4 Pillars of AF Management

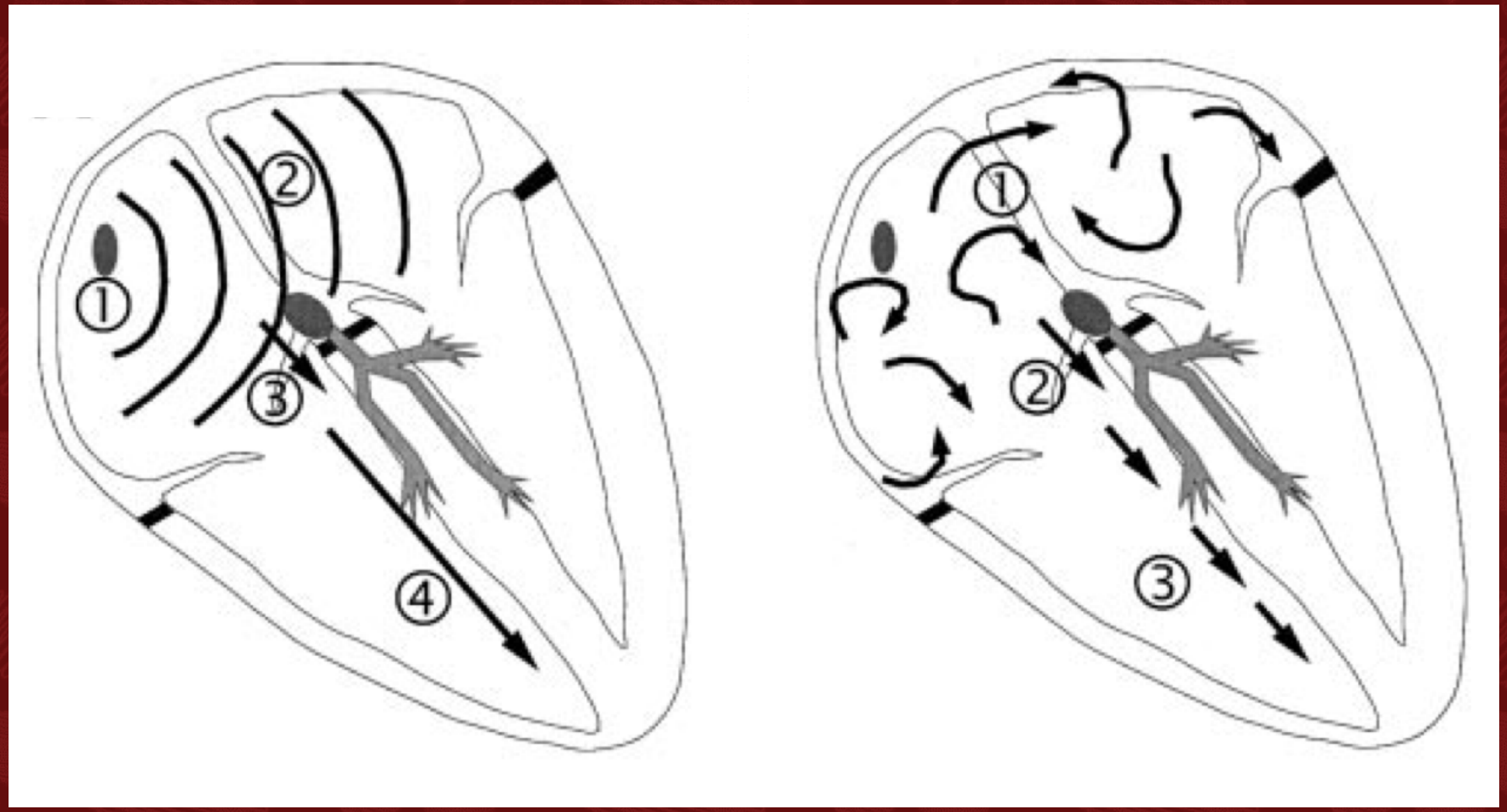
OHI EP Symposium

February 14, 2020

Joseph J Gard MD FACC FHRS

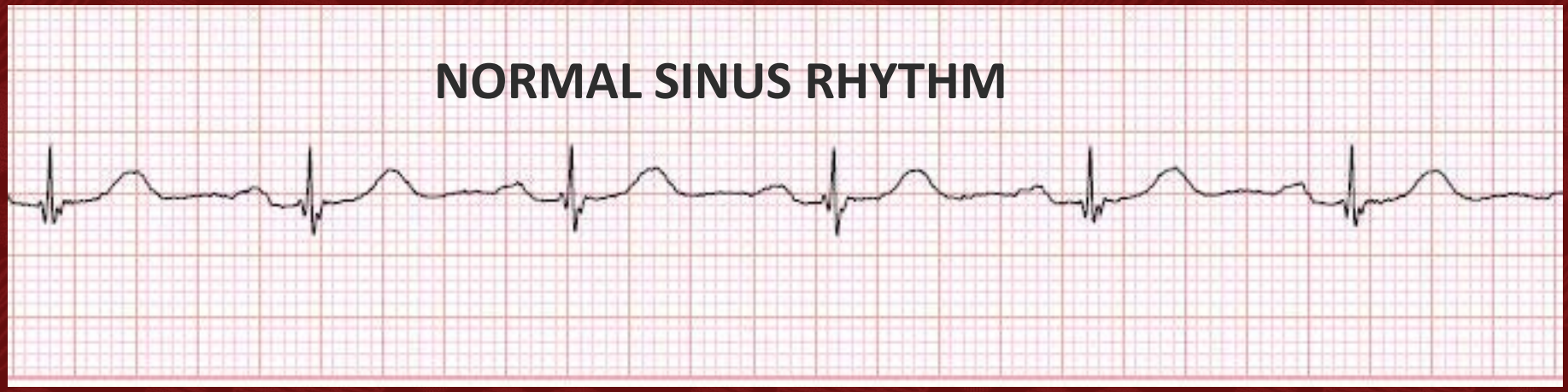
NORMAL SINUS RHYTHM

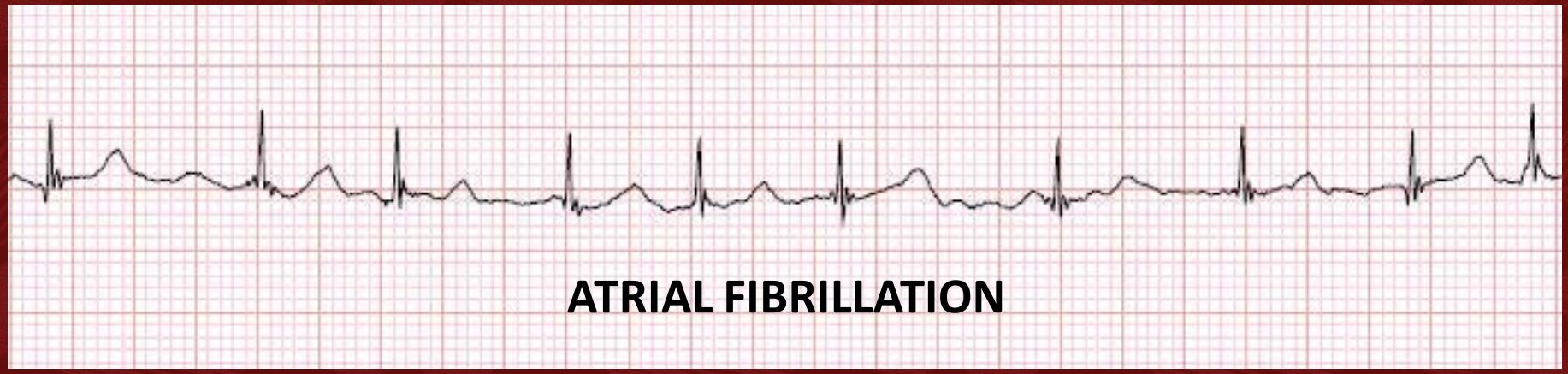
ATRIAL FIBRILLATION



Waktare Circ 2002; 106: 14-16

ECG Diagnosis

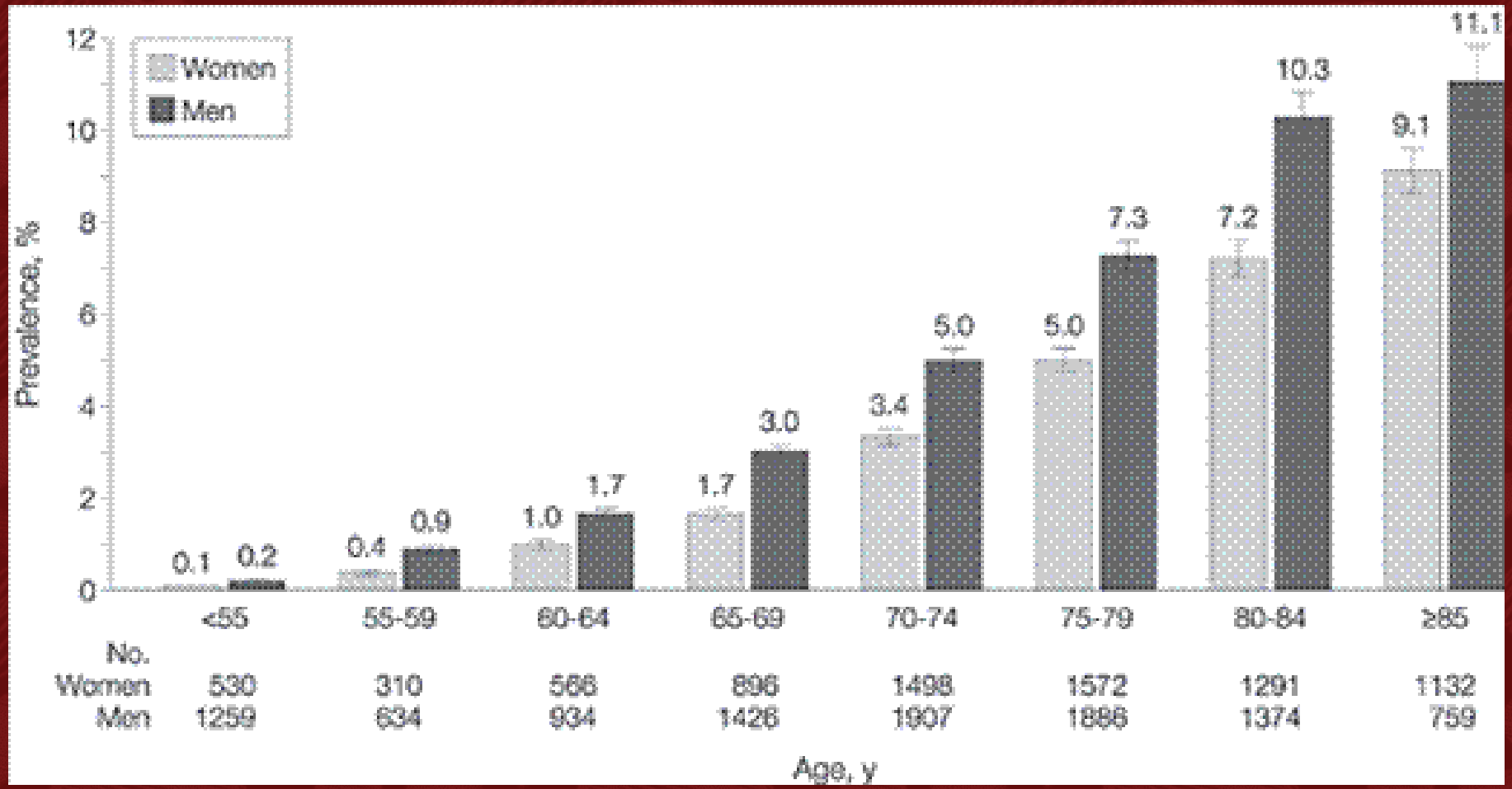




