

Prolonged Palpitations:

Dealing with Atrial Fibrillation

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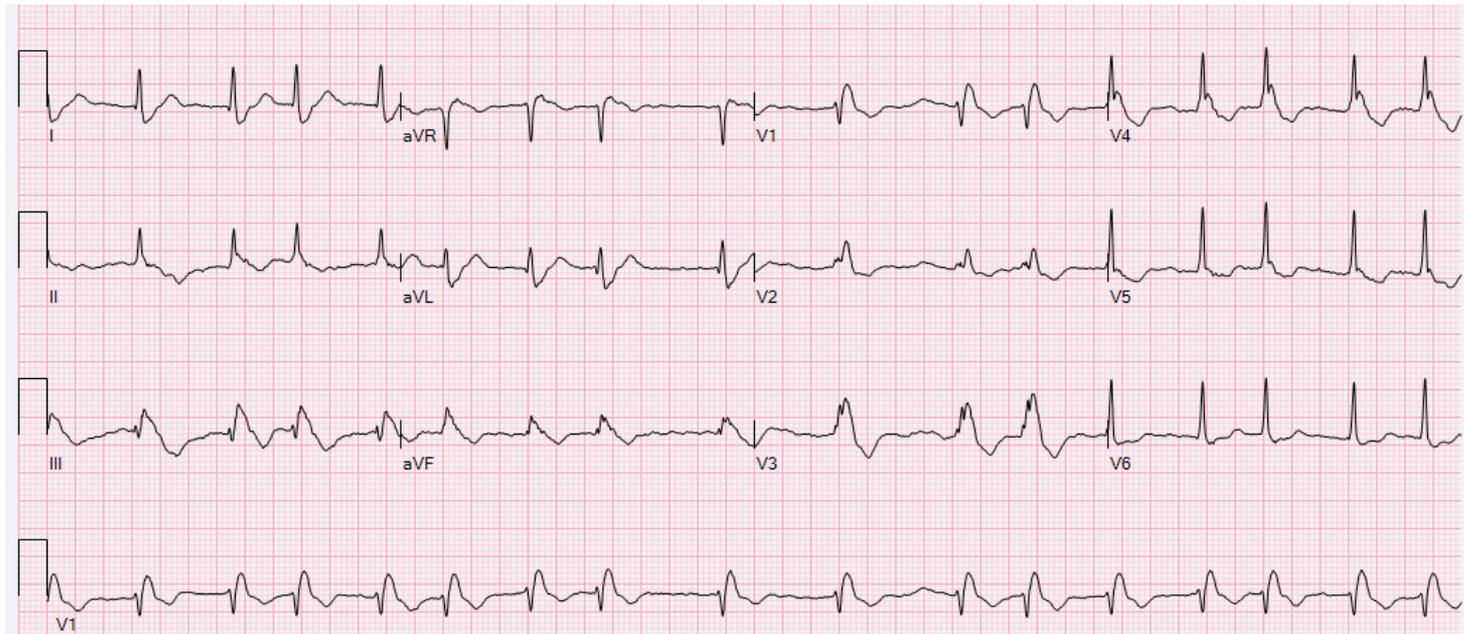
Disclosures:

