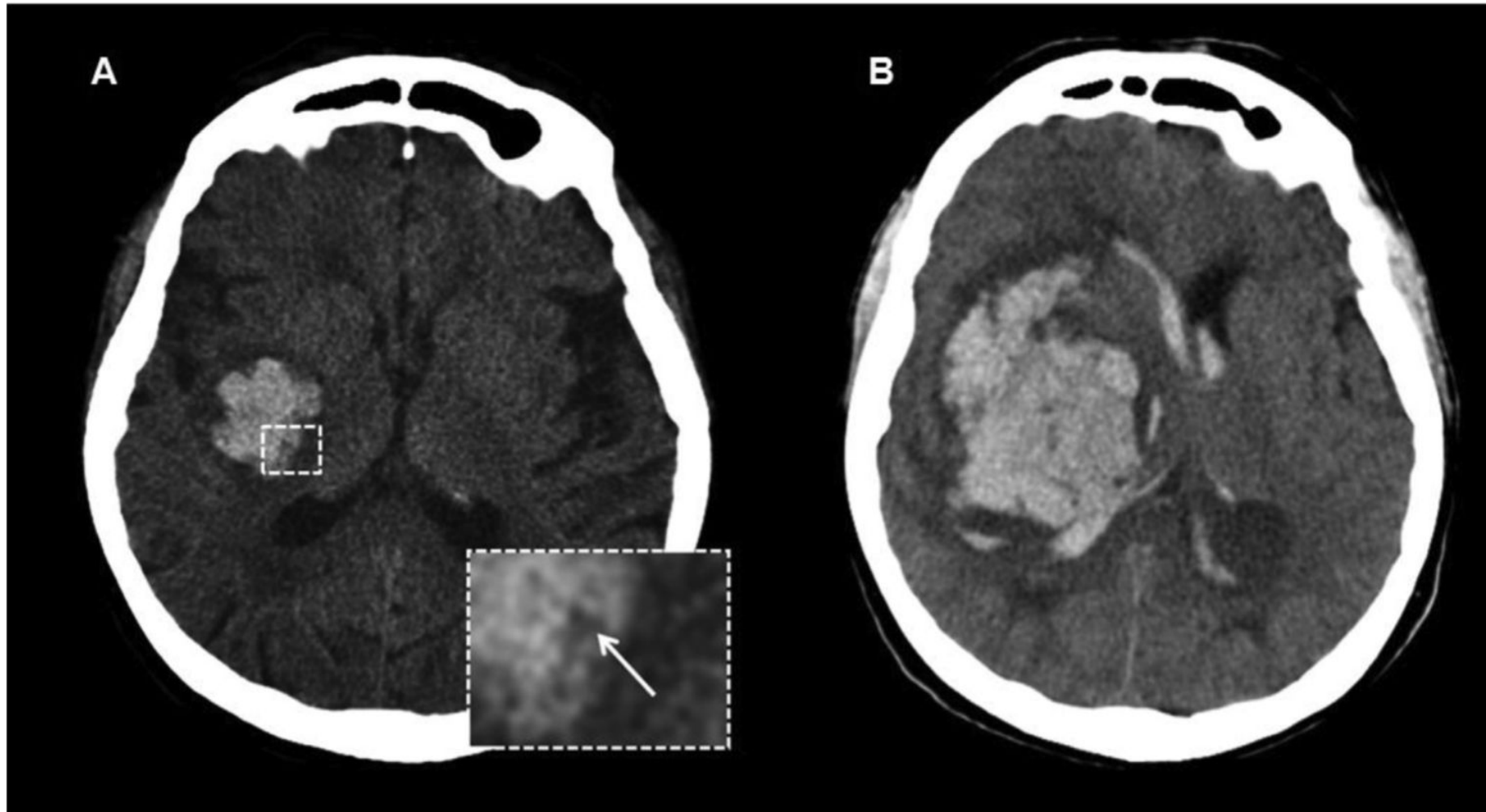
Baku Health Center

Baku, Azerbaijan

Facts

- The absolute risk of ICH in patients taking OAT is 0.25-1.1 %. This risk is 7-10 times higher than in general population.
- Up to half of patients treated with OAT-related ICH experience early clinical deterioration due to active bleeding, leading to hematoma enlargement.
- Mortality rates are up to 67%. Most survivors have severe disability.
- ICH expansion is more common (up to 54%) and delayed (up to 48 hours from onset) in OAT-associated ICH and represents an appealing target for acute ICH treatment.

