Contemporary AF Management: Addressing Increased Detection, Early Rhythm Control, and Role of AADs

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Supported by an educational grant from Sanofi US.

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Disclosures

- **Christian Sohns, prof** has nothing to disclose
- **Jared Bunch, MD:** Consultant – Abbott, Bayer, BD, Biotronik, Biosense-Webster, Boston Scientific, Cook, CSI, Inari, Medtronic, Philips, Shockwave, VentureMed
- **Qussay Marashly, MD** has nothing to disclose
- **Peter Hanna, MD, PhD** has nothing to disclose
- **Edward Paul Gerstenfeld MD, FHRS:** Consultant – Abbott, Boston Scientific, Medtronic; grant/research support – Abbott, Boston Scientific; advisory board – Biosense-Webster
- **Jason Andrade, MD** has nothing to disclose

Learning Objectives

- Assess current and emerging insights into AF, including associated comorbidities and risk factors
- Describe the latest clinical guidelines for AF and the significance of early identification and the implementation of early rhythm control strategies
- Evaluate the latest clinical data associated with the efficacy and safety of state-of-the-art therapeutic interventions for managing AF, including antiarrhythmic drugs
- Implement strategies for shared decision-making and collaborative disease management that incorporate patient preferences, reduce the burden of AF, and enhance patients' quality of life

AF = atrial fibrillation.

AF Overview and Artificial Intelligence in AF Care

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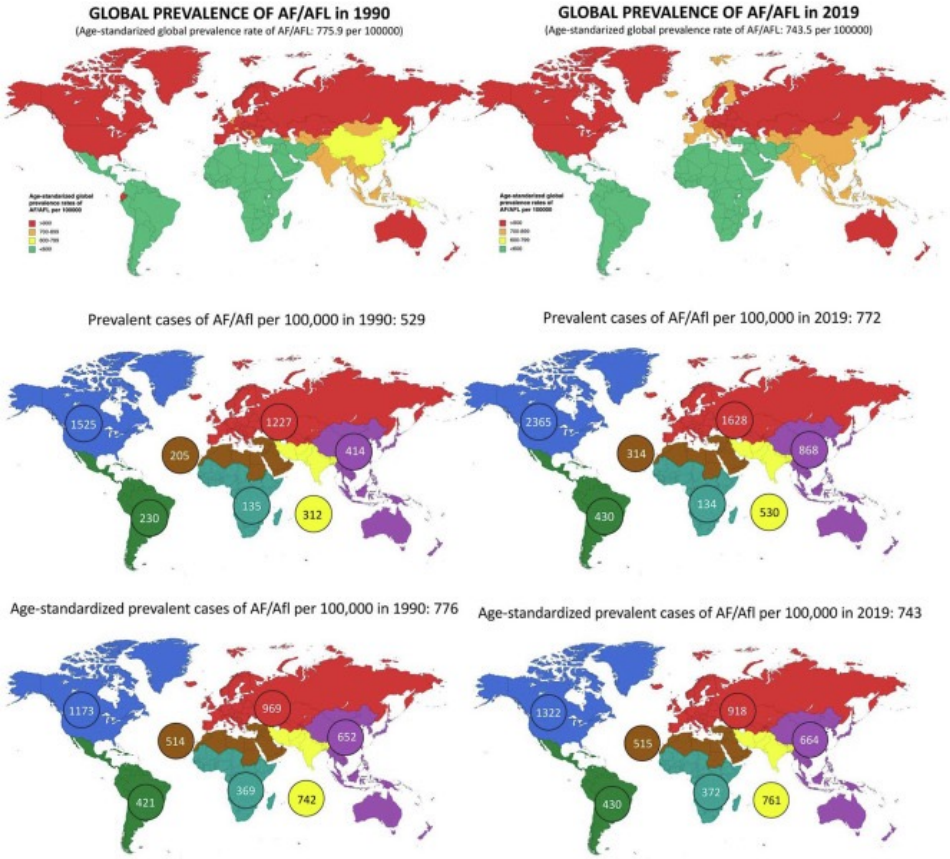
Epidemiology, Burden, and Trends

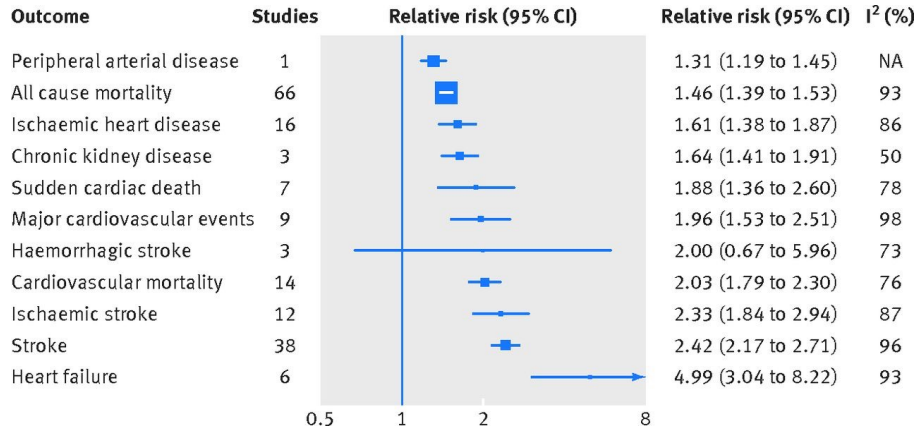
- Between 2010 and 2019, the global prevalence of AF has risen markedly from 33.5 million to 59 million individuals living with AF
- Incidence of AF varies depending on race/ethnicity
  - 1 in 3 White individuals at >45 years
  - 1 in 10 Chinese individuals at ≥40 years
  - 1 in 5 African American individuals ≥40 years
- True prevalence of AF is higher because many individuals have undiagnosed AF until they develop symptoms or present with an ischemic stroke

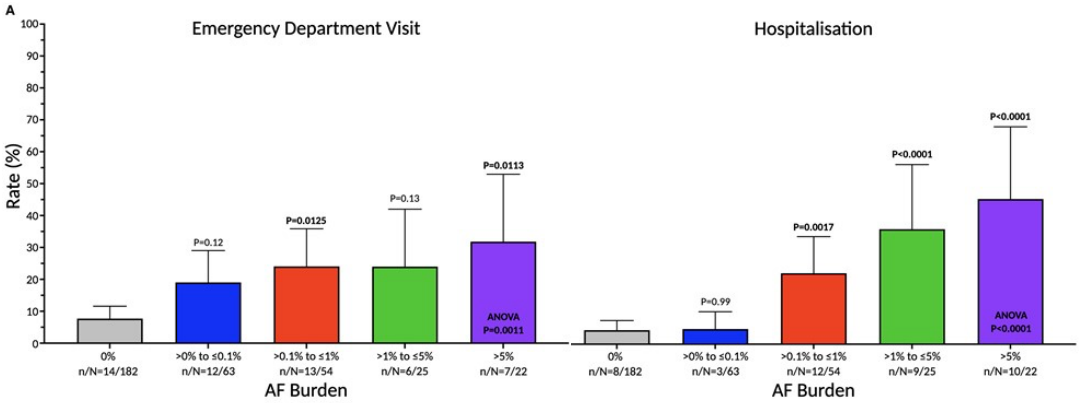


Linz D, et al. *Lancet Reg Health Eur*. 2024;37:100786.

Impact of Atrial Fibrillation on Patients and Healthcare Systems

- Increased mortality and morbidity
- Quality of life impairment
- Higher AF burden correlates with even greater costs
- Adults with AF have significantly higher total annual healthcare expenditures than those without AF
  - In one US analysis, adjusted annual costs for patients with AF were ~$14,083 vs ~$8,771 for individuals without AF
  - Hospital inpatient care is the dominant cost driver
- Higher AF burden correlates with even greater costs





Odutayo A, et al. *BMJ*. 2016;354:i4482. Andrade JG, et al. *Eur Heart J*. 2023;44(9):765-776.

Specific Cardiovascular Risk Factors/Comorbidities

- Hypertension
- Heart failure
- Coronary artery disease
- Diabetes mellitus
- Sleep apnea
- Obesity
- Alcohol use
- Physical activity

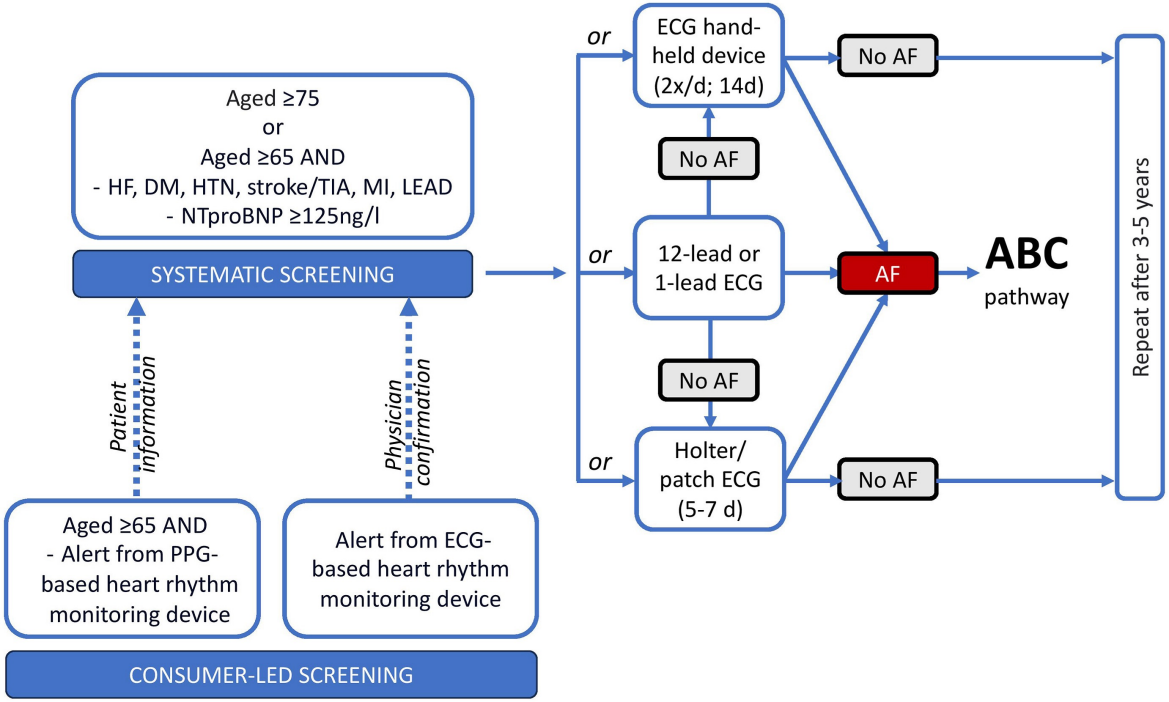
Recommendation	Class[a]	Level[b]
Identification and management of risk factors and comorbidities is recommended as an integral part of AF care.[39,125–127]	I	B
Blood pressure lowering treatment is recommended in patients with AF and hypertension to reduce recurrence and progression of AF and prevent adverse cardiovascular events.[126–130]	I	B
Diuretics are recommended in patients with AF, HF, and congestion to alleviate symptoms and facilitate better AF management.	I	C
Appropriate medical therapy for HF is recommended in AF patients with HF and impaired LVEF to reduce symptoms and/or HF hospitalization and prevent AF recurrence.[131–137]	I	B
Sodium-glucose cotransporter-2 inhibitors are recommended for patients with HF and AF regardless of left ventricular ejection fraction to reduce the risk of HF hospitalization and cardiovascular death.[136,138–140]	I	A
Effective glycaemic control is recommended as part of comprehensive risk factor management in individuals with diabetes mellitus and AF, to reduce burden, recurrence, and progression of AF.	I	C
Weight loss is recommended as part of comprehensive risk factor management in overweight and obese individuals with AF to reduce symptoms and AF burden, with a target of 10% or	I	B
A tailored exercise programme is recommended in individuals with paroxysmal or persistent AF to improve cardiorespiratory fitness and reduce AF recurrence.[141–146]	I	B
Reducing alcohol consumption to ≤3 standard drinks (≤30 grams of alcohol) per week is recommended as part of comprehensive risk factor management to reduce AF recurrence.[126,127,147]	I	B
Bariatric surgery may be considered in conjunction with lifestyle changes and medical management in individuals with AF and body mass index ≥40 kg/m^2 [c] where a rhythm control strategy is planned, to reduce recurrence and progression of AF.	IIb	C
Management of obstructive sleep apnoea may be considered as part of a comprehensive management of risk factors in individuals with AF to reduce recurrence and progression.[126–128,148–154]	IIb	B
When screening for obstructive sleep apnoea in individuals with AF, using only symptom-based questionnaires is not recommended.[155–157]	III	B

AF, atrial fibrillation; HF, heart failure; LVEF, left ventricular ejection fraction.
[a]Class of recommendation.
[b]Level of evidence.
[c]Or body mass index ≥35 kg/m^2 with obesity-related complications.

Van Gelder IC, et al. *Eur Heart J*. 2024;45(36):3314-3414.

AF Screening

- Early diagnosis is critical as AF is a dynamic, chronic, progressive disease
- Early rhythm control improves clinical outcomes



HF = heart failure; DM = diabetes mellitus; HTN = hypertension; TIA = transient ischemic attack; MI = myocardial infarction; LEAD = lower extremity arterial disease.
Linz D, et al. *Lancet Reg Health Eur*. 2024;37:100786.

Irregular Heart Rhythm Detection (IHRD) by Wearables Is Strongly Predictive of Atrial Fibrillation

Wearable activity device

IHRD Positive Predictive Value

98.2%

Smartwatch

IHRD Positive Predictive Value

84.0%

Lubitz SA, et al. *Circulation*. 2022;146(19):1415-1424. Perez MV, et al. *N Engl J Med*. 2019;381(20):1909-1917.

Diagnosis of AF: AI to Re-Classify Atrial Fibrillation

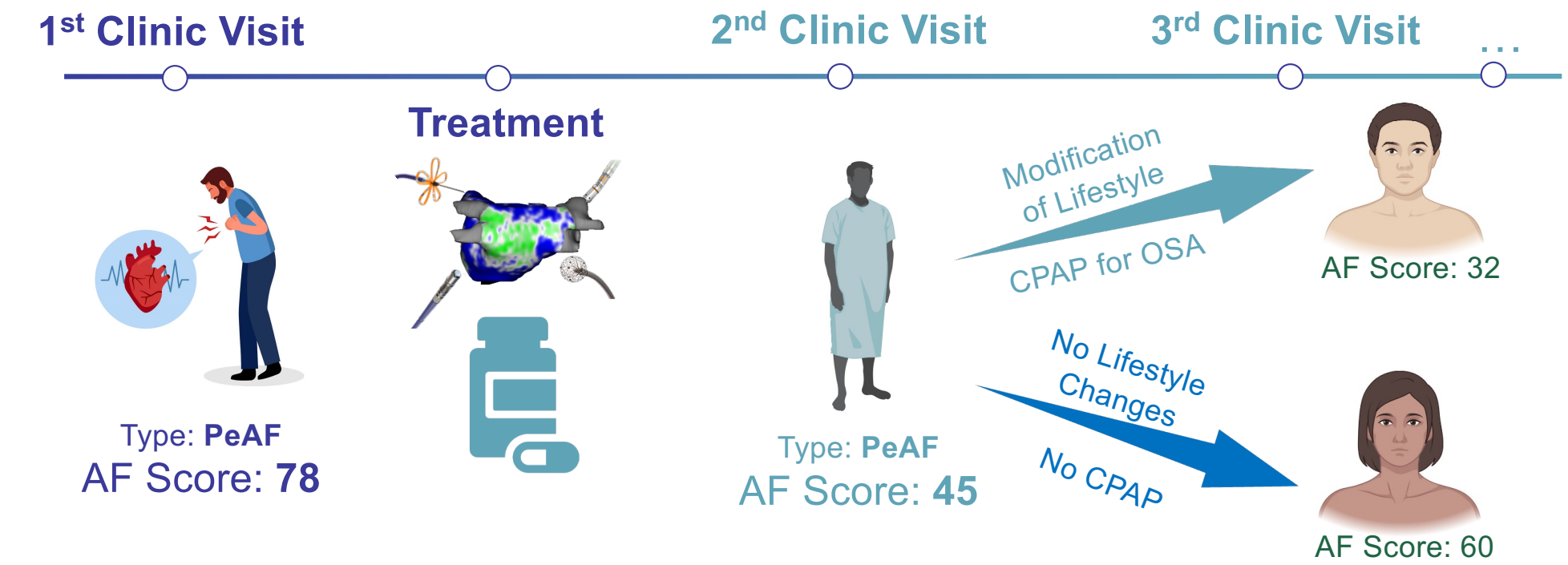
RECLASS-AF

Paroxysmal	Paroxysmal	Persistent	Persistent
Patient 1 Age: 66 Gender: Female LAV: 75.5 LAFibrosis:15.5 Echo EF: 67 BMI: 22.5 Implanted Device …..	Patient 2 Age: 55 Gender: Male LAV: 142.3 LAFibrosis:30% BMI: 27	Patient 3 Age: 74 Gender: Male LAV: 124.3 LAFibrosis:7.1 Echo EF: 35 BMI: 25.8 CAD Cardiomyopathy Mitral Valve Regurgitation …..	Patient 4 Age: 70 Gender: Male LAV: 196.6 LAFibrosis:46.3 Echo EF: 34 BMI: 26.6 CAD Hypertension Smoker …..
AF Score: **0.4**	AF Score: **39**	AF Score: **48**	AF Score: **98**

Feng H, et al. *Heart Rhythm*. 2024;21(5 suppl):S415-S416.

Diagnosis of AF: AI to Re-Classify Atrial Fibrillation

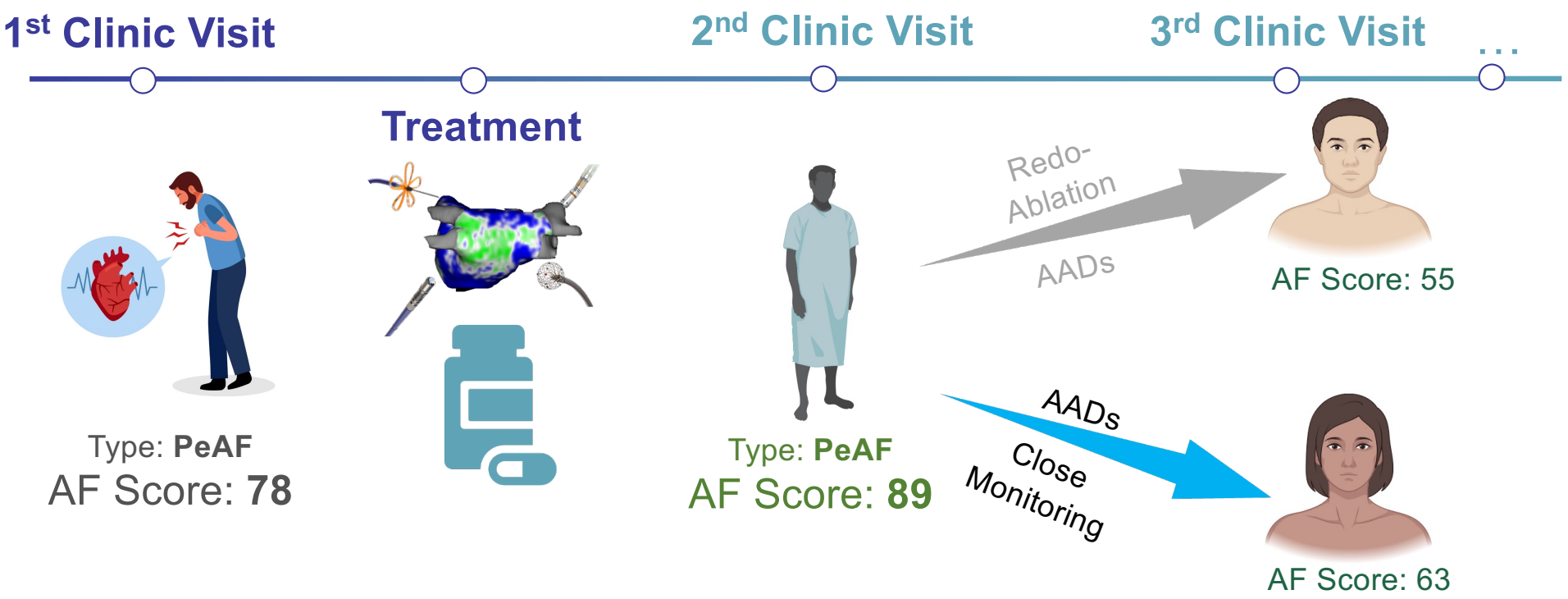
Patient Journey



CPAP = continuous positive airway pressure; OSA = obstructive sleep apnea; PeAF = persistent AF.
Feng H, et al. *Heart Rhythm*. 2024;21(5 suppl):S415-S416.

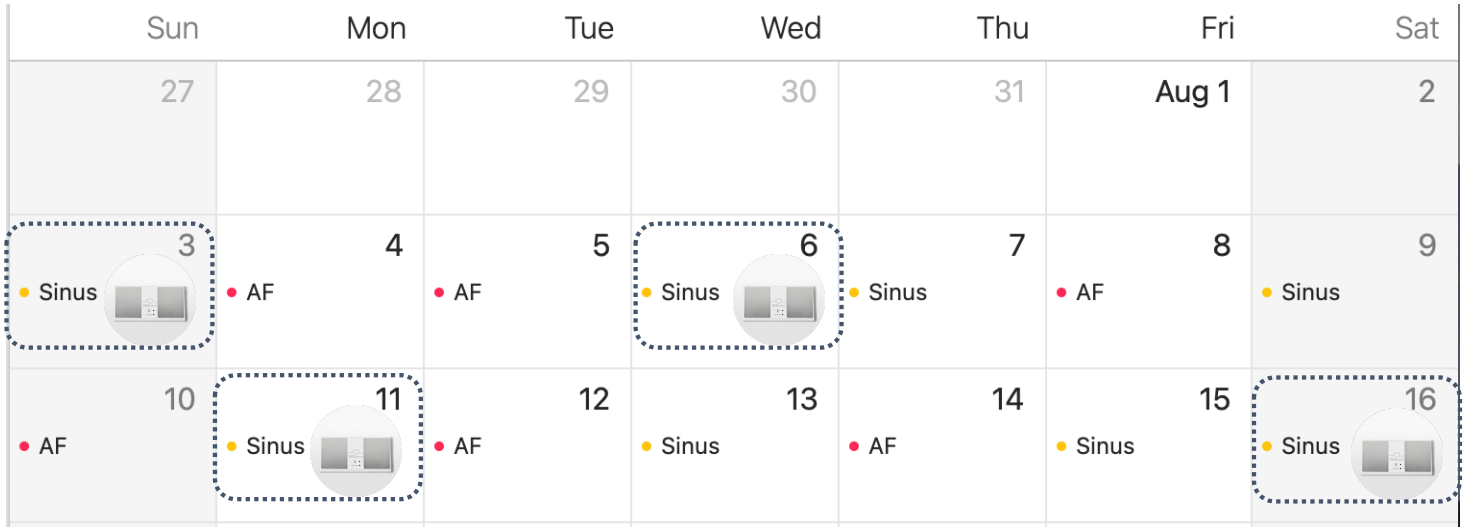
Diagnosis of AF: AI to Re-Classify Atrial Fibrillation

Patient Journey



AAD = antiarrhythmic drug.
Feng H, et al. *Heart Rhythm*. 2024;21(5 suppl):S415-S416.