- I have no financial conflicts of interest to disclose



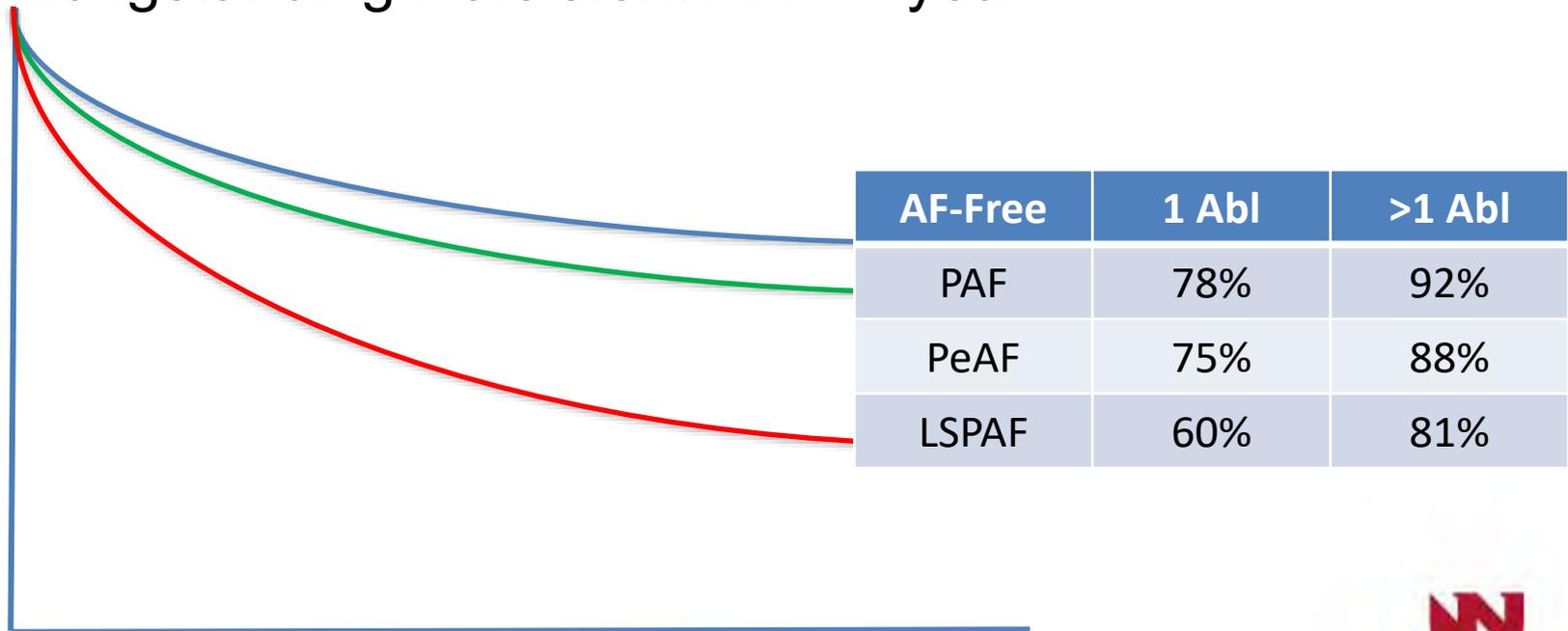
Case: 67-year-old man

- Atrial fibrillation diagnosed 3 years prior
- Progressively worsening dyspnea on exertion
- Htn, DM 2, RA, obesity (BMI 43 = 343 lbs)



Definitions

- Paroxysmal AF: <7 days, spontaneously converts
- Persistent AF: ≥ 7 days, requires cardioversion
- Longstanding Persistent AF: >1 year



Next Steps?

In addition to oral anticoagulation:

- A. Weight loss and lifestyle management
- B. Initiate antiarrhythmic drug and cardiovert
- C. Perform catheter ablation