Role of dynamic imaging



Steps

- 1. Reverse OAT
- 2. Dynamic imaging and early intervention and decompression
- 3. Active treatment phase
- 4. Evaluation for reinstatement of OAT
- 5. Evaluation for LAAO
- 6 Modify possible risk factors
- 6. Rehabilitation

Do not forget !!!

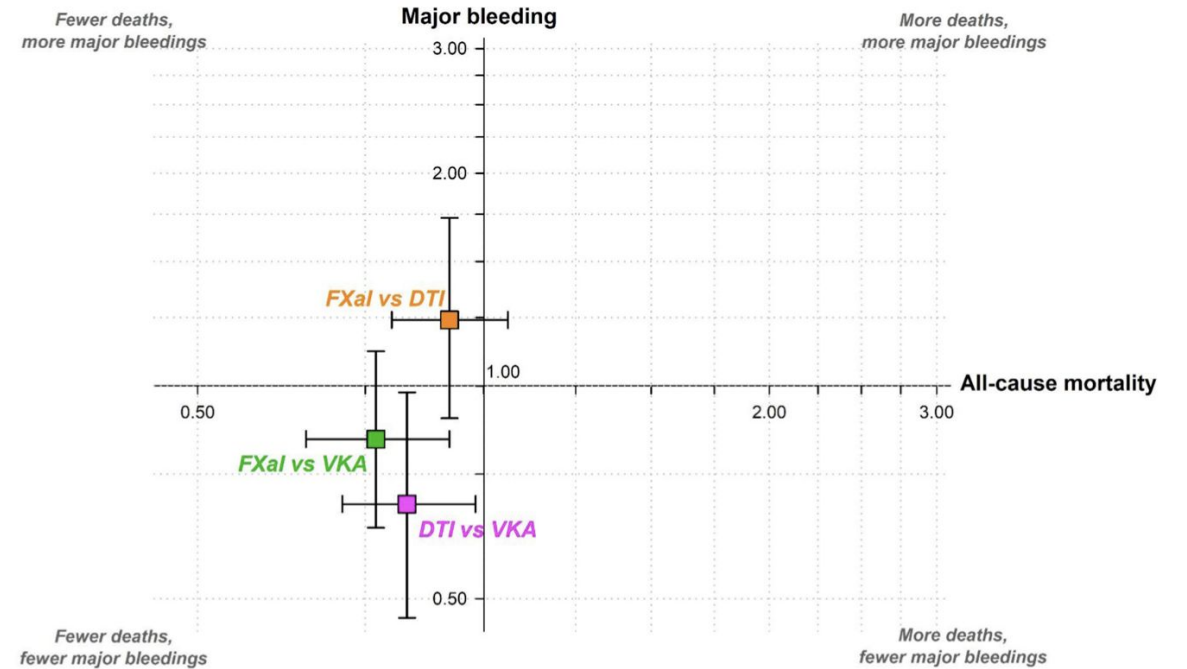
- OAT agents have not the same bleeding risk and stroke prevention rate. They are different.
- CHADSVASC and HASBLED scores are not stable and should be reassessed in each patients during every follow up visit.
- Are the same HASBLED scores have the same bleeding risk?
- Are the same CHADSVASC scores have the same ischemic stroke risk?

Are all OA are the same?