AF is Common

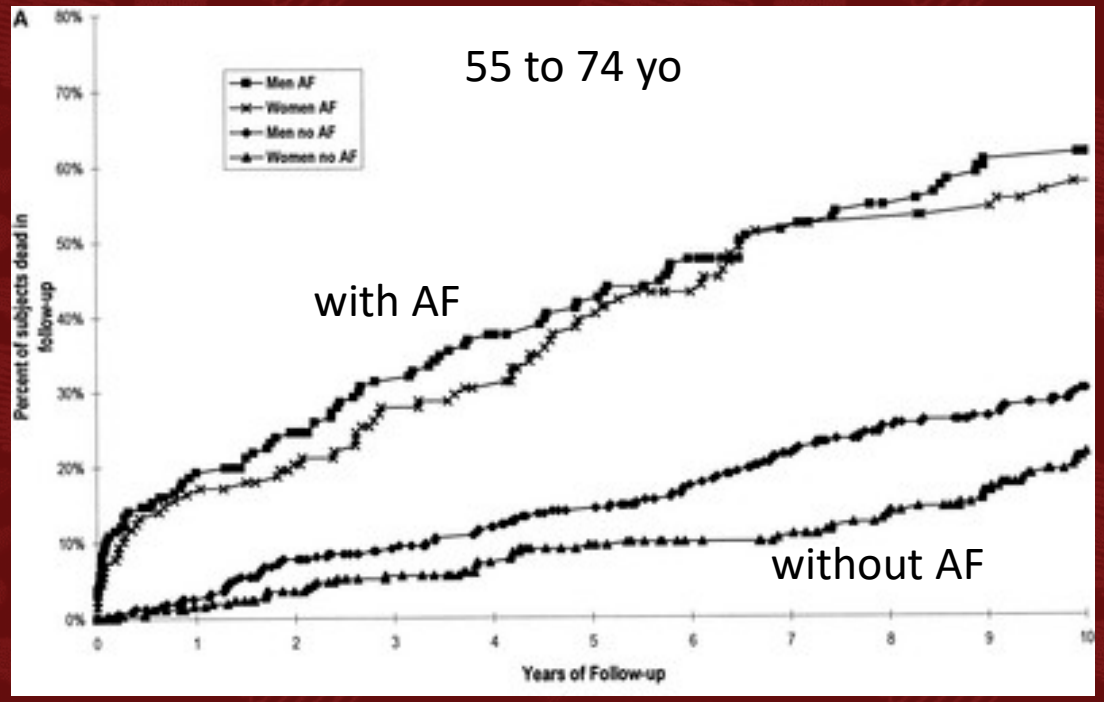
- **The most common sustained arrhythmia**
- **0.5 – 1% prevalence in general population**
- **@ 40 yo 1 in 4 develop AF over lifetime**
- **More common with age**
- **Median age is 75**

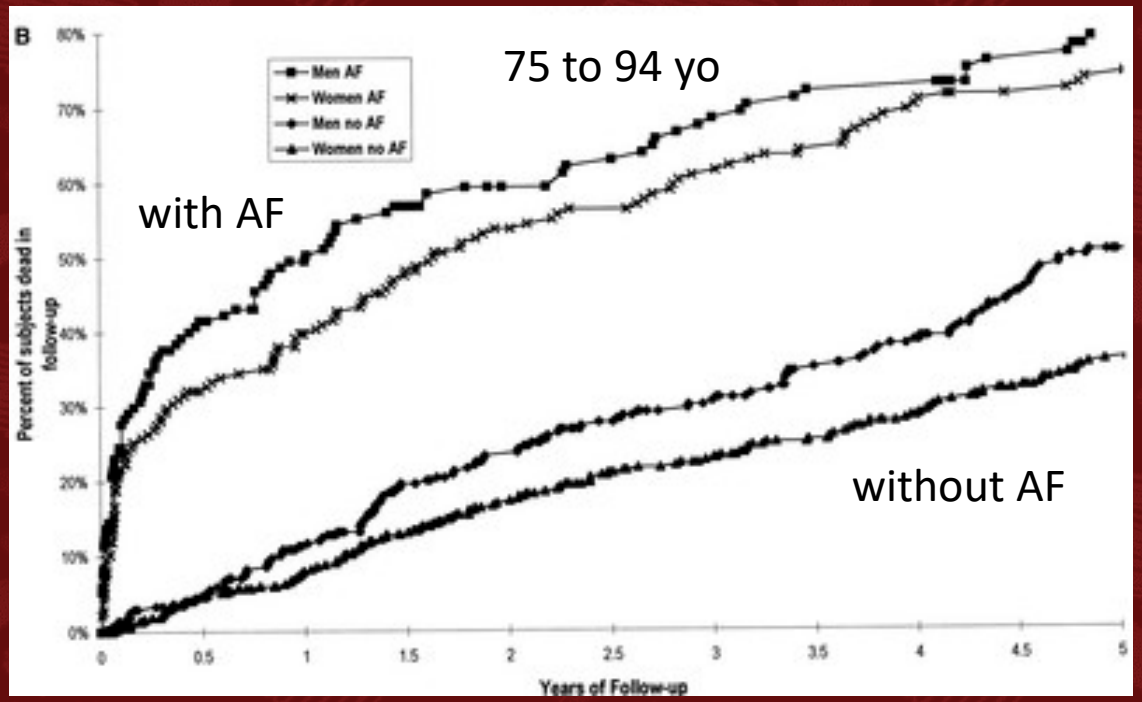
AF prevalence increases with age.