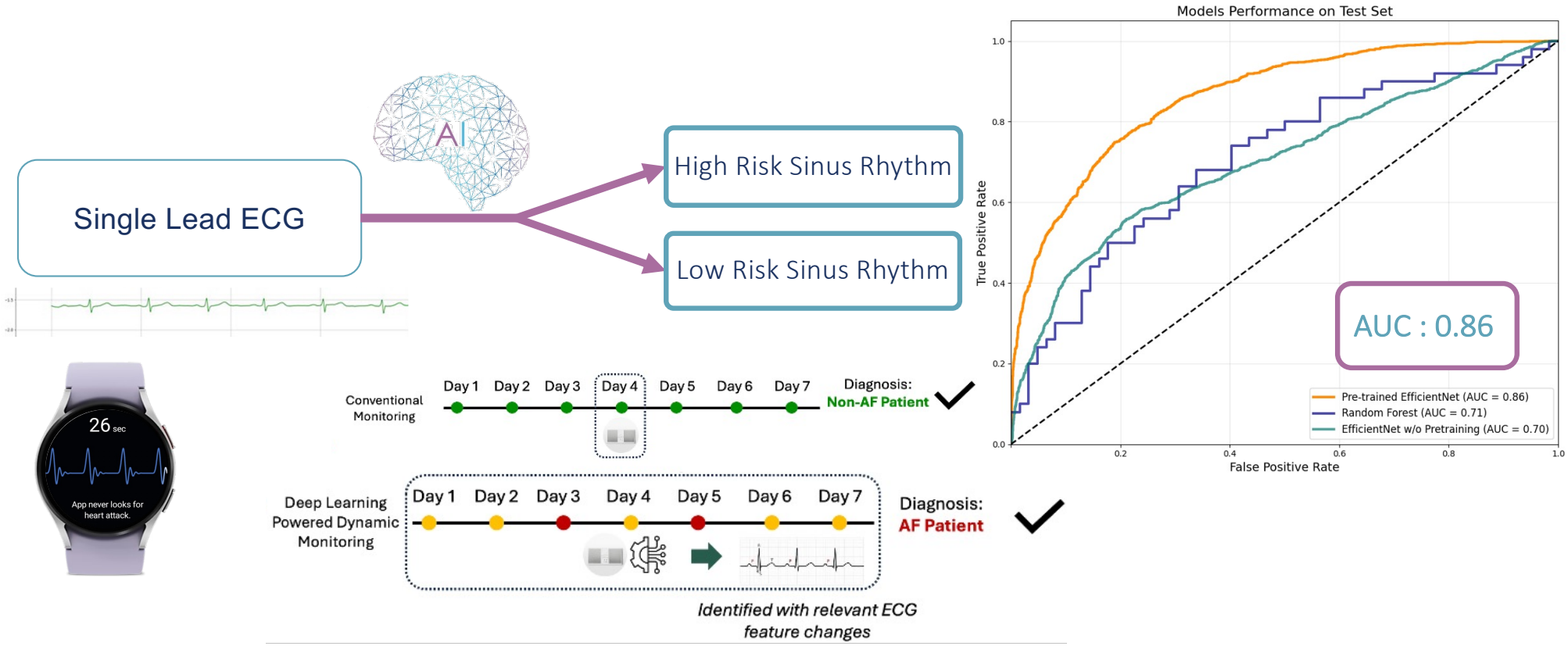
Post-Treatment Monitoring: Single Lead Sinus ECG Reclassification to Enhance Post-ablation



Undetected Recurrence

Liu Y, et al. *Heart Rhythm*. 2025;22(4 suppl):S791.

Post-Treatment Monitoring: Single Lead Sinus ECG Reclassification to Enhance Post-ablation



Liu Y, et al. *Heart Rhythm*. 2025;22(4 suppl):S791.

Post-Treatment Monitoring: Single Lead Sinus ECG Reclassification to Enhance Post-ablation

AI Sinus Reclassification: Changing Snapshots to 7 Day Monitoring Window

Tulane Digital Monitor Day

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30 	31	Aug 1	2
3 • Severe Sinus	4 • AF	5 • AF	6 • Severe Sinus	7 • Severe Sinus	8 • AF	9 • Severe Sinus
10 • AF	11 • Severe Sinus	12 • AF	13 • Severe Sinus	14 • AF	15 • Severe Sinus	16 • Severe Sinus

Sinus Rhythm Reclassification AI

- Severe Sinus
- Benign Sinus

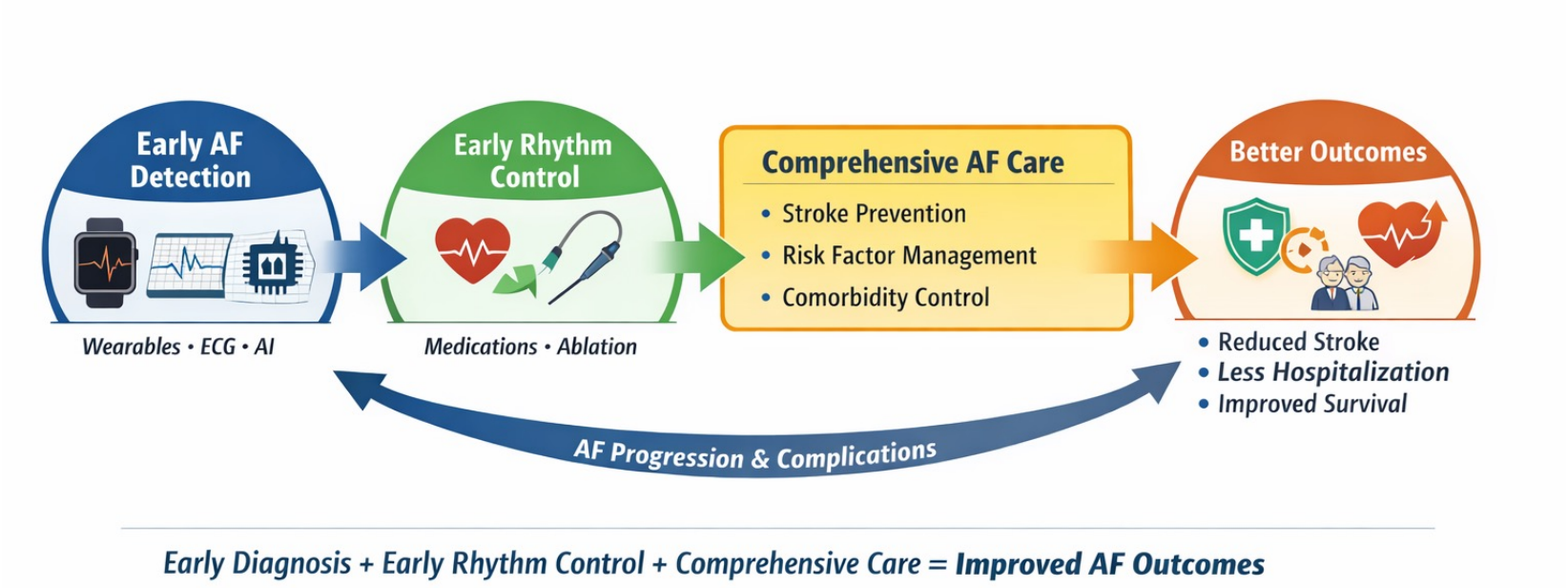
AUC: 0.87

Detected Recurrence

AUC = area under curve.

Liu Y, et al. *Heart Rhythm*. 2025;22(4 suppl):S791.

The Future of AF Care: Earlier, Smarter, and More Personalized



Key Learning Points

- AF is a chronic and **progressive disease** influenced by comorbidities over time
- **Atrial fibrillation is a growing global epidemic** associated with major morbidity, mortality, impaired quality of life, and substantial healthcare costs
- **Artificial intelligence and digital health tools are transforming AF care**, enabling scalable screening, improved risk prediction, and more personalized rhythm and stroke prevention strategies

AF Diagnosis and Initial Management

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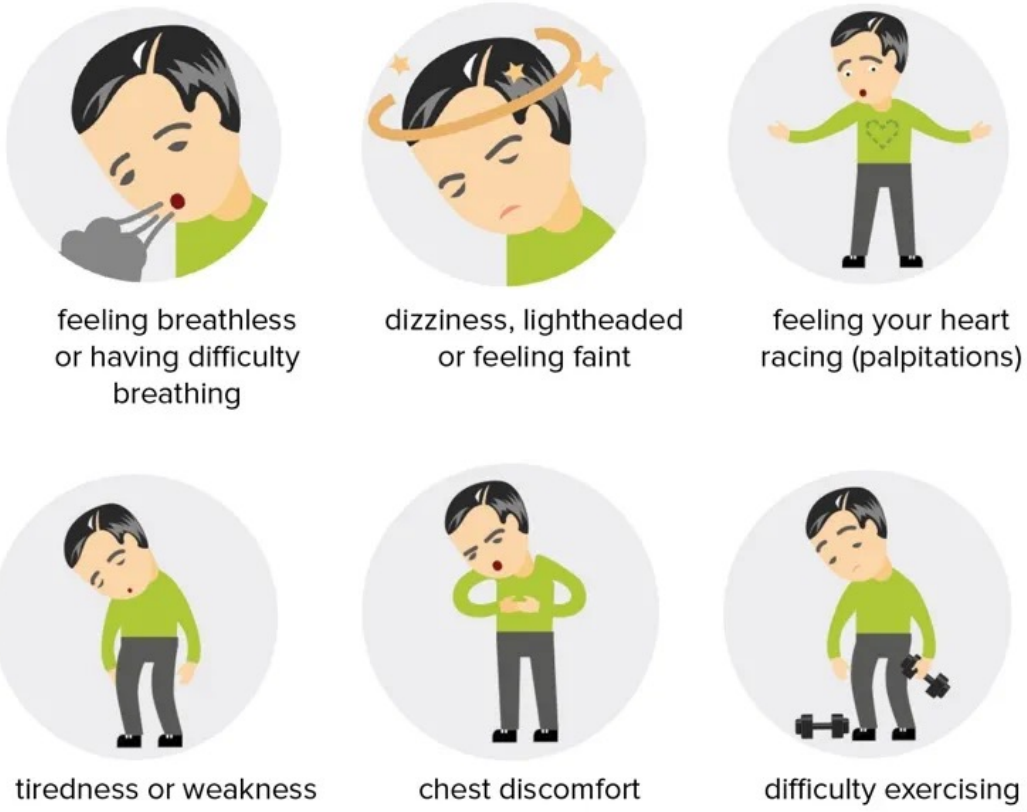
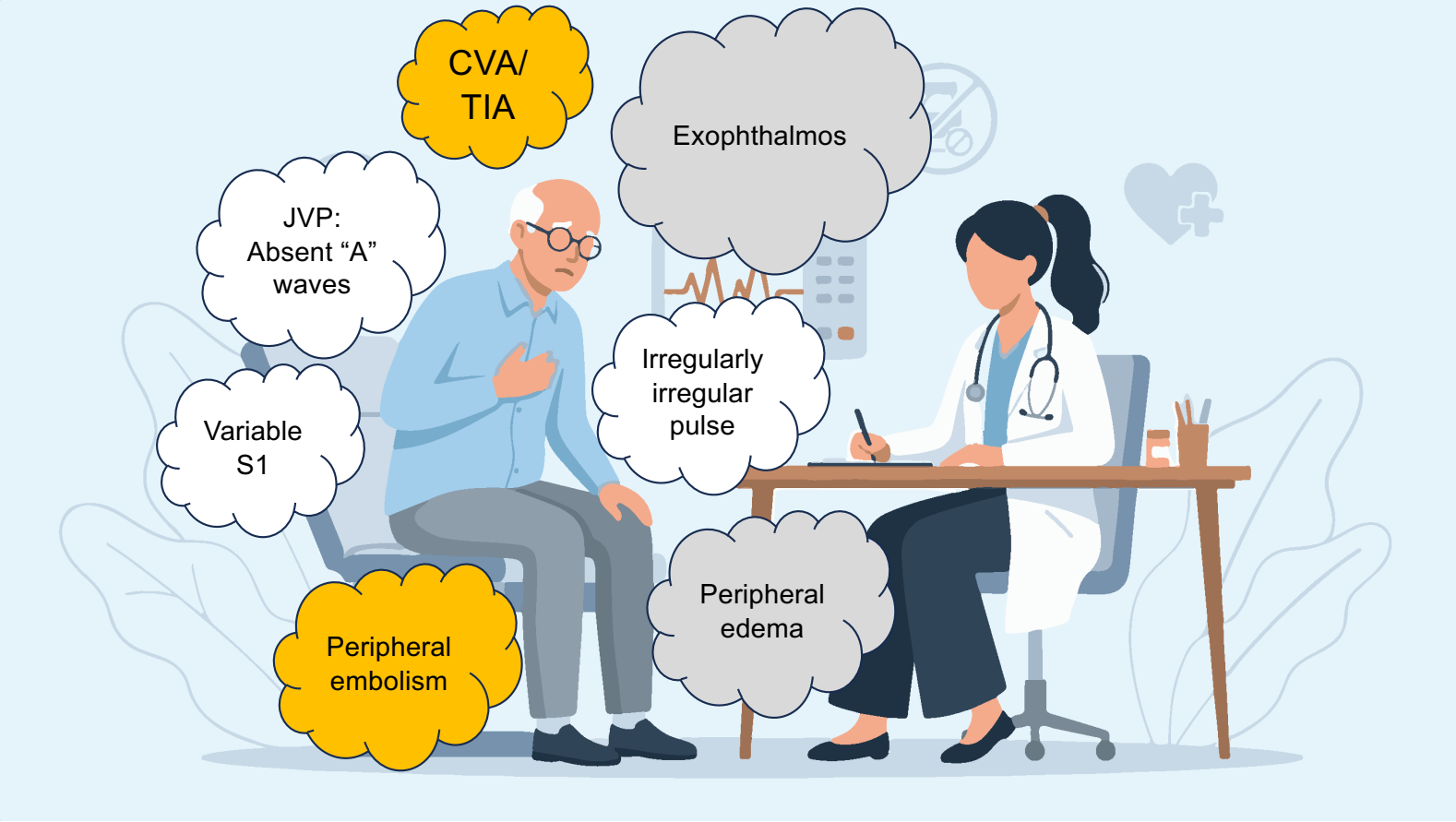
Atrial Fibrillation Symptoms



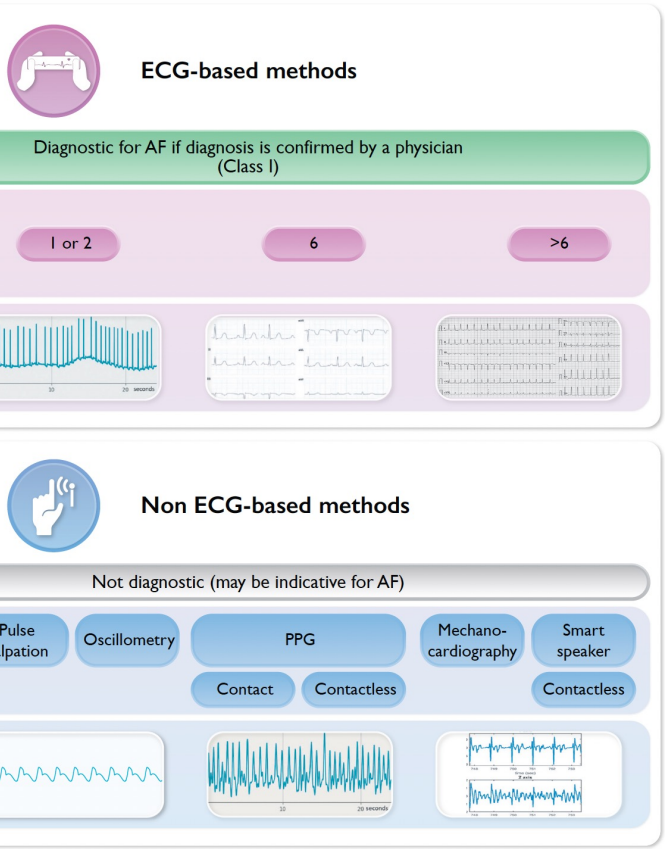
Heart Foundation. Accessed Feb 10, 2026. https://www.heartfoundation.org.nz/your-heart/heart-conditions/atrial-fibrillation.

Physical Exam Findings



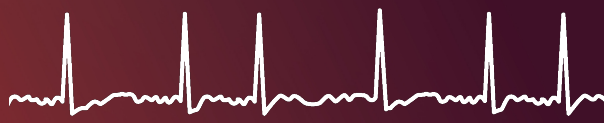
TIA = transient ischemic attack; CVA = cerebrovascular accident; JVP = jugular venous pressure.

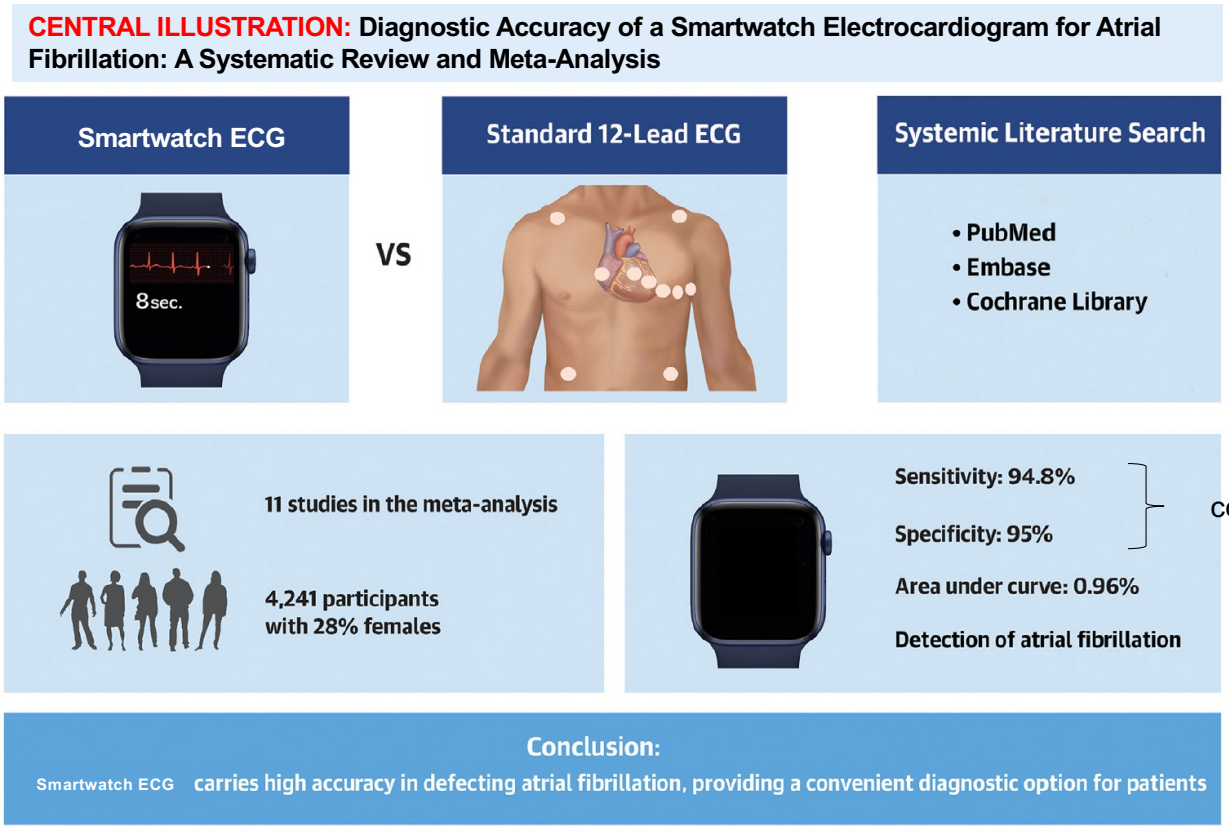
Screening and Diagnosis of AF



Van Gelder IC, et al. *Eur Heart J*. 2024;45(36):3314-3414.

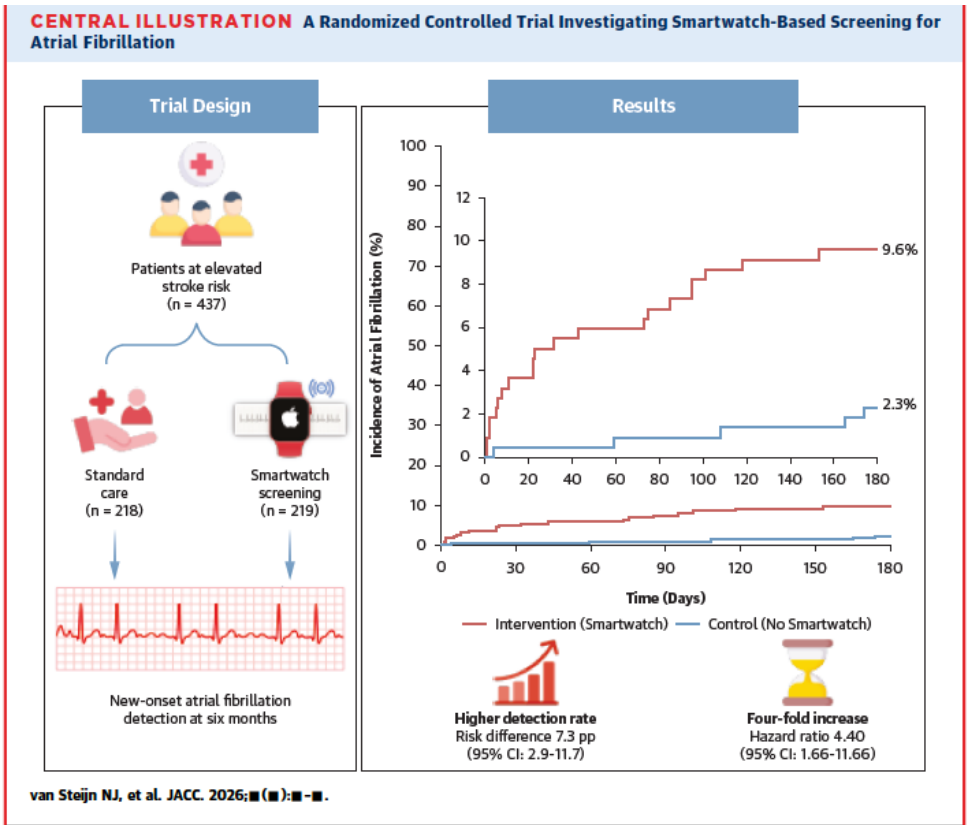
Diagnostic Accuracy of Smartwatch ECG





Shahid I, et al. *JACC Adv*. 2025;4(6 Pt 2):101788.

