Guidelines for Atrial Fibrillation Management: What's New?*

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Indiana-ACC Annual Conference
9/10/22

*In 10 min or less

Disclosures

- Consulting: Biosense Webster, Inc; Medtronic, Inc

Outline

- 2019 AHA/ACC/HRS focused update
- 2020 ESC/EHRA guidelines

10.1016/j.jacc.2019.01.011.

https://doi.org/10.1093/eurheartj/ehaa612

But what I really want to know

- Approach to a new diagnosis of AF
  - How to screen? Wearables?
  - When to refer for advanced therapies?
- Anticoagulation and Atrial Fibrillation
  - When to anticoagulate?
  - When to stop OAC?

Class I Class IIb
Class IIa Class 3

2019 guidelines updates

- DOACs (dabigatran, apixaban, rivaroxaban, **edoxaban**) now first line
  - Only apixaban for end stage renal disease
  - Idaracizumab reversal for dabig; adnexanet alfa for apix/riva
  - For AF>48hr, use DOAC 3wk prior and 4wk after DCCV
  - For CHADSvasc>2/3, AF<48hr, consider DOAC ASAP pre CVN and long term
  - LAAO for those with high bleeding and stroke risk
- Catheter ablation for HFrEF
- Clopidogrel>prasugrel, triple=>double therapy in 4-6 wk
- ILR for cryptogenic stroke
- Weight loss recommended for obese AF

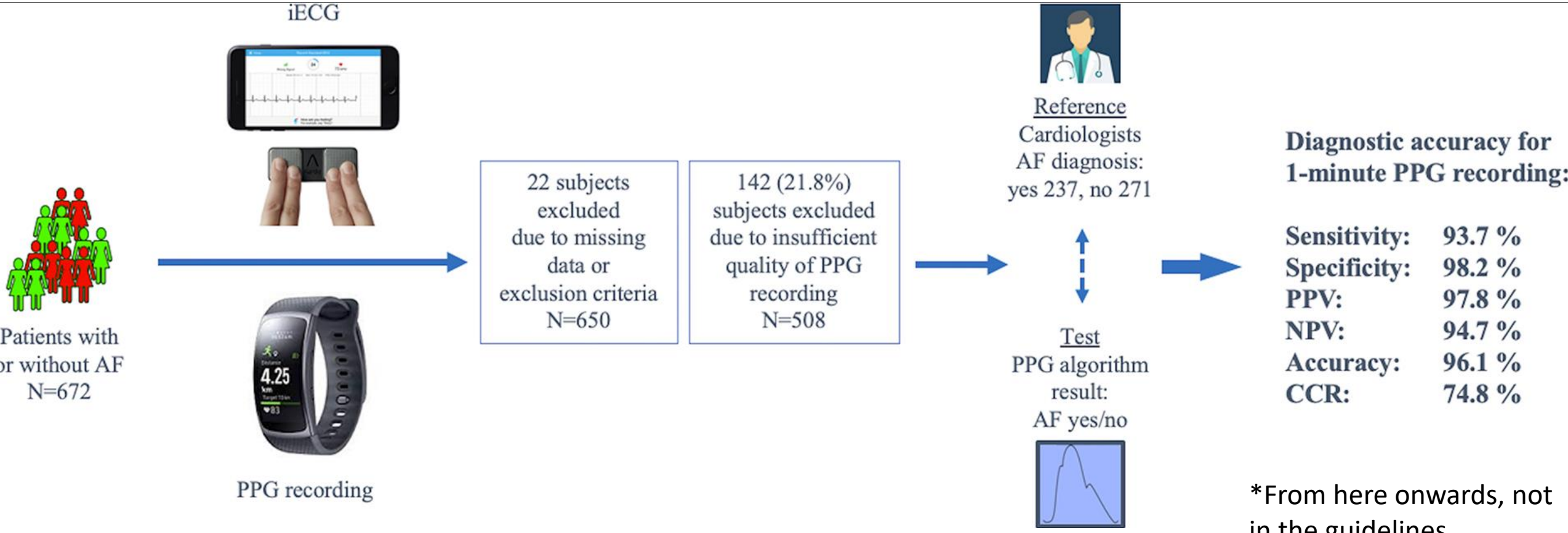
2020 guidelines updates

- Opportunistic screening: >65, HTN, OSA
- ECG screening: >75, high stroke risk
- Patient-centered model of care
- DOAC>warfarin
- 1-4wk triple=>double therapy
- Postop AF in noncardiac surgery should be anticoag long term
- Catheter ablation reasonable
- Treat obesity and OSA

How to diagnose AF?