JAMA. 2001;285(18):2370-2375

Increased mortality with AF





Emelia J. Benjamin. Circulation. Impact of Atrial Fibrillation on the Risk of Death , Volume: 98, Issue: 10, Pages: 946-952

AF is NOT a Lethal Rhythm but DOES have Morbidity

Stroke Risk

Symptoms

- Palpitations
- Dyspnea
- Fatigue
- Lightheadedness

Exacerbate co-existing conditions

- Heart failure or ischemia

The Impairment of Health-Related Quality of Life in Patients With Intermittent Atrial Fibrillation: Implications for the Assessment of Investigational Therapy

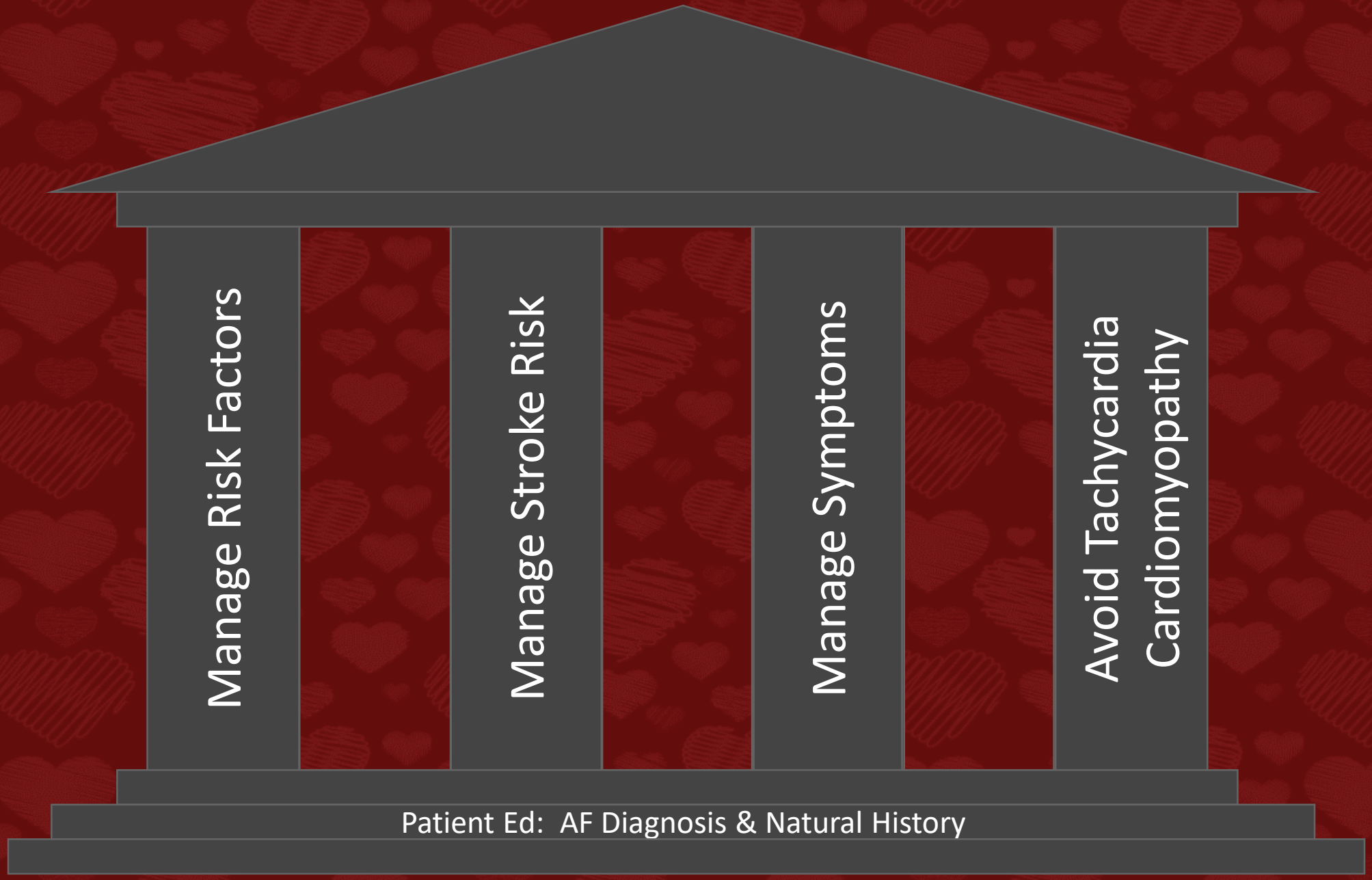
RESULTS Across all domains of the SF-36, AF patients reported substantially worse QoL than healthy controls (1.3 to 2.0 standard deviation units), with scores of 24%, 23%, 16% and 30% lower than healthy individuals on measures of physical and social functioning, mental and general health, respectively (all $p < 0.001$). Patients with AF were either significantly worse ($p < 0.05$, published controls) or as impaired (study controls) as either PTCA or post-MI patients on all domains of the SF-36 and the same as heart failure controls on SF-36 psychological subscales. Patients with AF were as impaired or worse than study PTCA controls on measures of illness intrusiveness, activity limitations and symptoms. Associations between objective disease indexes and subjective QoL measures had poor correlations and accounted for <6% of the total variability in QoL scores.

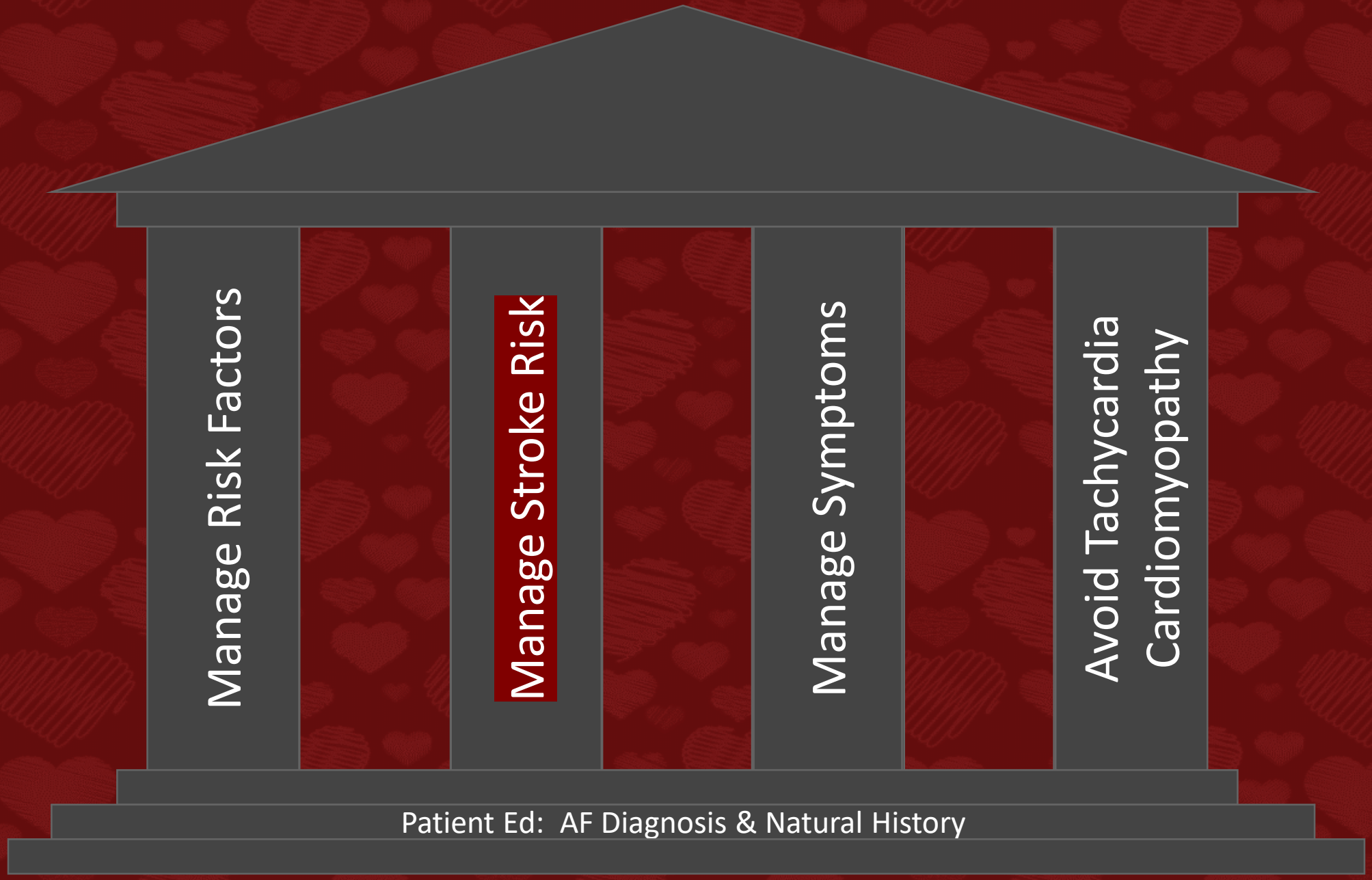
CONCLUSIONS Quality of life is as impaired in patients with intermittent AF as in patients with significant structural heart disease. Patients' perception of QoL is not dependent on the objective measures of disease severity that are usually employed. (J Am Coll Cardiol 2000;36:1303–9)