Smartwatch-Based AF Screening Increases Detection of New Onset AF



van Steijn NJ, et al. *JACC.* 2026; S0735-1097(25)10337-9.

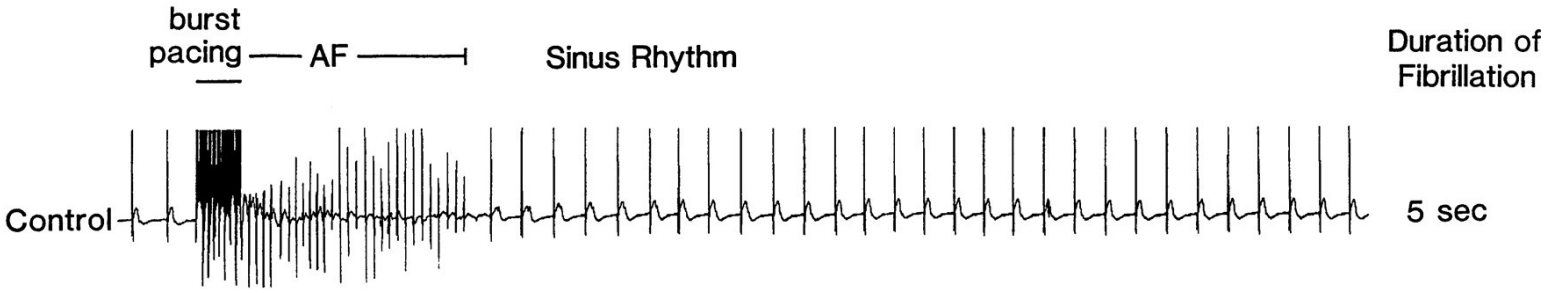
Lifetime Risk for AF Is High

LIFETIME RISK for AF
1 in 3 individuals

of European ancestry
at index age of 55 years
37.0% (34.3% to 39.6%)

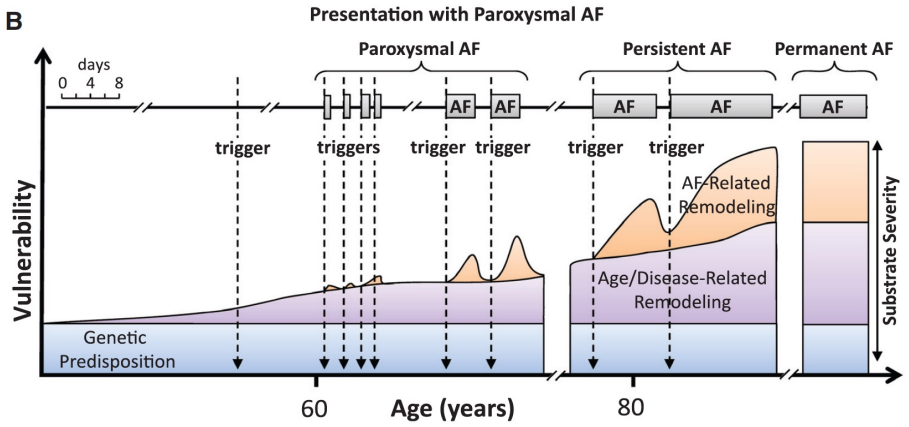
Hindricks G, et al. *Eur Heart J*. 2021;42(5):373-498.

AF Begets AF



Wijffels MC, et al. *Circulation*. 1995;92(7):1954-1968.

Initiation and Maintenance of AF



Heijman J, et al. *Circ Res*. 2014;114(9):1483-1499.

Stroke Risk Assessment: CHA_2DS_2-VASc Score

Table 6—*Stroke or Other TE at 1 Year Based on the 2009 Birmingham (CHA_2DS_2-VASc) Scoring System*

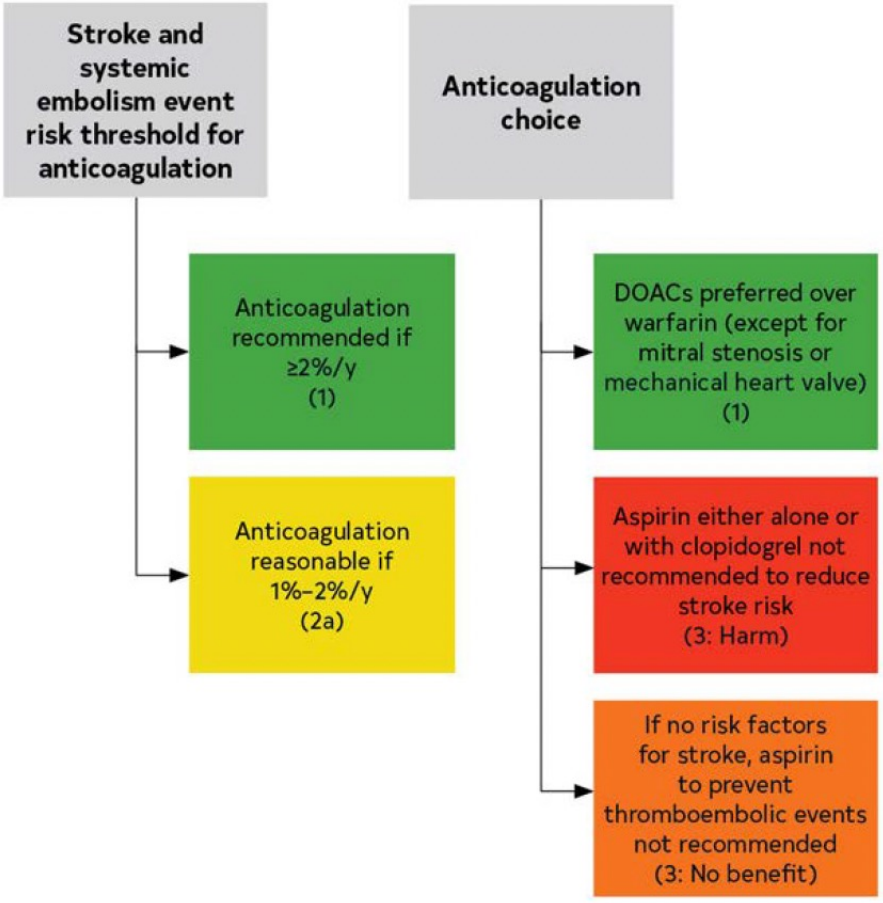
CHA_2DS_2-VASc Score	No.	Number of TE Events	TE Rate During 1 y (95% CI)	TE Rate During 1 y, Adjusted for Aspirin Prescription,[a] %
0	103	0	0% (0-0)	0
1	162	1	0.6% (0.0-3.4)	0.7
2	184	3	1.6% (0.3-4.7)	1.9
3	203	8	3.9% (1.7-7.6)	4.7
4	208	4	1.9% (0.5-4.9)	2.3
5	95	3	3.2% (0.7-9.0)	3.9
6	57	2	3.6% (0.4-12.3)	4.5
7	25	2	8.0% (1.0-26.0)	10.1
8	9	1	11.1% (0.3-48.3)	14.2
9	1	1	100% (2.5-100)	100
Total	1,084	25	*P* Value for trend 0.003	

See Tables 1 and 2 for expansion of abbreviations.

[a]Theoretical TE rates without therapy: corrected for the % of patients receiving aspirin within each group, assuming that aspirin provides a 22% reduction in TE risk, based on Hart et al.[28]

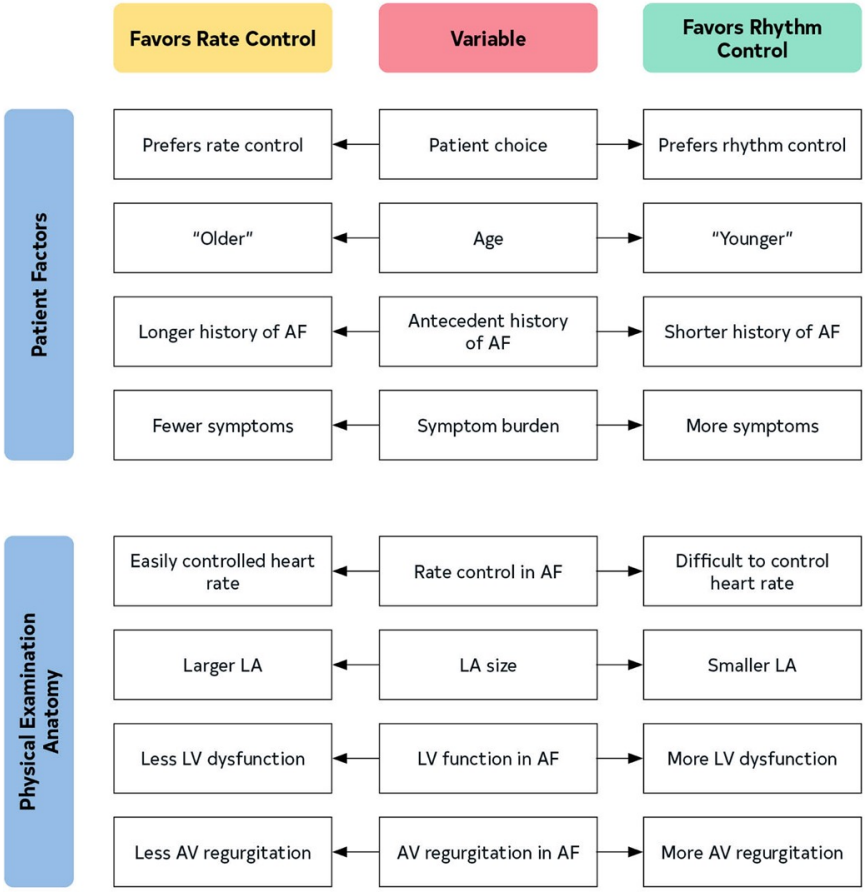
Lip GY, et al. *Chest*. 2010;137(2):263-272.

Stroke Risk Assessment: CHA_2DS_2-VASc Score



Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156.

Rate vs Rhythm Control



Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156.

Early Rhythm Control Is Beneficial

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 1, 2020 VOL. 383 NO. 14

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*

Patients with newly diagnosed AF and cardiovascular risk factors are likely to benefit from early rhythm control

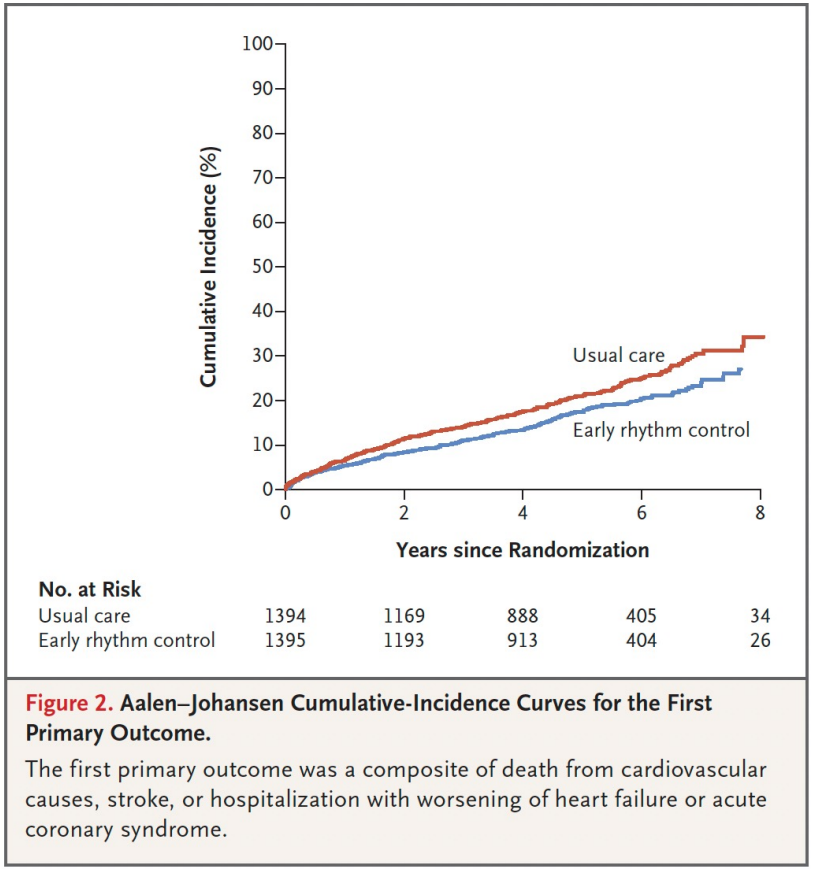


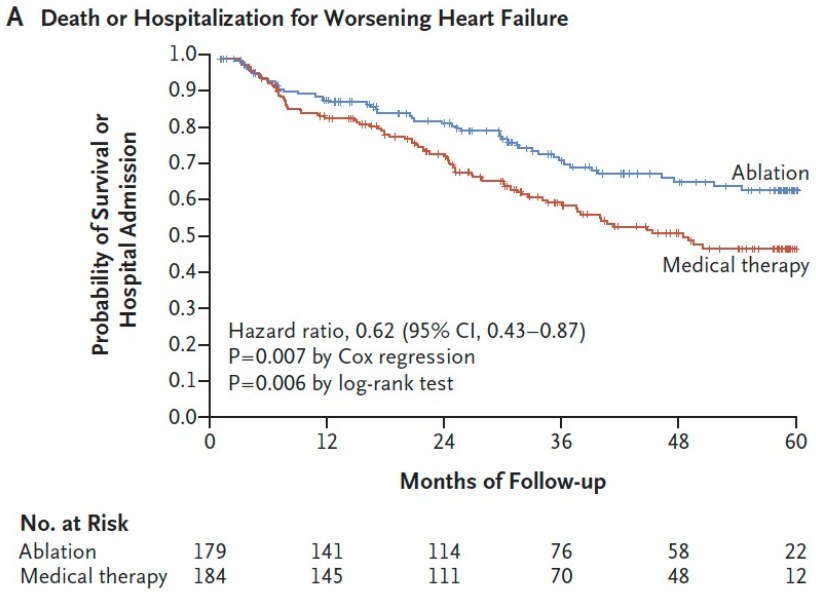
Figure 2. Aalen–Johansen Cumulative-Incidence Curves for the First Primary Outcome.

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

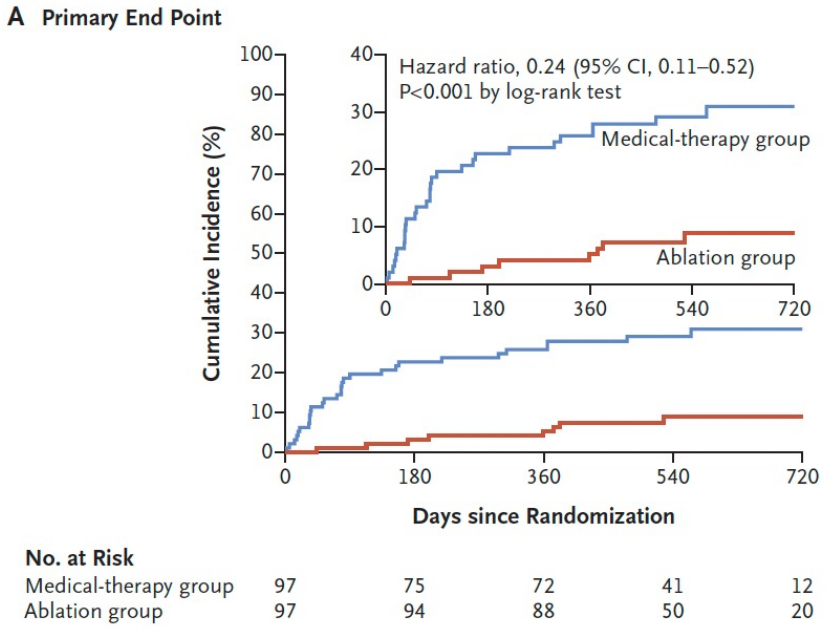
Kirchhof P, et al. *N Engl J Med*. 2020;383(14):1305-1316.

Approach to Rhythm Control in Patients with AF and Heart Failure

Catheter Ablation for Atrial Fibrillation with Heart Failure

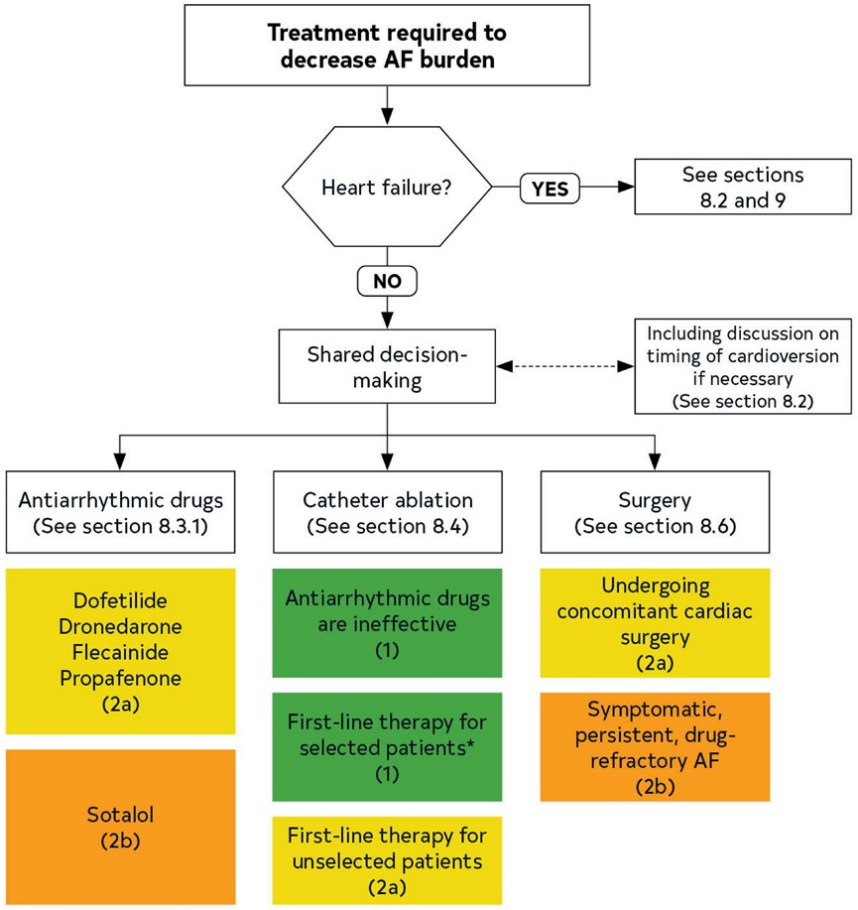


Catheter Ablation in End-Stage Heart Failure with Atrial Fibrillation



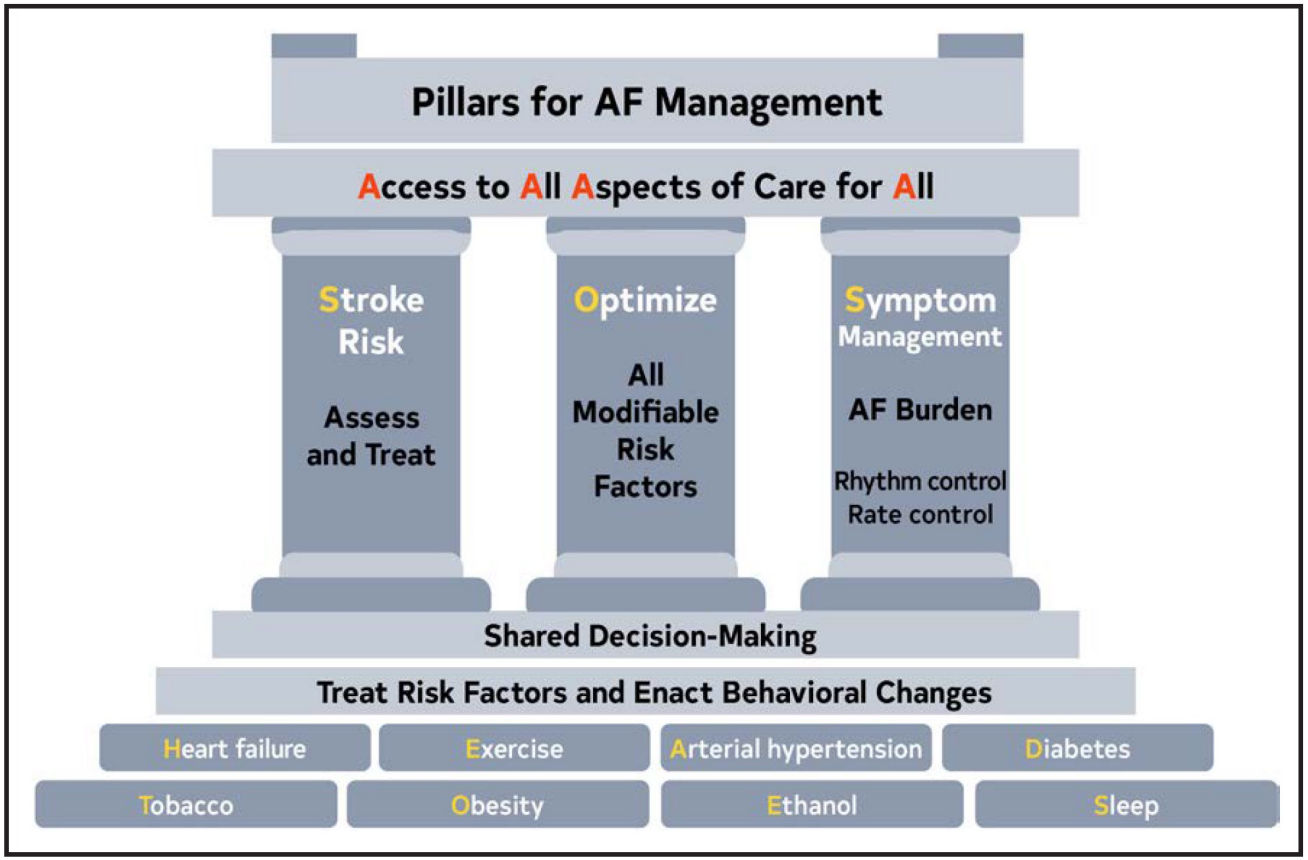
Marrouche NF, et al. *N Engl J Med*. 2018;378(5):417-427. Sohns C, et al. *N Engl J Med*. 2023;389(15):1380-1389.

Approach to Rhythm Control



Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156.

ACC/AHA/ACCP/HRS Evidence-Based AF Guidelines



Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156.

Key Learning Points

- Wearables may be used for screening for AF that may be diagnosed with ECG
- Initial management of AF should focus on stroke risk mitigation, lifestyle modification, and AF burden reduction
  - Patients with newly diagnosed AF and cardiovascular risk factor benefit from early rhythm control strategy

A Review of Pharmacologic Treatment of AF in 2026

Edward Paul Gerstenfeld MD, FHRS

Professor of Medicine

University of California, San Francisco

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Supported by an educational grant from Sanofi US.

