May 2023

Hot issues in AF care

Dr. Peter Loewen
B.Sc.(Pharm), ACPR, Pharm.D., FCSHP, R.Ph.
Associate Professor of Pharmacy I UBC
David H MacDonald Professor of Clinical Pharmacy
UBC Center for Cardiovascular Innovation
UBC Collaboration for Outcomes Research & Evaluation

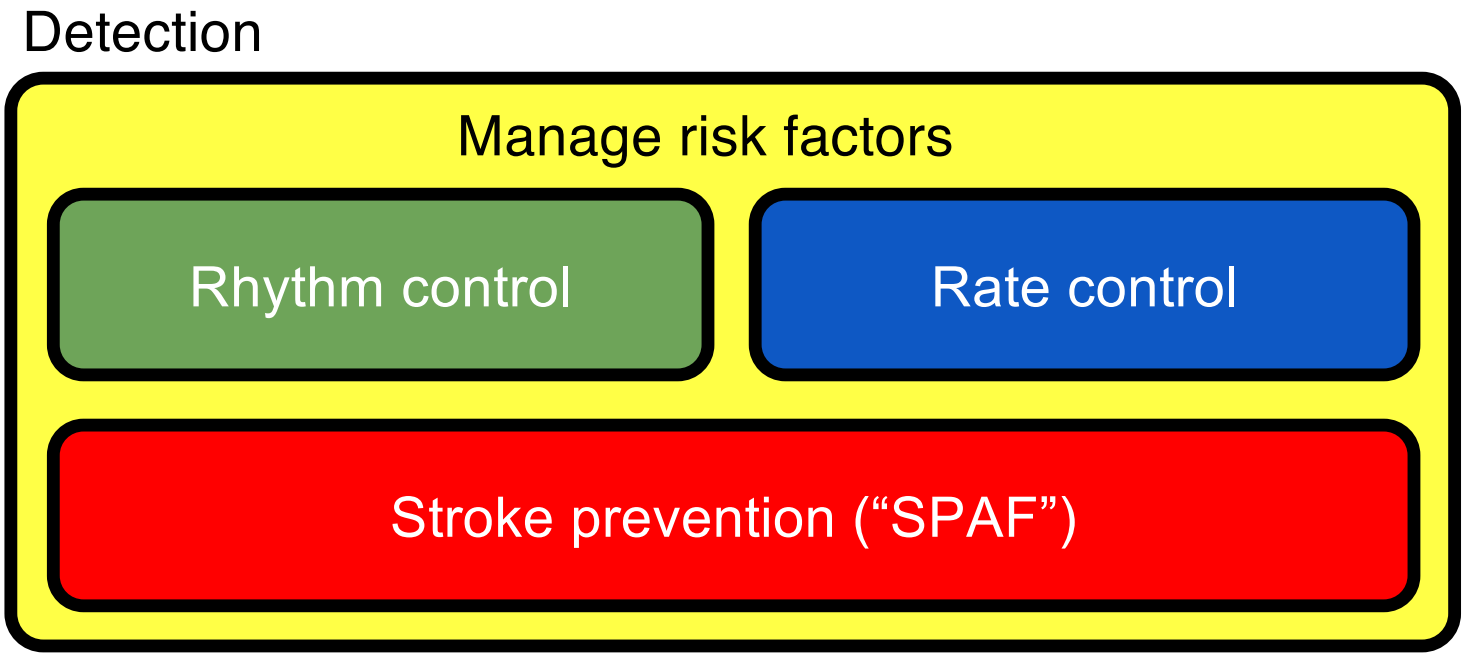
peterloewen.com

Themes for today

1. Screening
2. Triggers
3. Rhythm control check-in
4. OAC dosing
5. Adherence ← Stroke, Death, Bleeding


EVERYTHING
EVERYWHERE
ALL AT ONCE

Organizing our AF management thoughts



AF detection in primary care

screening, opportunistic case finding

Why screen for AF?

WHO principles for screening
(1) The condition sought should be an important health problem
(2) There should be an accepted treatment for patients with recognized disease
(3) Facilities for diagnosis and treatment should be available
(4) There should be a recognizable latent or early symptomatic stage
(5) There should be a suitable test or examination
(6) The test should be acceptable to the population
(7) The natural history of the condition, including development from latent to declared disease, should be adequately understood
(8) There should be an agreed policy on whom to treat as patients
(9) The cost of case-finding (including diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole
(10) Case-finding should be a continuing process and not a "once and for all" project

fulfilled
debated or dependent on tool used
not demonstrated

Extramiana F, Steg PG. Circulation. 2022;145(13):955–8.

PIAAF – Pharmacy-based screening

Observational
P: 1145 people ≥65 y/o without AF or with AF and not on OAC at 30 AB and ON pharmacies
I: single1-lead ECG, 2 BP readings, CANRISK diabetes questionnaire
O: prevalence of 'actionable' AF, defined as newly diagnosed AF, or previously diagnosed AF in an individual who was not receiving OAC. AF was defined as a 30 sec, single-lead ECG recording with irregular rhythm without p-waves.

N=29 AF cases found (95% were new AF)
BP >140/90 in 55% of all pts
High risk of diabetes in 44% of all pts

Of new AF cases:
17% started on OAC by 3mos
50% had improved BP
71% had confirmed diabetes

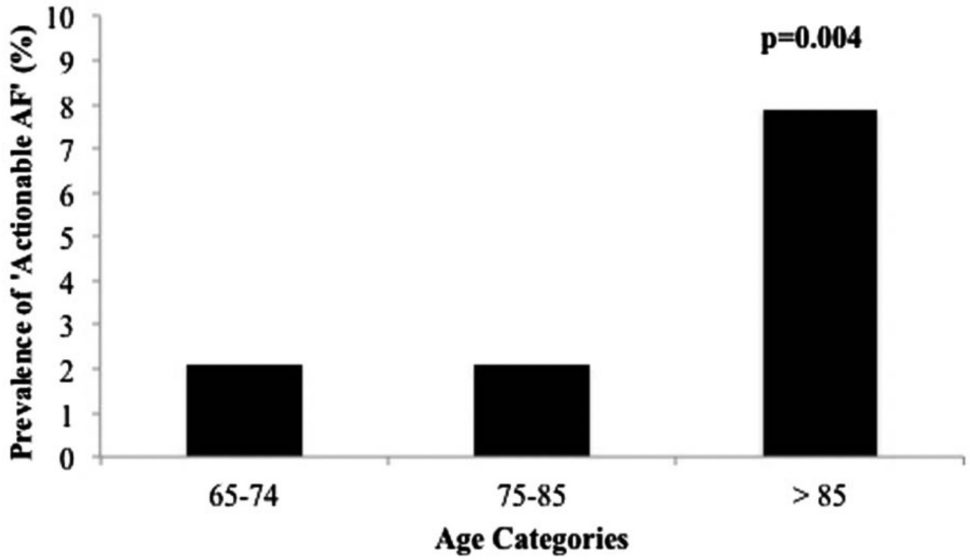


Figure 2 Prevalence of 'actionable AF' by age groups. AF, atrial fibrillation.

PIAFF-Pharmacy. Open Hear. 2016;3(2):e000515.

SCREEN-AF

unblinded RCT
P: 856 75+ y/o's with HTN and no AF in 48 primary care practices
I: 2-week continuous ECG patch monitor at baseline and at 3 mos + automated BP monitor with AF-detection used BID during AF cECG periods; **C:** usual care
O: AF detection within 6 months; OAC use

	AF diagnosed	OAC initiated by 6mos
cECG	5.3%	4.1%
control	0.5%	0.9%
NNS	21	33

"AF screening with a wearable cECG monitor was well tolerated, increased AF detection 10-fold, and prompted initiation of anticoagulant therapy in most cases. Compared with continuous ECG, intermittent oscillometric screening with a BP monitor was an inferior strategy for detecting paroxysmal AF."

SCREEN-AF. JAMA Cardiol. 2021;6(5).

VITAL-AF

Pragmatic clinic-level cluster randomized trial

P: 30,715 65+ y/o's without AF attending 16 PC clinics; 12-month study period

I: AliveCor KardiaMobile AF screening during vital sign assessment at regular clinic visits

C: usual care; **O:** new AF diagnosis; OAC initiation

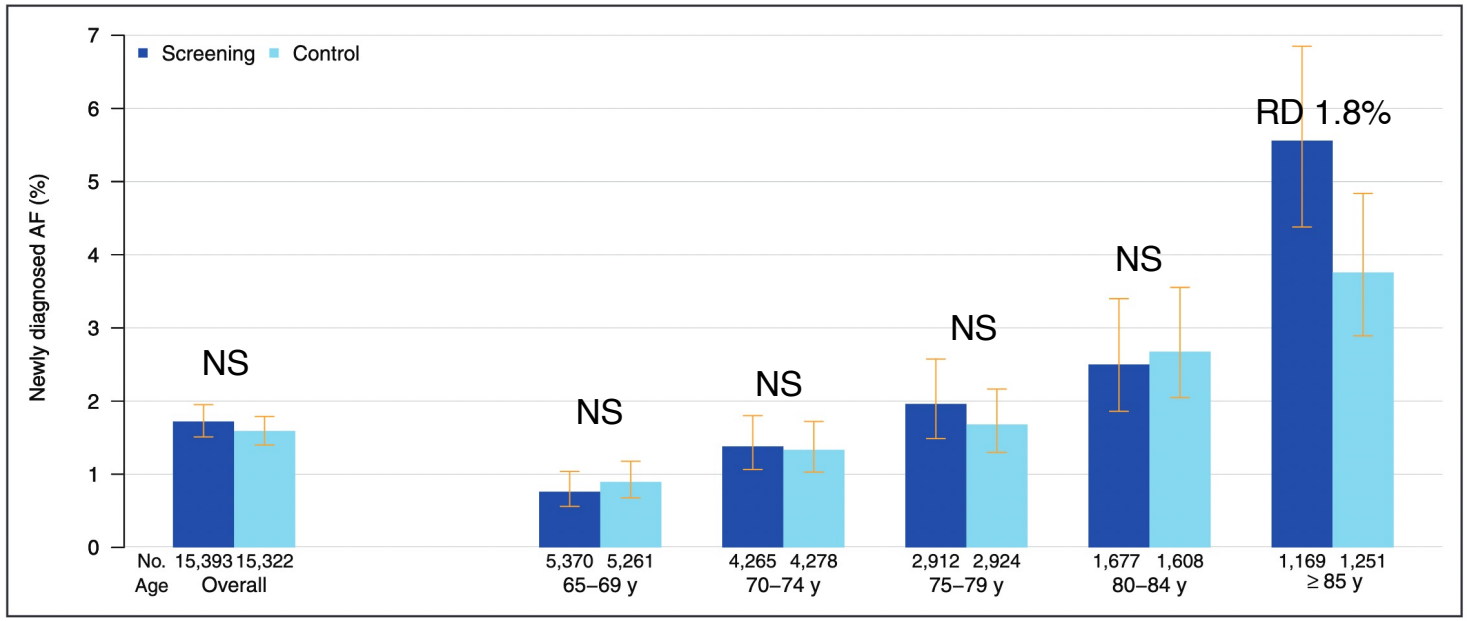


Figure 2. Proportion of individuals with newly diagnosed AF within 12 months in the screening and control groups overall and stratified by age.