My approach

Pt education: AF diagnosis, its natural history (AF begets AF), and treatment options (including realistic expectations)

1. ID & Treat reversible risk factors
2. Stroke risk reduction
3. Manage symptoms
4. Avoid tachycardia mediated cardiomyopathy


Manage Risk Factors
Manage Stroke Risk
Manage Symptoms
Avoid Tachycardia Cardiomyopathy
Patient Ed: AF Diagnosis & Natural History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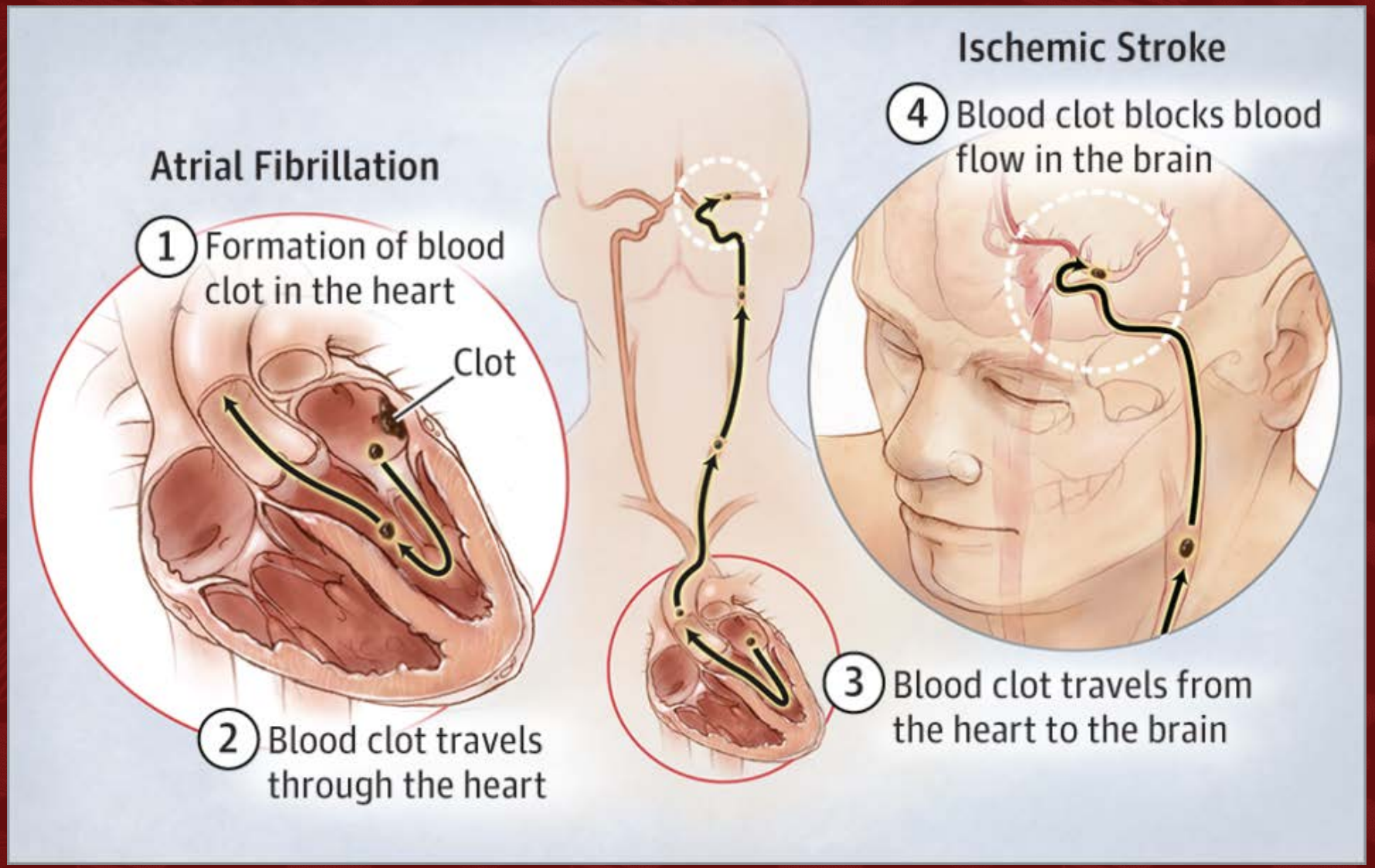
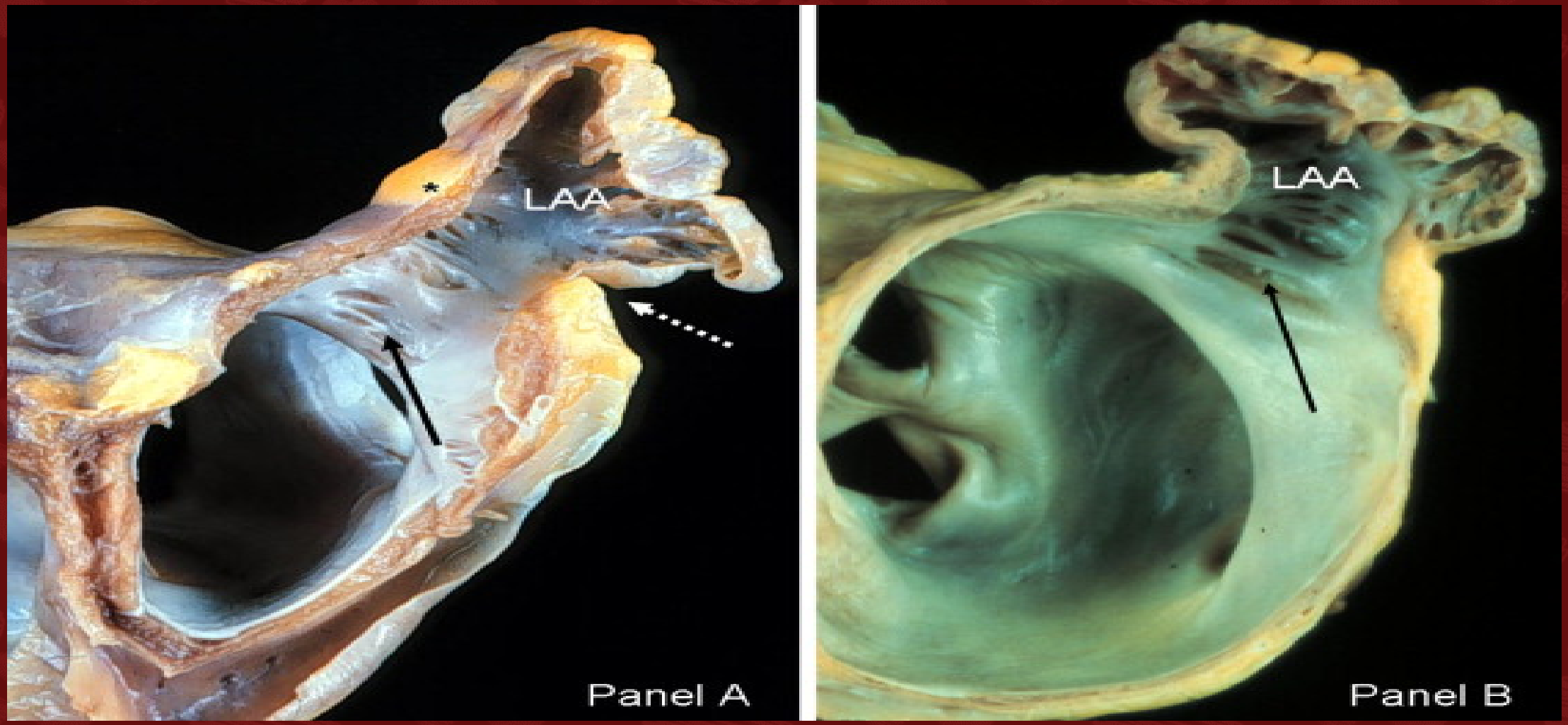
Stroke risk is increased 4-5 fold for AF patients



From: **Preventing Stroke in People With Atrial Fibrillation** JAMA. 2015;314(3):310.