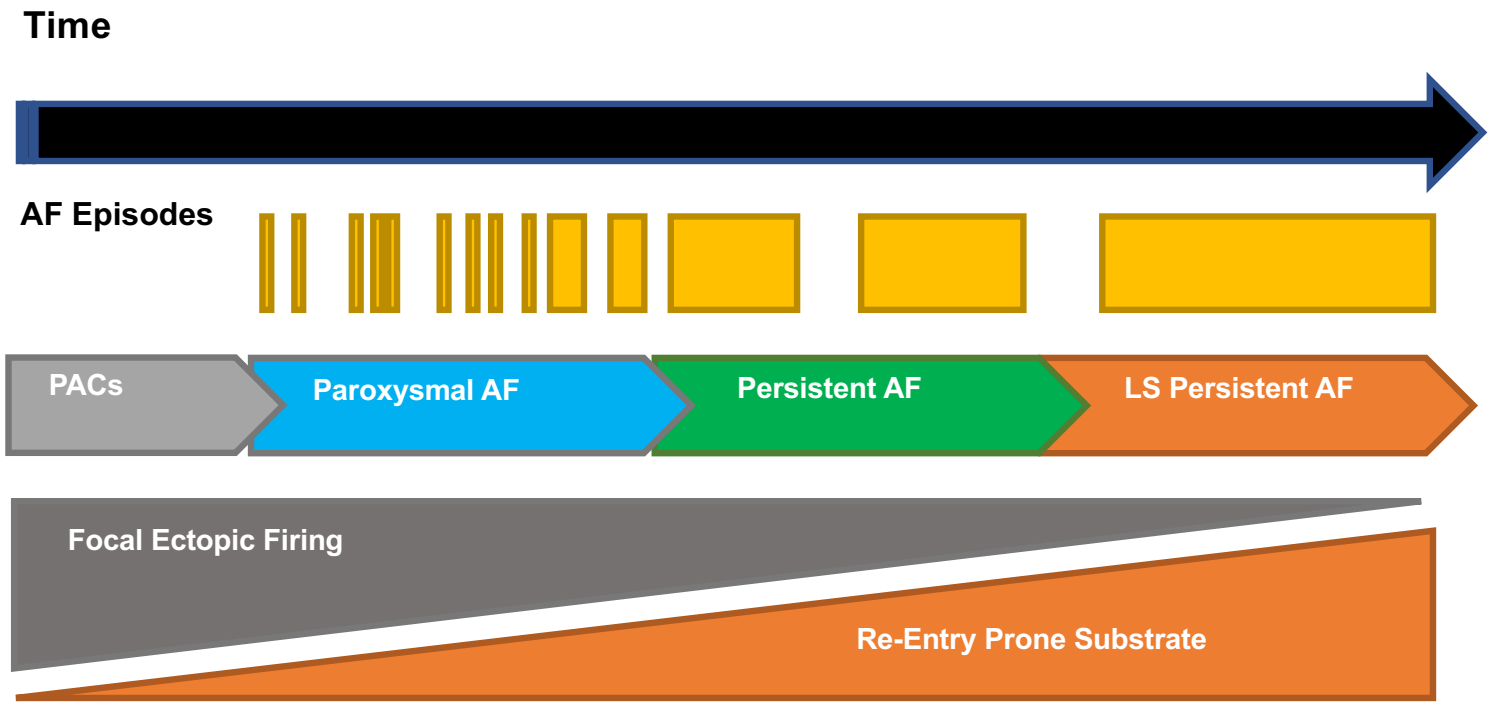
Case

- 52-yo CHA_2DS_2VASc = 0 has AF episodes yearly, last leading to ER visit due to RVR requiring CV
  - ECG: Sinus rhythm 58bpm, QTc 420ms
  - Cath 2022 showed luminal irregs with ~30% LAD narrowing. Stress echo negative for ischemia
  - Meds: Metoprolol 25mg daily, Hctz 12.5 daily

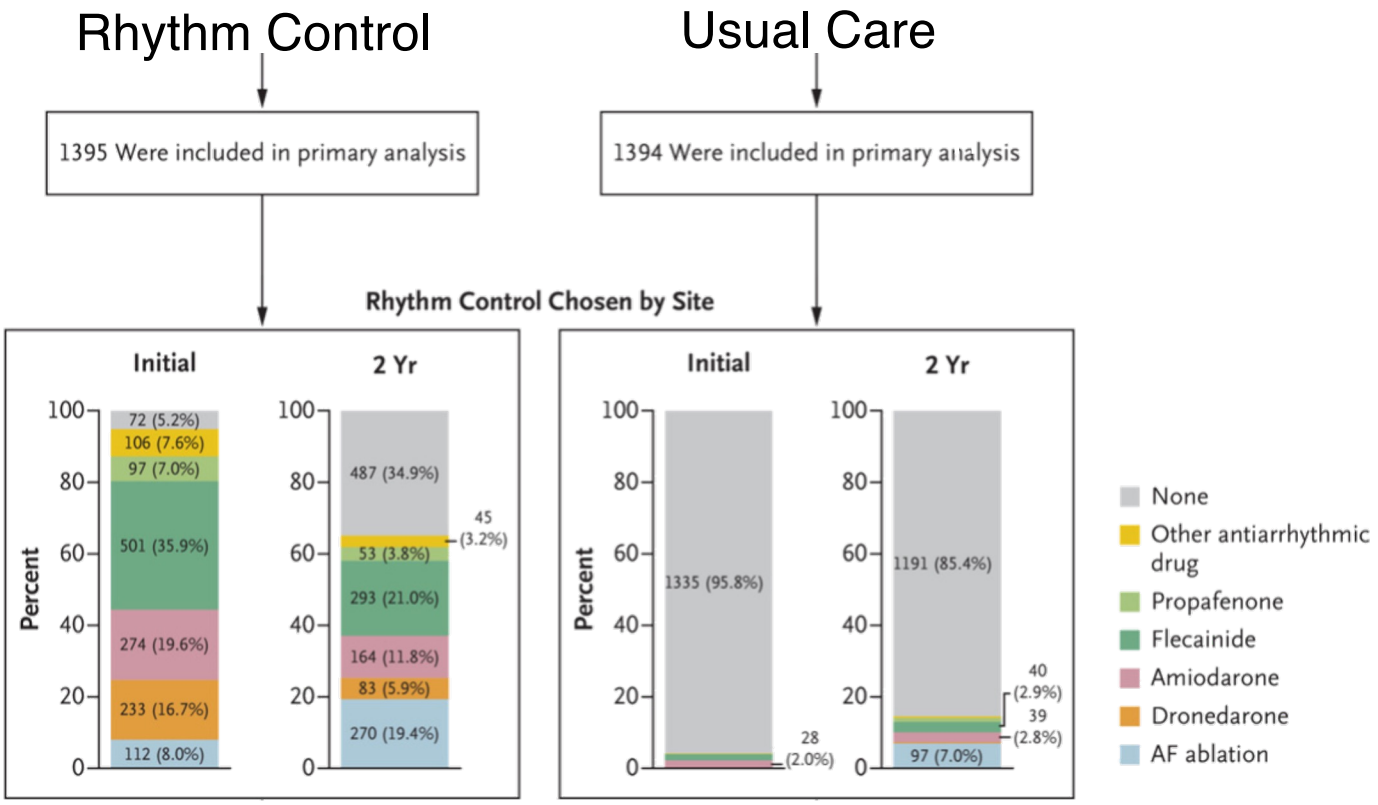
- Which would be the most appropriate next step
  A. Add apixaban 5mg bid
  B. Schedule catheter ablation
  C. Start flecainide 100mg po bid
  D. Propafenone 300mg po with next AF episode
  E. Start dronedarone 400mg bid

RVR = rapid ventricular response.

Atrial Fibrillation Progression



Early Rhythm-Control Therapy in Patients with Atrial Fibrillation

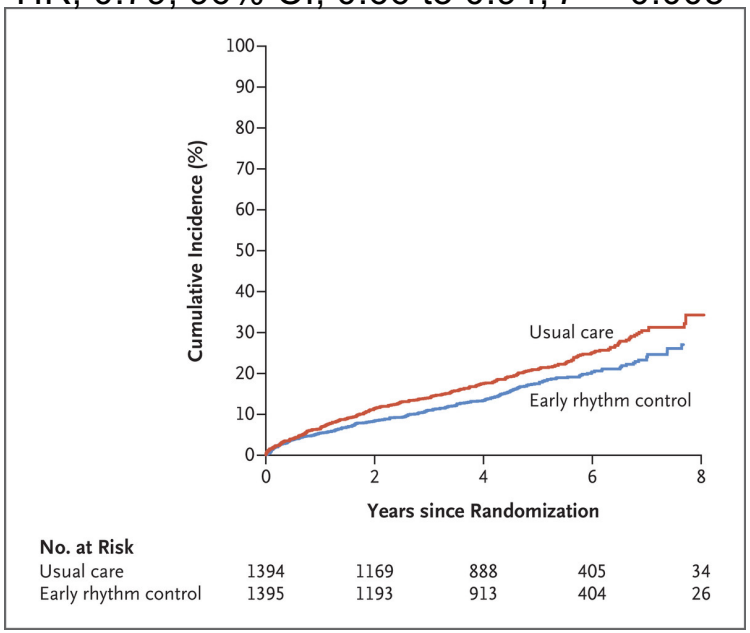


- N=2,789
- Age 70±8 yrs
- 46% female
- 26% persistent
- 36% asx

Kirchhof P, et al. *N Engl J Med*. 2020;383(14):1305-1316.

EAST-AFNET 4 Outcome

HR, 0.79; 96% CI, 0.66 to 0.94; *P* = 0.005



- Primary outcome = CV death, stroke, or hospitalization with worsening CHF

Table 2. Efficacy Outcomes.*

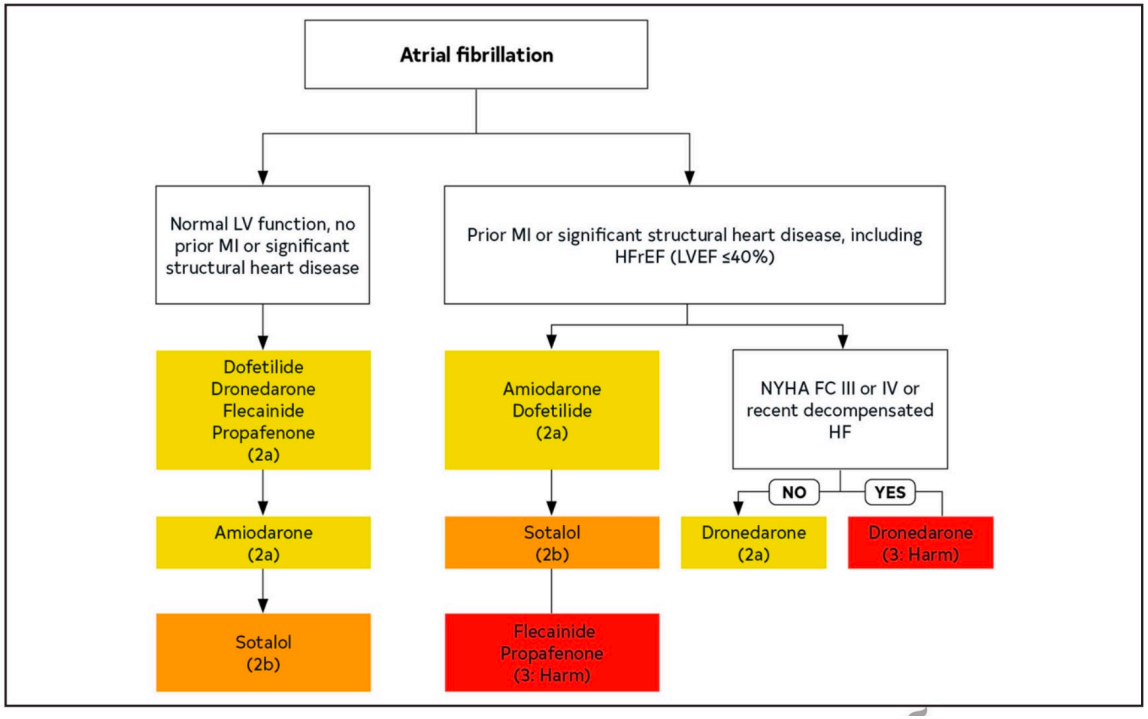
Outcome	Early Rhythm Control	Usual Care	Treatment Effect
First primary outcome — events/person-yr (incidence/100 person-yr)	249/6399 (3.9)	316/6332 (5.0)	0.79 (0.66 to 0.94)†
Components of first primary outcome — events/person-yr (incidence/100 person-yr)			
Death from cardiovascular causes	67/6915 (1.0)	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)§

Kirchhof P, et al. *N Engl J Med*. 2020;383(14):1305-1316.

Antiarrhythmic Management of Atrial Fibrillation

- **Antiarrhythmic drugs**
  - Class IA — quinidine, procainamide, disopyramide
  - Class IC — flecainide, propafenone
  - Class III — sotalol, dofetilide, dronederone, amiodarone, ibutilide (IV, acute use only)

Antiarrhythmic Drug Therapy



- A meta-analysis of 5 randomized studies totaling 1882 patients with AF reported sotalol to be associated with an increase in all-cause mortality (RR, 2.23 [95% CI,1.03-4.81]). However, this study included patients with advanced HF, and sotalol may still have a role in patients with preserved heart function

NYHA = New York Heart Association; HFrEF = heart failure with reduced ejection fraction; LVEF = left ventricular ejection fraction.
Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156.

Acute Conversion

- **Intravenous AAD**
  - Ibutilide (EF>40%, QTc<440ms, 2a)
    - (2 mg/30 min; have MgSO4 available)
  - Amiodarone (300mg bolus, 1mg/min gtt, 2a)
  - Procainamide (1 gm, 50mg/min, 2b)
- **Oral AAD (preserved EF, no CAD, no SHD)**
  - "Pill in pocket" (PIP) therapy
  - *Flecainide 200 (<70kg) - 300mg (>70kg, 2a),
  - *Propafenone 450 (<70kg)- 600mg (>70kg, 2a)
  - *Preceded by CaB, BB
- Ed's strategy for AF PIP therapy (on DOAC)
  - Metoprolol 12.5(HR<70)-25mg po; after 30mins take propafenone 150mg po
  - After ~1 hour take propafenone 150mg po
  - Then take 150mg tid with metoprolol

8.2.3. Pharmacological Cardioversion

Recommendations for Pharmacological Cardioversion
Referenced studies that support the recommendations are summarized in the Online Data Supplement.

COR	LOE	Recommendations
2a	C-LD	1. For patients with AF, pharmacological cardioversion is reasonable as an alternative to electrical cardioversion for those who are hemodynamically stable or in situations when electrical cardioversion is preferred but cannot be performed.[1]
2a	A	2. For patients with AF, ibutilide[2,3] is reasonable for pharmacological cardioversion for patients without depressed LV function (LVEF <40%).
2a	A	3. For patients with AF, intravenous amiodarone is reasonable for pharmacological cardioversion, although time to conversion is generally longer than with other agents (8-12 hours).[4–8]
2a	A	4. For patients with recurrent AF occurring outside the setting of a hospital, the "pill-in-the-pocket" (PITP) approach with a single oral dose of flecainide[9–11] or propafenone,[10–14] with a concomitant atrioventricular nodal blocking agent,[15] is reasonable for pharmacological cardioversion if previously tested in a monitored setting.[16–18]
2a	B-NR	3. In patients with AF who are initiating PITP dosing of flecainide and propafenone with concomitant atrioventricular nodal blocking drugs, it is reasonable to receive the first dose in a facility that can provide continuous electrocardiographic monitoring, given the potential for proarrhythmia.[9–13]

DOAC = direct oral anticoagulant; SHD = structural heart disease; CAD = coronary artery disease.
Joglar JA, et al. *Circulation*. 2024;149(1):e1-e156. *Capucci A, et al. *Am J Cardiol*. 1994;74(5):503-505.

Antiarrhythmic Drugs

Drug	Maintenance	Elimination	T1/2	Mechanism	Drug-Drug
Flecainide	50-150mg bid	Liver (70%) Kidney (30%)	12-27 hr	Inhibits I_{Na}	CYP2D6 substrate
Propafenone	150-300mg tid SR: 225-425mg bid	Liver	9 hr	Inhibits I_{Na}	CYP2D6 subtrate
Dofetilide[a]	125-500ug bid	Kidney	10 hr	Inhibits I_{kr}	Renal cation
Sotalol	80-160mg bid CrCl 40-60: qd	Kidney	12 hr	Inhibits I_{kr} BB	None
Dronedarone	400 mg bid	Liver	13-19 hr	Inhibits $I_{kr}, I_{ks}, I_{na}, I_{to}, I_{kur}, I_{to}, I_{Ca\text{-}L}, I_{KAch}$, BB	CYP3A substrate
Amiodarone	6-10gm load 1-200mg qd	Liver	14-59 d	same	CYP2C9 CYP2D6

[a]In-patient

Patel P, Goyal A. StatPearls [Internet]. Updated Feb 28, 2024. StatPearls Publishing; 2025. https://www.ncbi.nlm.nih.gov/books/NBK482322/.