- **WATCH-AF**

https://doi.org/10.1016/j.jacep.2018.10.006



*From here onwards, not in the guidelines

When to intervene?

The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 OCTOBER 1, 2020 VOL. 383 NO. 14

Early intervention matters

Early Rhythm-Control Therapy in Patients with Atrial Fibrillation

P. Kirchhof, A.J. Camm, A. Goette, A. Brandes, L. Eckardt, A. Elvan, T. Fetsch, I.C. van Gelder, D. Haase, L.M. Haegeli, F. Hamann, H. Heidbüchel, G. Hindricks, J. Kautzner, K.-H. Kuck, L. Mont, G.A. Ng, J. Rekosz, N. Schoen, U. Schotten, A. Suling, J. Taggeselle, S. Themistoclakis, E. Vettorazzi, P. Vardas, K. Wegscheider, S. Willems, H.J.G.M. Crijns, and G. Breithardt, for the EAST-AFNET 4 Trial Investigators*

- 2789 patients in 135 centers
- Median 36 days from AF diagnosis to intervention
- Stopped early for efficacy at 5.1 yr fu
- Primary outcome: CV death, stroke, or hospitalization

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EAST-AF

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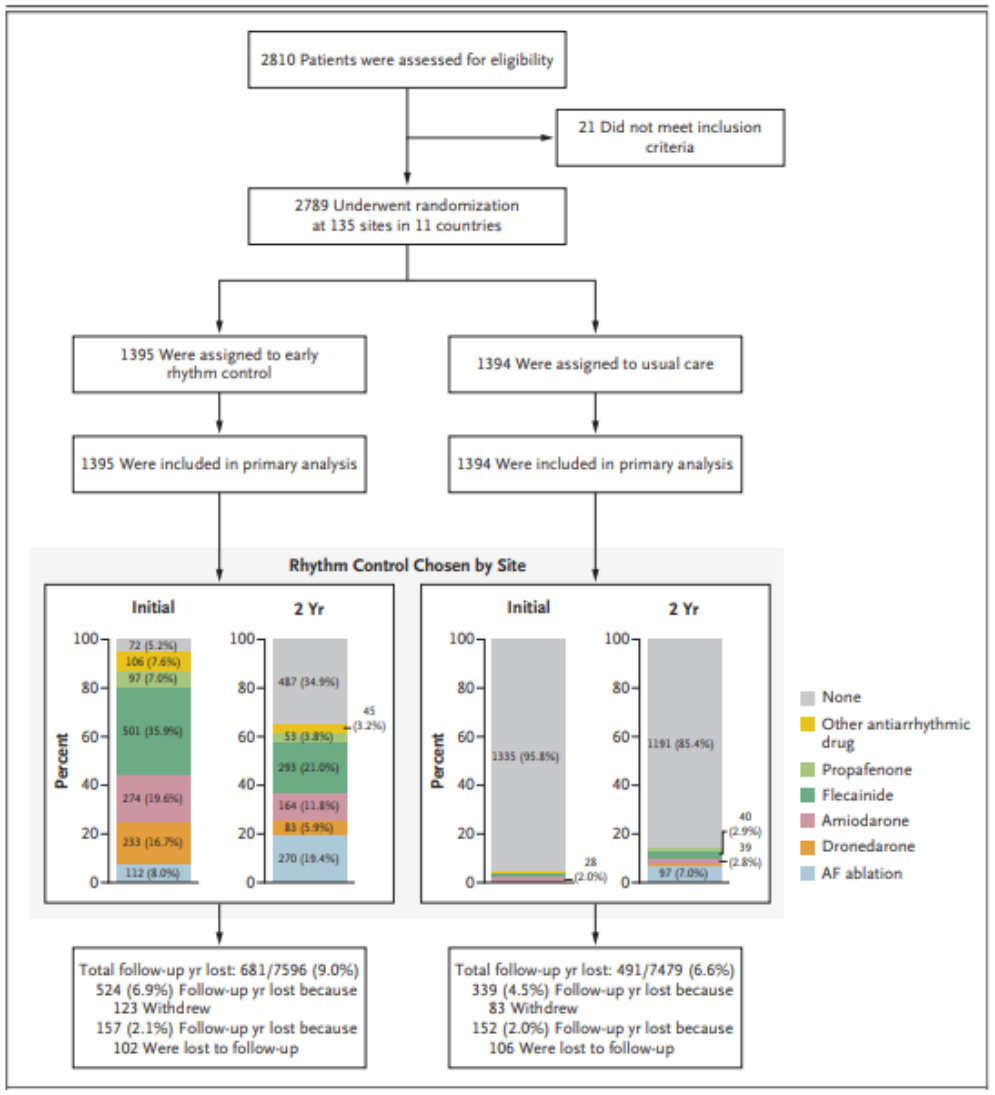