Left Atrial Appendage

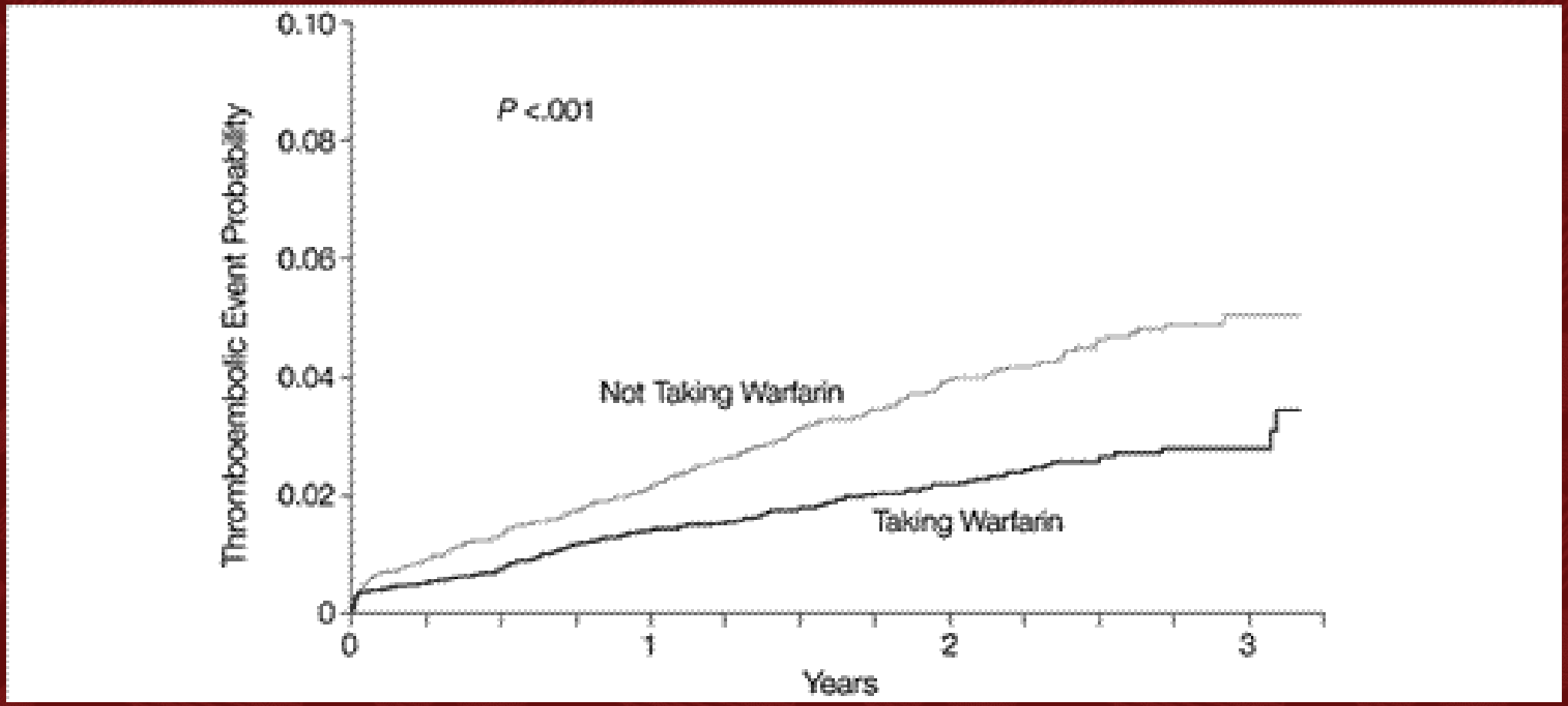


FF Syed , SJ Asirvatham Heart Rhythm Volume 8, Issue 2 2011 194 - 198

AF Risk of Stroke

- 4-5 fold increased stroke risk compared to non-AF.
- Annual risk of stroke similar for paroxysmal versus chronic
  - Paroxysmal AF (3.2%)
  - Chronic AF (3.3%)