Depicted are 95% CIs. AF indicates atrial fibrillation.

New OAC Rx in newly diagnosed patients:
73.5% in intervention
70.8% in control (NS)

VITAL-AF. Circulation. 2022;145(13):946–54.

LOOP

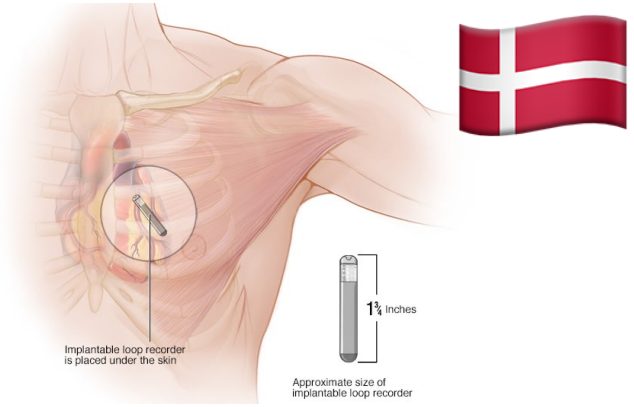
unblinded RCT

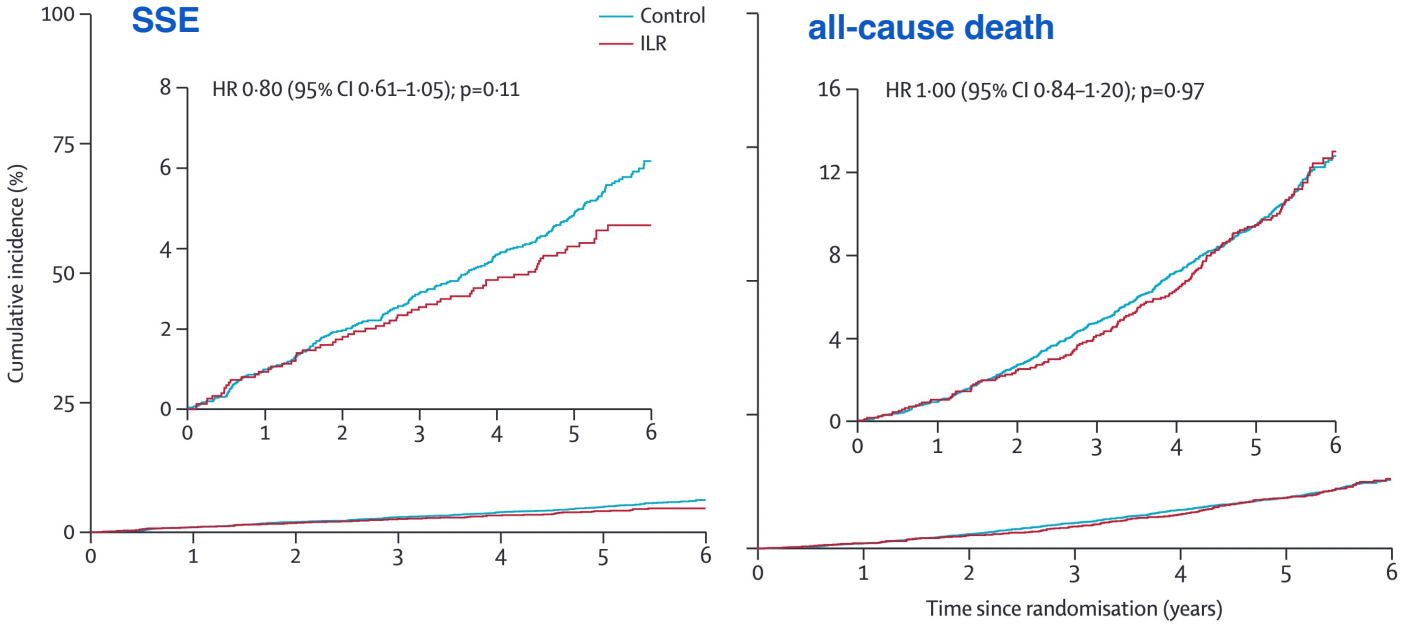
P: 6005 70-90 y/o with no AF + 1 $CHADS_2$ factor at 4 primary care centers

I: implantable loop recorder (ILR); OAC recommended if AF episode >6min detected

C: usual care

O: SSE over 65 mos followup



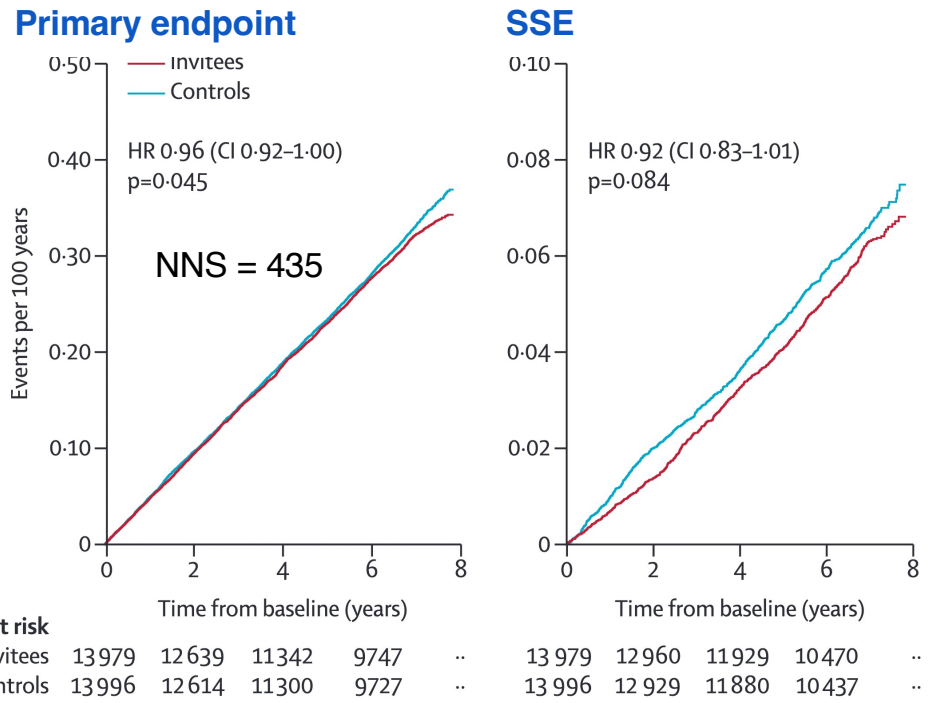


	AF diagnosed	OAC initiated (95% persisted)
ILR	32%	30%
control	12%	13%

LOOP. Lancet. 2021;398(10310):1507–16.

STROKESTOP

unblinded RCT
P: 28,786; all 75-76 y/o's with no AF hx in 2 regions were invited
I: intermittent 1-lead (Zenicor®) ECGs BID x 14 days; Those with AF reviewed by cardiologist and offered OACs as appropriate; **C:** no screening program
O: SSE + major bleeding + all-cause death over median 6.9y followup



STROKESTOP. Lancet. 2021;398(10310):1498–506.

Key points about screening

- Treatment based on single-point or short-term AF detection is of unclear benefit
- Non-permanent AF patterns (frequency, durations) most associated with stroke are unknown
- ***Some AF is worth screening for, some is not… which is which?***

Extramiana F, Steg PG. Circulation. 2022;145(13):955–8.

JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Screening for Atrial Fibrillation
US Preventive Services Task Force Recommendation Statement

POPULATION Adults 50 years or older without a diagnosis or symptoms of AF and without a history of transient ischemic attack or stroke.

EVIDENCE ASSESSMENT The USPSTF concludes that evidence is lacking, and the balance of benefits and harms of screening for AF in asymptomatic adults cannot be determined.

RECOMMENDATION The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for AF. (I statement)

USPSTF. JAMA. 2022;327(4):360–7.

AF triggers

AF triggers

Most common self-reported AF triggers:

- Caffeine
- Alcohol
- Reduced sleep
- Exercise
- Lying on left side
- Dehydration
- Large meals
- Cold food or drink
- Specific diets

Groh CA, et al. Heart Rhythm 2019;16:996–1002.