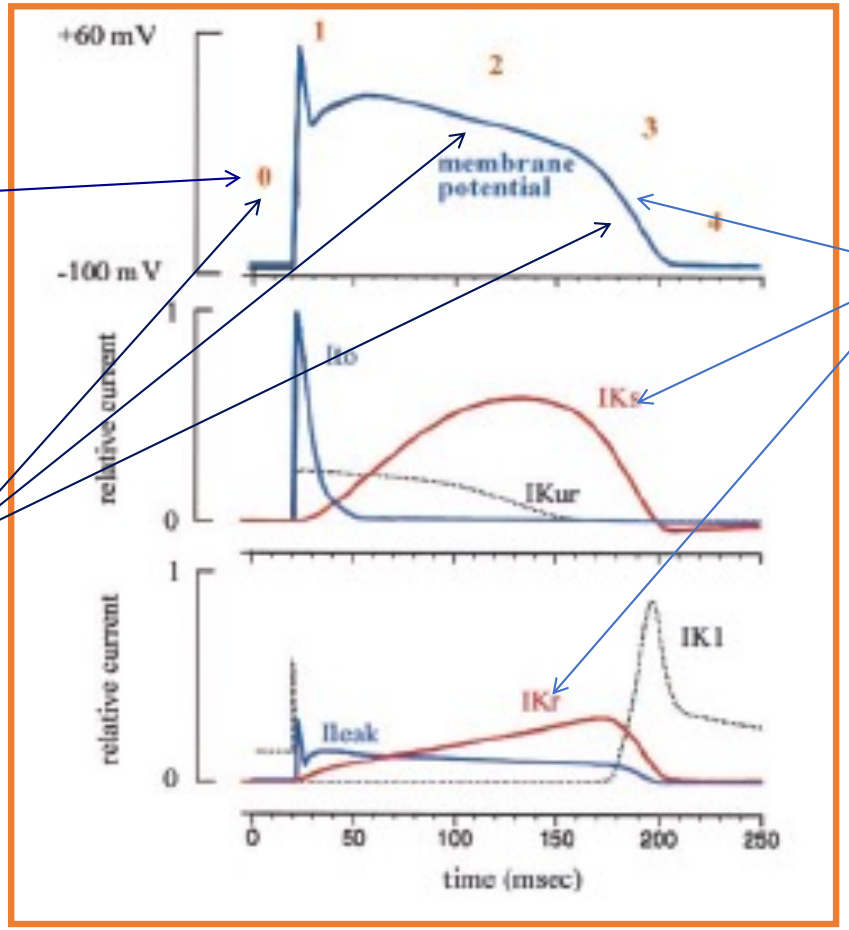
Antiarrhythmic Drug Effects

flecainide

propafenone

amiodarone

dronedarone

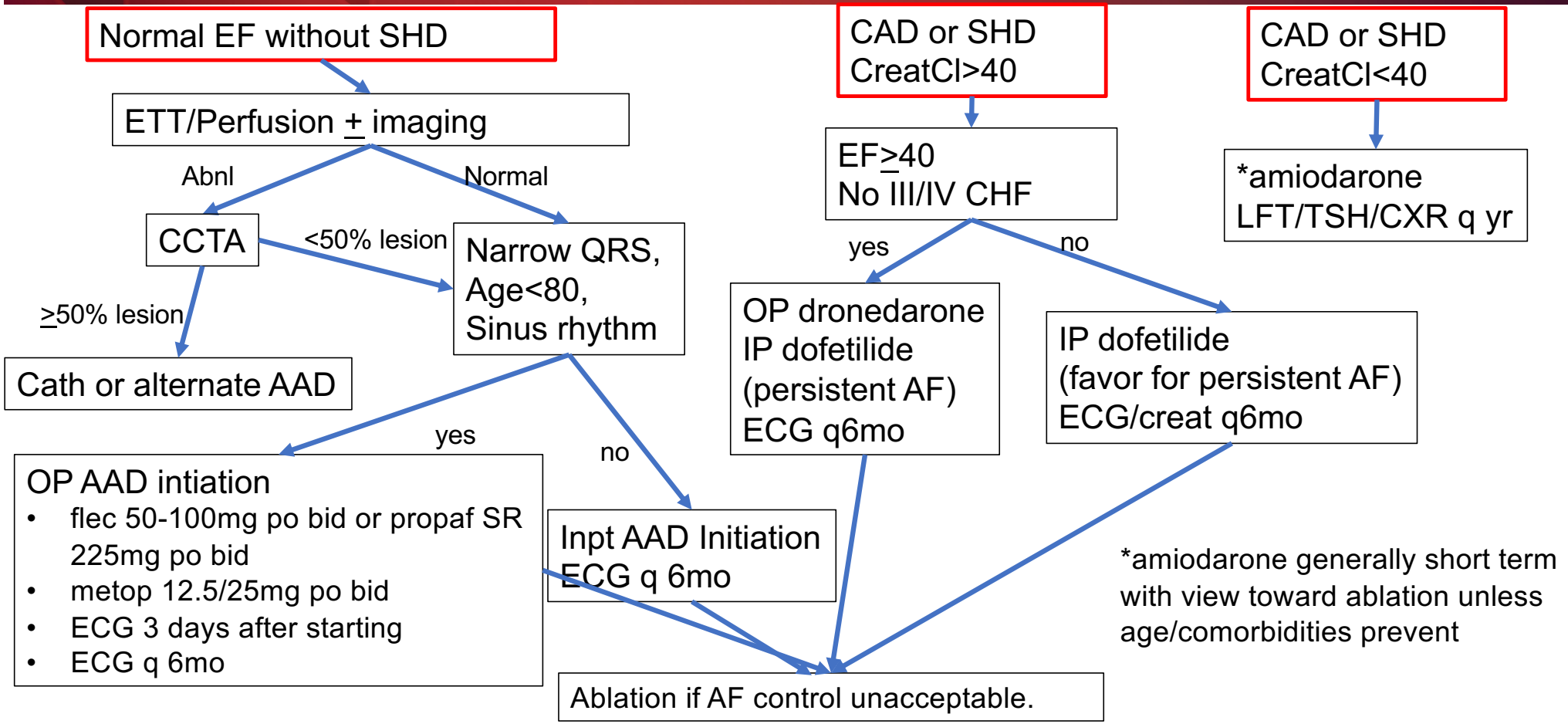


dofetilide

sotalol

ibutilide

Ed's Approach to AADs for AF



Recurrent AF or Flutter after Multiple Ablations

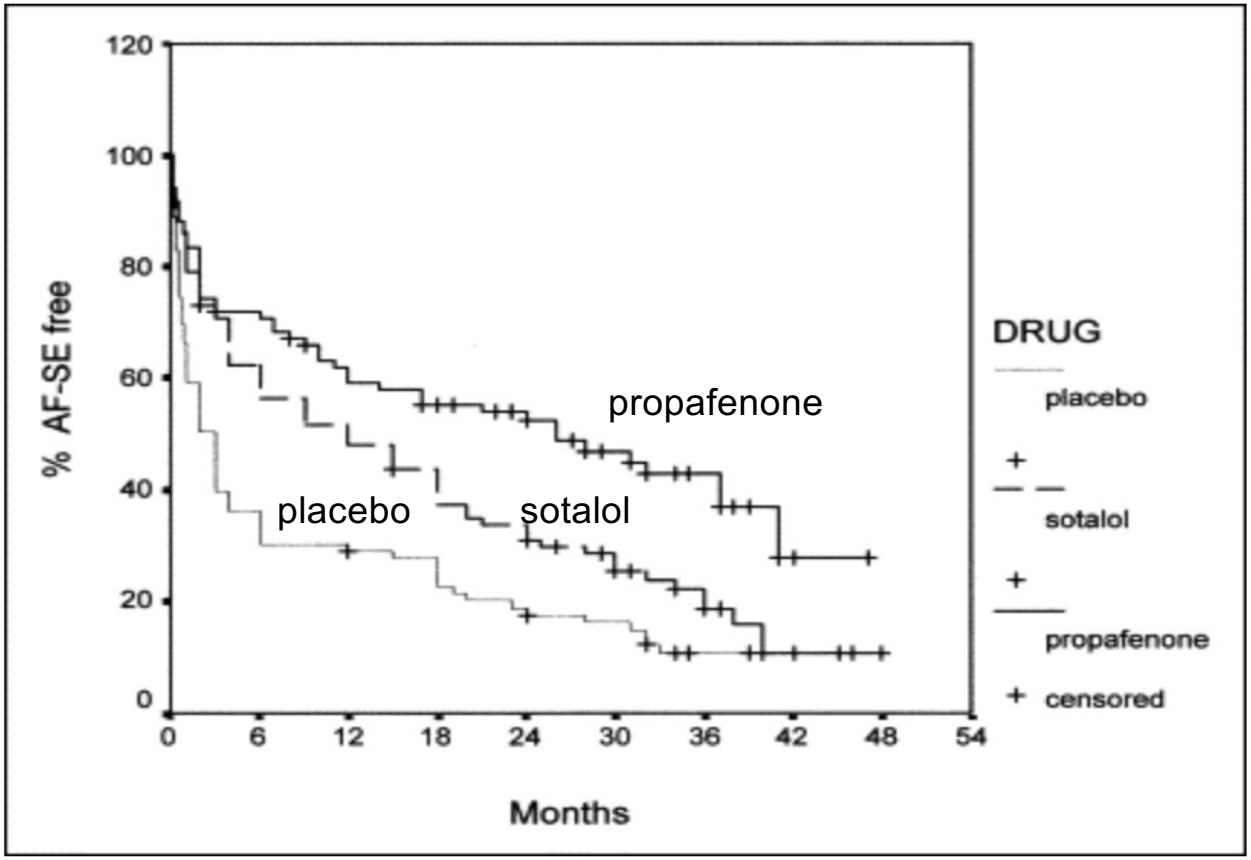
- Consider Class III AADs
  - Dofetilide[a]
  - Dronedarone
  - Short term amiodarone

[a]**Requires hospital admission.**

Antiarrhythmic Drug Therapy

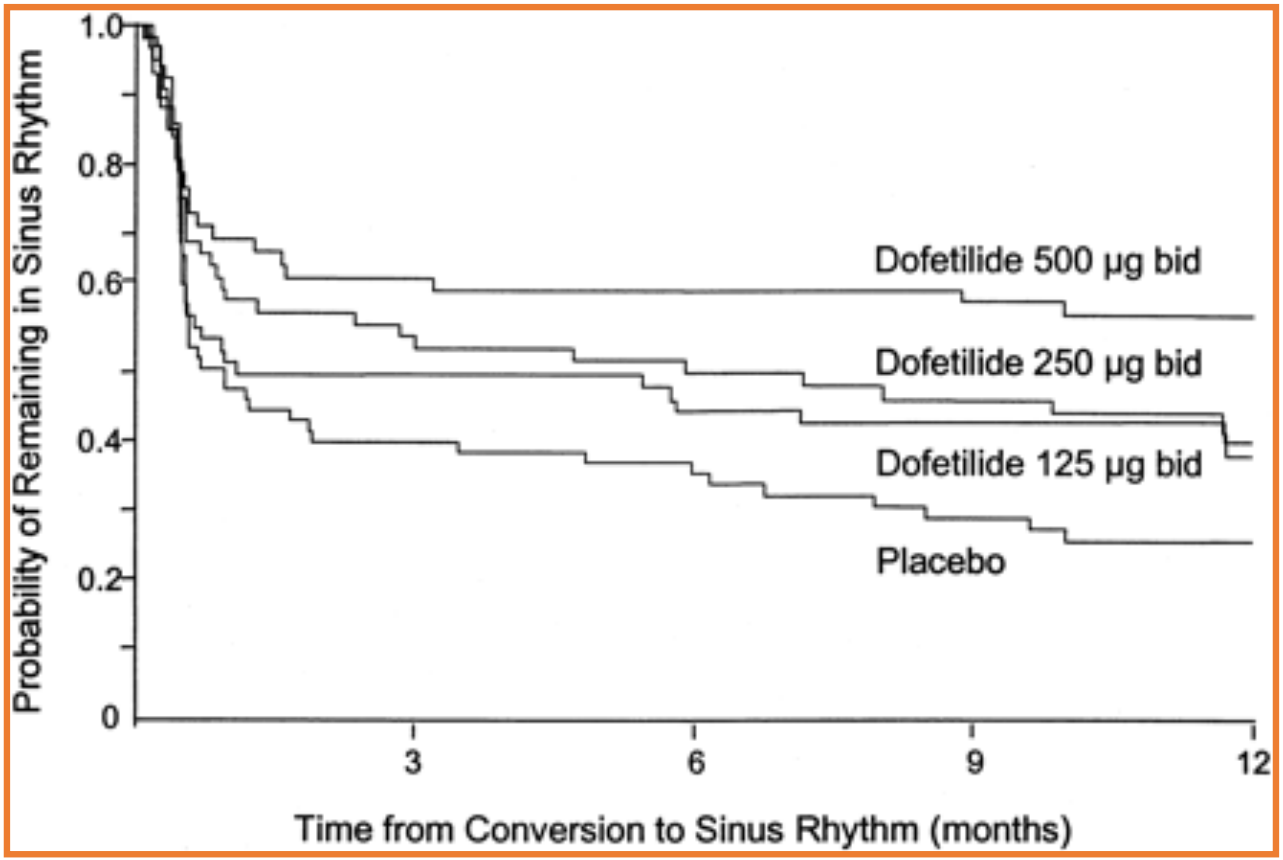
- No AA drug is expected to have 100% efficacy. The goal is to reduce AF burden and frequency
- AF recurrence on an AAD therapy should not be considered a “failure.” For infrequent recurrences, cardioversion can be performed without dose adjustment

Efficacy of Drug Therapy



Kochiadakis GE, et al. *Am J Cardiol*. 2004;94(12):1563-1566.

Efficacy of Drug Therapy



Pedersen OD, et al. *Circulation*. 2001;104(3):292-296.

Adverse Effects of Dofetilide

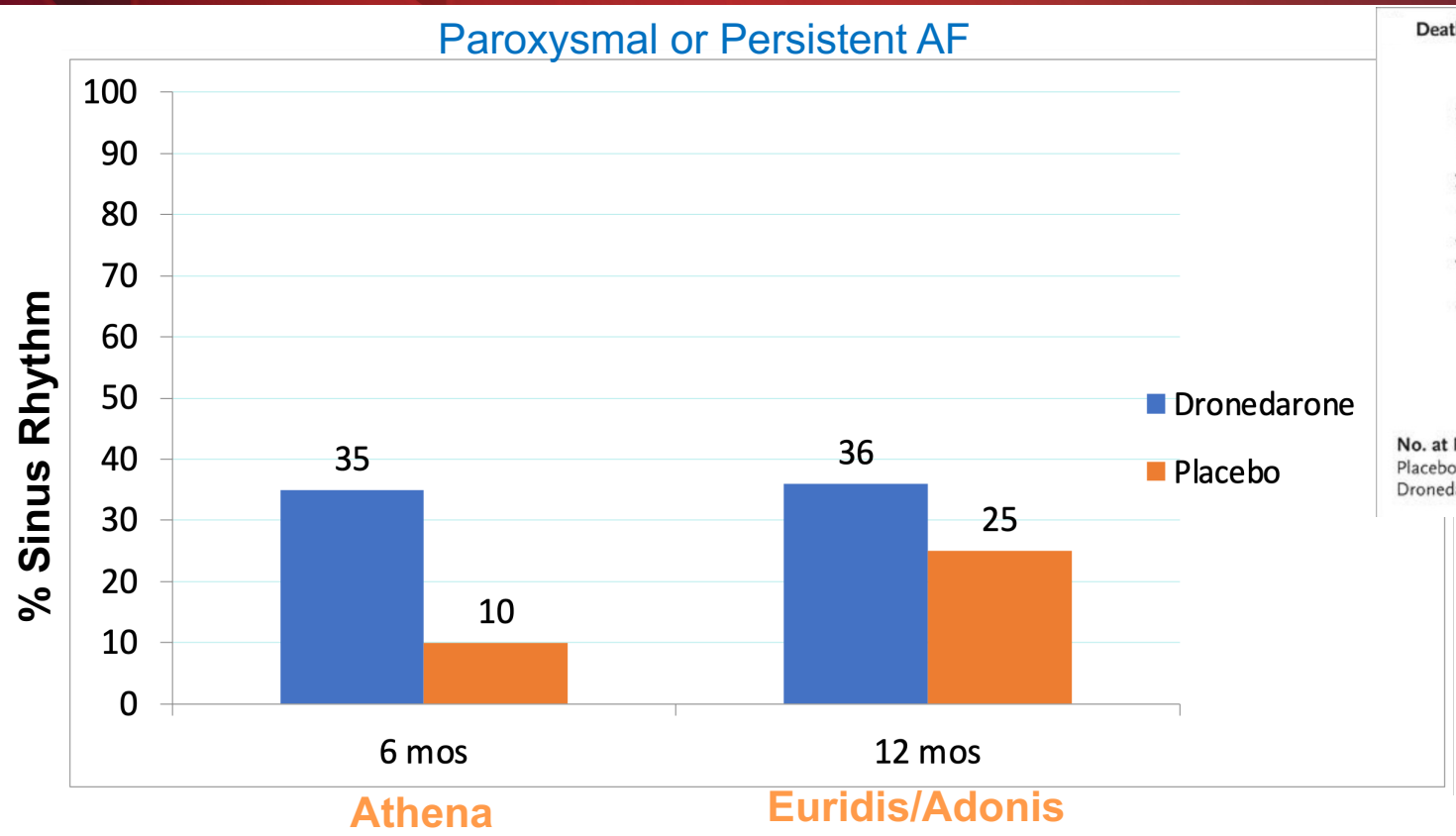
ARRHYTHMIA EVENT:	DOFETILIDE DOSE < 250 MCG BID N=217	250 MCG BID N=388	> 250-500 MCG BID N=703	> 500 MCG BID N=38
Ventricular arrhythmias* ^	3.7%	2.6%	3.4%	15.8%
Ventricular fibrillation	0	0.3%	0.4%	2.6%
Ventricular tachycardia^	3.7%	2.6%	3.3%	13.2%
Torsade de pointes	0	0.3%	0.9%	10.5%
Various forms of block				
AV block	0.9%	1.5%	0.4%	0
Bundle branch block	0	0.5%	0.1%	0
Heart block	0	0.5%	0.1%	0

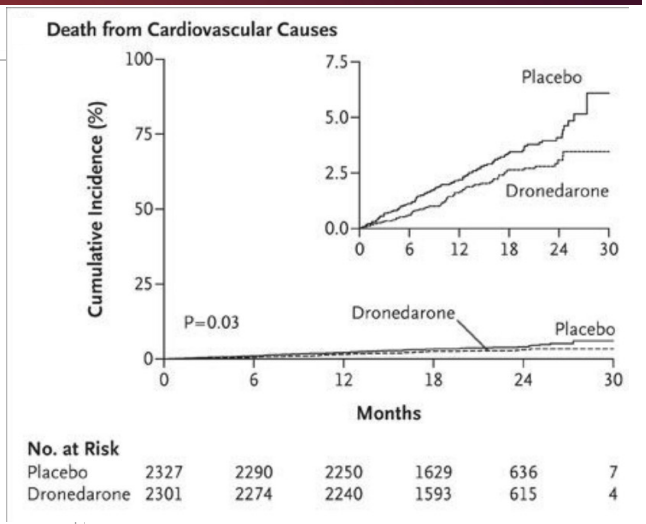
- Drug interactions
  - **Verapamil**
  - **Thiazide diuretics**
  - Metformin
  - Diltiazem
  - Trimethoprim
  - Ciprofloxacin
  - SSRIs, TCA
  - Grapefruit juice

SSRI = selective serotonin reuptake inhibitors; TCA = tricyclic antidepressants.

Drugs@FDA: FDA-Approved Drugs. Accessed Feb 19, 2026. https://www.accessdata.fda.gov/drugsatfda_docs/label/2013/020931s007lbl.pdf.

Dronedarone: Maintenance of Sinus Rhythm





Dronedarone demonstrated reduced CV hospitalization/death

Hohnloser SH, et al. *N Engl J Med*. 2009;360(7):668-678. Singh BN, et al. *N Engl J Med*. 2007;357(10):987-999.

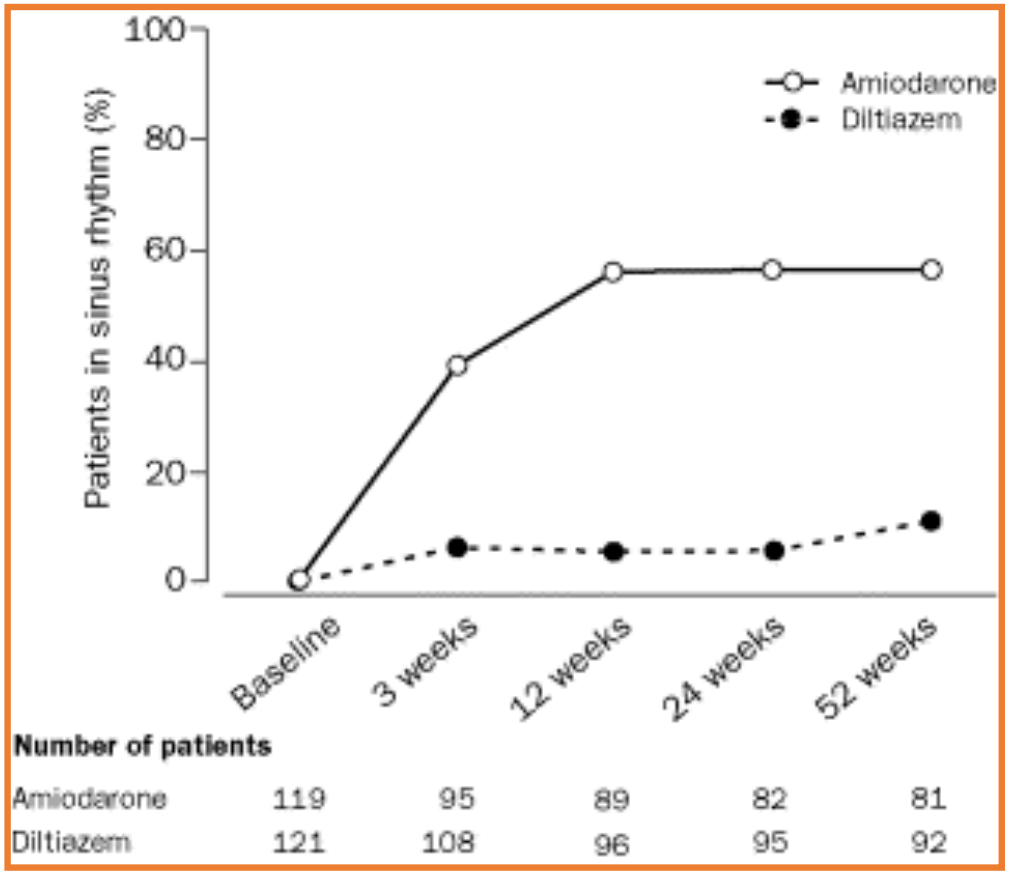
Permanent Atrial Fibrillation Outcome Study Using Dronedarone on Top of Standard Therapy (PALLAS)

- Permanent AF >6 months, anticoagulation not required

	Dronedarone N = 1572 n (%)	Placebo N = 1577 n (%)	Hazard ratio	*P*
CV death, MI, stroke systemic embolism	32 (2)	14 (0.9)	2.3	0.009
Death, CV hospitalization	118 (7.5)	81 (5.1)	1.5	0.006
Death	16 (1)	7 (0.4)	2.3	0.065
Myocardial infarction	3 (0.2)	3 (0.2)	1.0	1.0
Stroke	17 (1.1)	7 (0.4)	2.4	0.047
Heart Failure hospitalization	34 (2.2)	15 (1)	2.3	0.008

Connolly SJ, et al. *N Engl J Med*. 2011;365(24):2268-2276.

Efficacy of Amiodarone



Number of patients					
Amiodarone	119	95	89	82	81
Diltiazem	121	108	96	95	92

Hohnloser SH, et al. *Lancet*. 2000;356(9244):1789-1794.

Amiodarone Skin Toxicity

Amiodarone Monitoring

Table 24. Recommended Monitoring for Patients Taking Oral Amiodarone

Adverse Effect	Baseline Testing	Initial Follow-Up Testing	Additional Follow-Up Testing
Hypo- or hyperthyroidism	TSH (T4 and T3 if TSH abnormal)	3-6 mo	Every 6 mo
Hepatotoxicity	AST, ALT	3-6 mo	Every 6 mo
QT interval prolongation	ECG	Annually	–
Interstitial lung disease	Chest x-ray: Recommended CT chest: Not recommended PFTs	Chest x-ray: Unexplained cough or dyspnea or other signs/symptoms suspicious for interstitial lung disease	CT chest: As indicated to follow-up ongoing symptoms or chest x-ray findings
Corneal microdeposits (epithelial keratopathy)	Not recommended	Development of visual abnormalities, which may indicate optic neuropathy	–
Dermatologic (blue-gray skin discoloration), photosensitivity	Not recommended	Physical examination annually	Development of skin discoloration, severe sunburn
Neurological	Not recommended	Physical examination annually	Development of peripheral neuropathy or other neurological abnormalities

ALT indicates alanine transaminase; AST, aspartate transaminase; CT, computed tomography; ECG, electrocardiogram; TSH, thyroid-stimulating hormone; and TdP, torsades de pointes.

Joglar JA, et al. *J Am Coll Cardiol*. 2024;83(1):109-279.

AAD Monitoring

- Flecainide, propafenone
  - ECG 3 days, then q6 months
  - Stress test ~ every other year
- Dofetilide, sotalol
  - ECG q 6 months
  - Creatinine q 6 months
- Dronedarone
  - ECG q3-6 months
  - LFTs monthly for 6 mos, 9mos, 12 mos, **then q6 mos**
  - Creatinine 7 days after and regularly thereafter

LFT = liver function test.

Case

- 52-yo CHA_2DS_2-VASc=0 has AF episodes yearly, last leading to ER visit due to RVR requiring CV
  - ECG: Sinus rhythm 58bpm, QTc 420ms
  - Cath 2022 showed luminal irregs with ~30% LAD narrowing. Stress echo negative for ischemia
  - Meds: Metoprolol 25mg daily, Hctz 12.5 daily

- Which would be the most appropriate next step
  A. Add apixaban 5mg bid
  B. Schedule catheter ablation
  C. Start flecainide 100mg po bid
  D. Propafenone 300mg po with next AF episode
  E. Start dronedarone 400mg bid

Case 2

- 74-yo with sx recurrent persistent AF and atypical flutter s/p ablation x2. s/p CABG/AVR 5 years ago – complete revasc. NYHA I. Fruitopian diet
- Meds: Atorvastatin 40mg qd, metoprolol 50 bid, metformin 1000mg bid, hctz 12.5qd, fluoxetine 20mg qd, warfarin 5mg M/W/F/Sun 2.5mg T/Th
- ECG: Sinus bradycardia 58bpm; QTc 435ms
- Creat 1.2 mg/dl weight 82kg
- Echo: EF 53% with LVH 1.2cm

AVR = aortic valve replacement; CABG = coronary artery bypass grafting.

Best Antiarrhythmic Options?

1. Flecainide
2. Propafenone
3. Sotalol
4. Dofetilide
5. Dronedarone
6. Amiodarone

Best Antiarrhythmic Options?

1. Flecainide
2. Propafenone
3. Sotalol
4. **Dofetilide**
5. **Dronedarone**
6. Amiodarone

Meds to Adjust before Staring AADs

- **Dofetilide**
  - Stop Hctz
  - Decrease or stop metformin
  - Decrease or stop fluoxetine
  - Reduce metoprolol 25 bid
  - Avoid grapefruit juice
- **Dronedarone**
  - Change atorva to rosuvastatin
  - Decrease warfarin
  - Reduce metoprolol 25 bid
  - Avoid grapefruit juice

- In which patient population has dronedarone demonstrated a reduction in cardiovascular hospitalization or death?
  A. Patients with permanent AF and congestive heart failure
  B. Patients with paroxysmal or persistent AF
  C. Patients with recent decompensated heart failure
  D. Patients using dronedarone for ventricular rate control of persistent AF

- In which patient population has dronedarone demonstrated a reduction in cardiovascular hospitalization or death?
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  B. Patients with paroxysmal or persistent AF
  C. Patients with recent decompensated heart failure
  D. Patients using dronedarone for ventricular rate control of persistent AF

Key Learning Points

- Maintenance of sinus rhythm improves outcome (CHF, stroke) in patients with recent onset AF
- AAD risks/benefit should be carefully considered and used to improve symptoms and minimize adverse effects
- In patients without CAD or SHD, Class IC (with AV nodal blocker) best tolerated with lowest toxicity
- For infrequent episodes without SHD, consider PIP therapy with IC (and AV nodal blocker)
- Class IC, dronedarone, amiodarone can be started as OPs; dofetilide always as IP; sotalol depends on your comfort level
- Amiodarone only for short-term therapy or older patients without other options

Thank you

Rate vs Rhythm Control and Personalized AF Treatment Strategies

Jason Andrade

Professor, Vancouver General Hospital

HMP Global | Provided by HMP Education, an HMP Global company.

Supported by an educational grant from Sanofi US.