Warfarin reduces stroke risk



JAMA. 2003;290(20):2685-2692

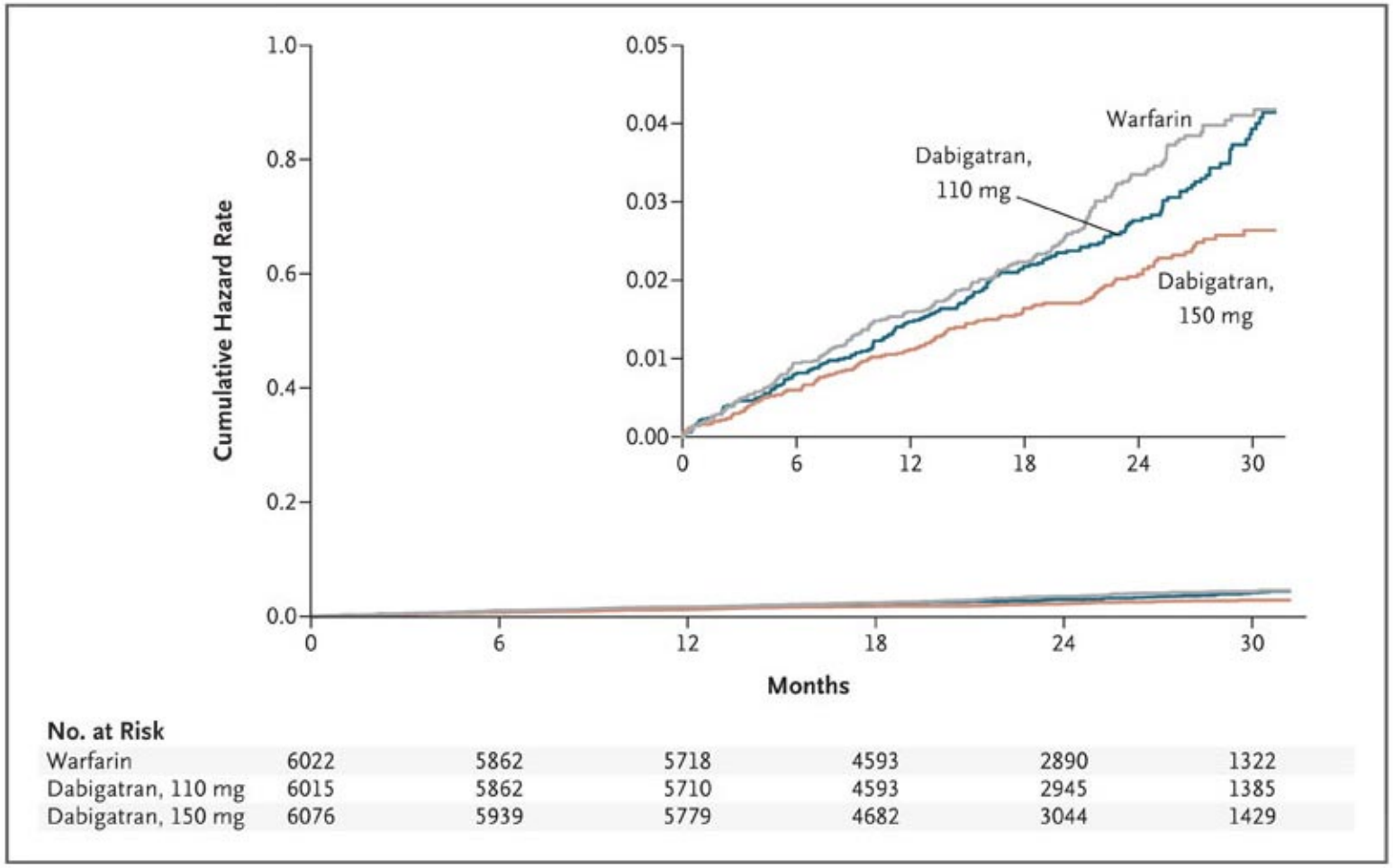
Warfarin Challenges

1-3% annual risk of major bleeding on warfarin

INR monitoring

Time in therapeutic window

Dabigatran vs Warfarin

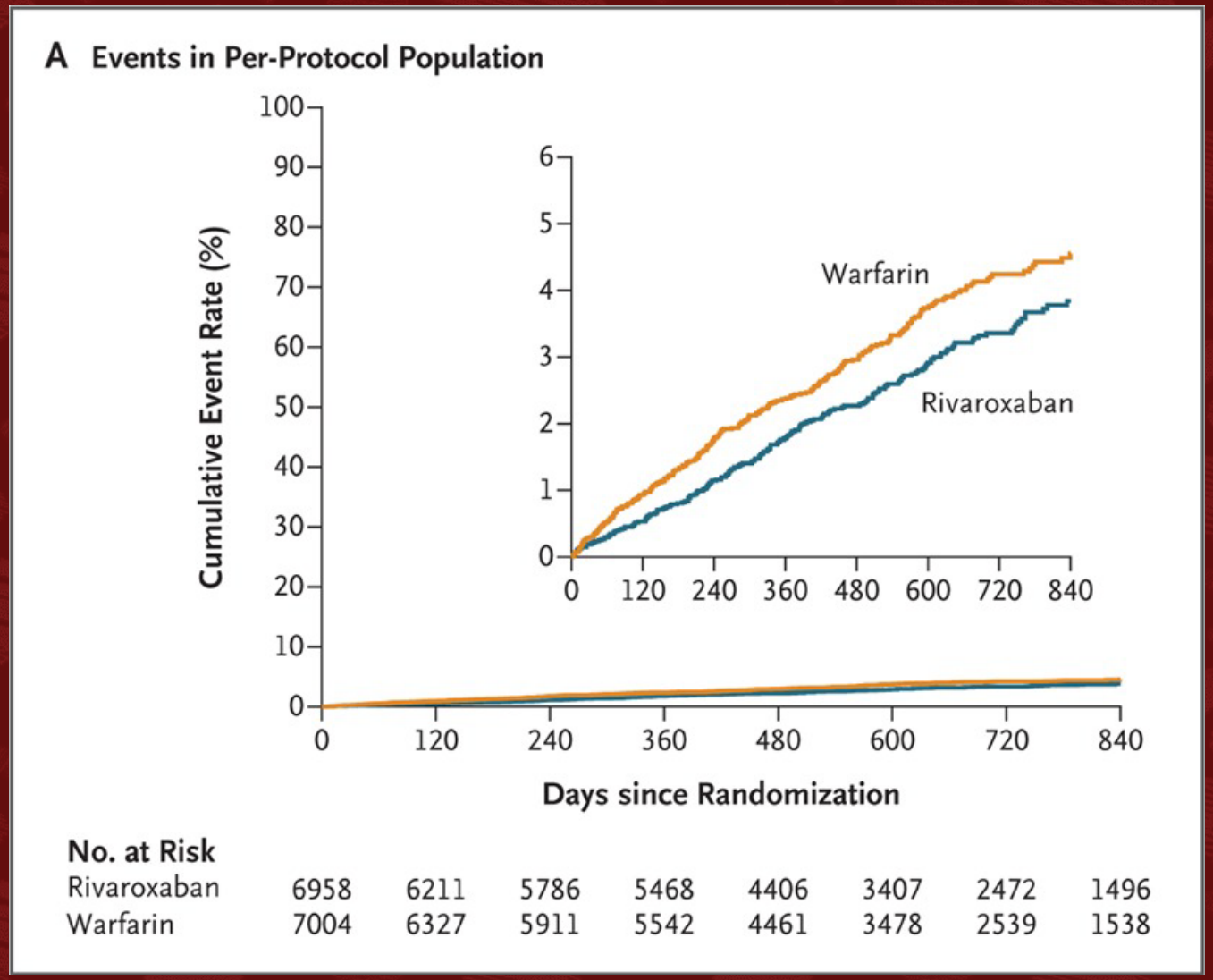


No. at Risk

Warfarin	6022	5862	5718	4593	2890	1322
Dabigatran, 110 mg	6015	5862	5710	4593	2945	1385
Dabigatran, 150 mg	6076	5939	5779	4682	3044	1429

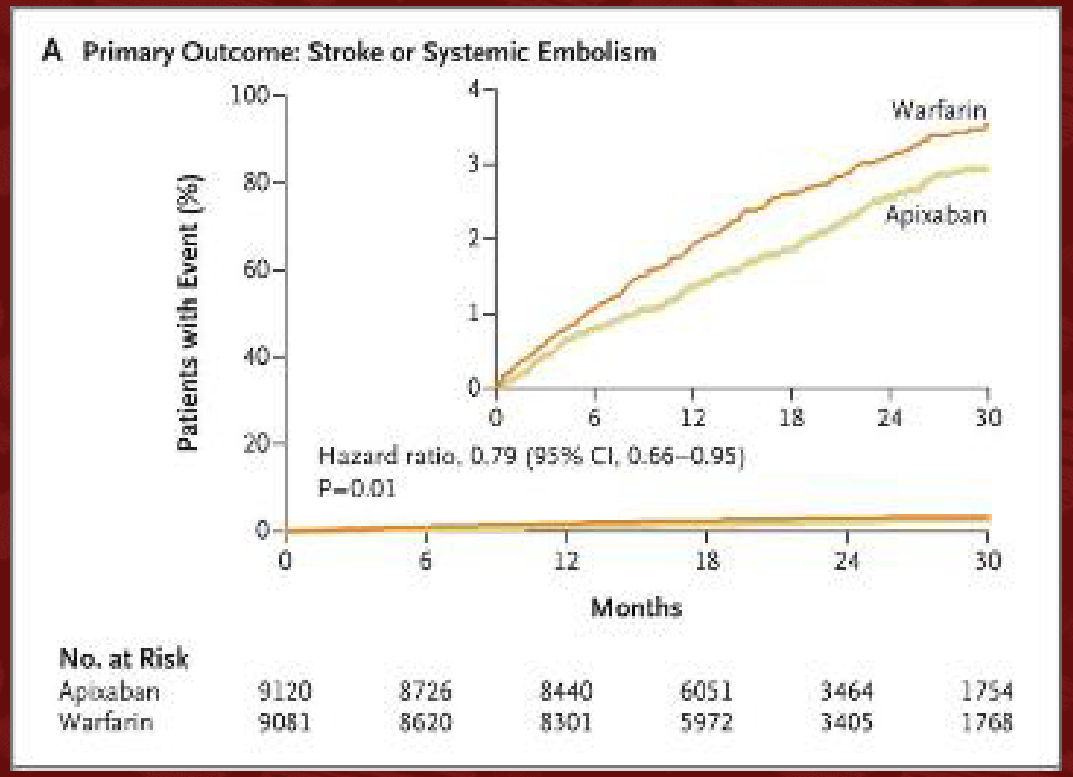
Connolly SJ et al. N Engl J Med 2009;361:1139-1151