JAMA Cardiology | Original Investigation

Individualized Studies of Triggers of Paroxysmal Atrial Fibrillation

The I-STOP-AFib Randomized Clinical Trial

series of N-of-1 RCTs

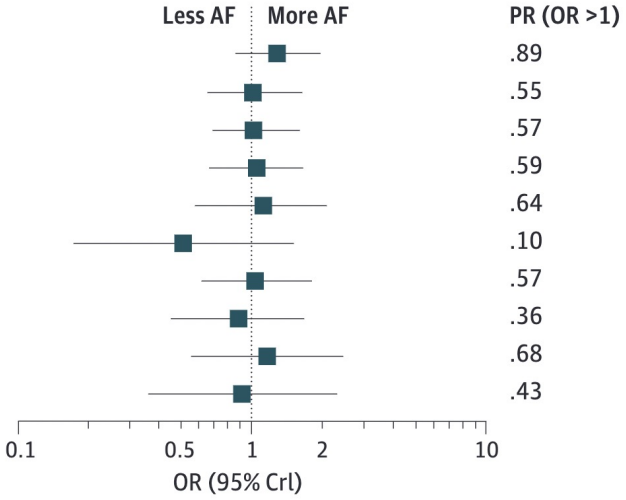
P: 446 pts with symptomatic paroxysmal AF

I/C: expose (or don't expose) self to self-selected triggers encountered (or easily avoided) in daily life, at random (instructed by test message) in 1-week blocks x 6 blocks. Daily interviews re: AF symptoms, and used 1-lead ECG during AF symptoms.

O: Atrial Fibrillation Effect on Quality-of-Life (AFEQT) score at 10 weeks

A Intention to treat

	On		Off		
Trigger type	No.	Total No.	No.	Total No.	OR (95% CrI)
Alcohol	164	923	154	924	1.30 (0.85-1.96)
Caffeine	301	1045	310	1047	1.03 (0.65-1.65)
Lack of sleep	125	750	110	726	1.03 (0.68-1.59)
Exercise	162	794	135	761	1.05 (0.67-1.63)
Dehydration	51	375	43	410	1.12 (0.58-2.10)
Cold food and drink	22	106	29	111	0.49 (0.17-1.51)
Lying on the left side	101	424	115	445	1.05 (0.62-1.81)
Large meals	106	348	106	348	0.88 (0.46-1.68)
Diet	46	227	43	226	1.21 (0.54-2.49)
Custom	45	228	35	209	0.91 (0.36-2.31)



I-STOP-AFib. JAMA Cardiol. 2022;7(2):167–74.

JAMA Cardiology | Original Investigation

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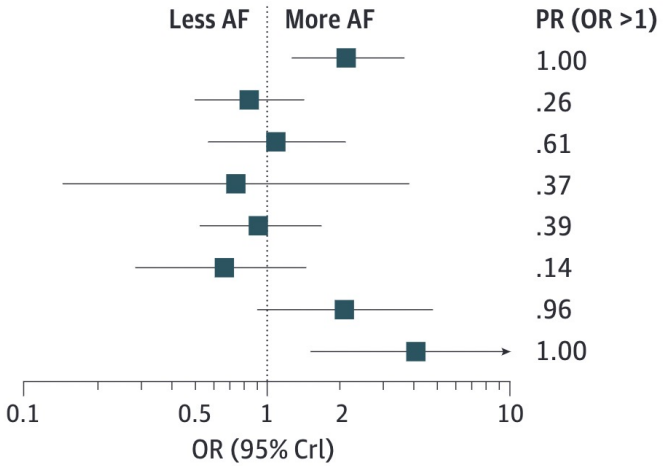
B Per protocol

	On		Off		
Trigger type	No.	Total No.	No.	Total No.	OR (95% CrI)
Alcohol	148	578	141	913	2.15 (1.27-3.61)
Caffeine	291	841	268	885	0.84 (0.51-1.40)
Exercise	88	508	99	448	1.10 (0.58-2.06)
Cold food and drink	6	52	6	56	0.74 (0.14-3.80)
Lying on the left side	106	462	108	403	0.92 (0.52-1.66)
Large meals	67	243	143	448	0.67 (0.30-1.45)
Diet	49	180	34	224	2.11 (0.91-4.73)
Custom	47	197	30	213	4.09 (1.49-11.58)



I-STOP-AFib. JAMA Cardiol. 2022;7(2):167–74.

AF triggers

Coffee may even be *protective* against AF

JAMA Internal Medicine | Original Investigation

Coffee Consumption and Incident Tachyarrhythmias
Reported Behavior, Mendelian Randomization, and Their Interactions

Eun-jeong Kim, MD; Thomas J. Hoffmann, PhD; Gregory Nah, MA; Eric Vittinghoff, PhD; Francesca Delling, MD; Gregory M. Marcus, MD, MAS

CONCLUSIONS AND RELEVANCE In this prospective cohort study, greater amounts of habitual coffee consumption were inversely associated with a lower risk of arrhythmia, with no evidence that genetically mediated caffeine metabolism affected that association. Mendelian randomization failed to provide evidence that caffeine consumption was associated with arrhythmias.

Kim E, et al. JAMA Intern Med 2021;181

Early rhythm control

EAST-AFNET 4 – rethinking rhythm control

EARLY RHYTHM CONTROL vs. conventional rate control

Prospective, randomized, open-label, blinded endpoint (PROBE)

P: N=2789 with early AF (median 36 days since diagnosis). Mean 70 y/o. 1/3 each were first-episode, paroxysmal, persistent.

I: cardioversion with drugs (flecainide 35%, amiodarone 20%, dronedarone 17%, propafenone 7%) or ablation (8%) based on local practice/judgement. By 2y, 19% had been ablated and 35% were on no antiarrhythmic drug.

90% were on OAC in both arms

C: usual care (rate control).

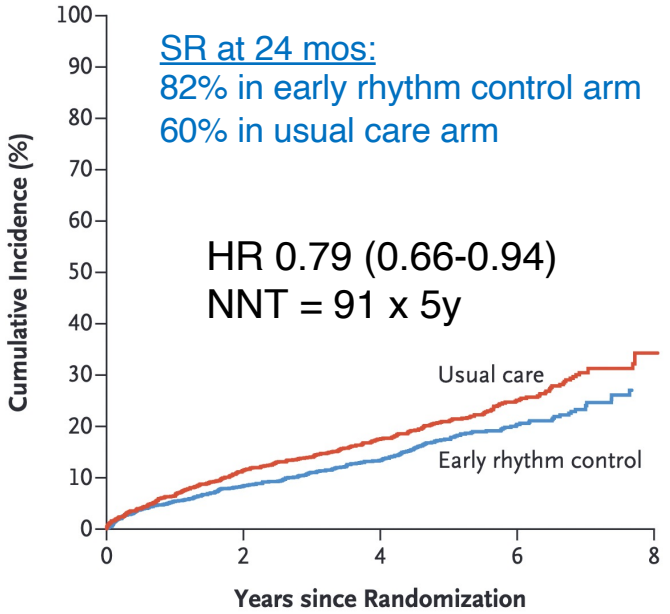
O: 1st primary: CV death, stroke, or hospitalization with worsening of HF or ACS. **2nd primary**: nights in hospital/year. **primary safety**: death, stroke, or serious adverse events related to rhythm-control therapy.

Stopped early for efficacy after median 5.1y of follow-up

Table 2. Efficacy Outcomes.*

Outcome	Early Rhythm Control	Usual Care	Treatment Effect
First primary outcome — events/person-yr (incidence/ 100 person-yr)	249/6399 (3.9)	316/6332 (5.0)	0.79 (0.66 to 0.94)†
Components of first primary outcome — events/person-yr (incidence/100 person-yr)			
Death from cardiovascular causes	67/6915 (1.0)	94/6988 (1.3)	0.72 (0.52 to 0.98)‡
Stroke	40/6813 (0.6)	62/6856 (0.9)	0.65 (0.44 to 0.97)‡
Hospitalization with worsening of heart failure	139/6620 (2.1)	169/6558 (2.6)	0.81 (0.65 to 1.02)‡
Hospitalization with acute coronary syndrome	53/6762 (0.8)	65/6816 (1.0)	0.83 (0.58 to 1.19)‡
Second primary outcome — nights spent in hospital/yr	5.8±21.9	5.1±15.5	1.08 (0.92 to 1.28)§
Sinus rhythm — no. of patients with feature/total no. (%)	921/1122 (82.1)	687/1135 (60.5)	3.13 (2.55 to 3.84)††
Asymptomatic — no. of patients with feature/total no. (%)‡‡	861/1159 (74.3)	850/1171 (72.6)	1.14 (0.93 to 1.40)††

NNT = 333 x 5y



EAST-AFNET 4. New Engl J Med 2020;383:1305–16

Annals of Internal Medicine

ORIGINAL RESEARCH

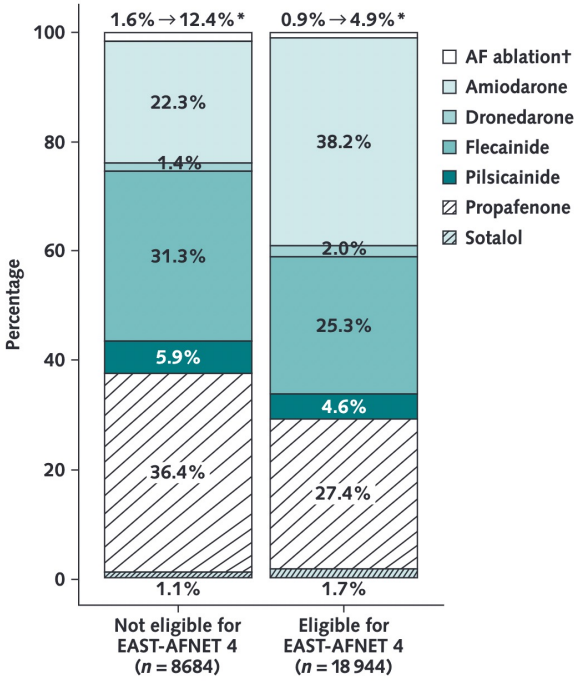
Early Rhythm Control Therapy for Atrial Fibrillation in Low-Risk Patients