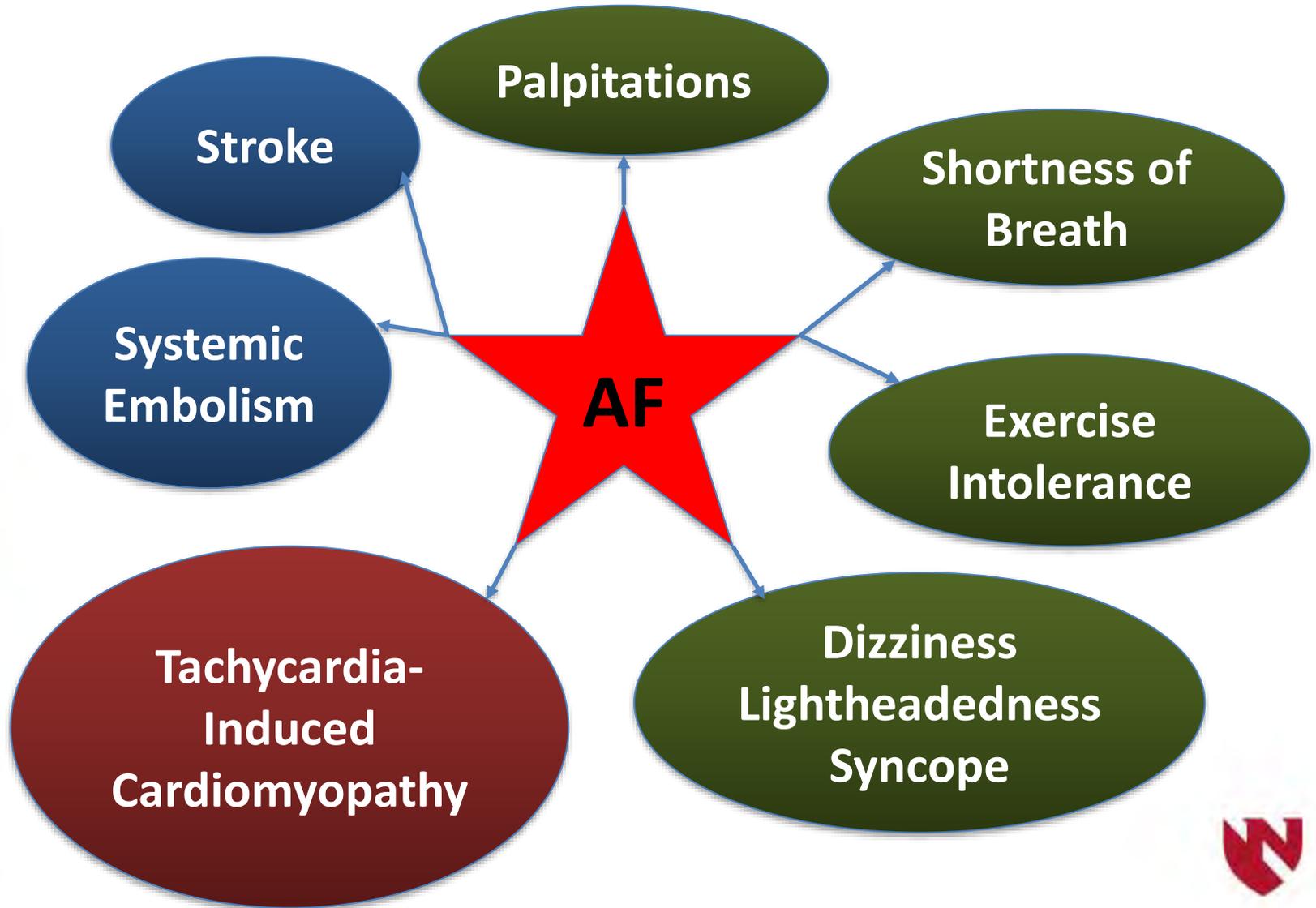


Next Steps: Concerns

- A. Weight loss and lifestyle management
 - AF may limit physical activity
- B. Initiate antiarrhythmic drug and cardiovert
 - Sinus node function is unknown
 - QTc is less accurate in AF
- C. Perform catheter ablation
 - Success rate is reduced



What Does AF Cause?