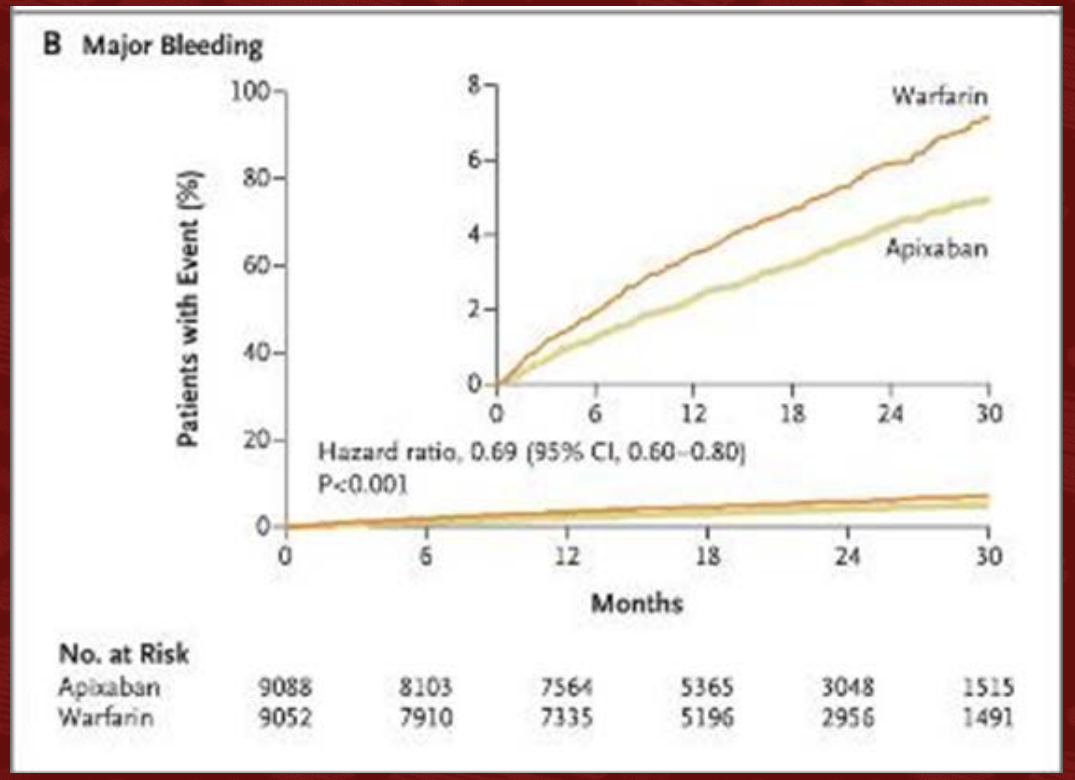
Rivaroxaban vs Warfarin



Patel MR et al. N Engl J Med 2011;365:883-891

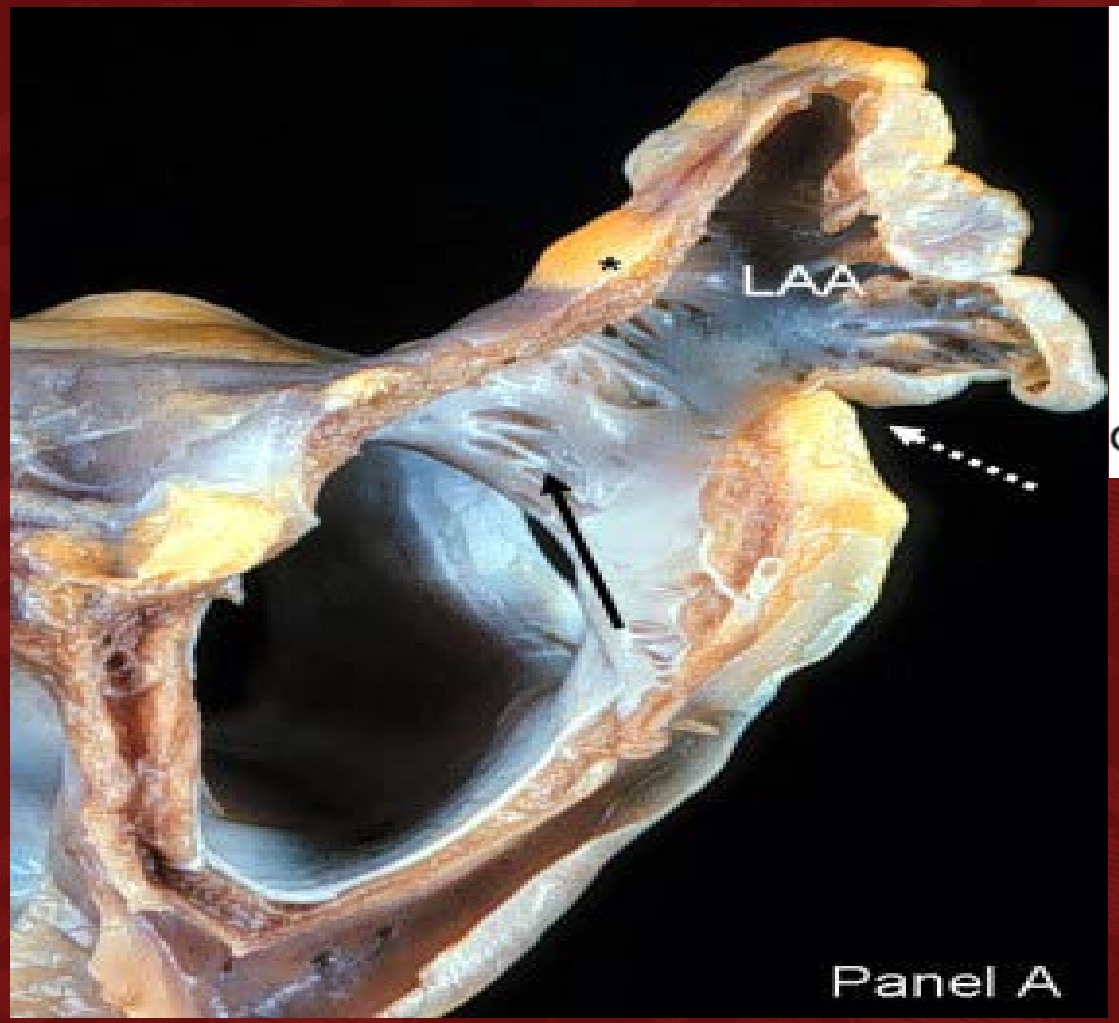
Apixaban was superior to warfarin in preventing stroke or systemic embolism, caused less bleeding, and resulted in lower mortality for AF patients. (Eliquis 2.13%/year risk major bleeding)

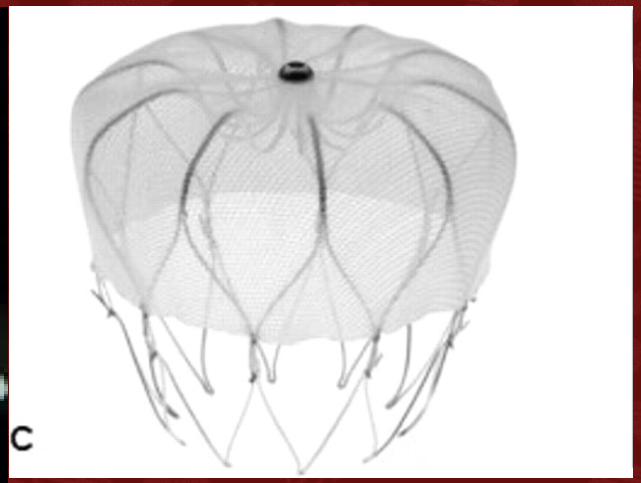




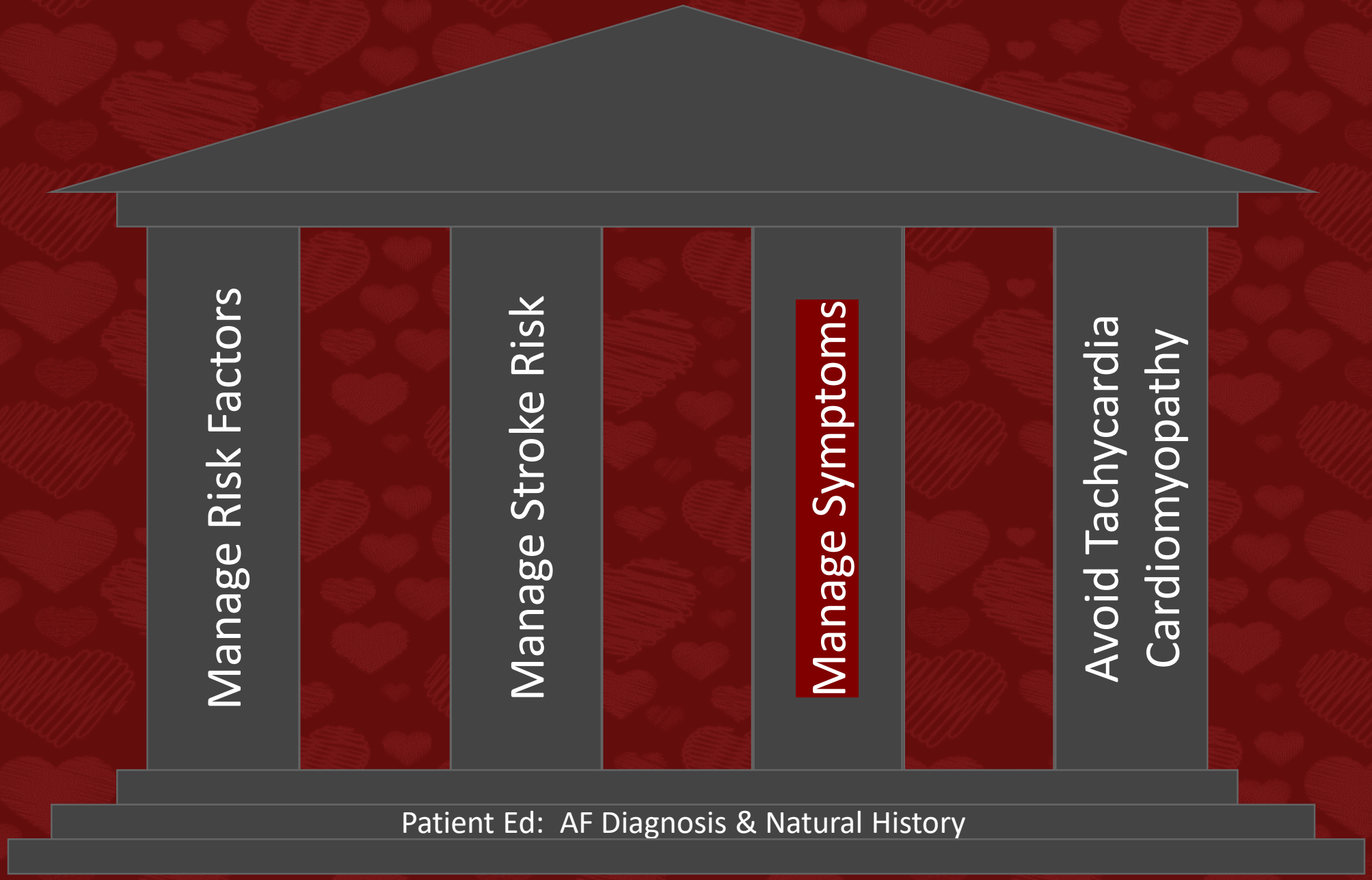
ARISTOTLE Trial Granger CB et al. N Engl J Med 2011;365:981-992

Watchman left atrial appendage occlusion





Chatterjee S. et al.; Ann Thorac Surg 2011;92:2283-2292
FF Syed, SJ Asirvatham Heart Rhythm 2011;8:194-198