Treat the Arrhythmia: The Two Major Treatment Strategies

- **Control of the heart rate**
  - Leaves the heart fibrillating but uses medications (or procedures) to ***slow*** the ventricular response.
  - The goal is a resting HR < 100 beats/minute
    - A slower heart rate gives the ventricles more time to relax and fill with blood, improving symptoms
- **Control of the heart rhythm**
  - Medicines (“anti-arrhythmics”) and/or procedures are used to convert AF to a normal rhythm
  - The goal is to decrease the frequency and duration of AF
    - Note – the goal is not to prevent all episodes of AF

Historical Perspective

- Prior to late 1990s there was a preference for rhythm control over rate control
  - “Fewer symptoms”
  - “Better exercise tolerance”
  - “Lower-risk of stroke”
  - ”No need for anticoagulation”
  - “Better QOL”
  - “Better survival”

- Rate control was considered suboptimal and only used after repeated attempts to maintain sinus have failed

Wyse DG, et al. *N Engl J Med*. 2002;347(23):1825-1833. Pedersen OD, et al. *Circulation*. 2001;104(3):292-296.

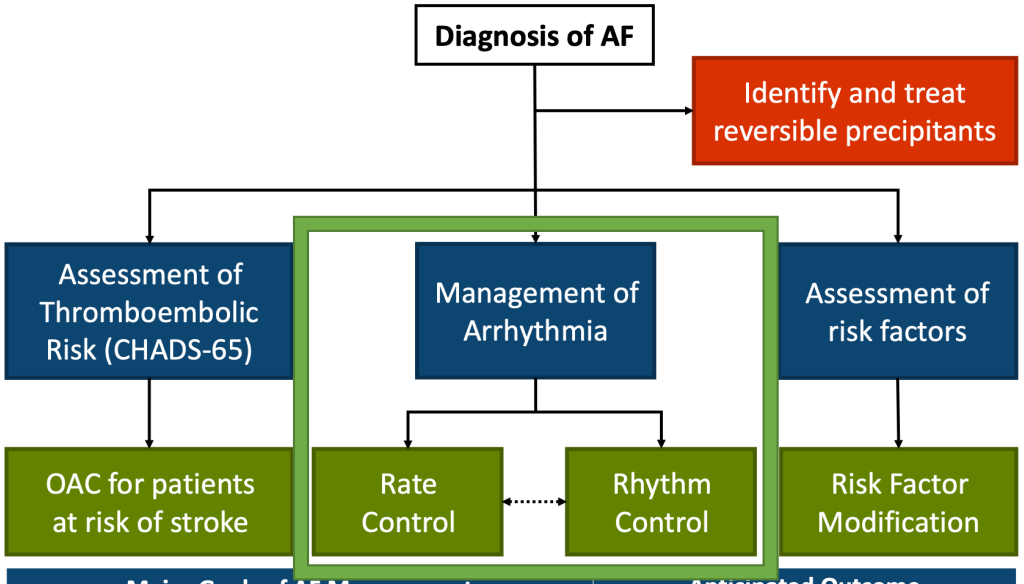
Historical Perspective

- Evidence emerged that
  - AADs aren't very effective at controlling AF
  - AADs may be harmful (eg. CAST trial)
  - Warfarin effectively prevents stroke

- As a result, the idea of rate control gained favor and large clinical trials were undertaken

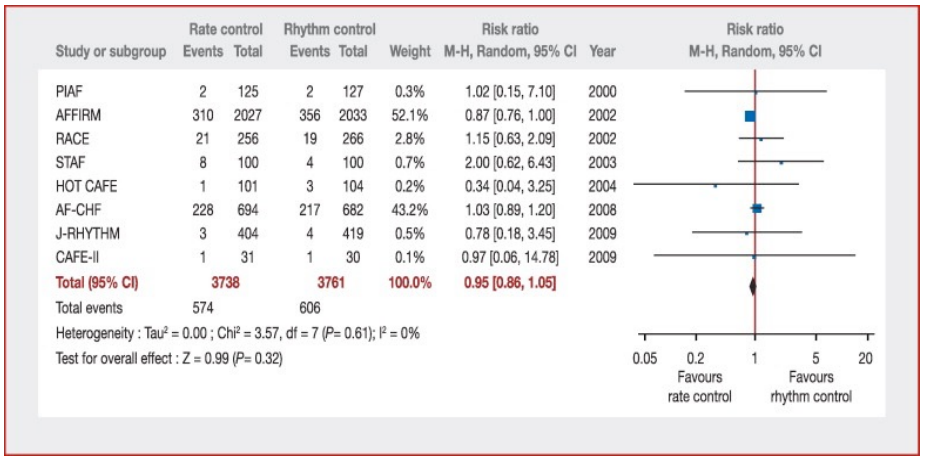
Echt DS, et al. *N Engl J Med*. 1991;324(12):781-788.

Atrial AF: Arrhythmia Management – Rate vs Rhythm



Major Goals of AF Management	Anticipated Outcome
Prevent stroke or systemic thromboembolism	Improvement in survival
Cardiovascular Risk Reduction	
Improve symptoms, functional capacity, and QOL	Reduction in healthcare utilisation (e.g. ED visits or hospitalizations)
Prevent complications (e.g. LV dysfunction, falls)	

- Eight RCTs, 7499 patients
- No significant differences in
  - **All-cause mortality** - RR 0.95; CI 0.86-1.05
  - **CV mortality** - RR 0.99; CI 0.87-1.13
  - **Sudden death** - RR 1.12; CI 0.91-1.38



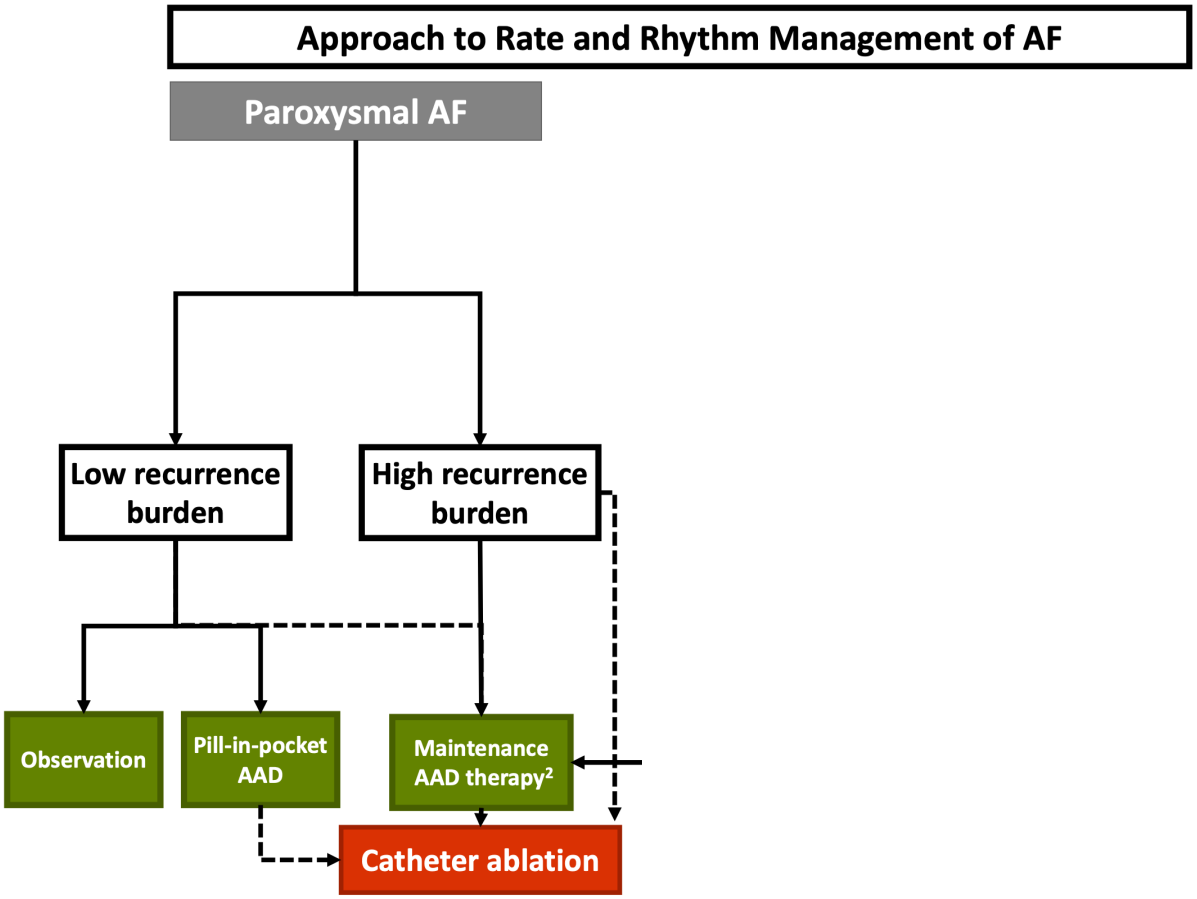
Study or subgroup	Rate control Events	Total	Rhythm control Events	Total	Weight	Risk ratio M-H, Random, 95% CI	Year
PIAF	2	125	2	127	0.3%	1.02 [0.15, 7.10]	2000
AFFIRM	310	2027	356	2033	52.1%	0.87 [0.76, 1.00]	2002
RACE	21	256	19	266	2.8%	1.15 [0.63, 2.09]	2002
STAF	8	100	4	100	0.7%	2.00 [0.62, 6.43]	2003
HOT CAFE	1	101	3	104	0.2%	0.34 [0.04, 3.25]	2004
AF-CHF	228	694	217	682	43.2%	1.03 [0.89, 1.20]	2008
J-RHYTHM	3	404	4	419	0.5%	0.78 [0.18, 3.45]	2009
CAFE-II	1	31	1	30	0.1%	0.97 [0.06, 14.78]	2009
Total (95% CI)	3738		3761		100.0%	0.95 [0.86, 1.05]	
Total events	574		606				

Heterogeneity : Tau² = 0.00 ; Chi² = 3.57, df = 7 (P= 0.61); I² = 0%

Test for overall effect : Z = 0.99 (P= 0.32)

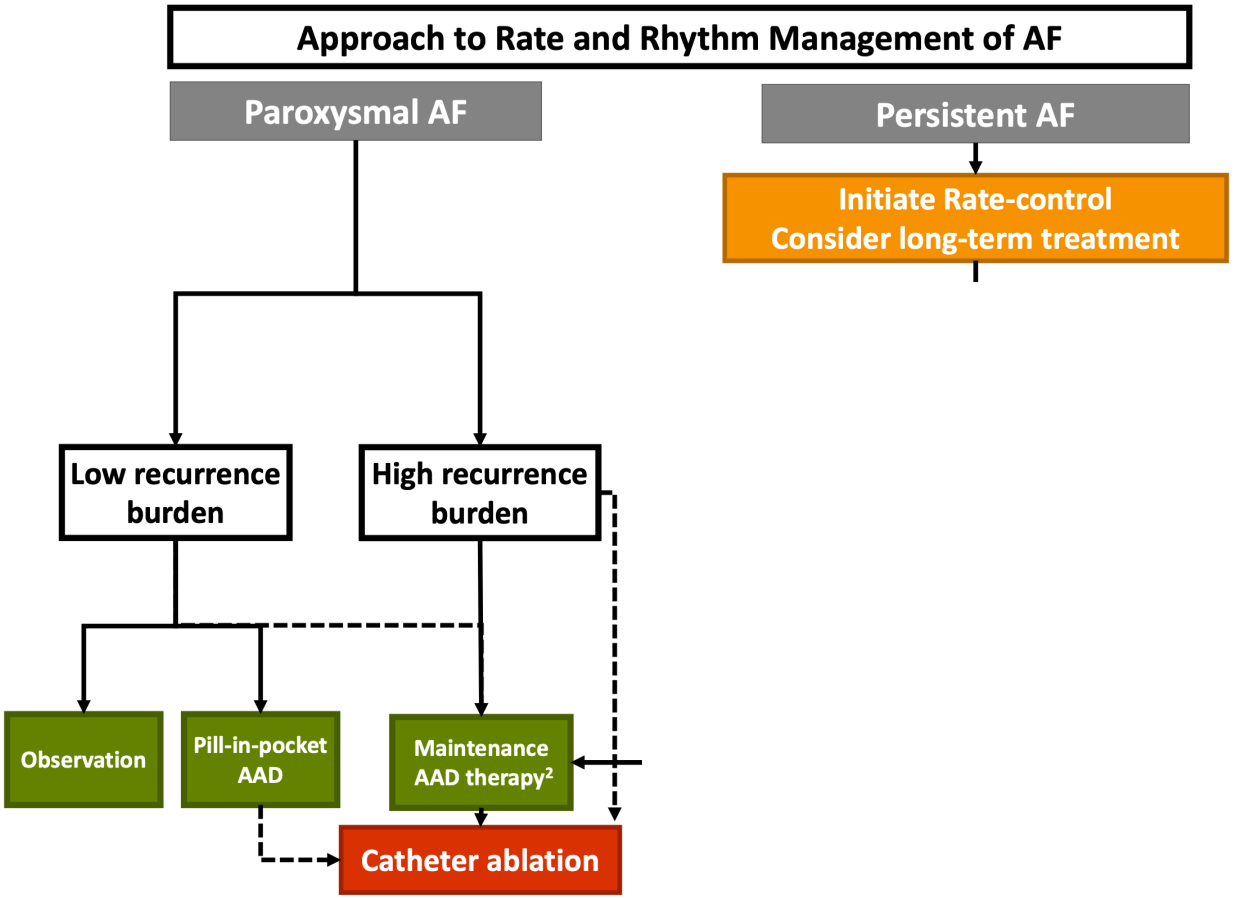
Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948. Caldeira D, et al. *Arch Cardiovasc Dis*. 2012;105(4):226-238.

Rhythm and Rate Control



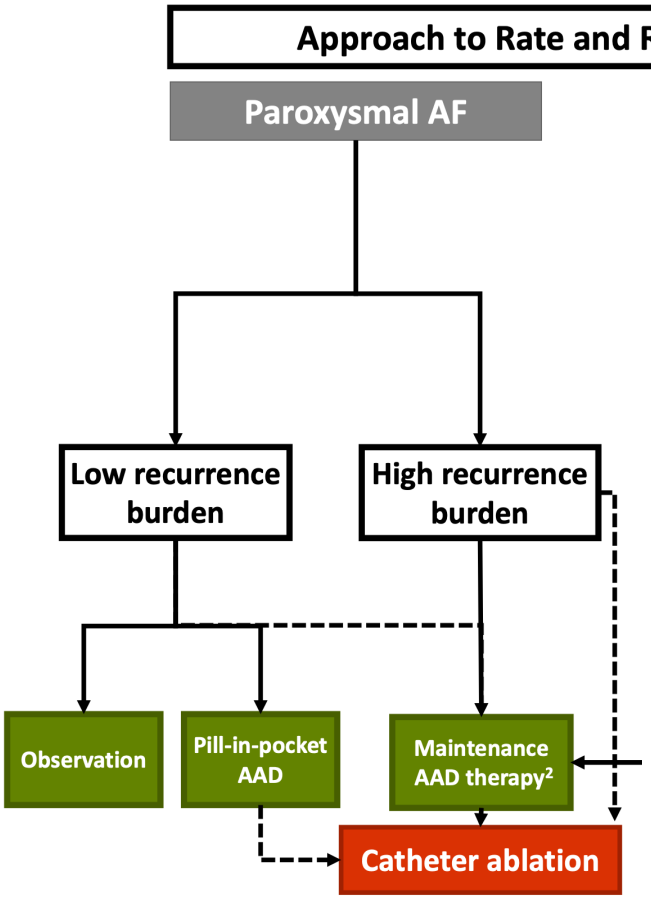
Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Rhythm and Rate Control



Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Rhythm and Rate Control



Persistent AF

Initiate Rate-control
Consider long-term treatment

Favours rate control	Favours rhythm control
Persistent AF	Paroxysmal AF
	Newly detected AF
Less symptomatic	More symptomatic
Aged ≥65 years	Aged <65 years
Hypertension	No hypertension
No history of congestive heart failure	Congestive heart failure clearly exacerbated by AF
Previous antiarrhythmic drug failure	No previous antiarrhythmic drug failure
Patient preference	Patient preference

Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

EAST AFNET Study

Early Rhythm-Control Therapy in Patients with Atrial Fibrillation

- Recent onset AF (≤ 1 year duration; median 36 days) and risk factors
  - Age ≥ 75 or, previous TIA or stroke or, any 2 of the following
    - Age ≥ 65, female, diabetes, HTN, HF, CAD, PAD, CKD, LVH

	Early Rhythm Control (n=1395)	Usual Care (n=1394)	
Primary Outcome	CV death, stroke, or hospitalization for HF or ACS 3.9% vs 5.0% (HR 0.79; 95%CI 0.66-0.94; *P*=0.005)		
CV Death	1.0%	1.3%	**HR 0.72 (0.52-0.98)**
Stroke	0.6%	0.9%	**HR 0.65 (0.44-0.97)**
HF Hosp	2.1%	2.6%	HR 0.81 (0.65-1.02)
ACS Hosp	0.8%	1.0%	HR 1.08 (0.92-1.28)
Secondary Outcome	Serious adverse events related to rhythm control 4.9% vs 1.4% (HR 1.73; 95%CI 1.10-2.37, *P*<0.001)		

Median of 5.1 years of follow-up

Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948. Kirchhof P, et al. *N Engl J Med*. 2020;383(14):1305-1316.

Early Rhythm Control

Early Rhythm Control

Studies (author-year)	Study design	Data source	Inclusion period (y)	AF population for analysis	Sample size (*N*)	Early rhythm control (*N*[%])	Age (y)[a]	Females (%)[a]	Follow-up time (y)
Kirchhof-2020 [8]	RCT	EAST-AFNET 4	2011-2016	AF diagnosed ≤ 12 months before enrollment	2789	1395 (50.0)	71.0	46.2	5.1
Blomström-2020 [11]	Post hoc analysis of RCT	ATHENA	2005-2006	AF diagnosed ≤ 3 months before enrollment	1296	670 (51.7)	72.5	72.0	NA
Yang-2021 [12]	Post hoc analysis of RCT	AFFIRM	1995-2002	AF diagnosed ≤ 6 months before enrollment	2526	1269 (50.2)	71.0	38.3	3.5
Proietti-2022 [19]	Observational cohort	ESC-EHRA EORP-AF Long-Term General Registry	2013-2016	AF diagnosed ≤ 12 months before enrollment	3774	2052 (54.4)	69.0	44.1	1.85
Kim-2021 [10]	Observational cohort	National Health Insurance Service of Korea	2011-2015	AF diagnosed ≤ 12 months before enrollment	16323	9246 (56.6)	69.0	47.1	2.1
Chao-2022 [22]	Observational cohort	Taiwan National Health Insurance Research Database	2001-2016	AF diagnosed ≤ 12 months before enrollment	301064	62649 (20.8)	68.3	44.5	5.1
Dickow-2022 [21]	Retrospective cohort	US administrative database	2011-2016	AF diagnosed ≤ 12 months before enrollment	109739	27106 (24.7)	68.9	40.8	2.6
Kany-2022 [20]	Retrospective cohort	UK Biobank database	2006-2010	AF diagnosed ≤ 12 months before enrollment	9691	874 (9.91)	68.0	42.0	4.94[a]

Zhu W, et al. *BMC Med*. 2022;20(1):340.

Stroke and Early Rhythm Control

1.1.2 Stroke or systemic embolism

Chao-2022	-0.256	0.017	60.9%	0.77 [0.75, 0.80]
Dickow-2022	-0.416	0.174	6.6%	0.66 [0.47, 0.93]
Kany-2022	-0.163	0.2	5.1%	0.85 [0.57, 1.26]
Kim-2021	-0.301	0.106	15.1%	0.74 [0.60, 0.91]
Kirchhof-2020	-0.431	0.202	5.0%	0.65 [0.44, 0.97]
Yang-2021	0.086	0.164	7.3%	1.09 [0.79, 1.50]
Subtotal (95% CI)			**100.0%**	**0.78 [0.71, 0.85]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 6.34$, df = 5 (P = 0.27); $I^2 = 21\%$

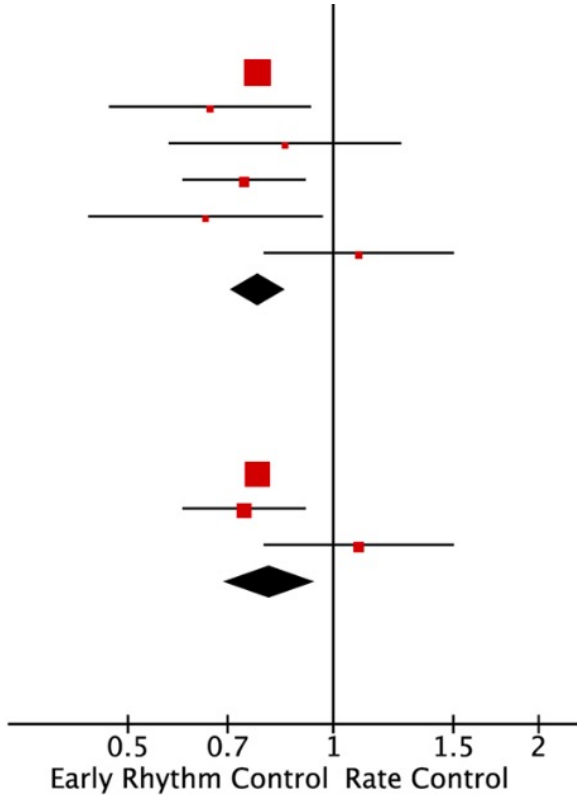
Test for overall effect: Z = 5.37 (P < 0.00001)

1.1.3 Ischemic stroke

Chao-2022	-0.256	0.017	56.4%	0.77 [0.75, 0.80]
Kim-2021	-0.301	0.106	27.6%	0.74 [0.60, 0.91]
Yang-2021	0.086	0.164	16.0%	1.09 [0.79, 1.50]
Subtotal (95% CI)			**100.0%**	**0.81 [0.69, 0.94]**

Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 4.51$, df = 2 (P = 0.10); $I^2 = 56\%$

Test for overall effect: Z = 2.78 (P = 0.005)



Zhu W, et al. *BMC Med*. 2022;20(1):340.

Dementia and Early Rhythm Control

Early Rhythm Control and Incident Dementia in Patients With Atrial Fibrillation and Prior Stroke

So-Ryoung Lee, PhD,[a,b] Eue-Keun Choi, PhD,[a,b] Seung-Woo Lee, BSc,[c] Kyung-Do Han, PhD,[d] Seil Oh, PhD,[a,b] Gregory Y.H. Lip, MD[b,e,f]

ABSTRACT

BACKGROUND Although early rhythm control (ERC) in patients with atrial fibrillation (AF) reduces the risk of stroke, there is no evidence thus far on whether ERC reduces the risk of developing dementia in patients with AF and prior stroke.