Treating AF

**Stroke
Prevention**

- Anticoagulation
- LAA Occlusion

**Heart
Failure
Prevention**

- Rate Control
- Pacemaker
+ AV Node

**Symptom
Treatment**

- Antiarrhythmics
- Ablation

Heart-Healthy Lifestyle

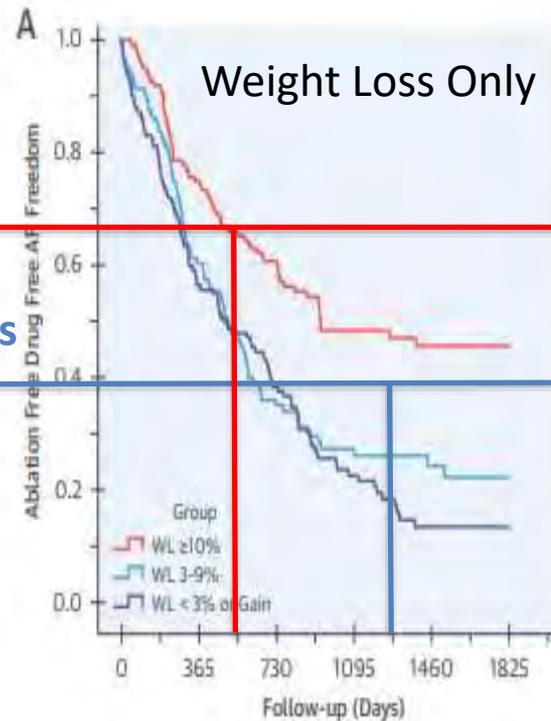


Treating AF: Lifestyle Modification

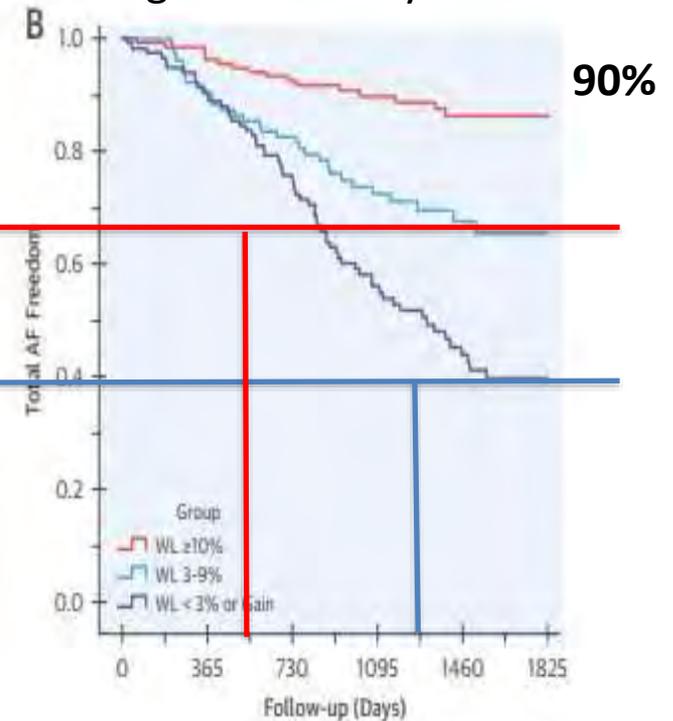
Weight Loss + Rhythm Control

Ablation

Antiarrhythmic Drugs



Time (Days)	0	365	730	1095	1460	1825
≥10 WL	135	101	72	42	31	18
3-9% WL	103	62	36	22	13	7
<3% WL or gain	117	66	44	22	11	9



Time (Days)	0	365	730	1095	1460	1825
≥10 WL	135	130	114	86	67	36
3-9% WL	103	93	83	57	35	22
<3% WL or gain	117	105	85	53	32	22



Lifestyle Considerations

It's More than Weight Loss:

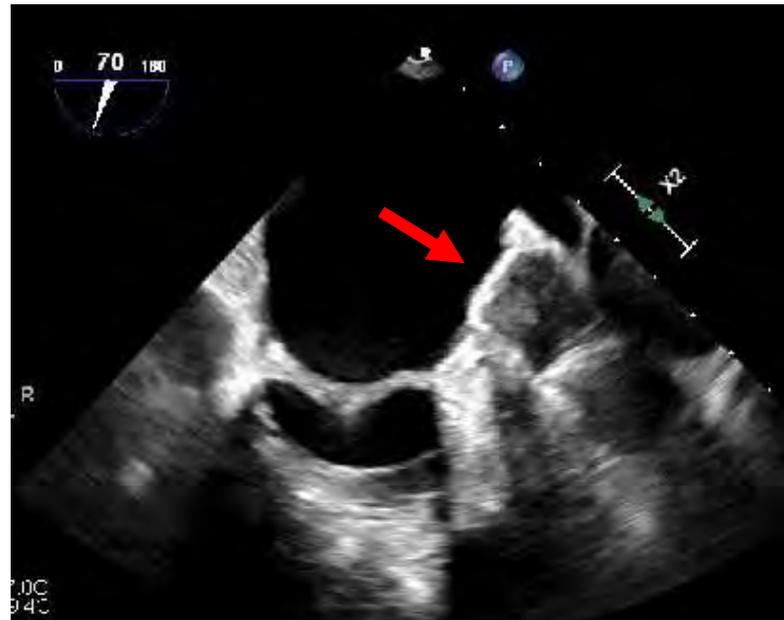
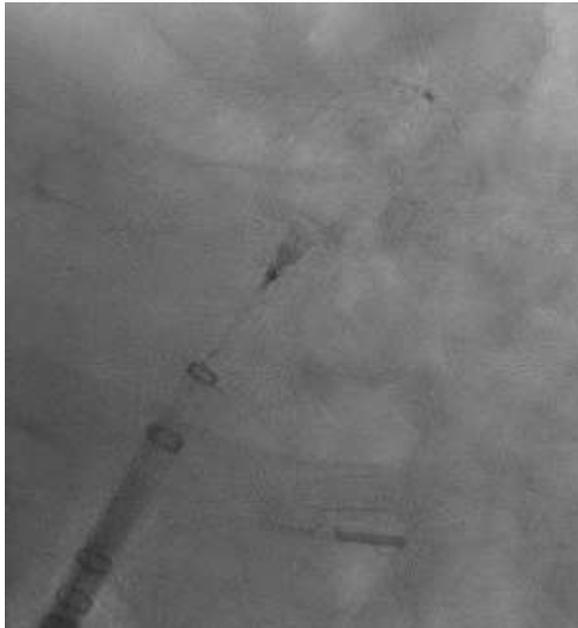
- Diet
 - High potassium foods: Mediterranean, DASH, Plant-based
 - Minimize alcohol and stimulants
- Exercise: moderate intensity
- Sleep
 - Limit sleep deprivation
 - Treat sleep apnea
- Stress reduction