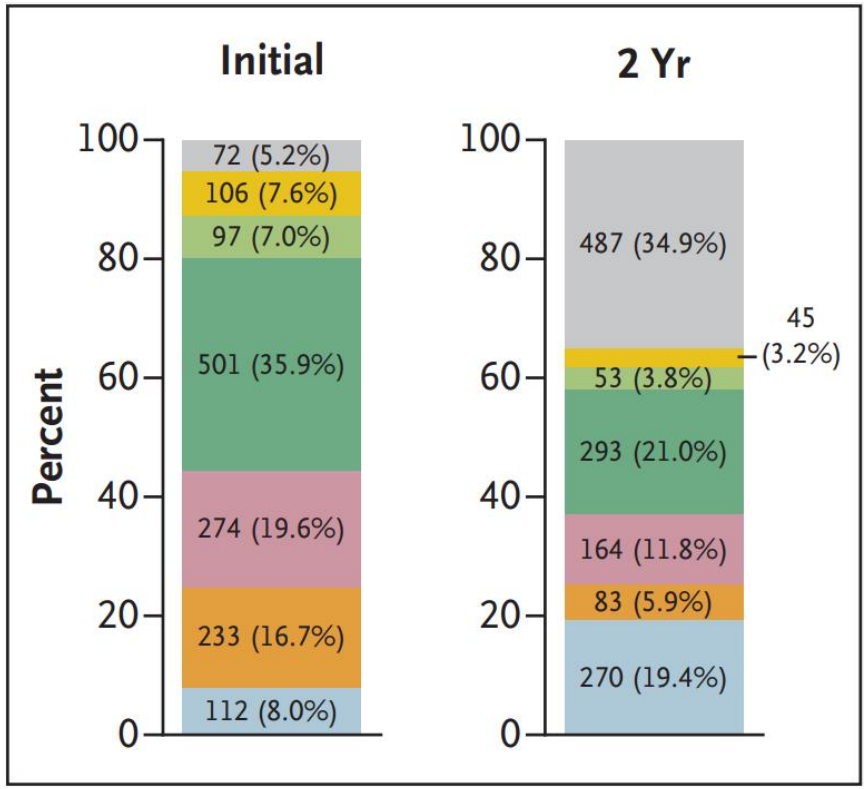

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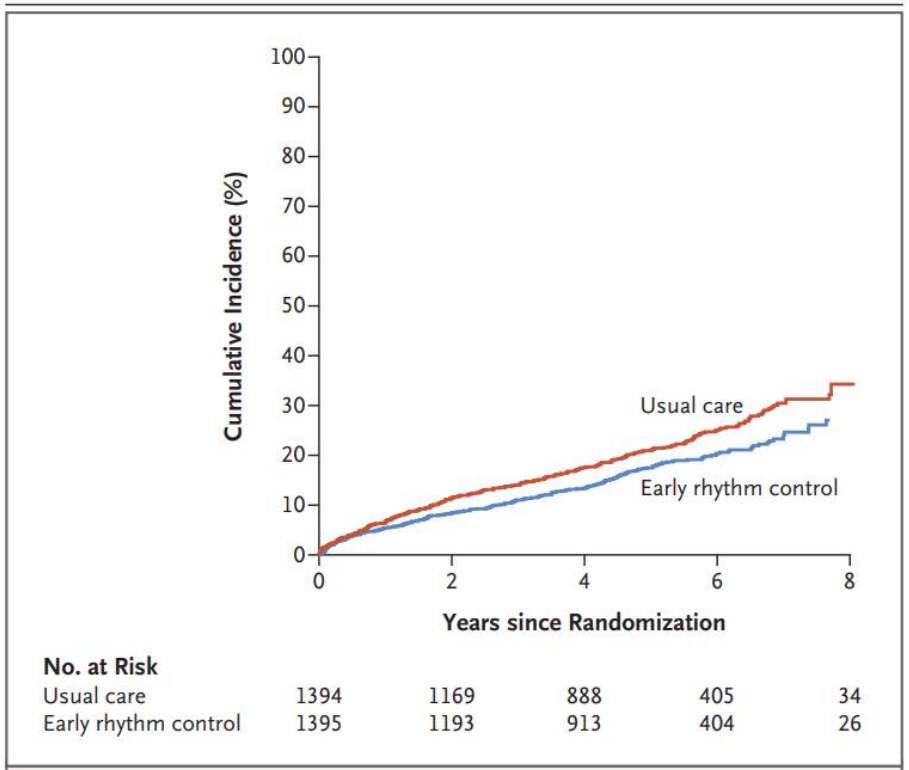