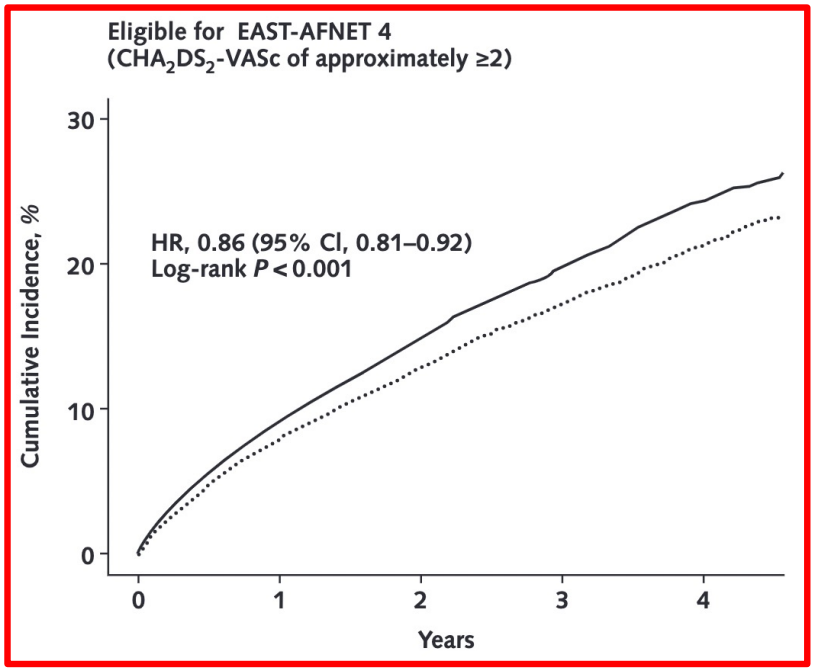
population-based cohort study with propensity weighting

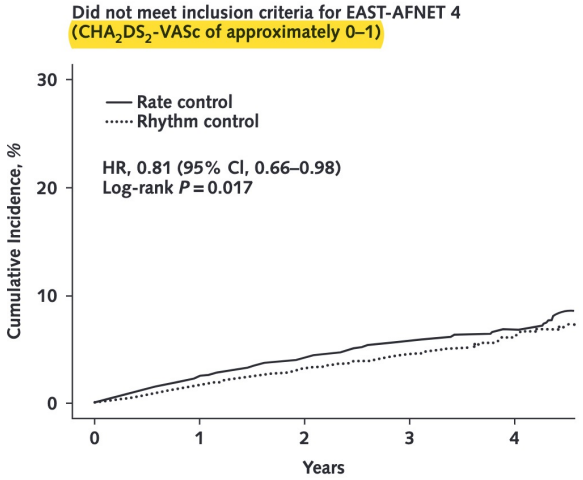
P: 37,557 with AF who received early rhythm control (AAD or ablation) or rate control within 1 year of diagnosis. Differentiated those who would be eligible for EAST-AFNET4 vs. those who wouldn't.

I: early rhythm control; **C:** rate control only

O: cardiovascular death, ischemic stroke, hospitalization for heart failure, or myocardial infarction



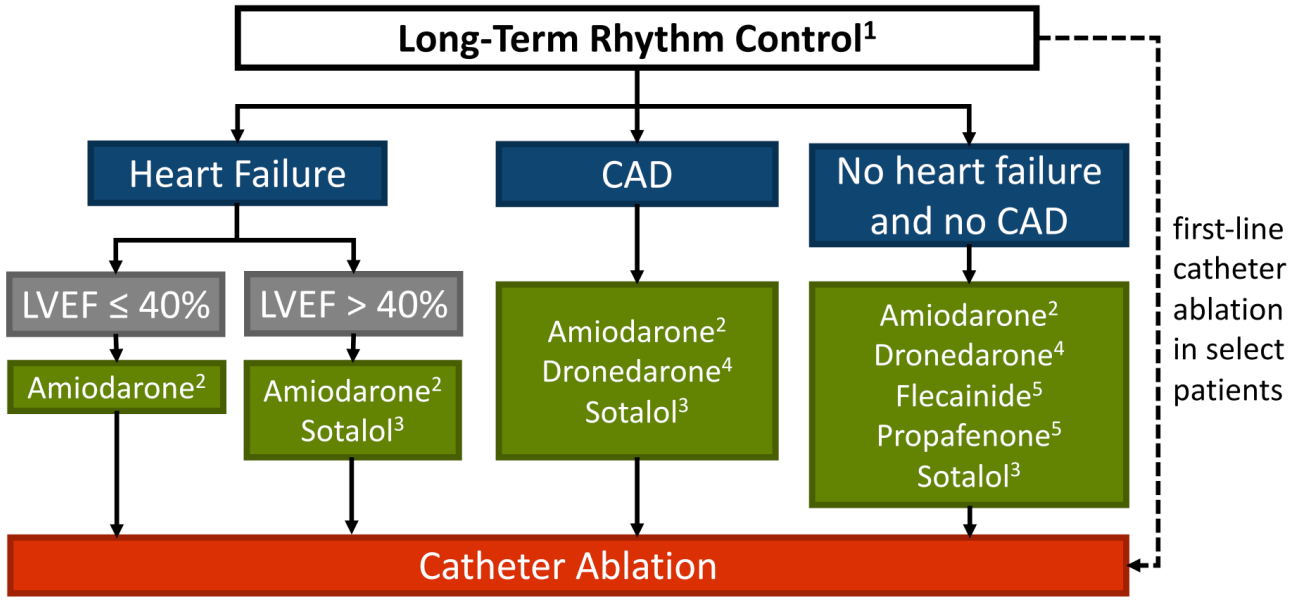




Kim D, et al. Ann Intern Med. 2022; https://doi.org/10.7326/M21-4798

Because of EAST-AFNET 4…

72. We suggest that a rhythm control strategy be considered for most stable patients with recent-onset AF (Weak Recommendation; Moderate-Quality Evidence).



CCS/CHRS 2020 AF Guidelines https://doi.org/10.1016/j.cjca.2020.09.001

What about ablation?

CASTLE-AF

ablation vs. standard rate or rhythm control

& many others

unblinded RCT

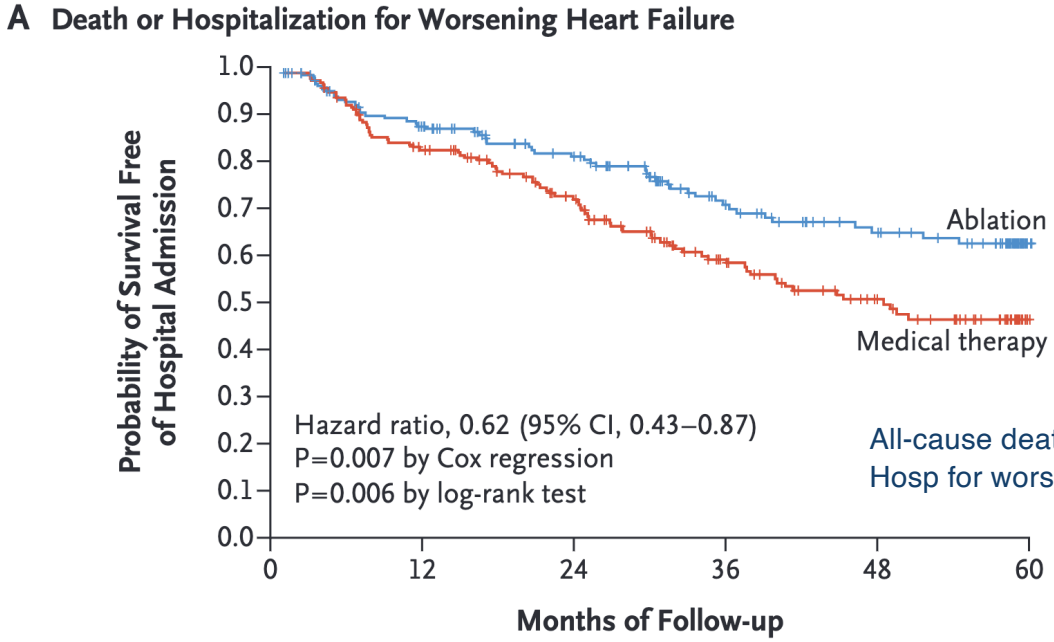
P: N=363 patients with symptomatic paroxysmal or persistent AF and HFrEF who did not have a response to antiarrhythmic drugs, had unacceptable side effects, or were unwilling to take AADs

I: catheter ablation (63% in SR at 5y)

C: rate or rhythm control as appropriate (27% in SR at 5y)

O: all-cause death or hospitalization for worsening heart failure at 5 years

All patients were anticoagulated.



All-cause death: HR 0.53 (0.32-0.86)
Hosp for worsening HF: HR 0.56 (0.37-0.83)

CASTLE-AF. NEJM 2018;378:417–27

EARLY AF

ablation vs. AADs

unblinded RCT

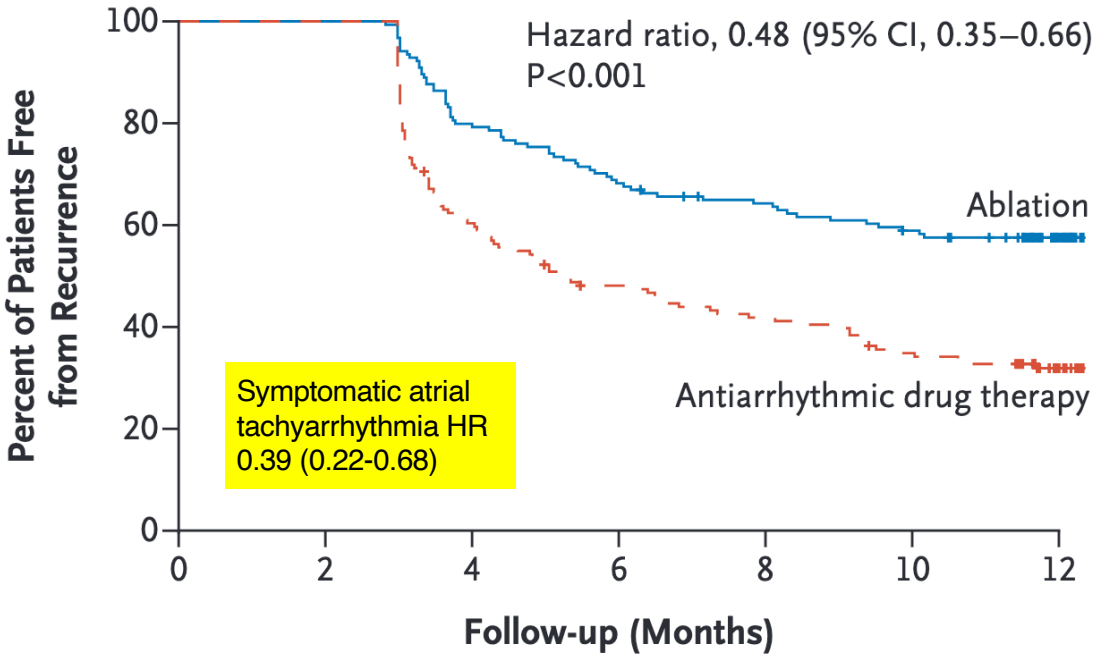
P: N=303 with symptomatic, paroxysmal, untreated atrial fibrillation