Stroke Prevention

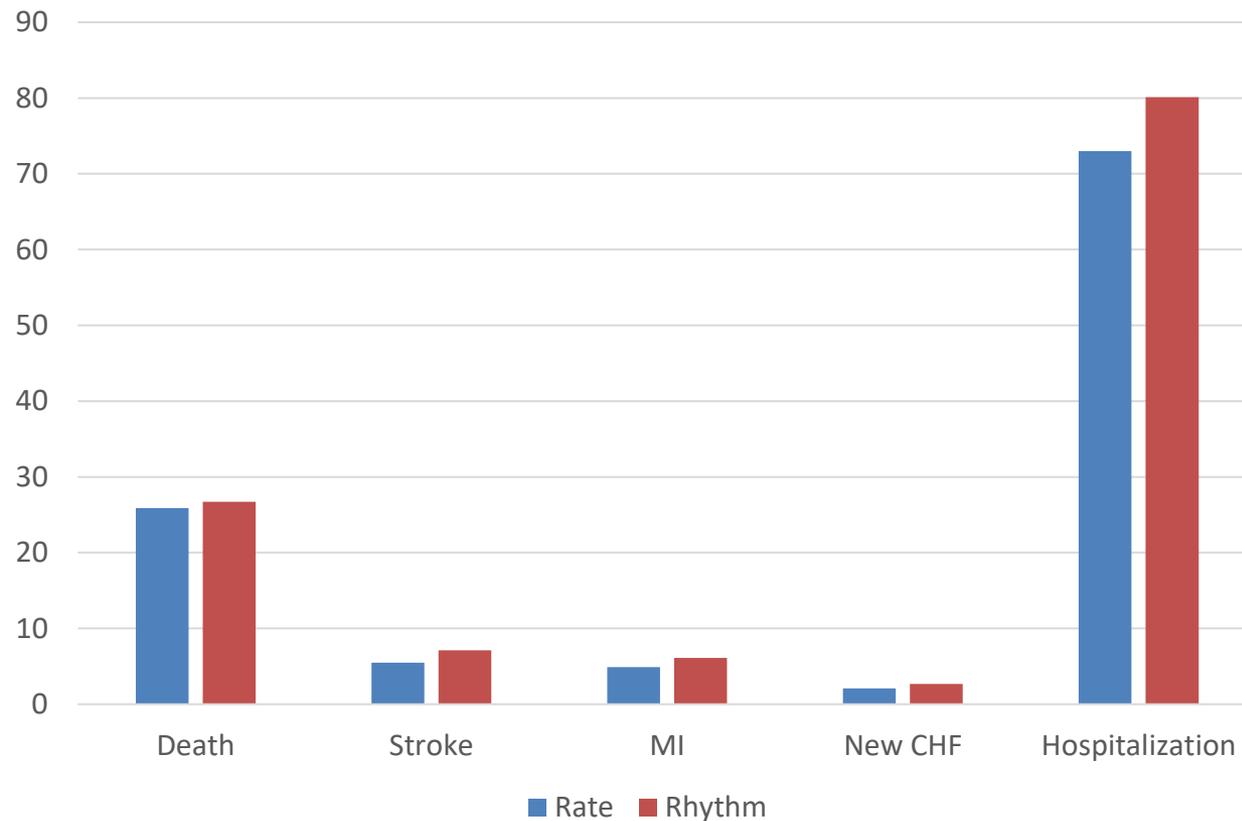
Stay tuned! More to be discussed later . . .