Figure 2. Aalen–Johansen Cumulative-Incidence Curves for the First Primary Outcome.

The first primary outcome was a composite of death from cardiovascular causes, stroke, or hospitalization with worsening of heart failure or acute coronary syndrome.

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)§
Key secondary outcomes at 2 yr			
Change in left ventricular ejection fraction — %	1.5±9.8	0.8±9.8	0.23 (−0.46 to 0.91)¶
Change in EQ-5D score	−1.0±21.4	−2.7±22.3	1.07 (−0.68 to 2.82)¶
Change in SF-12 Mental Score**	0.7±10.6	1.6±10.1	−1.20 (−2.04 to −0.37)¶
Change in SF-12 Physical Score**	0.3±8.5	0.1±8.2	0.33 (−0.39 to 1.06)¶
Change in MoCA score	0.1±3.3	0.1±3.2	−0.14 (−0.39 to 0.12)¶
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)††

What about AFFIRM?

The New England Journal of Medicine

VOLUME 347 DECEMBER 5, 2002 NUMBER 23

A COMPARISON OF RATE CONTROL AND RHYTHM CONTROL IN PATIENTS WITH ATRIAL FIBRILLATION

THE ATRIAL FIBRILLATION FOLLOW-UP INVESTIGATION OF RHYTHM MANAGEMENT (AFFIRM) INVESTIGATORS*

- 4060 patients randomized to rate control or rhythm control (meds)
  - 15% crossover
  - 2/3 patients in rhythm control on amiodarone
  - 15% more patients in rate control on warfarin
- More sinus rhythm in rhythm control; more TdP, brady, stroke

Event	Overall (N=4060)	Rate-Control Group (N=2027)	Rhythm-Control Group (N=2033)	P Value
		no. of patients (%)		
Primary end point (death)	666 (26.3)	310 (25.9)	356 (26.7)	0.08†
Secondary end point (composite of death, disabling stroke, disabling anoxic encephalopathy, major bleeding, and cardiac arrest)	861 (32.3)	416 (32.7)	445 (32.0)	0.33
Torsade de pointes	14 (0.5)	2 (0.2)‡	12 (0.8)	0.007
Sustained ventricular tachycardia	15 (0.6)	9 (0.7)	6 (0.6)	0.44
Cardiac arrest followed by resuscitation				
Ventricular fibrillation or ventricular tachycardia	19 (0.6)	10 (0.7)	9 (0.5)	0.83
Pulseless electrical activity, bradycardia, or other rhythm	10 (0.3)	1 (<0.1)	9 (0.6)	0.01
Central nervous system event				
Total	211 (8.2)	105 (7.4)	106 (8.9)	0.93
Ischemic stroke§	157 (6.3)	77 (5.5)	80 (7.1)	0.79
After discontinuation of warfarin	69	25	44	
During warfarin but with INR <2.0	44	27	17	
Concurrent atrial fibrillation	67	42	25	
Primary intracerebral hemorrhage	34 (1.2)	18 (1.1)	16 (1.3)	0.73
Subdural or subarachnoid hemorrhage	24 (0.8)	11 (0.8)	13 (0.8)	0.68
Disabling anoxic encephalopathy	9 (0.3)	4 (0.2)	5 (0.4)	0.74
Myocardial infarction	140 (5.5)	67 (4.9)	73 (6.1)	0.60
Hemorrhage not involving the central nervous system	203 (7.3)	107 (7.7)	96 (6.9)	0.44
Systemic embolism	16 (0.5)	9 (0.5)	7 (0.4)	0.62
Pulmonary embolism	8 (0.3)	2 (0.1)	6 (0.5)	0.16
Hospitalization after base line	2594 (76.6)	1220 (73.0)	1374 (80.1)	<0.001