I: catheter ablation with a cryothermy balloon

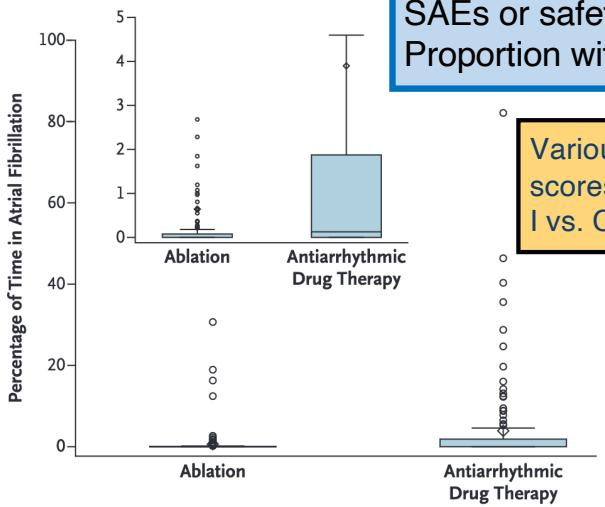
C: AAD for initial rhythm control

All patients were anticoagulated.

O: first documented recurrence of any atrial tachyarrhythmia between 91 and 365 days after catheter ablation or the initiation of an AAD. 12 mos follow-up.



AF burden



No differences in:
Hospitalization >24h
ED visits
SAEs or safety endpoints
Proportion with AF sx

Various QOL scores improved in I vs. C group.

EARLY AF. NEJM 2021;384:305–15

EARLY AF

ablation vs. AADs

unblinded RCT

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I: catheter ablation with a cryothermy balloon

C: AAD for initial rhythm control

All patients were anticoagulated.

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AADs used

	Used first N (%)	Used second N (%)	Used third N (%)	Used anytime N (%)	Median dose (IQR) in mg/day
Flecainide	114 (76.5%)	10 (6.7%)	0	124 (83.2%)	200 (125, 250)
Propafenone	7 (4.7%)	9 (6.0%)	2 (1.3%)	18 (12.1%)	600 (450, 600)
Sotalol	23 (15.4%)	17 (11.4%)	2 (1.3%)	42 (28.2%)	160 (160, 240)
Dronedarone	5 (3.4%)	7 (4.7%)	0	12 (8.1%)	800 (800, 800)
Amiodarone	0	3 (2.0%)	4 (2.7%)	7 (4.7%)	200 (200, 200)
Total	***149 (100%)***	***46 (30.9%)***	***8 (5.4%)***		

EARLY AF. NEJM 2021;384:305–15

EARLY AF – 3-year follow-up

ablation vs. AADs

unblinded RCT

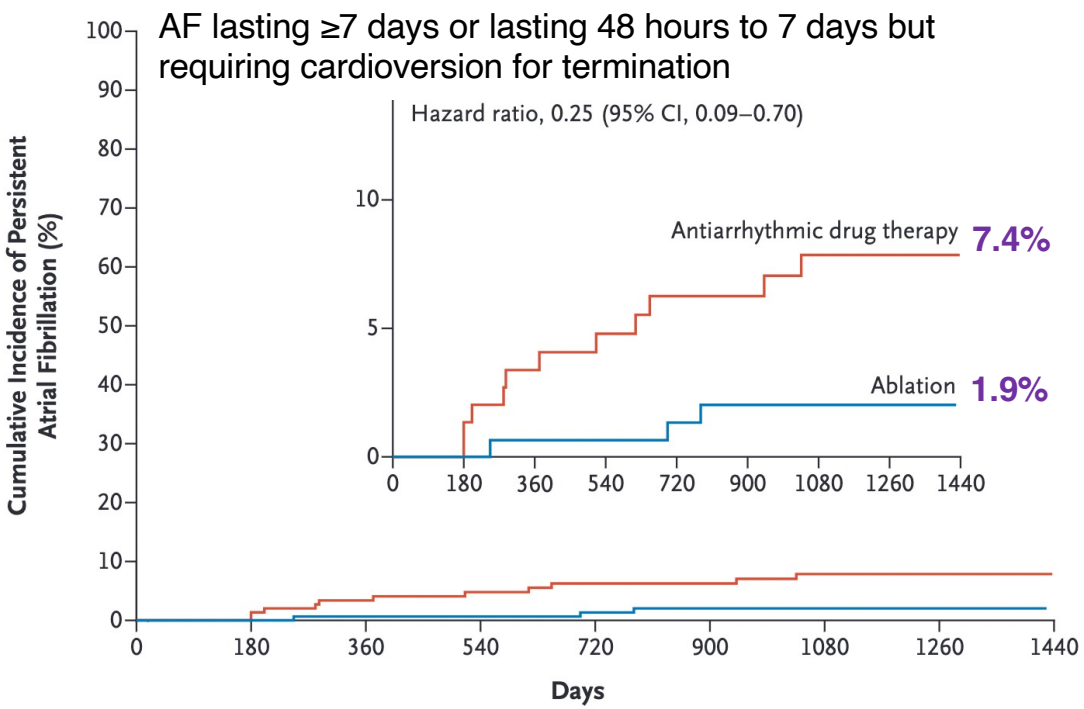
P: N=303 with symptomatic, paroxysmal, untreated atrial fibrillation

I: catheter ablation with a cryothermy balloon

C: AAD for initial rhythm control

All patients were anticoagulated.

O: first episode of persistent AF from 91 days post-intervention to 3 years.



	ablation	AAD	HR
recurrent atrial tachyarrhythmia (fib or flutter lasting ≥30s	56.5%	77.2%	0.51 (0.38-0.67)
hospitalization	5.2%	16.8%	0.31 (0.14-0.66)
SAEs	4.5%	10.1%	0.45 (0.19-1.05)
symptom-free	95.2%	82.9%	1.15 (1.06-1.26)

EARLY AF. NEJM 2022; 7NOV22

CABANA

ablation vs. standard rate or rhythm control

unblinded RCT

P: N=2204 symptomatic patients with AF aged 65+ or <65 with 1 or more risk factors for stroke. Excluded if they had failed 2+ AADs.

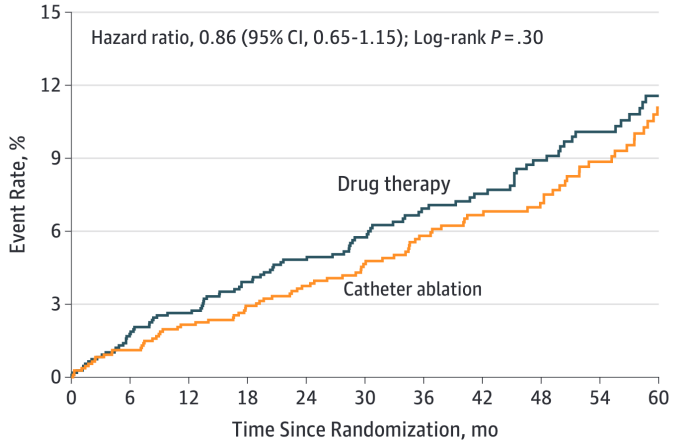
I: pulmonary vein isolation + additional ablative procedures at the discretion of site investigators

C: standard rhythm and/or rate control drugs guided by contemporaneous guidelines

O: death, disabling stroke, serious bleeding, or cardiac arrest. Median 48 mos follow-up.

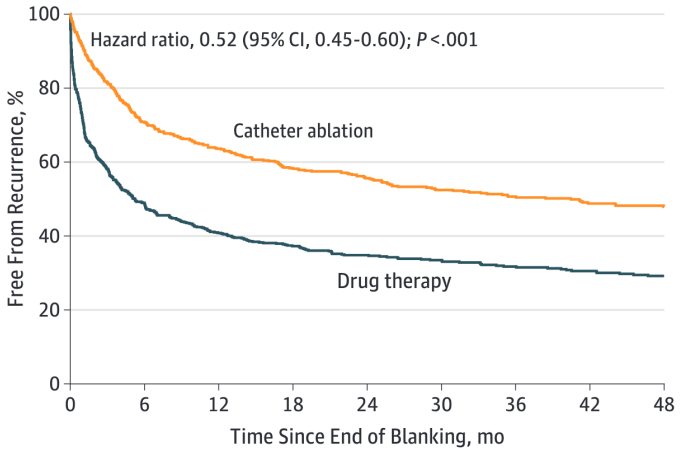
All patients were anticoagulated.

Figure 2. Kaplan-Meier Estimates of the Incidence of the Primary End Point



All-cause death: HR 0.85 (0.60-1.21)
Death+CV hospitalization: HR 0.83 (0.74-0.93)

Figure 6. Recurrent Atrial Fibrillation After Blanking by Intention-to-Treat Analysis



Various QOL scores improved at 12mos in I vs. C group.

CABANA. JAMA 2019;321:1275–85.

CABANA

ablation vs. standard rate or rhythm control

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I: pulmonary vein isolation + additional ablative procedures at the discretion of site investigators

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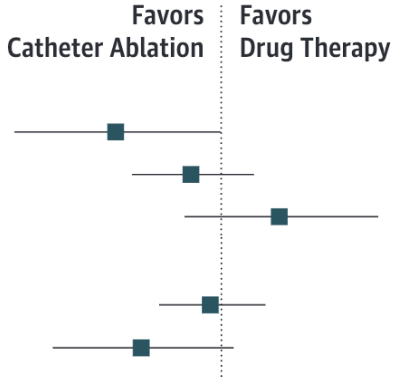
O: death, disabling stroke, serious bleeding, or cardiac arrest. Median 48 mos follow-up.