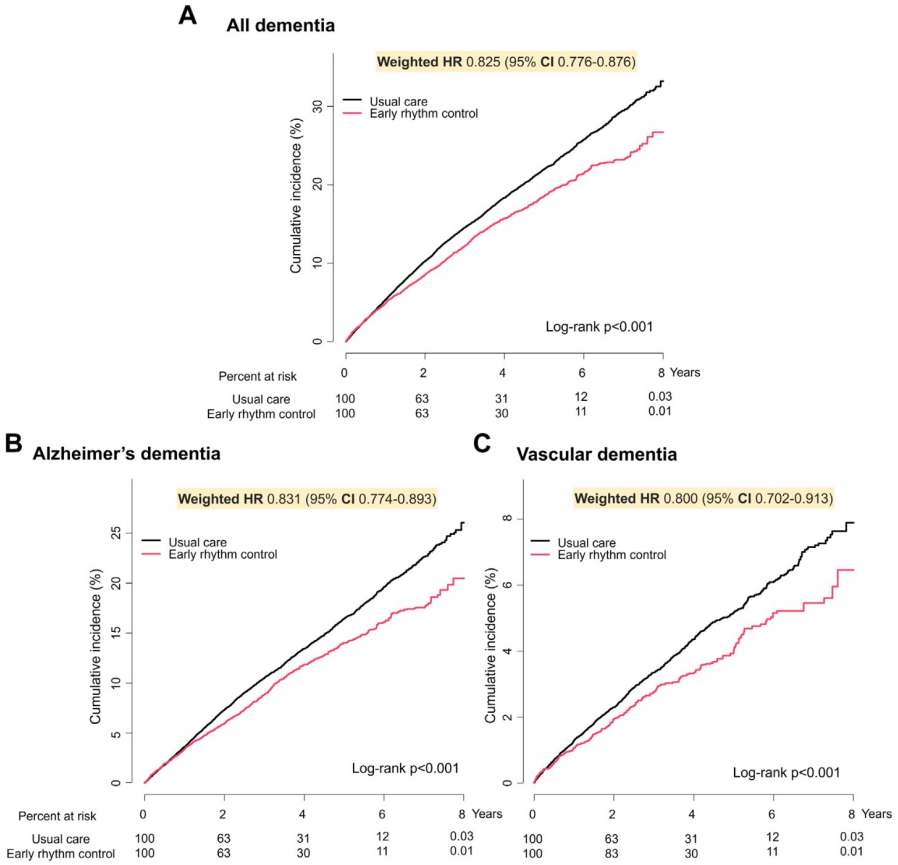
OBJECTIVES This study sought to evaluate whether ERC reduces the risk of developing dementia in patients with new-onset AF and prior stroke.

METHODS Using the Korean nationwide claims database, we identified patients with new-onset AF and prior stroke between 2010 and 2016. Patients who received rhythm control therapy within 1 year after AF onset were defined as the ERC group, otherwise patients were categorized as the usual care group. A propensity score weighting method was used to balance the 2 groups. Incident dementia defined by relevant diagnostic codes was evaluated.

RESULTS A total of 41,370 patients were included (mean age 70 ± 11 years; mean CHA_2DS_2-VASc score 5.3 ± 1.6): 10,213 in the ERC group and 31,157 in the usual care group. Compared with usual care, ERC was associated with lower risks of all dementia, Alzheimer's dementia, and vascular dementia (weighted HR: 0.825 [95% CI: 0.776-0.876], 0.831 [95% CI: 0.774-0.893], and 0.800 [95% CI: 0.702-0.913], respectively, all $P < 0.001$). The benefit of ERC was slightly accentuated in the younger age group (<65 years). The beneficial effect of ERC in reducing the risk of dementia was consistent regardless of the characteristics of prior stroke.

CONCLUSIONS ERC might be beneficial in the prevention of dementia in patients with AF and prior stroke. To prevent the progression of cognitive dysfunction, ERC should be considered in this population. (JACC Clin Electrophysiol 2024;10:1409-1420) © 2024 by the American College of Cardiology Foundation.

Stroke results in cognitive impairment along with physical disability, which significantly impacts the quality of life of stroke survivors.[1] Poststroke dementia is common after stroke with prevalence ranging from 10% to 50%.[2-5] The incidence of poststroke dementia is higher in the first few months after stroke.[6] Although the relative risk of dementia after stroke progressively declines,



Lee SR, et al. *JACC Clin Electrophysiol*. 2023;9(7 Pt 2):1121-1133.

Heart Failure and Early Rhythm Control

1.1.6 HF hospitalization

Dickow-2022	-0.051	0.112	23.9%	0.95 [0.76, 1.18]
Kany-2022	-0.041	0.115	22.7%	0.96 [0.77, 1.20]
Kim-2021	-0.236	0.099	30.6%	0.79 [0.65, 0.96]
Kirchhof-2020	-0.211	0.115	22.7%	0.81 [0.65, 1.01]
Subtotal (95% CI)			**100.0%**	**0.87 [0.78, 0.97]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 2.69$, df = 3 (P = 0.44); $I^2 = 0\%$

Test for overall effect: Z = 2.59 (P = 0.010)

1.1.6 HF hospitalization

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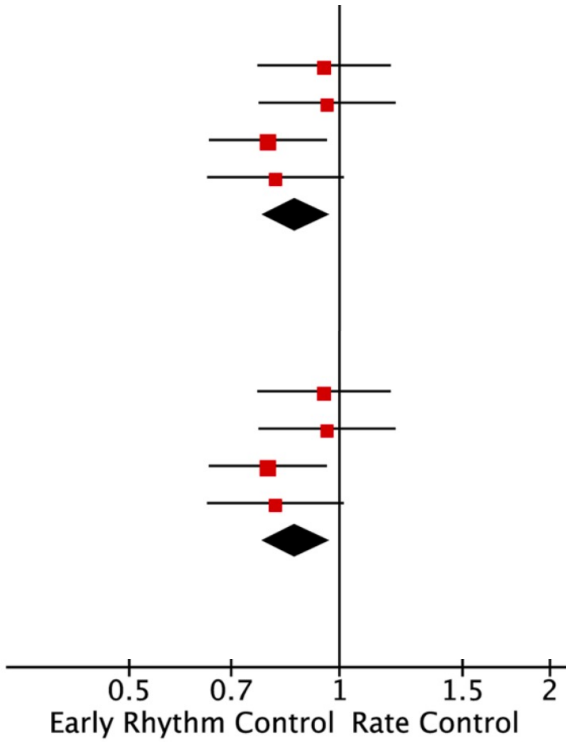
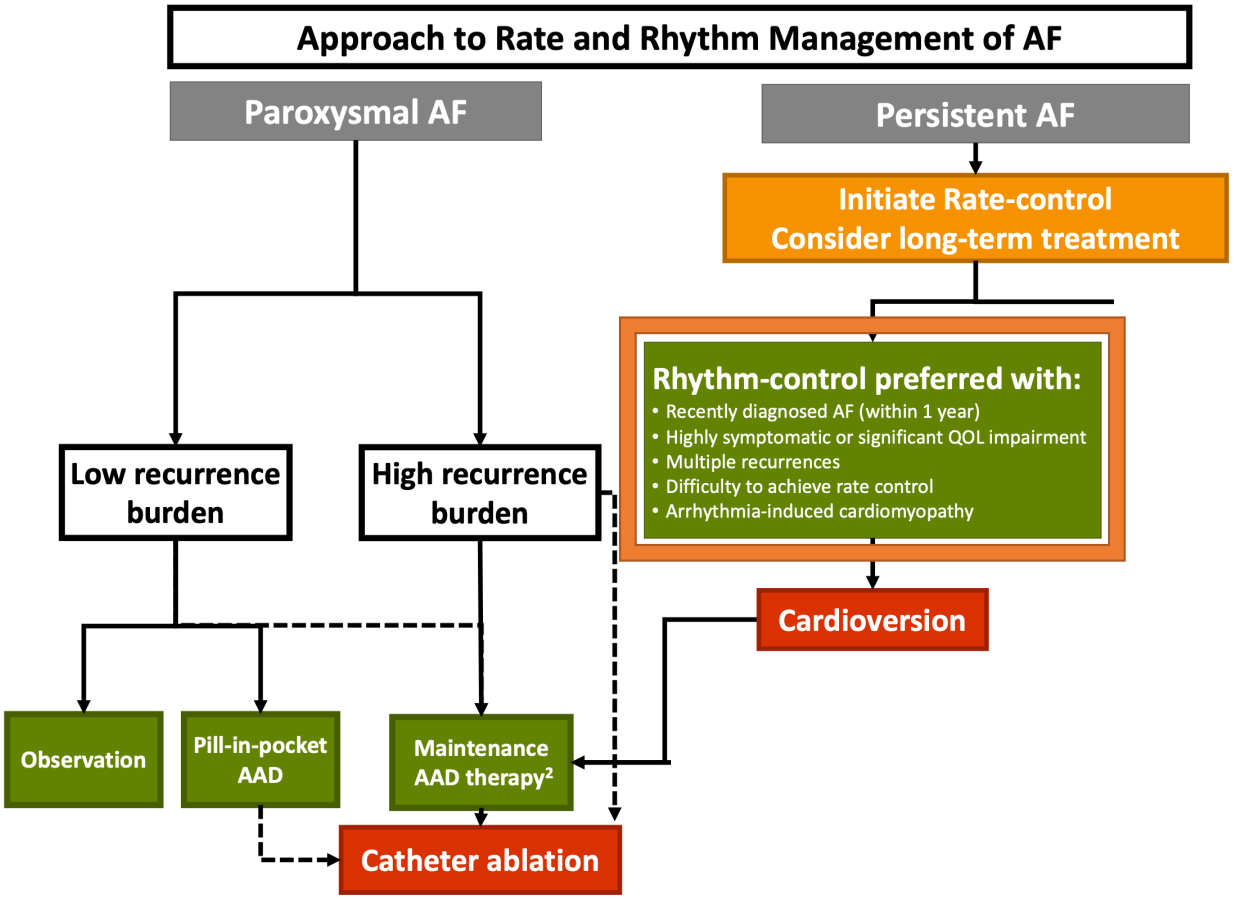
Test for overall effect: Z = 2.59 (P = 0.010)



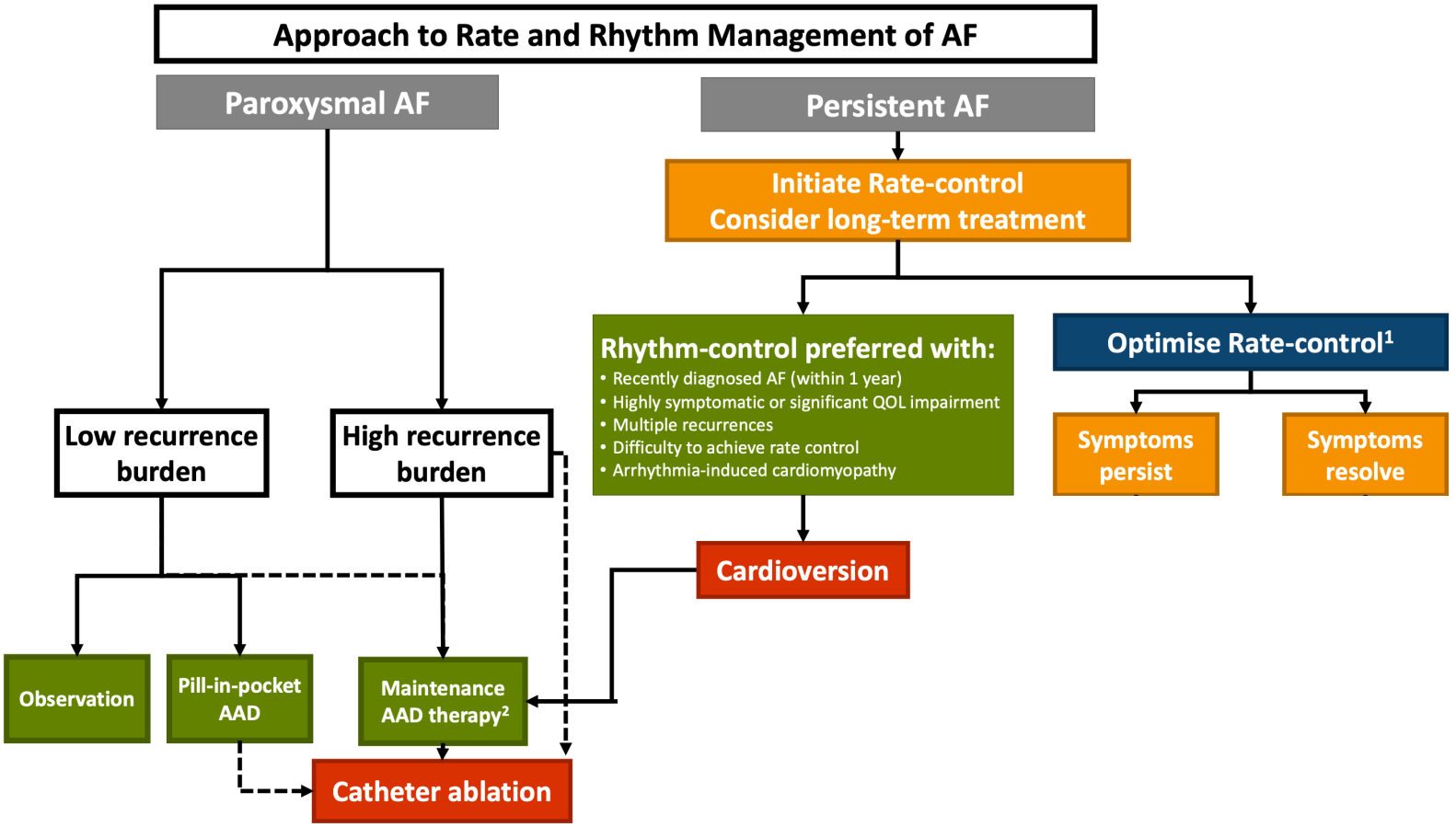
Zhu W, et al. *BMC Med*. 2022;20(1):340.

Rhythm and Rate Control



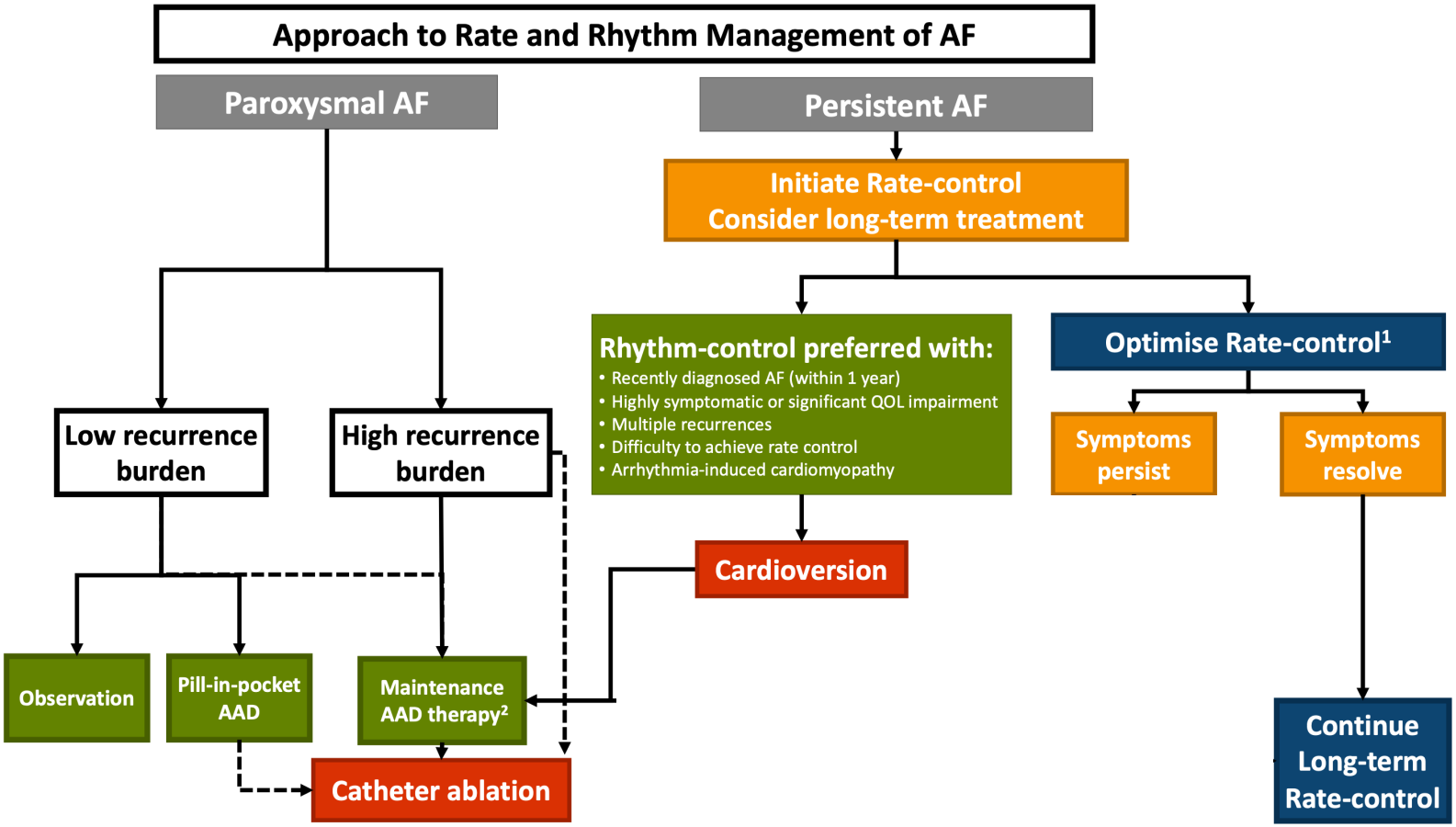
Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Rhythm and Rate Control



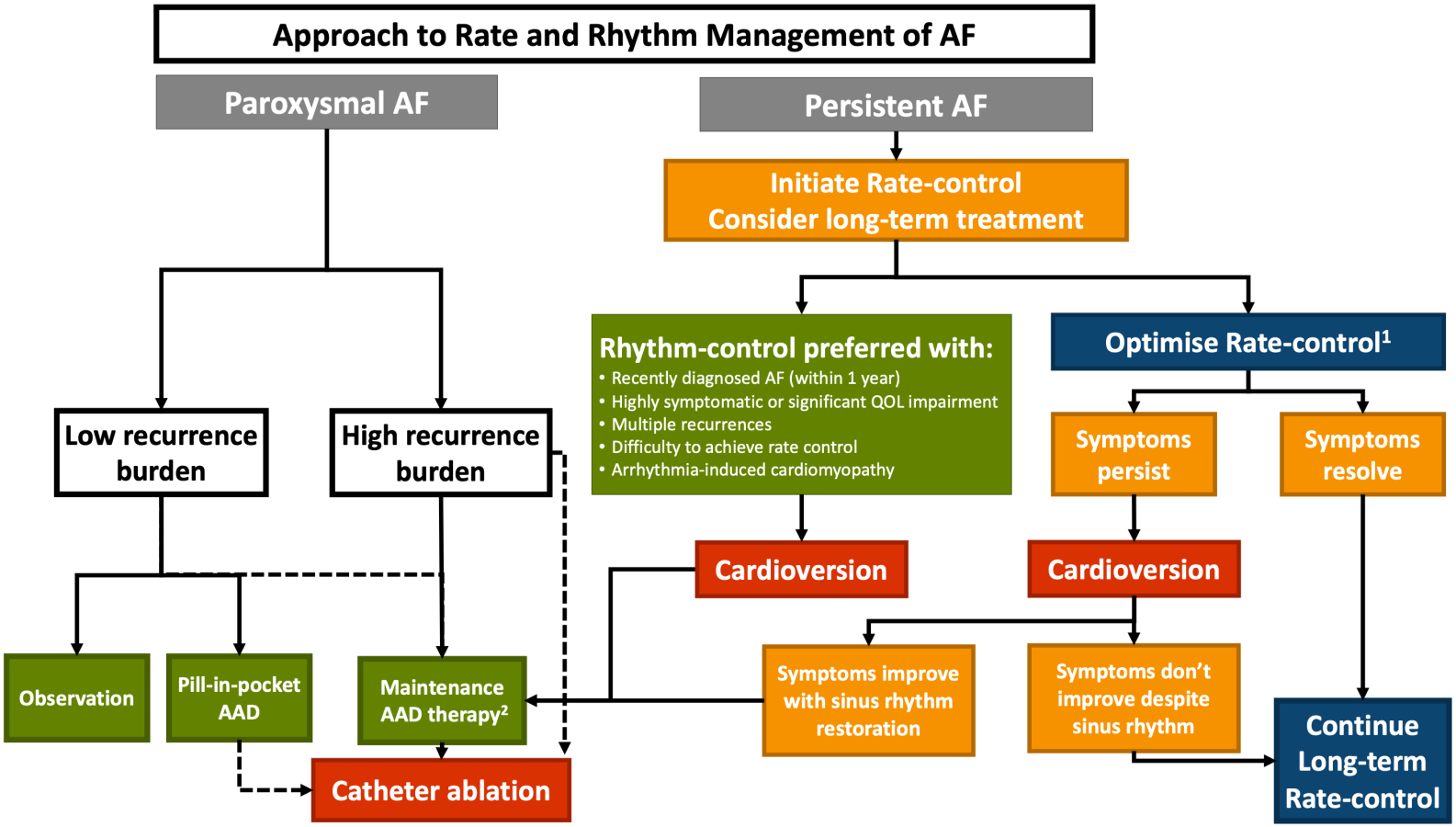
Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Rhythm and Rate Control



Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Rhythm and Rate Control



Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Do Symptoms Matter?

Review

Comparing Outcomes in Asymptomatic and Symptomatic Atrial Fibrillation: A Systematic Review and Meta-Analysis of 81,462 Patients

Daria Sgreccia [1], Marcella Manicardi [1], Vincenzo Livio Malavasi [1], Marco Vitolo [1,2,3], Anna Chiara Valenti [1], Marco Proietti [3,4,5], Gregory Y. H. Lip [3,6,†] and Giuseppe Boriani [1,*,†]

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Citation: Sgreccia, D.; Manicardi, M.; Malavasi, V.L.; Vitolo, M.; Valenti, A.C.; Proietti, M.; Lip, G.Y.H.; Boriani, G. Comparing Outcomes in Asymptomatic and Symptomatic Atrial Fibrillation: A Systematic Review and Meta-Analysis of 81,462 Patients. *J. Clin. Med.* **2021**, *10*, 3979. https://doi.org/10.3390/jcm10173979

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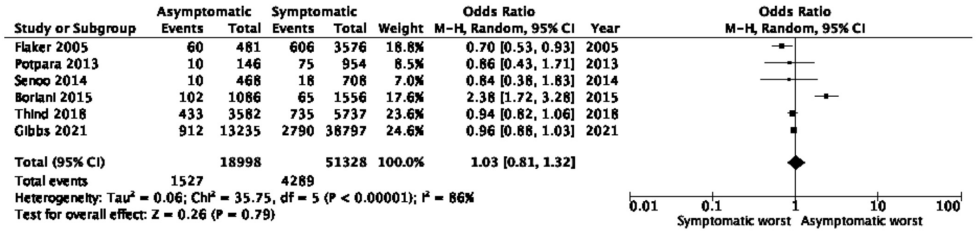
Abstract: Background: In atrial fibrillation (AF) patients, the presence of symptoms can guide the decision between rate or rhythm control therapy, but it is still unclear if AF-related outcomes are determined by symptomatic status of their clinical presentation. Methods: We performed a systematic review and metanalysis following the PRISMA recommendations on available studies that compared asymptomatic to symptomatic AF reporting data on all-cause mortality, cardiovascular death, and thromboembolic events (TEs). We included studies with a total number of patients enrolled equal to or greater than 200, with a minimum follow-up period of six months. Results: From the initial 5476 results retrieved after duplicates' removal, a total of 10 studies were selected. Overall, 81,462 patients were included, of which 21,007 (26%) were asymptomatic, while 60,455 (74%) were symptomatic. No differences were found between symptomatic and asymptomatic patients regarding the risks of all-cause death (odds ratio (OR) 1.03, 95% confidence interval (CI) 0.81–1.32), and cardiovascular death (OR 0.87, 95% CI 0.54–1.39). No differences between symptomatic and asymptomatic groups were evident for stroke (OR 1.22, 95% CI 0.77–1.93) and stroke/TE (OR 1.06, 95% CI 0.86–1.31) risks. Conclusions: Mortality and stroke/TE events in AF patients were unrelated to symptomatic status of their clinical presentation. Adoption of management strategies in AF patients should not be based on symptomatic clinical status.