Original research

Comparative effectiveness of oral anticoagulants in everyday practice

A John Camm ¹, Keith A A Fox, ² Saverio Viridone, ³ Jean-Pierre Bassand, ^{3,4} David A Fitzmaurice, ⁵ Samuel I Berchuck, ⁶ Bernard J Gersh, ⁷ Samuel Z Goldhaber, ⁸ Shinya Goto, ⁹ Sylvia Haas, ¹⁰ Frank Misselwitz, ¹¹ Karen S Pieper, ³ Alexander G G Turpie, ¹² Freek W A Verheugt ¹³, Riccardo Cappato, ¹⁴ Ajay K Kakkar, ^{3,15} for the GARFIELD-AF investigators



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

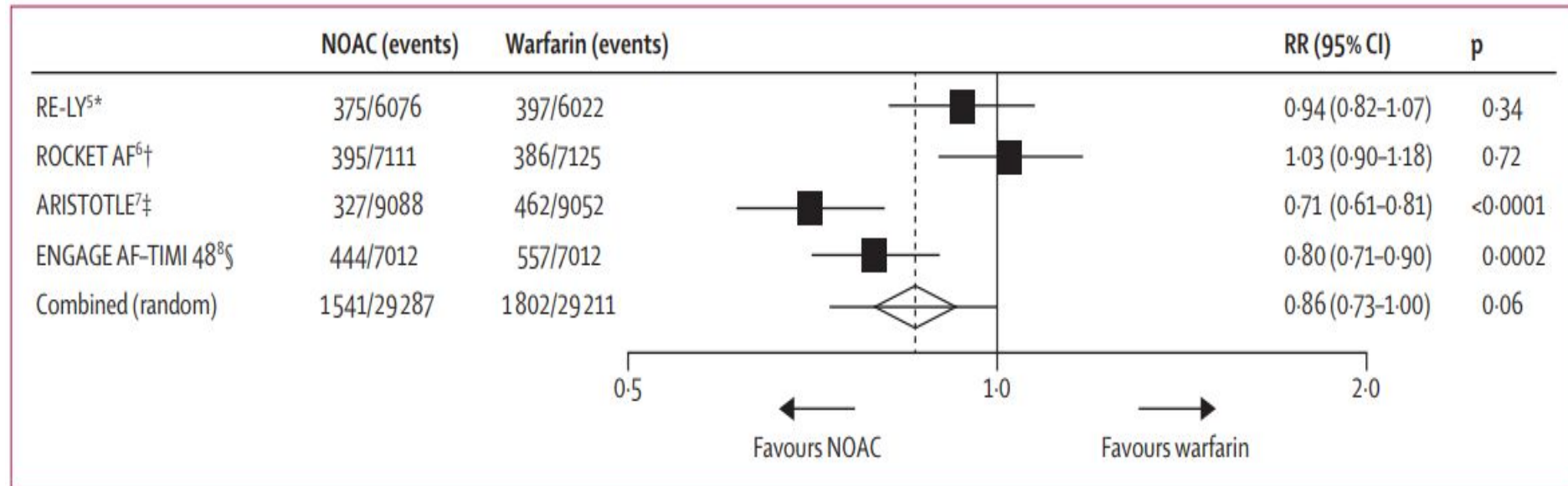


Figure 3: Major bleeding

Data are n/N, unless otherwise indicated. Heterogeneity: $I^2=83\%$; $p=0.001$. NOAC=new oral anticoagulant. RR=risk ratio. *Dabigatran 150 mg twice daily.

†Rivaroxaban 20 mg once daily. ‡Apixaban 5 mg twice daily. §Edoxaban 60 mg once daily.