All patients were anticoagulated.

Source	No. of Events/Patients (Person-Years)		Hazard Ratio (95% CI)	Interaction *P* Value
	Catheter Ablation	Drug Therapy		
Age, y				
<65	14/375 (1483)	27/391 (1498)	0.52 (0.27-1.00)	
≥65 and <75	50/577 (2159)	56/553 (2019)	0.84 (0.57-1.23)	.07
≥75	25/156 (514)	18/152 (529)	1.46 (0.80-2.67)	
History of congestive heart failure				
No	68/934 (3506)	72/931 (3500)	0.95 (0.68-1.32)	.20
Yes	21/174 (650)	29/163 (547)	0.61 (0.35-1.08)	



CABANA. JAMA 2019;321:1275–85.

Ablation for WHOM?

- We recommend catheter ablation of AF in patients who remain symptomatic after an adequate trial of antiarrhythmic therapy and in whom a rhythm control strategy remains desired (Strong Recommendation; High-Quality Evidence).
  - Values and preferences. This recommendation recognizes the positive effect of catheter ablation on AF burden, symptoms, QOL, and cardiovascular hospitalizations, as well as the declining risks of the procedure.

- We suggest catheter ablation to maintain sinus rhythm as first-line therapy for relief of symptoms in select patients with symptomatic AF (Weak Recommendation; Moderate-Quality Evidence).
  - Values and preferences. This recommendation recognizes that patients might have relative or absolute contraindications to pharmacologic rhythm control.

Canadian Cardiovascular Society
Leadership. Knowledge. Community.

CCS/CHRS 2020 AF Guidelines
https://doi.org/10.1016/j.cjca.2020.09.001

NOTES:

- Not every patient who has AF needs an ablation
- Currently, we are ablating 1-2% of all patients with AF; target probably needs to be closer to 5-15%
- Candidates for AF ablation:
  - Symptomatic AF
  - AF causing heart failure or LV dysfunction
  - Resistant (or patient intolerance) to antiarrhythmic medication
  - Left atrial size <55 mm
  - Age <80 or non-frail patients
  - Younger, paroxysmal patients who are for first-line ablation

Long-term rhythm control notes

- **GOALS**: symptom control, ↑ functional capacity, QOL, minimize adverse effects, ?CV risk reduction
- Doesn't usually fully suppress AF
- Most popular AADs: flecainide, sotalol
- SPAF therapy + rate control still required

Peri-ablation thromboprophylaxis

50. *We recommend that catheter ablation procedures for AF be performed with uninterrupted OAC (Strong Recommendation; High-Quality Evidence).*

51. *We suggest that after successful catheter or surgical ablation of AF, the decision to continue OAC beyond 2 months post-ablation should be determined based upon the patient's risk of stroke ("CCS Algorithm") and not by the apparent success of the procedure (Weak Recommendation; Low-Quality Evidence).*

rivaroxaban (VENTURE-AF), dabigatran (RE-CIRCUIT): less bleeding with DOAC than VKA.
apixaban (AXAFA): same bleeding with DOAC and VKA
edoxaban (ELIMINATE-AF): same bleeding with DOAC and VKA

CCS/CHRS 2020 AF Guidelines https://doi.org/10.1016/j.cjca.2020.09.001

SPAF after successful ablation: OCEAN 🇨🇦

unblinded RCT

P: N=1572 with at least one year post-successful catheter ablation for AF without evidence of any clinically apparent arrhythmia recurrence based on at least one 24h Holter and ECG within 6 months after the last ablation procedure and at least one 24h Holter and ECG between 6 and 12 months post-ablation or beyond. Patient must have no atrial fibrillation, atrial flutter or atrial tachycardia > 30 seconds detected on a minimum 48h Holter monitor within two months prior to enrollment.

I: rivaroxaban 15 mg daily; **C:** ASA 75-160 mg daily

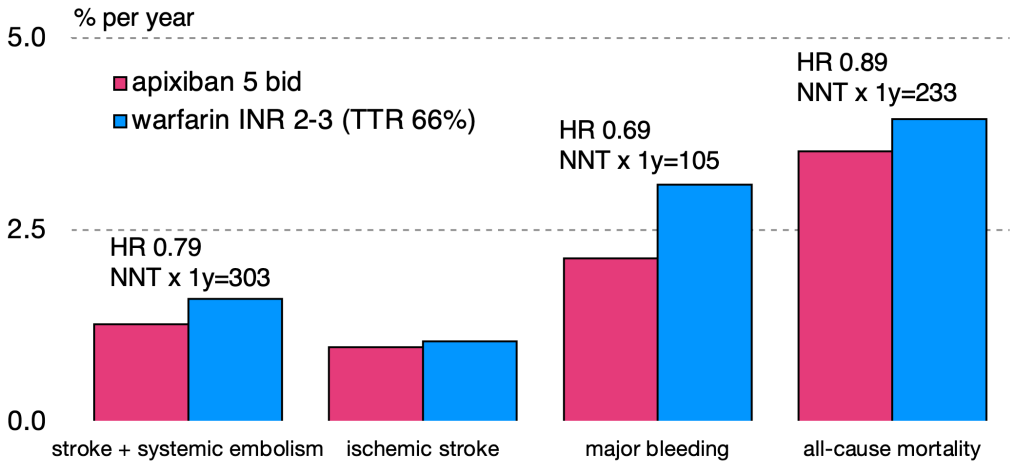
O: SSE or covert embolic stroke as detected by cerebral MRI. 3y follow-up.

results in ~2025

OCEAN https://clinicaltrials.gov/ct2/show/NCT02168829

What's the most effective OAC?
What's the safest OAC?

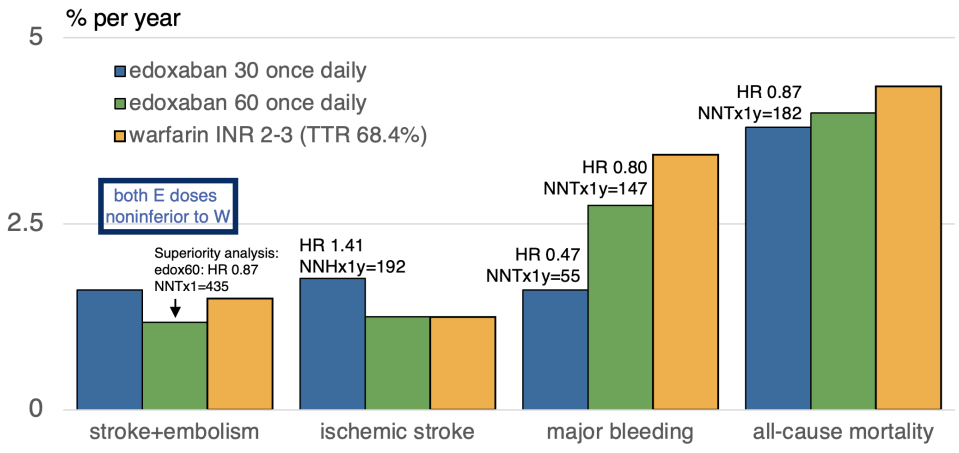
ARISTOTLE



ARISTOTLE. New Engl J Medicine 2011;365:981–92

vs. warfarin
- ↓ SSE
- ↓ major bleeding
- ↓ mortality

ENGAGE-AF

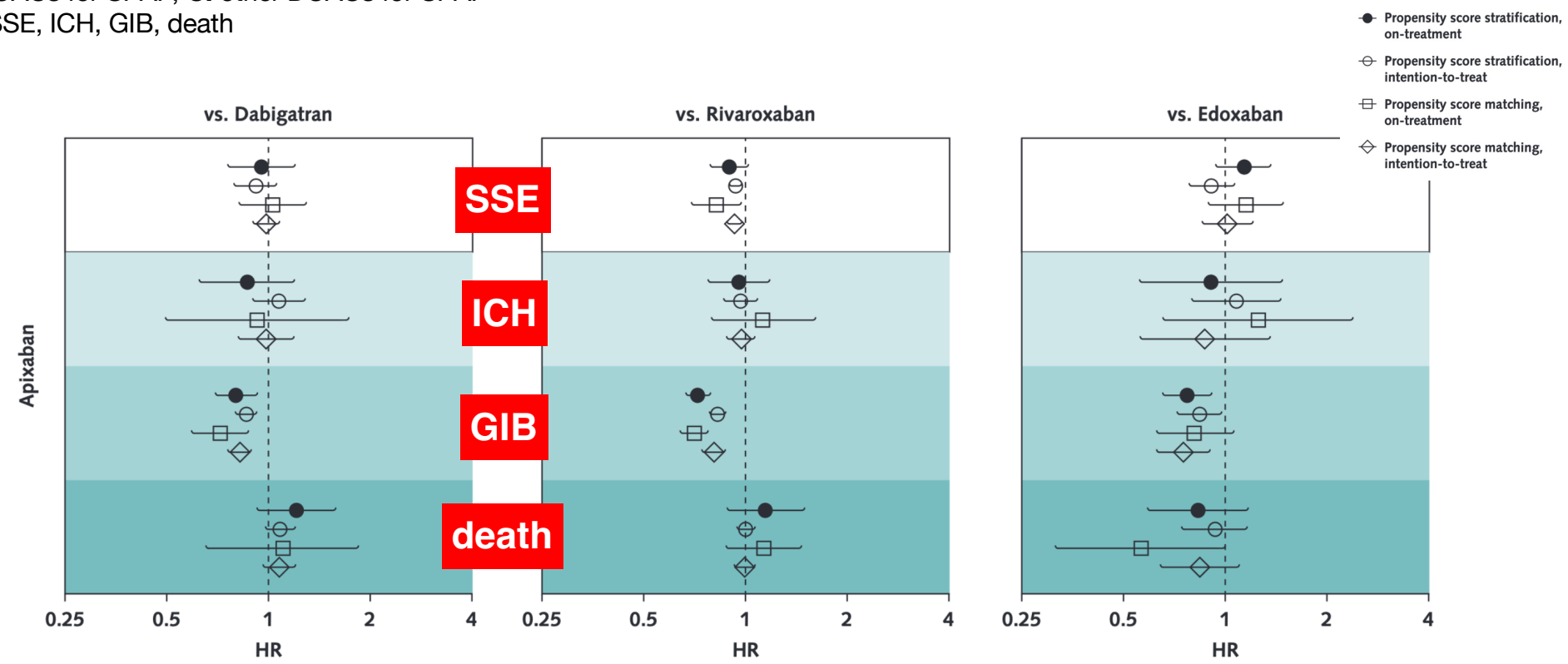


ENGAGE AF-TIMI 48. New Engl J Medicine 2013;369:2093–2104

vs. warfarin
- ↓ SSE
- ↓ major bleeding

Real-world evidence

population-based cohort study with propensity scoring
P: 527,226 patients newly diagnosed with AF 2010-2019 and received a new DOAC prescription.
I: DOACs for SPAF; **C:** other DOACs for SPAF
O: SSE, ICH, GIB, death



Lau WCY, et al. Ann Intern Med 2022;175:1515–24.