Due to our patient's rheumatoid arthritis and multiple medication interactions with anticoagulants, he opted for non-pharmacologic stroke prevention.



Rate vs Rhythm Control

AFFIRM: 4060 patients with recurrent AF and stroke risk



Wyse et al. NEJM 2002



Rhythm Control

Indicated for symptomatic atrial fibrillation:

- Palpitations
- Chest discomfort
- Shortness of breath
- Exertional dyspnea
- Exertional intolerance (fatigue)
- Lightheadedness and dizziness
- Near-syncope and syncope
- Heart failure symptoms
- Reduced LV ejection fraction



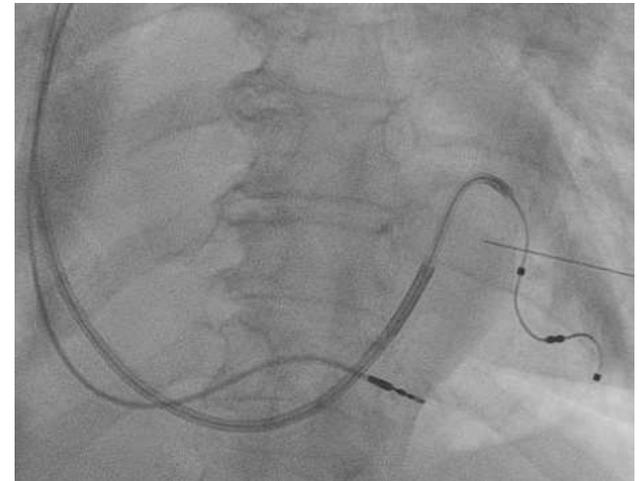
Permanent Rate Control

The APAF-CRT trial randomized 133 patients with:

- Severe symptoms
- Atrial fibrillation continuing >6 months (permanent)
- ≥ 1 Heart failure hospitalization in previous year

**Pharmacologic Rate Control versus
Cardiac Resynchronization Therapy
+ AV Node Ablation**

Mortality	2 yrs	4 yrs
Pharmacologic	21%	41%
CRT + AVN Ablation	5%	14%



Brignole M, et al. Eur Heart J, 2021;42:4731-4739.



Antiarrhythmic Drugs for AF

Antiarrhythmic Drugs



CAD
Sotalol
Dofetilide
Amiodarone
Dronedarone

CHF
Dofetilide
Amiodarone

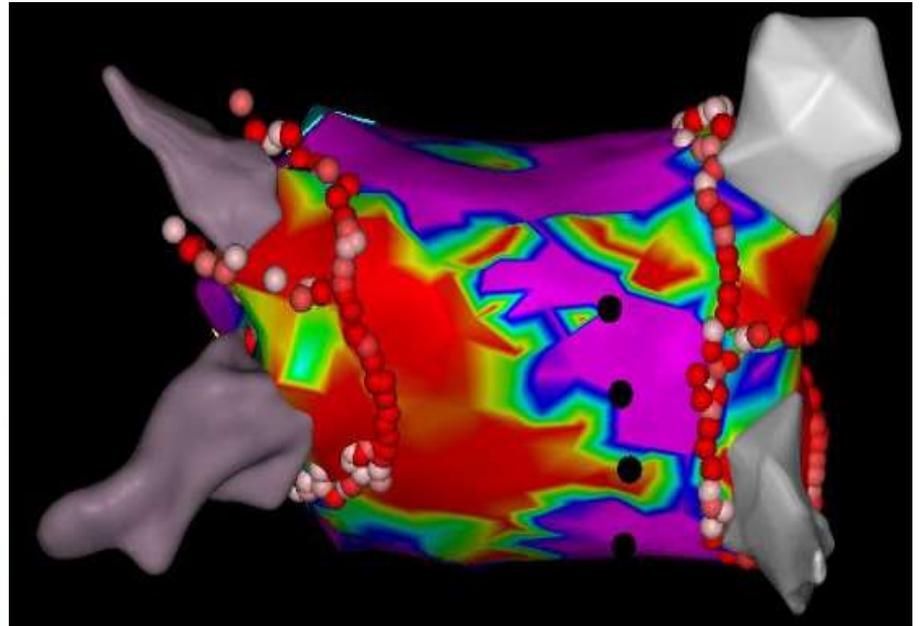
Quinidine
Disopyramide
Flecainide
Propafenone
Sotalol
Dronedarone
Amiodarone
Dofetilide