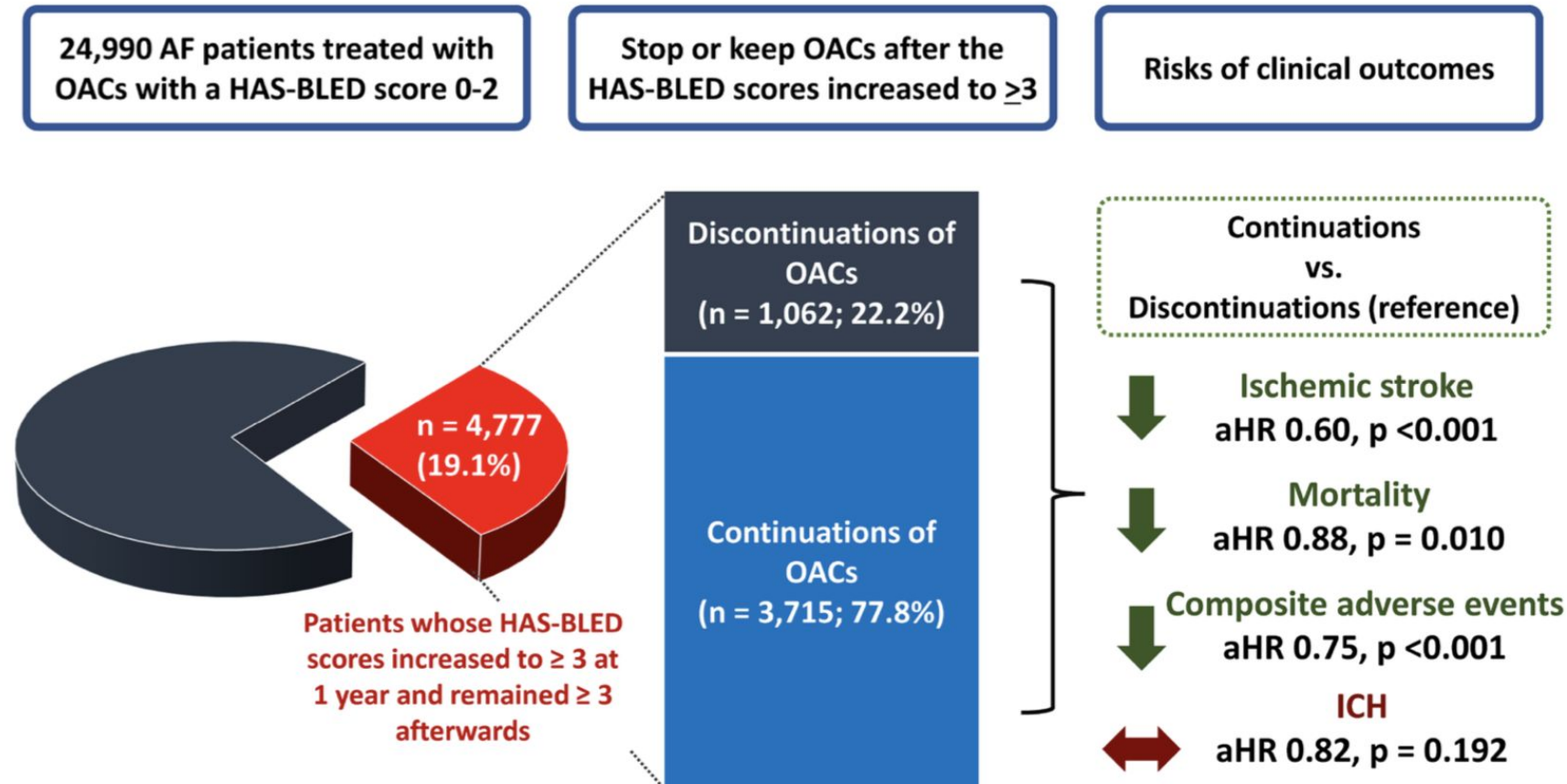
Table 9 Risk factors for bleeding with OAC and antiplatelet therapy

Non-modifiable	Potentially modifiable	Modifiable	Biomarkers
Age >65 years	Extreme frailty ± excessive risk of falls ^a	Hypertension/elevated SBP	GDF-15
Previous major bleeding	Anaemia	Concomitant antiplatelet/NSAID	Cystatin C/CKD-EPI
Severe renal impairment (on dialysis or renal transplant)	Reduced platelet count or function	Excessive alcohol intake	cTnT-hs
Severe hepatic dysfunction (cirrhosis)	Renal impairment with CrCl <60 mL/min	Non-adherence to OAC	von Willebrand factor (+ other coagulation markers)
Malignancy	VKA management strategy ^b	Hazardous hobbies/occupations	
Genetic factors (e.g. CYP 2C9 polymorphisms)		Bridging therapy with heparin	
Previous stroke, small-vessel disease, etc.		INR control (target 2.0 - 3.0), target TTR >70% ^c	
Diabetes mellitus		Appropriate choice of OAC and correct dosing ^d	
Cognitive impairment/dementia			