DOAC dosing

OAC dosage adjustment for renal dysfunction

CrCl	Warfarin	Apixaban	Dabigatran	Edoxaban	Rivaroxaban
CrCl >50 mL/min	Dose adjusted for INR 2.0-3.0	5 mg BID†	150 mg BID*	60 mg daily∞	20 mg daily
CrCl 30-49 mL/min	Dose adjusted for INR 2.0-3.0	5 mg BID†	Consider 110 mg BID	30 mg daily	15 mg daily
CrCl 15-29 mL/min	No RCT Data**	Very limited RCT Data§	No RCT Data¶	Very limited RCT Data¶	No RCT Data
CrCl <15 mL/min (or on dialysis)	No RCT Data‡	Very limited RCT Data¶	No RCT Data¶	No RCT Data¶	Very limited RCT Data¶

BID, twice daily; CrCl, creatinine clearance, INR, international normalized ratio; RCT, randomized clinical trial.
*Dabigatran 110 mg po BID is recommended if age ≥80 years, or ≥75 years with other bleeding risk factors including CrCl 30-50mL/min
†Apixaban 2.5 mg po BID is recommended if 2 of the 3 following criteria are present: 1) age ≥80 years, 2) body weight ≤60 kg, or 3) serum creatinine ≥133 μmol/L
∞Consider Edoxaban 30mg daily if weight ≤60 kg or concomitant potent P-Gp inhibitor therapy EXCEPT amiodarone or verapamil
**Dose adjusted warfarin has been used, but data regarding safety and efficacy is conflicting
‡Dose adjusted warfarin has been used, but observational data regarding safety and efficacy is conflicting and suggests harm.
§The ARISTOTLE trial included a small number of patients with a CrCl as low as 25 mL/min
¶Product monographs suggest the drug is contraindicated for this level of renal function.

CCS/CHRS 2020 AF Guidelines https://doi.org/10.1016/j.cjca.2020.09.001

Over- and under-dosing DOACs in AF

Meta-analysis of 34 studies of clinical outcomes with inappropriate under- or over-dosing of DOACs

Off-label underdosing
(vs. recommended dosing)
All-cause mortality: HR 1.28 (1.10-1.49)
SSE: no effect
All bleeding types: no effect

Off-label overdosing
(vs. recommended dosing)
Major bleeding: HR 1.41 (1.07-1.85)
SSE: HR 1.68 (1.00-2.82)
All-cause mortality: no effect

Caso V, et al. Heart 2023;109:178–85.

Use COCKROFT-GAULT CrCl for DOACs

$$\frac{(140 - \text{age in years}) \times (\text{wt in kg}) \times 1.23}{\text{SCr in } \mu\text{mol/L}}$$

CCS/CHRS 2020 AF Guidelines https://doi.org/10.1016/j.cjca.2020.09.001

"Compared with C-G, MDRD and CKD-EPI **misclassified 36.2% and 35.8% of patients**, respectively. Misclassification resulted in undertreatment (e.g., inappropriate dose reduction; 26.9% MDRD, 28.8% CKD-EPI), and to a lesser extent overtreatment (e.g., inappropriate use of standard dose; 9.3% MDRD, 7.0% CKD-EPI)."

Andrade, J., et al. Can J Cardiol 2018;34(8), 1010-1018

SPAF OAC adherence

Nonadherence with SPAF

Nonadherence

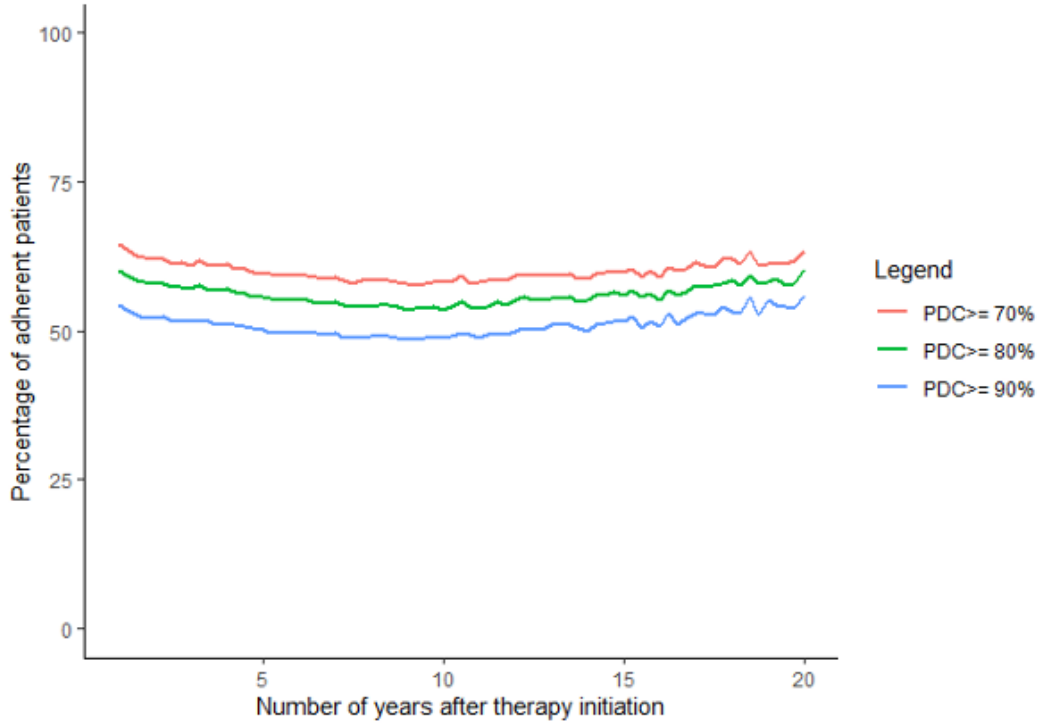
- ~25% of AF patients on OAC are <80% adherent [Salmasi S, al. BMJ Open 2020; 10(4), e034778]
- Nonadherence is associated with ↑ all-cause mortality and stroke [Yao X, et al. J Am Heart Assoc. 2016;5:e003074, a handful of others]
- DOACs are not clearly better than warfarin

Nonpersistence

- 9% prescribed OAC don't fill second prescription
- 1-year OAC discontinuation 14-53%; 66% discontinue by 5 years [Gomes, T et al. Arch Intern Med 2012;172(21):1687]

Long-term OAC adherence in AF

population-based cohort study
P: 30,265 patients with AF in BC (1996-2019)
I: any OAC for SPAF; **C:** n/a
O: longitudinal adherence (PDC); median 6.7 years of therapy

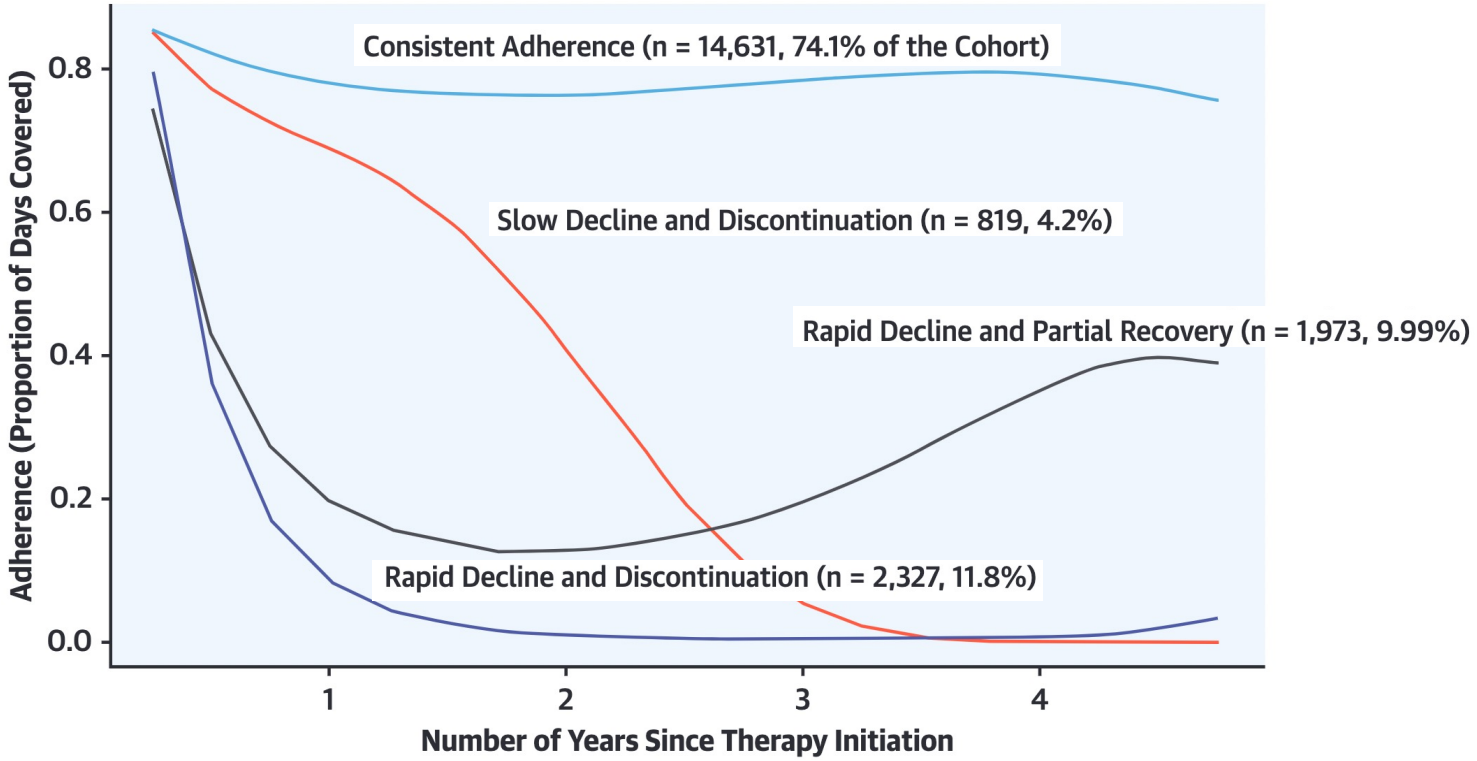


- 54% of patients prescribed OAC for SPAF were nonadherent
- 31% of doses were missed, on average
- VKA adherence was 13% higher than DOAC after controlling for confounders
- age >75 at initiation, polypharmacy, and longer duration of tx had the most detrimental effects on adherence