Keywords: atrial fibrillation; symptoms; outcomes; stroke; mortality; meta-analysis

1. Introduction

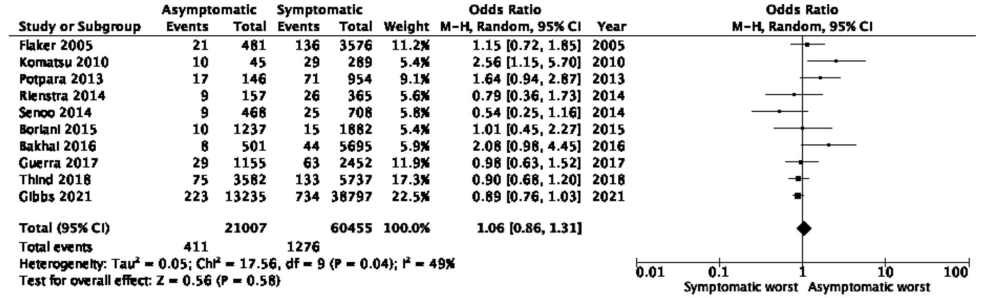
Atrial fibrillation (AF) is the most common sustained arrhythmia in adults and approximately one-third of AF patients are asymptomatic [1]. In such cases, AF is frequently detected during clinical screening in different settings (i.e., pre-operative assessments, cryptogenic stroke, continuous rhythm monitoring through an implanted device) [2–9]. Patients with AF are at increased risk of stroke and thromboembolic events (TEs), heart failure, cognitive impairment, and death [1,10–13]. As the diagnosis of AF may be delayed in asymptomatic patients, TE may be the first clinical presentation in these patients.

All-Cause mortality



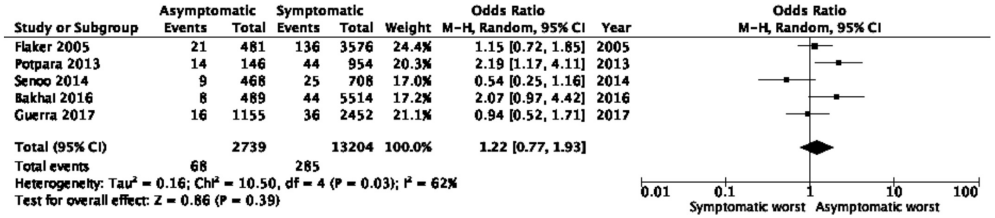
Panel A

Stroke or Systemic Embolism



Panel A

Stroke



Sgreccia D, et al. *J Clin Med*. 2021;10(17):3979.

Do Symptoms Matter?

CLINICAL RESEARCH STUDY

THE AMERICAN JOURNAL of MEDICINE®

Clinical Outcomes in Asymptomatic and Symptomatic Atrial Fibrillation Presentations in GARFIELD-AF: Implications for AF Screening

Harry Gibbs, MB PhD,[a] Ben Freedman, MB PhD,[b] Mårten Rosenqvist, PhD,[c] Saverio Virdone, MSc,[d] Wael Al Mahmeed, MD,[e] Giuseppe Ambrosio, MD, PhD,[f] A. John Camm, MD,[g] Barry Jacobson, MD,[h] Carlos Jerjes-Sanchez, MD,[i] Gloria Kayani,[d] Ali Oto, MD,[j] Elizaveta Panchenko, PhD,[k] Hany Ragy, MD,[l] Ajay K. Kakkar, PhD[d,m], for the GARFIELD-AF Investigators*

ABSTRACT

BACKGROUND: Asymptomatic atrial fibrillation is often detected incidentally. Prognosis and optimal therapy for asymptomatic compared with symptomatic atrial fibrillation is uncertain. This study compares clinical characteristics, treatment, and 2-year outcomes of asymptomatic and symptomatic atrial fibrillation presentations.

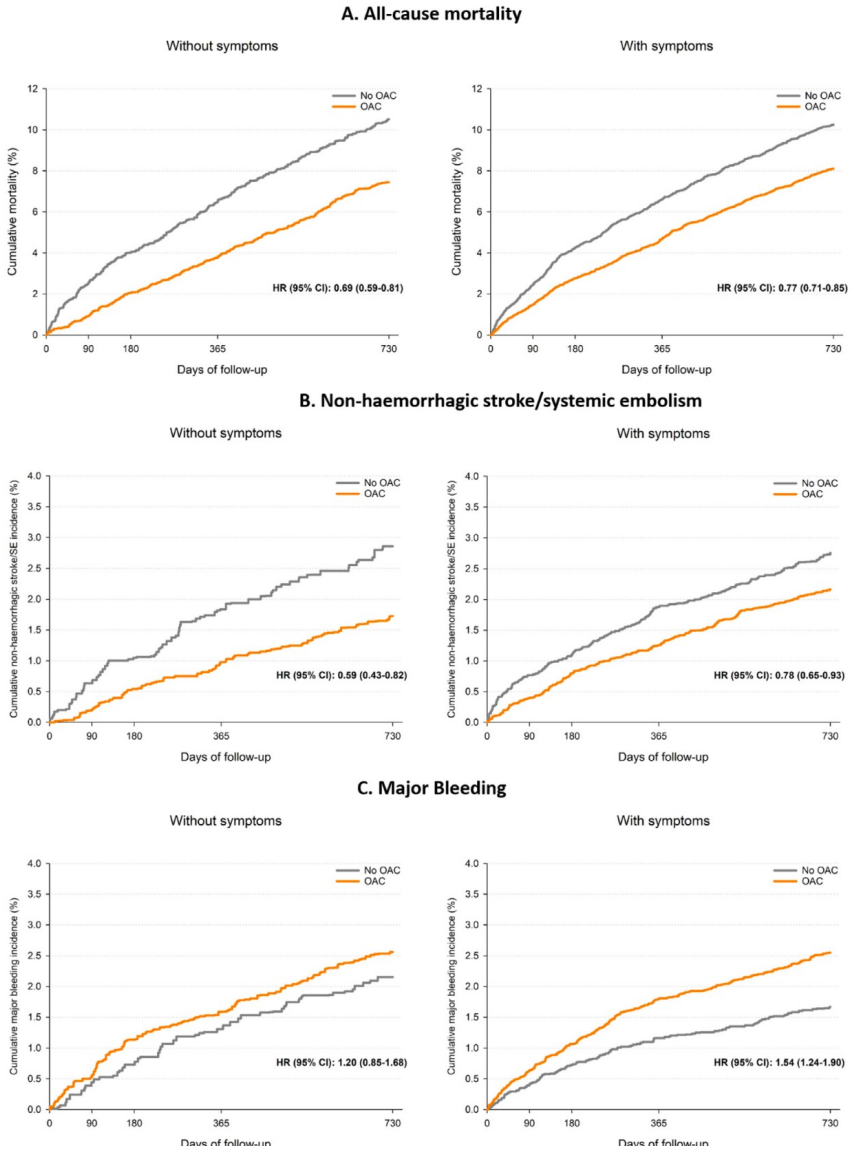
METHODS: Global Anticoagulant Registry in the Field-Atrial Fibrillation (GARFIELD-AF) is a global, prospective, observational study of newly diagnosed atrial fibrillation with ≥1 stroke risk factors (http://www.clinicaltrials.gov, unique identifier: NCT01090362). Patients were characterized by atrial fibrillation-related symptoms at presentation and the CHA_2DS_2-VASc score. Two-year follow-up recorded anticoagulation patterns (vitamin K antagonist, direct oral anticoagulants, parenteral therapy) and outcomes (stroke/systemic embolism, all-cause mortality, and bleeding).

RESULTS: At presentation, of 52,032 eligible patients, 25.4% were asymptomatic and 74.6% symptomatic. Asymptomatic patients were slightly older (72 vs 70 years), more often male (64.2% vs 52.9%), and more frequently initiated on anticoagulation ± antiplatelets (69.4% vs 66.0%). No difference in events (adjusted hazard ratios, 95% confidence interval) for nonhemorrhagic stroke/systemic embolism (1.19, 0.97-1.45), all-cause mortality (1.06, 0.94-1.20), or bleeding (1.02, 0.87-1.19) was observed. Anticoagulation was associated with comparable reduction in nonhemorrhagic stroke/systemic embolism (0.59, 0.43−0.82 vs 0.78, 0.65−0.93) and all-cause mortality (0.69, 0.59-0.81 vs 0.77, 0.71-0.85) in asymptomatic versus symptomatic, respectively.

CONCLUSIONS: Major outcomes do not differ between asymptomatic and symptomatic atrial fibrillation presentations and are comparably reduced by anticoagulation. Opportunistic screening-detected asymptomatic atrial fibrillation likely has the same prognosis as asymptomatic atrial fibrillation at presentation and likely responds similarly to anticoagulation thromboprophylaxis.

KEYWORDS: Anticoagulation; Asymptomatic; Atrial fibrillation; Symptomatic

Gibbs H, et al. *Am J Med*. 2021;134(7):893-901.e11.

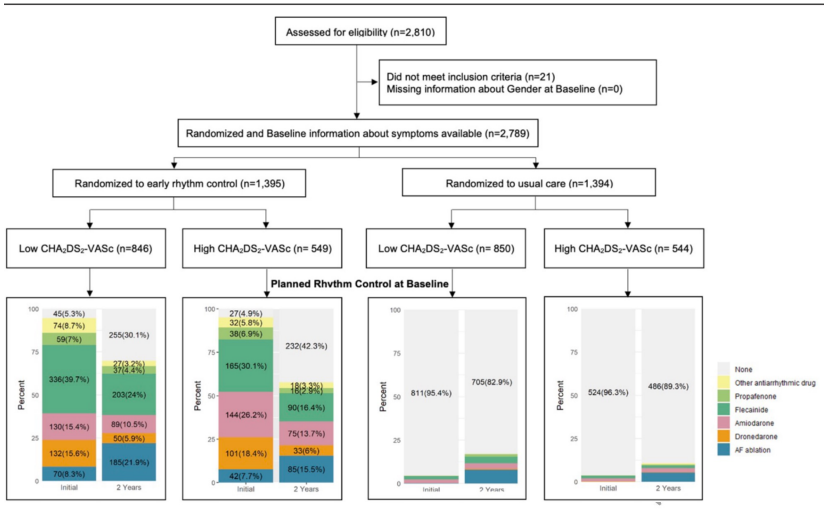


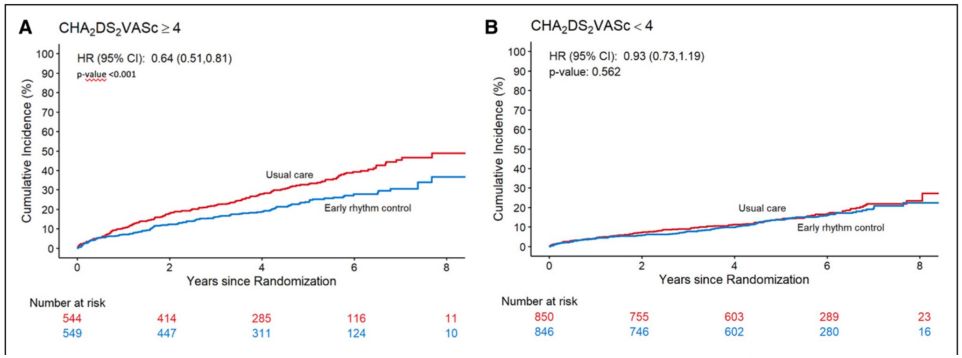
What If They Have Co-Morbidities?

Early Rhythm-Control Therapy in Patients with Atrial Fibrillation

Early Rhythm Control in Patients With Atrial Fibrillation and High Comorbidity Burden

Andreas Rillig, MD; Katrin Borof; Günter Breithardt, MD; A. John Camm, MD; Harry J.G.M. Crijns, MD, PhD; Andreas Goette, MD; Karl-Heinz Kuck, MD; Andreas Metzner, MD; Panos Vardas, MD; Eik Vettorazzi, MSc; Karl Wegscheider, PhD; Antonia Zapf, PhD; Paulus Kirchhof, MD

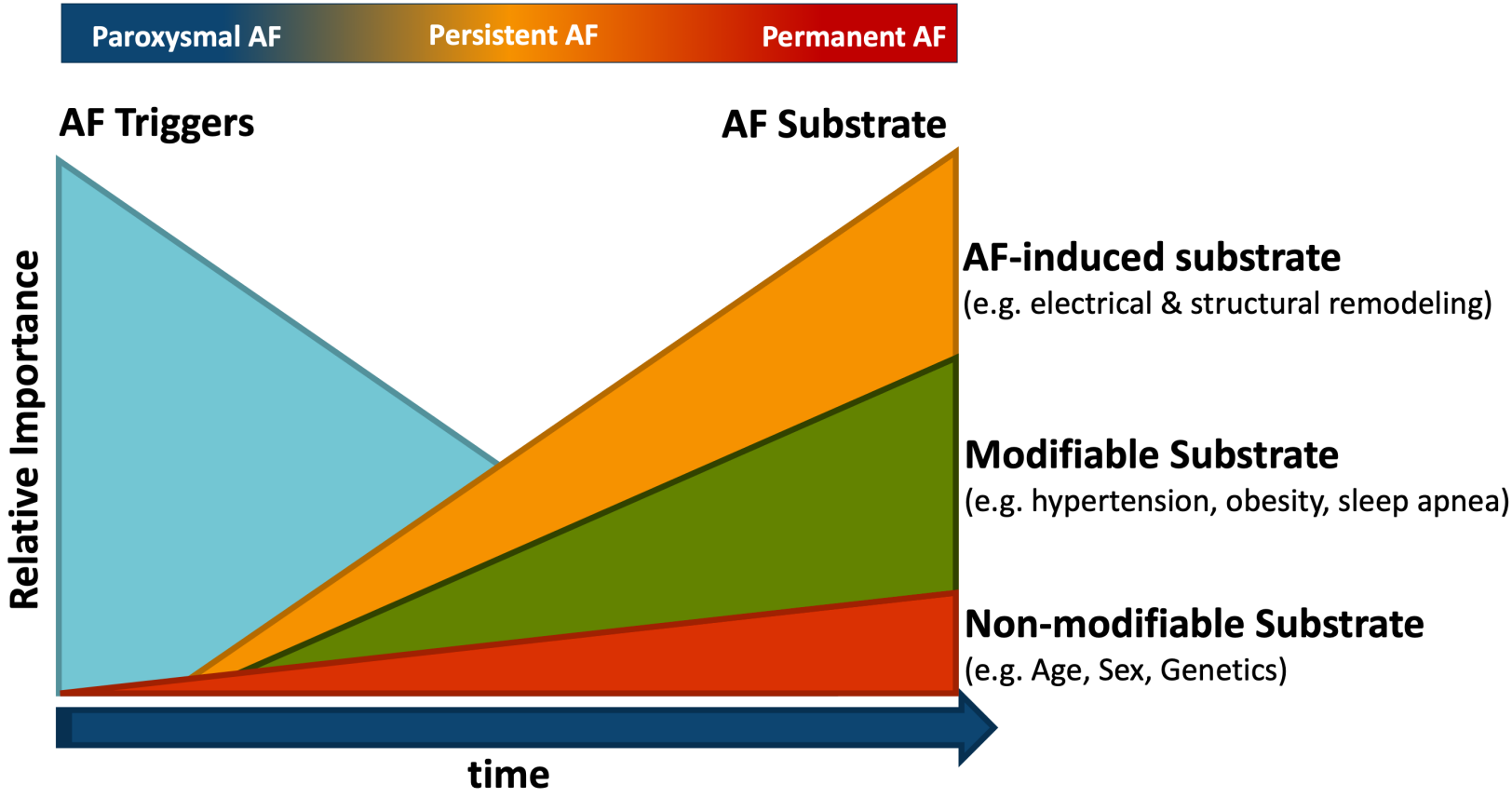




Outcome	Lower comorbidity burden (CHA_2DS_2-VASc score <4)				Higher comorbidity burden (CHA_2DS_2-VASc score ≥4)				$P_{interaction}$
	ERC	UC	HR (95% CI)	*P* value	ERC	UC	HR (95% CI)	*P* value	
First primary outcome*	122/846 (14.4)	133/850 (15.6)	0.93 (0.73, 1.19)	0.562	127/549 (23.1)	183/544 (33.6)	0.64 (0.51, 0.81)	<0.001	0.037
Components of the first primary outcome									
Death from cardiovascular causes	30/846 (3.5)	35/850 (4.1)	0.88 (0.54, 1.44)	0.616	37/549 (6.7)	59/544 (10.8)	0.6 (0.4, 0.91)	0.015	0.252
Stroke	21/846 (2.5)	19/850 (2.2)	1.14 (0.61, 2.12)	0.683	19/549 (3.5)	43/544 (7.9)	0.43 (0.25, 0.74)	0.002	0.021
Hospitalization with worsening of HF	62/846 (7.3)	71/850 (8.4)	0.88 (0.62, 1.24)	0.464	77/549 (14)	98/544 (18)	0.74 (0.55, 1)	0.048	0.438
Hospitalization with ACS	27/846 (3.2)	35/850 (4.1)	0.8 (0.48, 1.31)	0.371	26/549 (4.7)	30/544 (5.5)	0.83 (0.49, 1.41)	0.495	0.853
Second primary outcome: nights spent in hospital/y	4.83±21.2	3.77±11.3	1.07 (0.9, 1.27)	0.442	7.37±23	7.09±20.3	1.09 (0.9, 1.33)	0.366	0.972
Other									
CABANA-like outcome	78/846 (9.2)	73/850 (8.6)	1.11 (0.8, 1.53)	0.532	84/549 (15.3)	118/544 (21.7)	0.69 (0.52, 0.91)	0.009	0.028

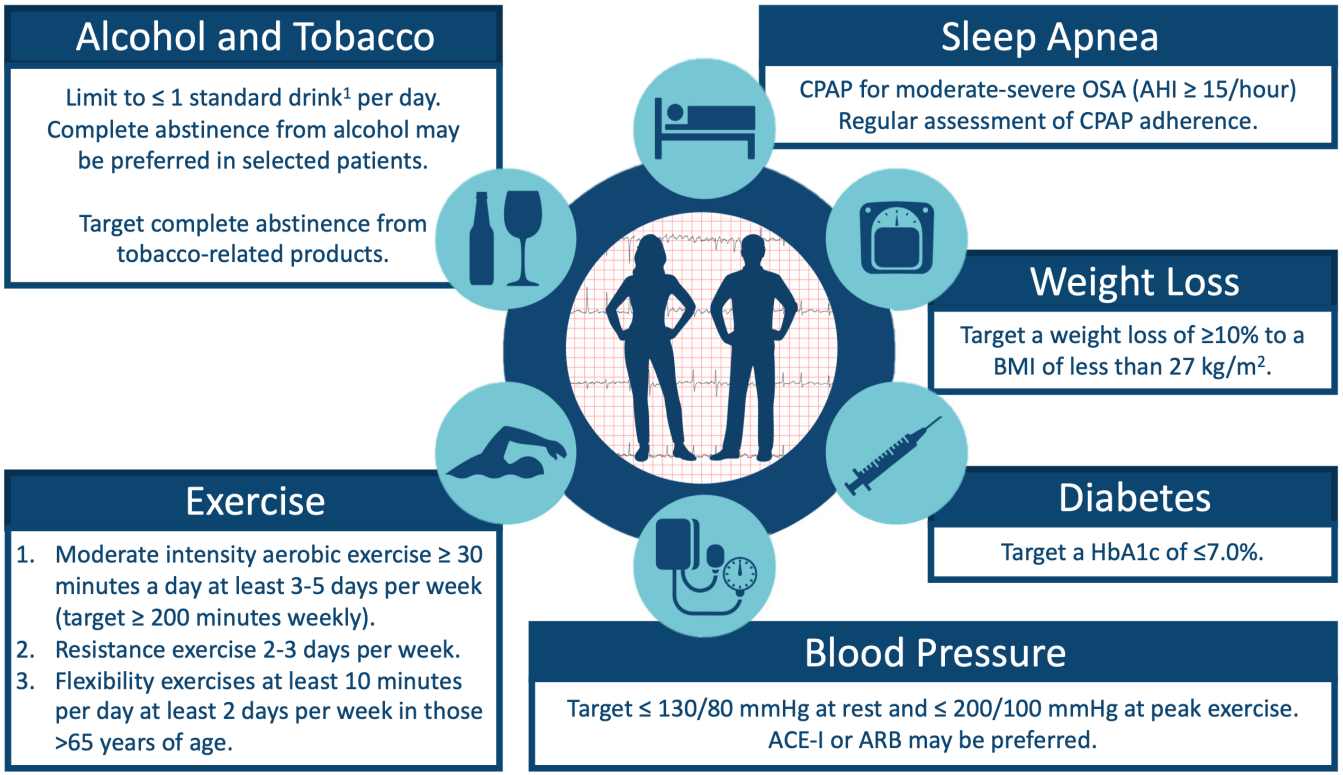
Rillig A, et al. *Circulation*. 2021;144(11):845-858.

What If They Have Co-Morbidities?



Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

What If They Have Co-Morbidities?



[1]defined as containing 14 g of alcohol; 44 mL (1.5 fluid oz.) of 80-proof liquor, 148 mL (5 fluid oz.) of wine or 355 mL (12 fluid oz.) of beer

ACE = angiotensin-converting enzyme; AHI = apnea-hypopnea index; ARB = angiotensin II receptor blocker; BMI = body-mass index; OSA = obstructive sleep apnea.

Andrade JG, et al. *Can J Cardiol*. 2020;36(12):1847-1948

Key Learning Points

- AF is a chronic, progressive disease
- Early aggressive management may be able to change disease trajectory
- Treatment decisions should be guided by shared decision-making that integrates the patient's goals of care and comorbidities