Continuation or discontinuation of oral anticoagulants after HAS-BLED scores increase in patients with atrial fibrillation

Tze-Fan Chao^{1,2} · Yi-Hsin Chan^{3,4,5} · Chern-En Chiang^{1,2,6} · Ta-Chuan Tuan^{1,2} · Jo-Nan Liao^{1,2} · Tzeng-Ji Chen⁷ · Gregory Y. H. Lip^{8,9} · Shih-Ann Chen^{1,2,10}



Risk factors for ICH

Modifiable

- (Uncontrolled) hypertension
- Low LDL/triglycerides
- Excessive alcohol consumption
- Current smoking
- Concomitant antiplatelet drugs
- Anticoagulant therapy
- Sympathomimetic drugs (cocaine, heroin, amphetamine, ephedrine, etc.)

Non-modifiable

- Older age
- Male sex
- Asian ethnicity
- Chronic kidney disease
- Cerebral disease:
 - ♦ Cerebral amyloid angiopathy
 - ♦ Small vessel disease

(Re)institution of OAC: Decision-making post ICH in patients with AF

Consider risk factors for recurrent ICH

Address modifiable bleeding risk factors

Weight the risks and benefits of OAC (re)institution
in consultation with neurologist/stroke specialist

OAC use (with/without cerebral diseases):
(observational data, RCTs are ongoing)

- Significant decrease in stroke and mortality
- Comparable risk for recurrent ICH vs. OAC non-use

OAC
Class IIa,
LoE C

2–4 weeks
after ICH

Irreversible cause of
ICH, non-modifiable
risk factors, etc.

LAA
occlusion
Class IIb, LoE B

No stroke
prevention
therapy

RCTs are ongoing

Additional considerations:

- No reversible/treatable cause of ICH
- ICH during OAC interruption
- ICH on adequate or underdosed OAC
- The need for concomitant antiplatelet therapy (e.g., ACS/PCI)

CMB on cerebral imaging:

- The risk of ICH increases with the presence and increasing CMB burden, but
- Regardless of CMB presence, burden and distribution, the absolute risk of ischaemic stroke is consistently substantially higher than that of ICH in post-stroke/ TIA patients

≥10 CMBs:

64 IS vs. 27 ICH events/1000 person-years

>20 CMBs:

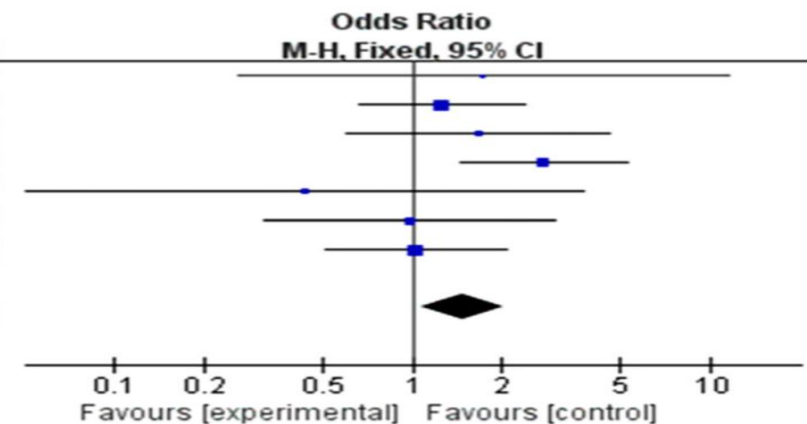
73 IS vs. 39 ICH events/1000 person-years