Salmasi S et al. Journal of Thrombosis & Thrombolysis *in press*

Longitudinal OAC adherence trajectories

population-based cohort study
P: 19,749 patients with AF in BC (1996-2019)
I: any OAC for SPAF; **C:** n/a
O: longitudinal OAC adherence trajectories

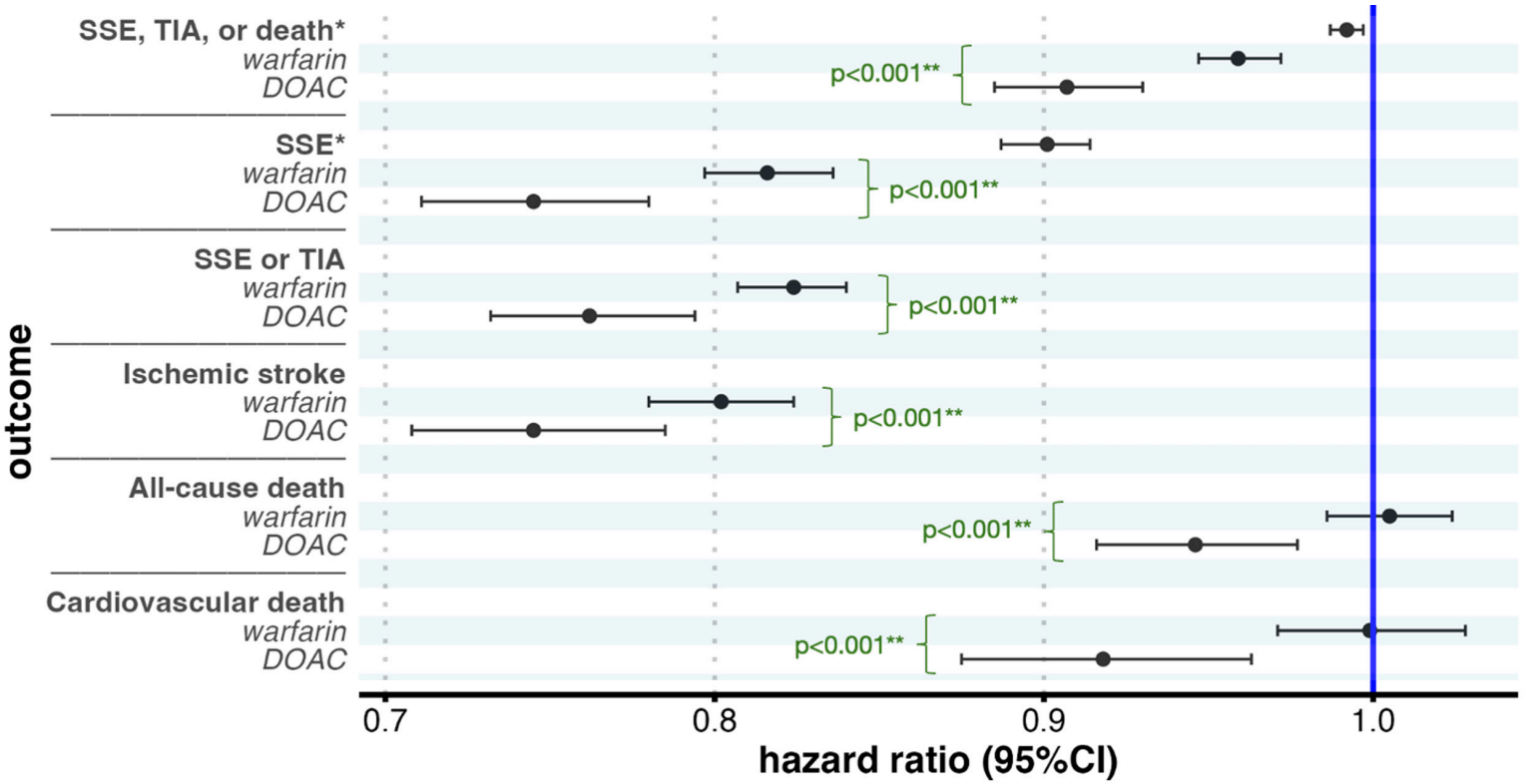


Salmasi S et al. J Am Coll Cardiol. 2021;78(24):2395–404.

Differential effects of OAC class nonadherence on outcomes

population-based cohort study
P: 34,946 patients with AF in BC (1996-2020); **I:** more adherence any OAC for SPAF; **C:** less adherence
O: stroke, death

Hazard reduction per increase in PDC (adherence)



Loewen et al. *Work in progress*

Potential strategies to improve SPAF adherence

- clinician recognition that adherence is a shared responsibility with the patient
- align therapy with patients' values and preferences
- coordinated support/reinforcement from FPs/pharmacists/cardiologists
- information-sharing between care providers
- tailored education and reinforcement, elicit and clarify misconceptions
- address *intentional* nonadherence
- focus on behavioral strategies
- increase follow-up frequency and include deliberate adherence questions and advice
- simplify dosing regimens
- simplify delivery system (e.g. blister packs), more frequent fills
- reminder systems, apps

SDM: we need to talk

SDM4AFib - process

multicenter unblinded RCT, blinded outcome assessment
P: 922 patients with AF considering starting OAC or reviewing OAC treatment at academic, community, and safety-net medical centers
I: within-encounter SDM tool (Anticoagulation Choice tool) [https://anticoagulationdecisionaid.mayoclinic.org]
C: usual care
O: quality of SDM (quality of communication, patient knowledge about AF and anticoagulant treatment, accuracy of patient estimates of their own stroke risk, decisional conflict, satisfaction), decisions made during the encounter, duration of the encounter, clinician involvement of patients in SDM.

- No differences in communication quality, knowledge, decisional conflict, accuracy of risk perception, choice of treatment (86% chose OAC in both groups)
- Clinicians more satisfied with intervention encounters (88% vs. 62%)
- Patient involvement in decision-making significantly higher in intervention group
- No difference in encounter duration (~32 mins in both)

SDM4AFib trial. JAMA Intern Med. 2020;180(9):1215–24.

SDM4AFib - adherence

multicenter unblinded RCT, blinded outcome assessment
P: 814 patients with AF considering starting OAC or reviewing OAC treatment at academic, community, and safety-net medical centers
I: within-encounter SDM tool (Anticoagulation Choice tool) [https://anticoagulationdecisionaid.mayoclinic.org]
C: usual care
O: adherence (PDC or TTR), safety endpoints @ 10 mos

- Primary adherence: 78% vs. 81% filled first Rx (NS)
- Secondary adherence: PDC 74% vs. 72% (NS)
- TTR: 67% vs. 64% (NS)
- Major bleeds: 13% vs. 14% (NS)

SDM4AFib trial. JAMA Cardiovasc Cerebrovasc Dis. 2021;11(2):e023048.

SPARCtool - Stroke Prevention in Atrial Fibrillation Risk Tool

for estimating risk of stroke and benefits & risks of antithrombotic therapy in patients with chronic nonvalvular atrial fibrillation

Developed by Peter Loewen, ACPR, Pharm.D., FCSHP peter.loewen@ubc.ca

references/notes **MAJOR UPDATE** v.10.1 | current as of May 2023

Patient:

Date: Tuesday, May 09, 2023

In your patient with atrial fibrillation, which of the following stroke or bleeding risk factors are present?

Reset

Stroke Risk (CHA2DS2-VASc)

Age	(•) <65 ( ) 65-74 ( ) 75+		
TIA or stroke (at any time in the past)	☐	**CHF/LV dysfunction** (diagnosed at any time in the past)	☐
Prior MI, peripheral artery disease, or aortic plaque	☐	**Hypertension** (controlled or uncontrolled)	☐
Female	☐	**Diabetes Type I or II** (controlled or uncontrolled)	☐
		CHA2DS2-VASc SCORE (0-9):	**0**

Major Bleeding Risk (HAS-BLED)

Abnormal renal function (dialysis, SCr>200 mcmol/L, or transplant)	☐	**History of labile INR** (time in therapeutic range <60%)	☐
Hypertension (SBP>160mmHg)	☐	**Current use of alcohol** (>8 drinks per week)	☐
Abnormal liver function (cirrhosis or liver enzymes >3x ULN)	☐	**Currently taking antiplatelet drug or NSAID**	☐
History of major bleeding (any cause)	☐	**HAS-BLED SCORE (0-9):**	**0**

May 2023

Hot issues in AF care

Dr. Peter Loewen
B.Sc.(Pharm), ACPR, Pharm.D., FCSHP, R.Ph.
Associate Professor of Pharmacy I UBC
David H MacDonald Professor of Clinical Pharmacy
UBC Center for Cardiovascular Innovation
UBC Collaboration for Outcomes Research & Evaluation

peterloewen.com