CKD
Amiodarone

COPD
Flecainide
Dofetilide



Catheter Ablation



Recurrence of AF at 18 months:

35%

36%

KH Kuck et al. NEJM 2016



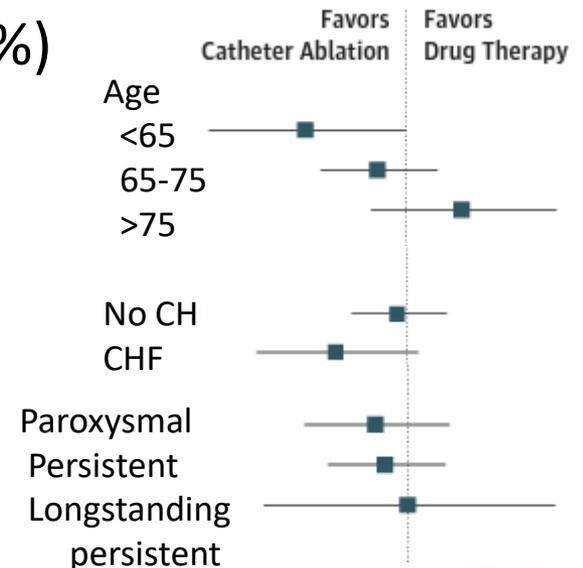
CABANA: 2204 patients

Antiarrhythmic Drugs

vs

Catheter Ablation

- No difference in mortality (6.1% vs 5.2%)
- No difference in stroke (3.6% vs 2.4%)
- Catheter ablation better than AADs
 - Younger patients (<65)
 - Heart failure (NYHA class II+)