REVIEW

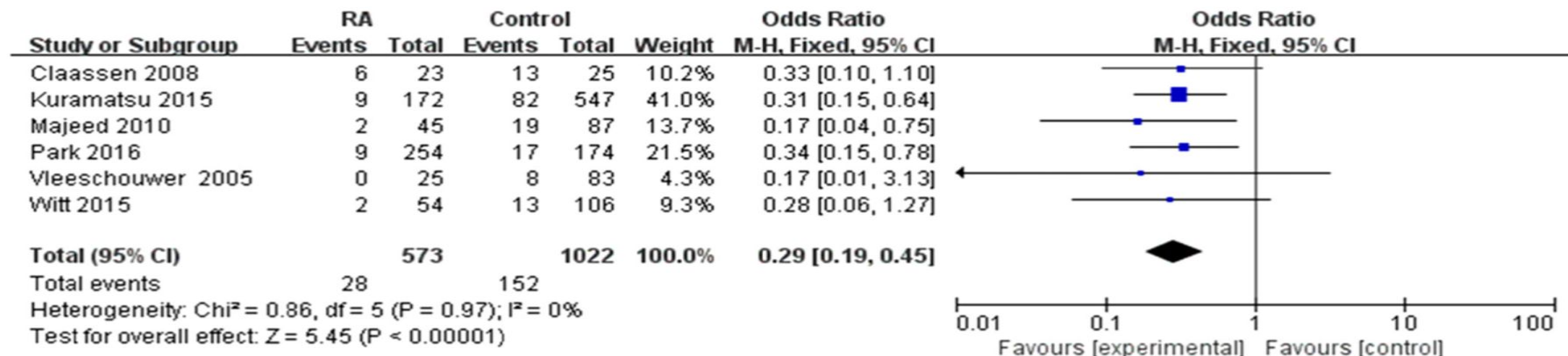
Whether it is safe to start anticoagulation after intracranial hemorrhage within 2 weeks: A systematic review and meta-analysis

BLEEDING

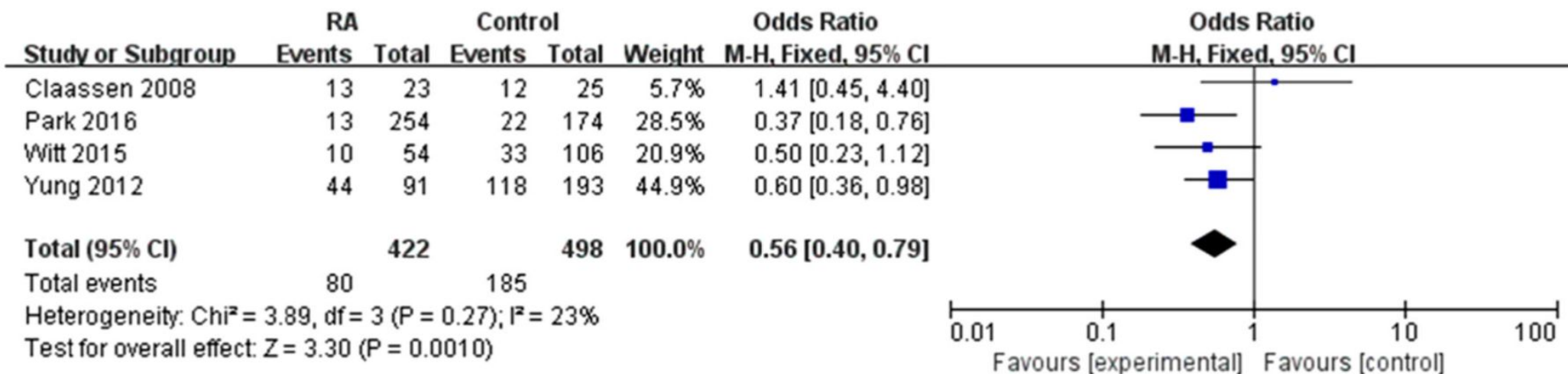
Study or Subgroup	RA		Control		Weight	Odds Ratio M-H, Fixed, 95% CI
	Events	Total	Events	Total		
Claassen 2008	3	23	2	25	2.7%	1.73 [0.26, 11.38]
Kuramatsu 2015	14	172	36	547	26.0%	1.26 [0.66, 2.39]
Majeed 2010	8	45	10	87	9.2%	1.66 [0.61, 4.57]
Park 2016	46	254	13	174	20.8%	2.74 [1.43, 5.24]
Vleeschouwer 2005	1	25	7	81	5.2%	0.44 [0.05, 3.76]
Witt 2015	5	54	10	106	10.1%	0.98 [0.32, 3.02]
Yung 2012	14	91	29	193	25.9%	1.03 [0.51, 2.06]
Total (95% CI)		664		1213	100.0%	1.49 [1.08, 2.04]
Total events	91		107			
Heterogeneity: $\text{Chi}^2 = 6.58$, $\text{df} = 6$ ($P = 0.36$); $I^2 = 9\%$						
Test for overall effect: $Z = 2.44$ ($P = 0.01$)						