Covariate	P	HR	HR: 99% Confidence Limits	
			Lower	Upper
Age at enrollment*	<0.0001	1.06	1.05	1.08
Coronary artery disease	<0.0001	1.56	1.20	2.04
Congestive heart failure	<0.0001	1.57	1.18	2.09
Diabetes	<0.0001	1.56	1.17	2.07
Stroke or transient ischemic attack	<0.0001	1.70	1.24	2.33
Smoking	<0.0001	1.78	1.25	2.53
Left ventricular dysfunction	0.0065	1.36	1.02	1.81
Mitral regurgitation	0.0043	1.36	1.03	1.80
Sinus rhythm	<0.0001	0.53	0.39	0.72
Warfarin use	<0.0001	0.50	0.37	0.69
Digoxin use	0.0007	1.42	1.09	1.86
Rhythm-control drug use	0.0005	1.49	1.11	2.01

*Per year of age.

doi.org/10.1161/01.CIR.0000121736.16643.11

When do I start blood thinners?

Implantable loop recorder detection of atrial fibrillation to prevent stroke (The LOOP Study): a randomised controlled trial

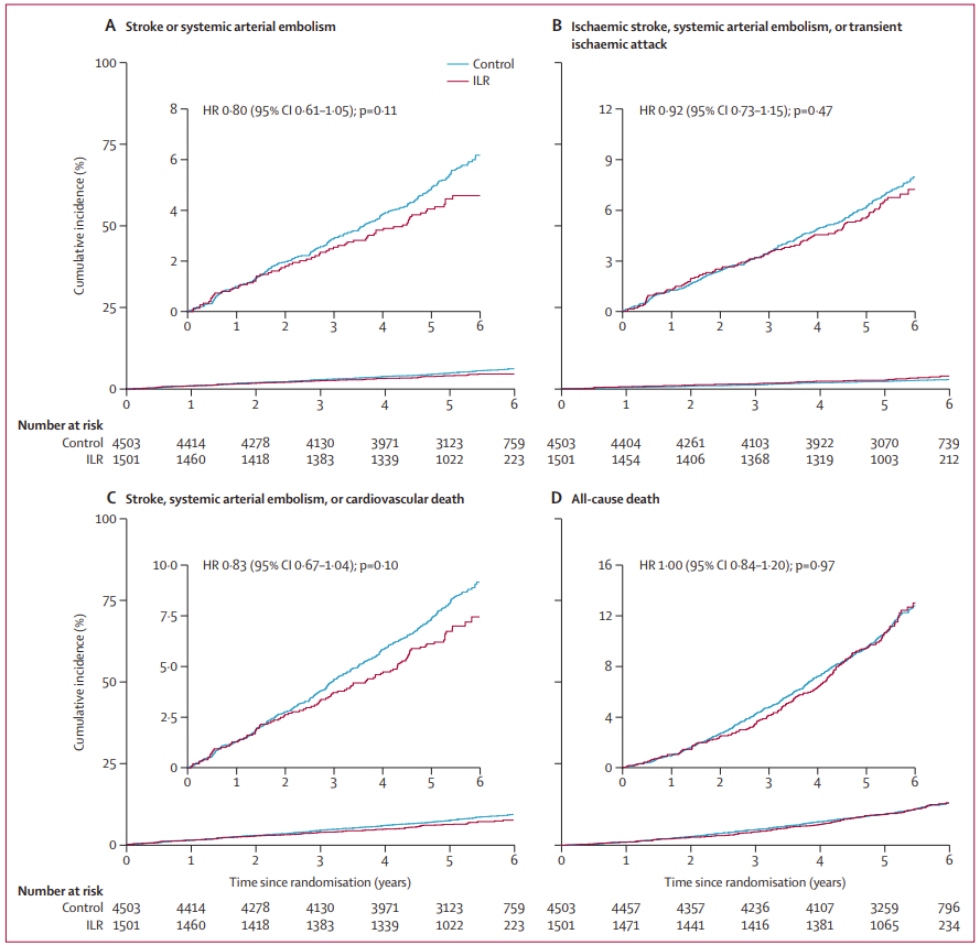
Jesper H Svendsen, Søren Z Diederichsen, Søren Højberg, Derk W Krieger, Claus Graff, Christian Kronborg, Morten S Olesen, Jonas B Nielsen, Anders G Holst, Axel Brandes, Ketil J Haugan, Lars Køber