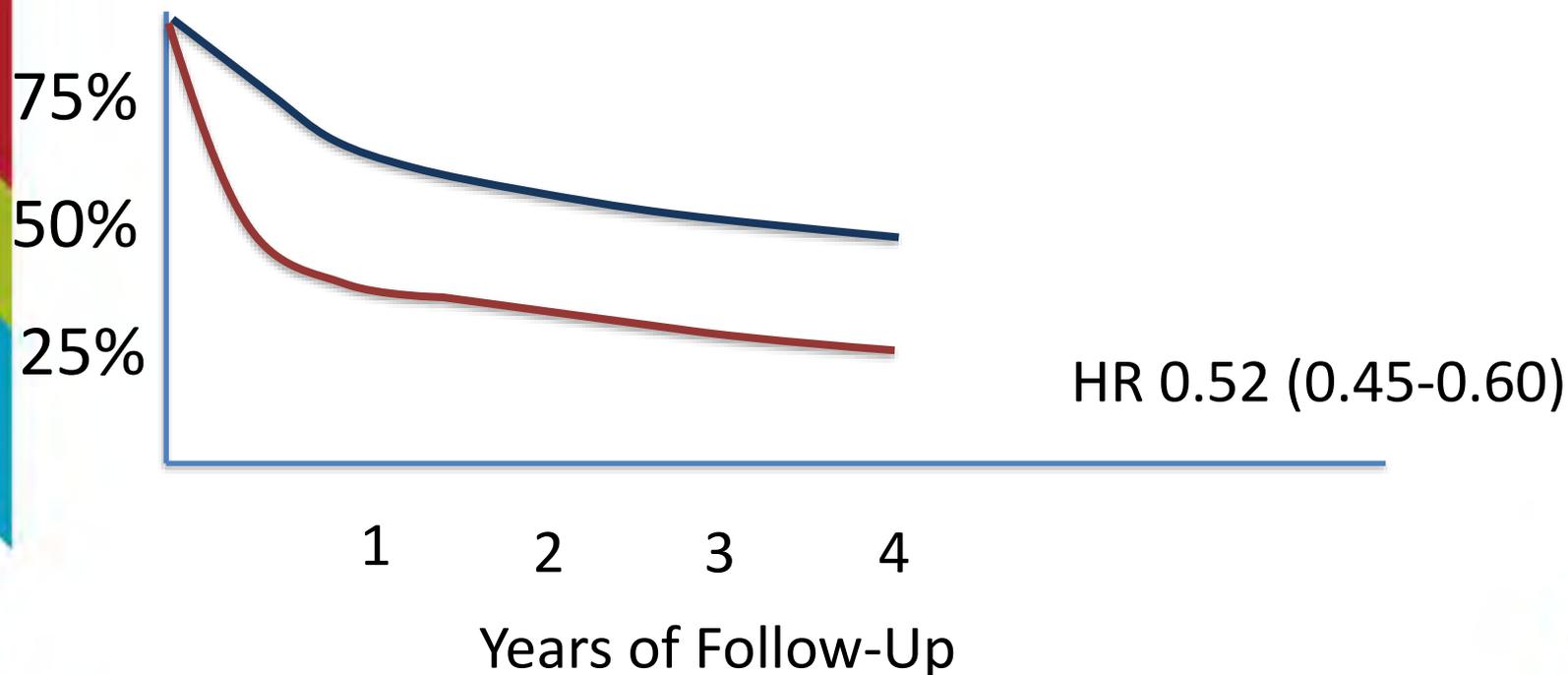


Does Ablation Effectively Treat AF?

Antiarrhythmic Drugs

Catheter Ablation

Freedom from AF



HR 0.52 (0.45-0.60)



Another Strategy: Convergent Ablation

- VATS with pericardial access
- Radiofrequency clamp: pulmonary vein isolation
- Left atrial appendage occlusion with clip
- Endocardial ablation:
 - Confirm Pulmonary vein isolation
 - Left atrial posterior wall ablation
 - Other inducible arrhythmia foci

	Hybrid	Endocardial
HARTCAP-AF (1 yr): CAJ Vander Heijden et al. JACC EP 2023;9:1013-1023	89%	41%
CONVERGE (18 months): DB Delurgio et al. Circ Arrhythm EP 2020;13:e009288	74%	55%



Early Treatment of AF

Perhaps the best way to prevent progression:
Treat AF aggressively early

EARLY AF: 303 Patients randomized to cryoablation
versus antiarrhythmic drugs

One year recurrence of symptomatic atrial
arrhythmias: 26% (AAD) vs 11% (ablation)

Andrade J, et al. NEJM 2021;384:305-315.



On the Horizon

Pulse Field Ablation

- Rapid electrical pulses causing electroporation
- Tissue effect limited to local myocardium
 - Potential for improved safety
- Efficacy appears good
- Procedure times significantly shorter (96 \pm 29 min)

	Efficacy	Complications
PEFCAT II (1 yr): VY Reddy et al. JACC EP 2021;7:614-627.	84%	2.5%
MANIFEST-PF (1 yr): MK Turagem et al. Circulation 2023;148:35-46.	78% 81%/71%	1.9%



Our Patient

- Index Ablation: PVI only
 - Procedure time 343 min; LA vol 116 mL
- Recurrence: Typical atrial flutter at 3 months
- Repeat Ablation: Re-do PVI + CTI at 5 months
 - Recovery of conduction on left PVs
 - Procedure time 332 min; LA vol 125 mL
- Left Atrial Appendage Occlusion at 10 months
- Last Follow-Up: 14 months after initial ablation
 - BMI 39 (305 lbs: lost 38 lbs!)



In Conclusion:

- Don't hesitate to refer patients for ablation **early**
 - **Good results are more likely**
- Don't hesitate to refer patients with symptomatic, even **longstanding persistent AF**
 - **Good results are still possible**
- Consider other approaches:
 - Cardiac resynchronization pacing + AV node ablation
 - Convergent (Hybrid) ablation
 - Pulse field ablation in the future





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