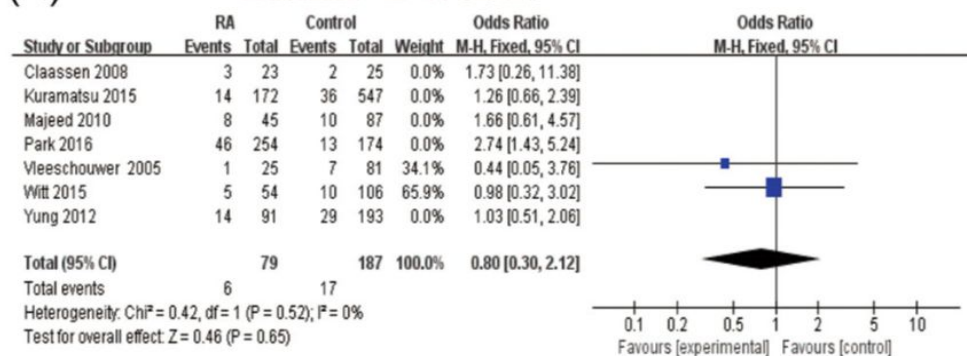
STROKE



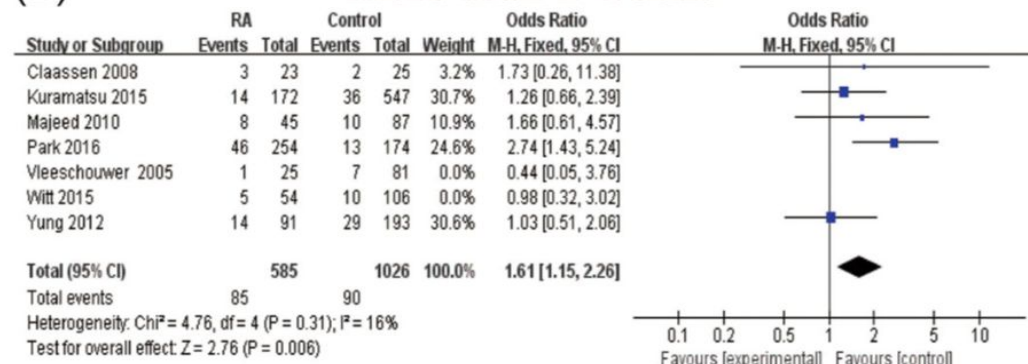
TOTAL MORTALITY



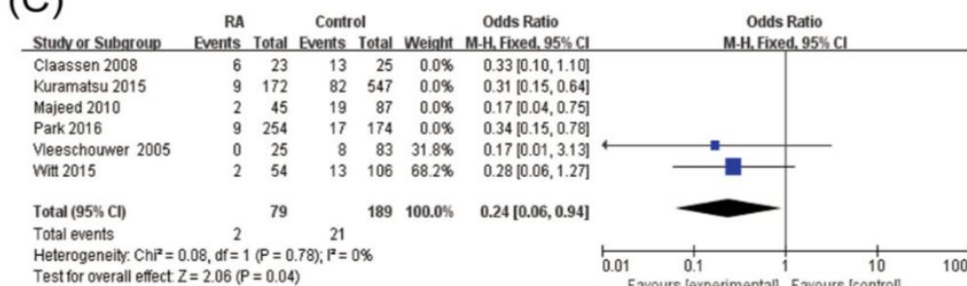
(A) within 2 weeks



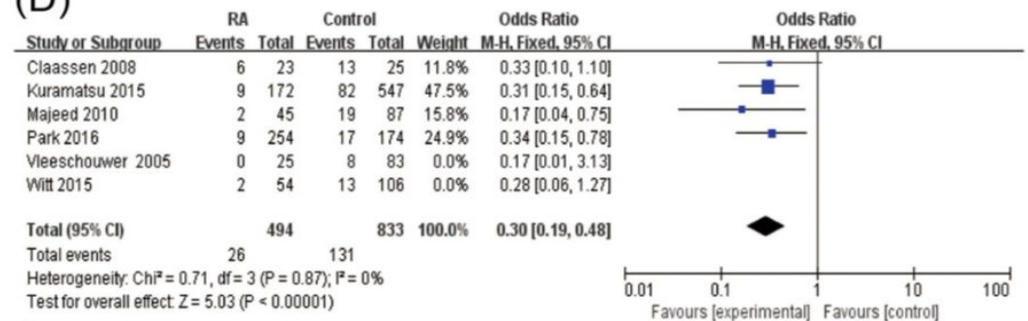
(B) more than 2 weeks



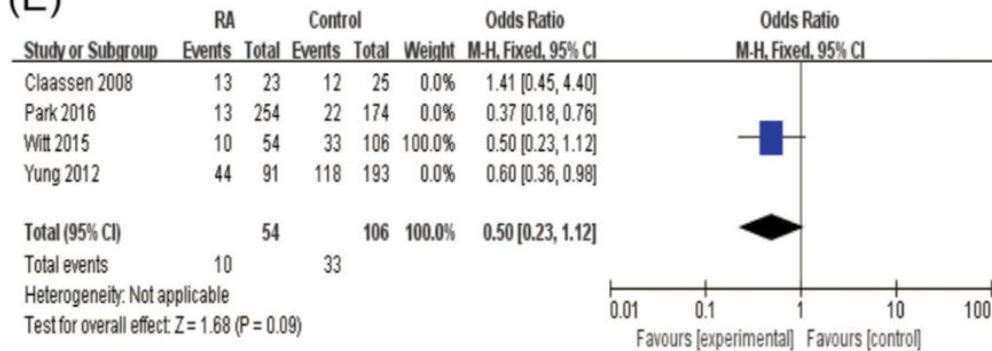
(C)



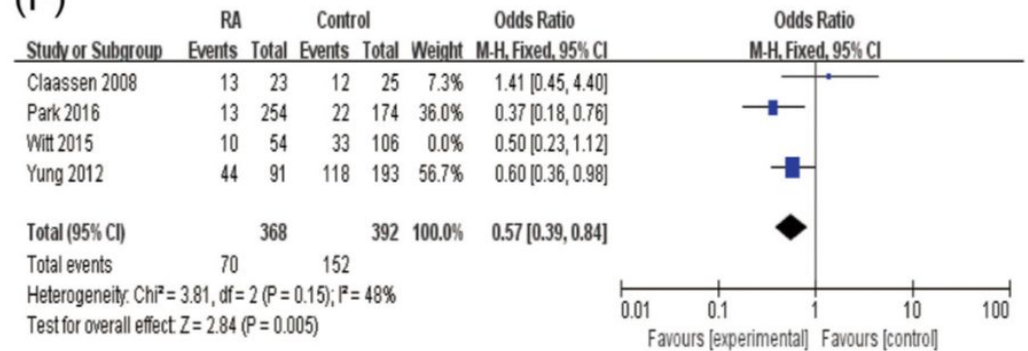
(D)



(E)



(F)



2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS)

Recommendations for occlusion or exclusion of the LAA

LAA occlusion may be considered for stroke prevention in patients with AF and contraindications for long-term anticoagulant treatment (e.g. intracranial bleeding without a reversible cause).^{448,449,481,482}

IIb

B

Surgical occlusion or exclusion of the LAA may be considered for stroke prevention in patients with AF undergoing cardiac surgery.^{459,483}

IIb

C

Keep in mind

- Device related thrombosis
- Peri-device leakage
- Epicardial devices may be an advantage

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THANK YOU FOR THE ATTENTION