Lancet 2021; 398: 1507–16

When not to start blood thinners

- Danish, 4 centers, 70-90yo + HTN/DM/HF/CVA, randomized to LINQ or SOC
  - 6min of AF => recommend OAC
- 1501 got ILR, 4503 got SOC
  - 31% AF v 12% AF
    - 30% got OAC v 13%

4.5% v 5.6% primary endpoint, p = 0.11



Circulation: Arrhythmia and Electrophysiology
Volume 2, Issue 5, 1 October 2009; Pages 474-480
https://doi.org/10.1161/CIRCEP.109.849638

ORIGINAL ARTICLE

TRENDS

The Relationship Between Daily Atrial Tachyarrhythmia Burden From Implantable Device Diagnostics and Stroke Risk

The TRENDS Study

- 2813 patients with CHADS>=1 and CIED capable of monitoring AF
- Analysis of TE event and the immediate 30d window prior to event

AT/AF Burden Subset	Annualized TE Rate (95% CI), %	Annualized TE Rate Excluding TIAs (95% CI), %
Zero AT/AF burden	1.1 (0.8–1.6)	0.5 (0.3–0.9)
Low AT/AF burden (<5.5 h)	1.1 (0.4–2.8)	1.1 (0.4–2.8)
High AT/AF burden (<1835>5.5 h)	2.4 (1.2–4.5)	1.8 (0.9–3.8)

Category	Variable	Hazard Ratio (95% CI)*	*P* Value
AT/AF burden	Low burden vs zero burden	0.98 (0.34, 2.82)	0.97
	High burden vs zero burden	2.20 (0.96, 5.05)	0.06
High and low burden are separated by the median value of 30-day windows having nonzero AT/AF burden; that is, high corresponds to a burden of ≥5.5 hours, low corresponds to a burden of 20 seconds to <5.5 hours.			

When do I stop blood thinners?

ELSEVIER
American Heart Journal
Volume 197, March 2018, Pages 124-132

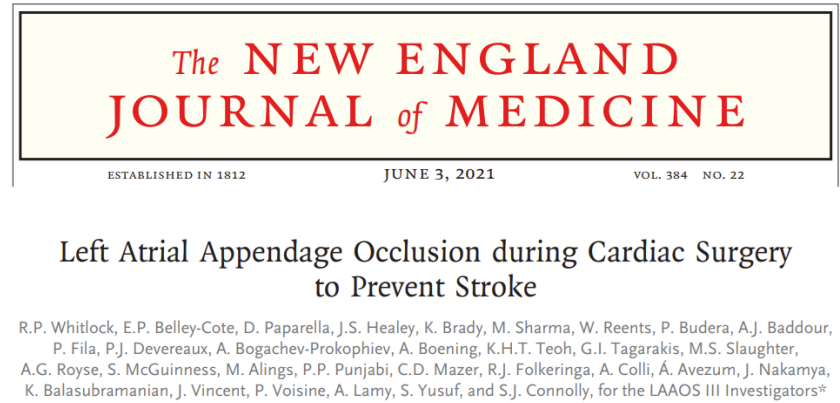
Trial Design

The Optimal Anti-Coagulation for Enhanced-Risk Patients Post–Catheter Ablation for Atrial Fibrillation (OCEAN) trial

OCEAN

- Currently enrolling in Canada, Aus
- CHADSvasc>0 sp ablation and no known recurrence for 12mo
- Randomized to 81mg asa or 15mg rivaroxaban; 786 subjects each arm
- 3 yr follow up planned; started ‘16 and plan completion ‘25

LAAOS III



- AF, CHADSv>1 and undergoing CV surgery randomly assigned LAA occlusion or not
- 2379 occ v 2391 not occ
  - 4.8% v 7.0% stroke or SE, p = 0.001
  - 77% remained on OAC after 3yr in both groups