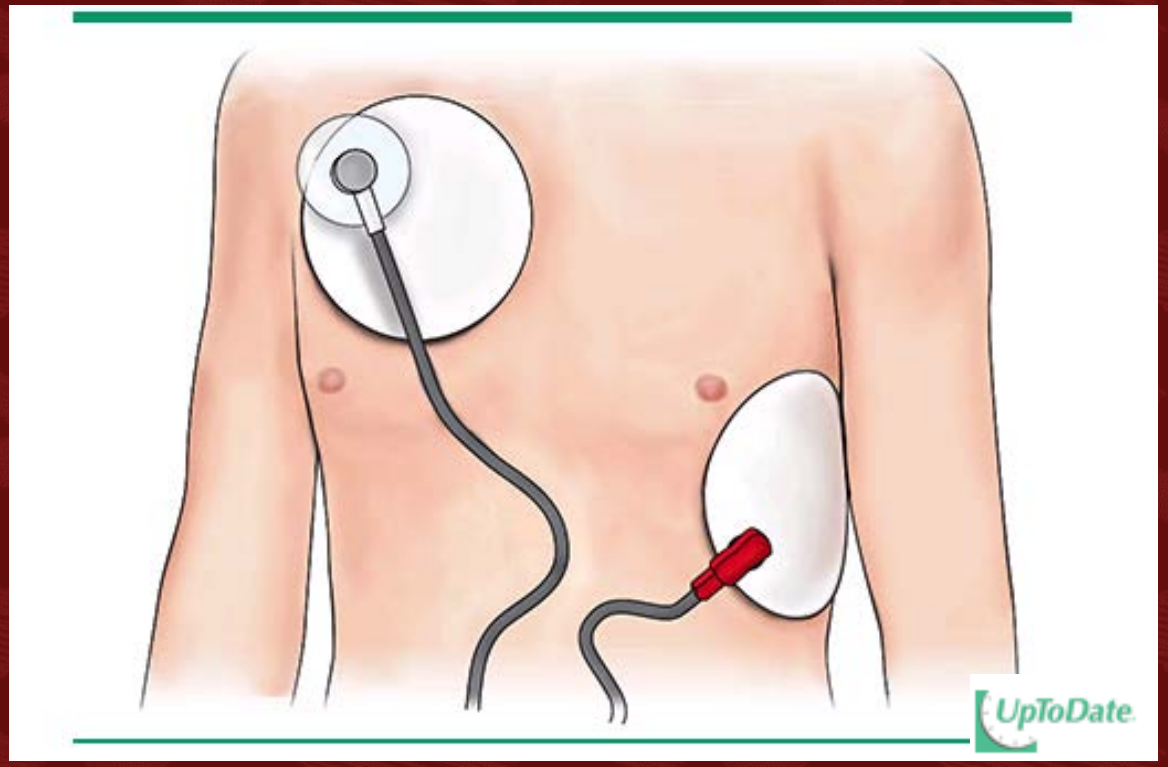

Manage Risk Factors
Manage Stroke Risk
Manage Symptoms
Avoid Tachycardia Cardiomyopathy
Patient Ed: AF Diagnosis & Natural History

Managing Symptoms

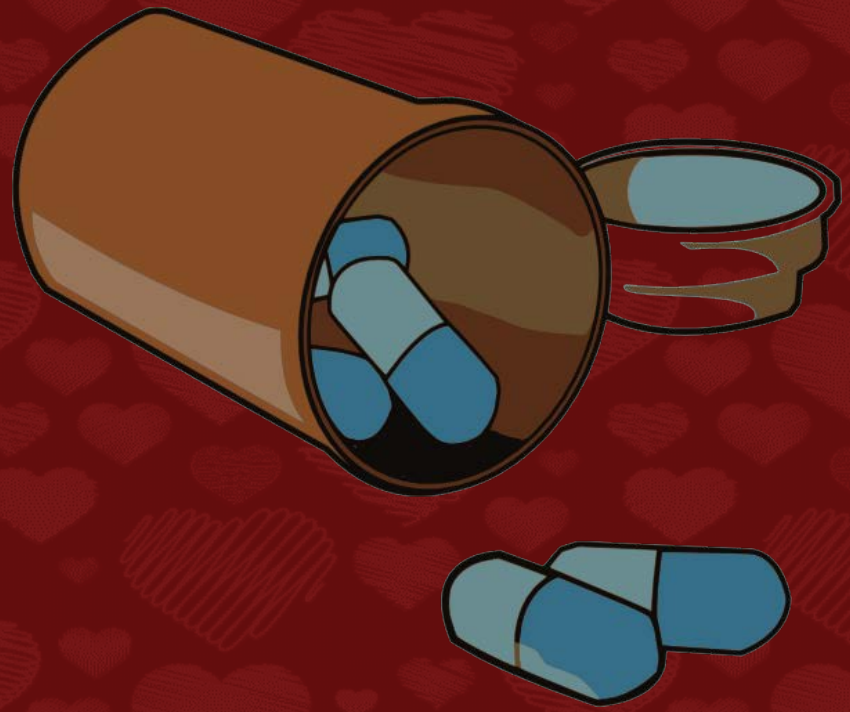
Heart Rate Control	Rhythm Control
Med(s) to slow heart rate	Antiarrhythmic drugs
+/- Pacemaker to avoid too slow heart rate	Catheter ablation
Pacemaker + AV node ablation (PM dependent)	Cardiac surgery (MAZE)

Cardioversion

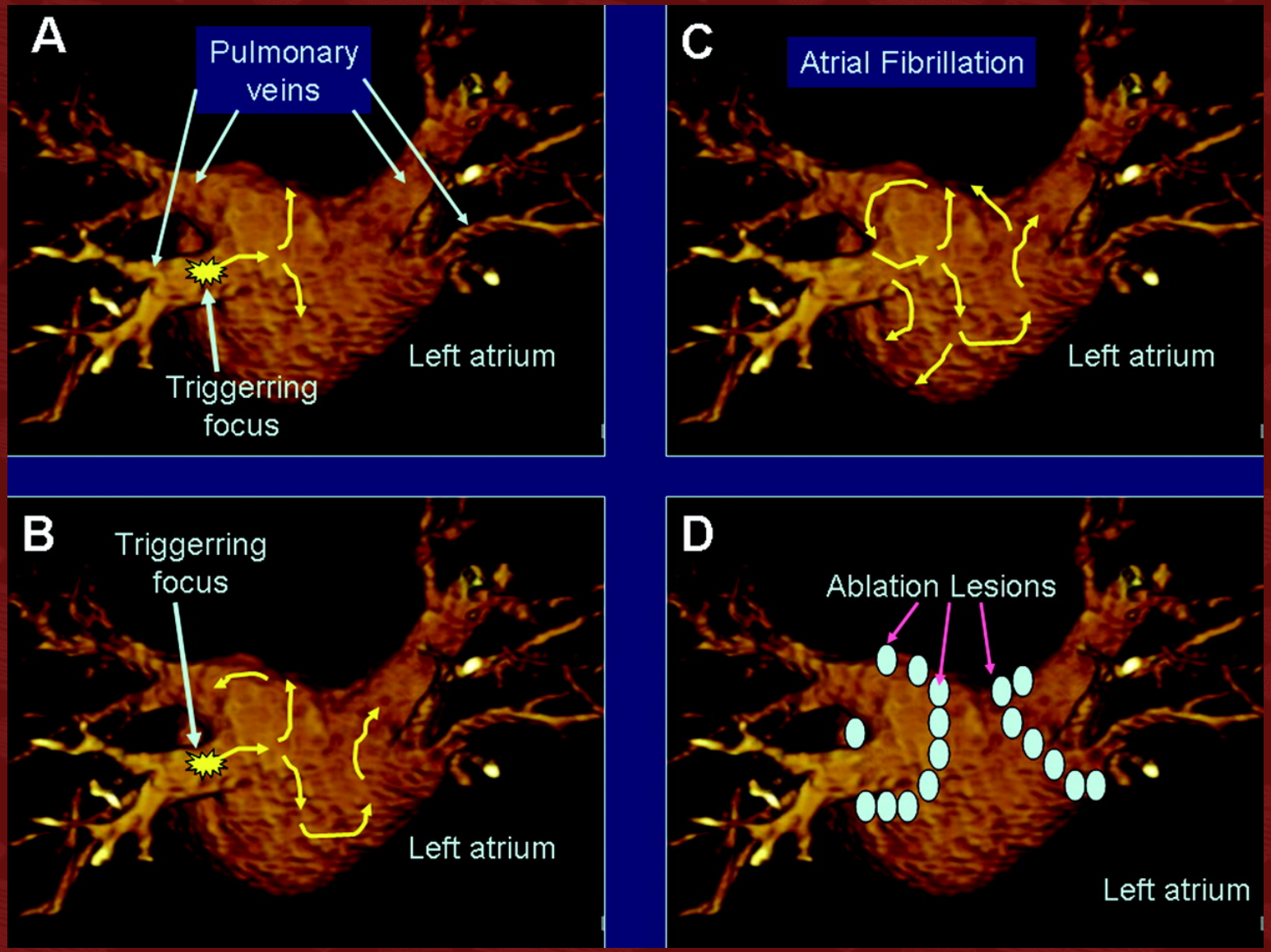
Electric Shock



Medication

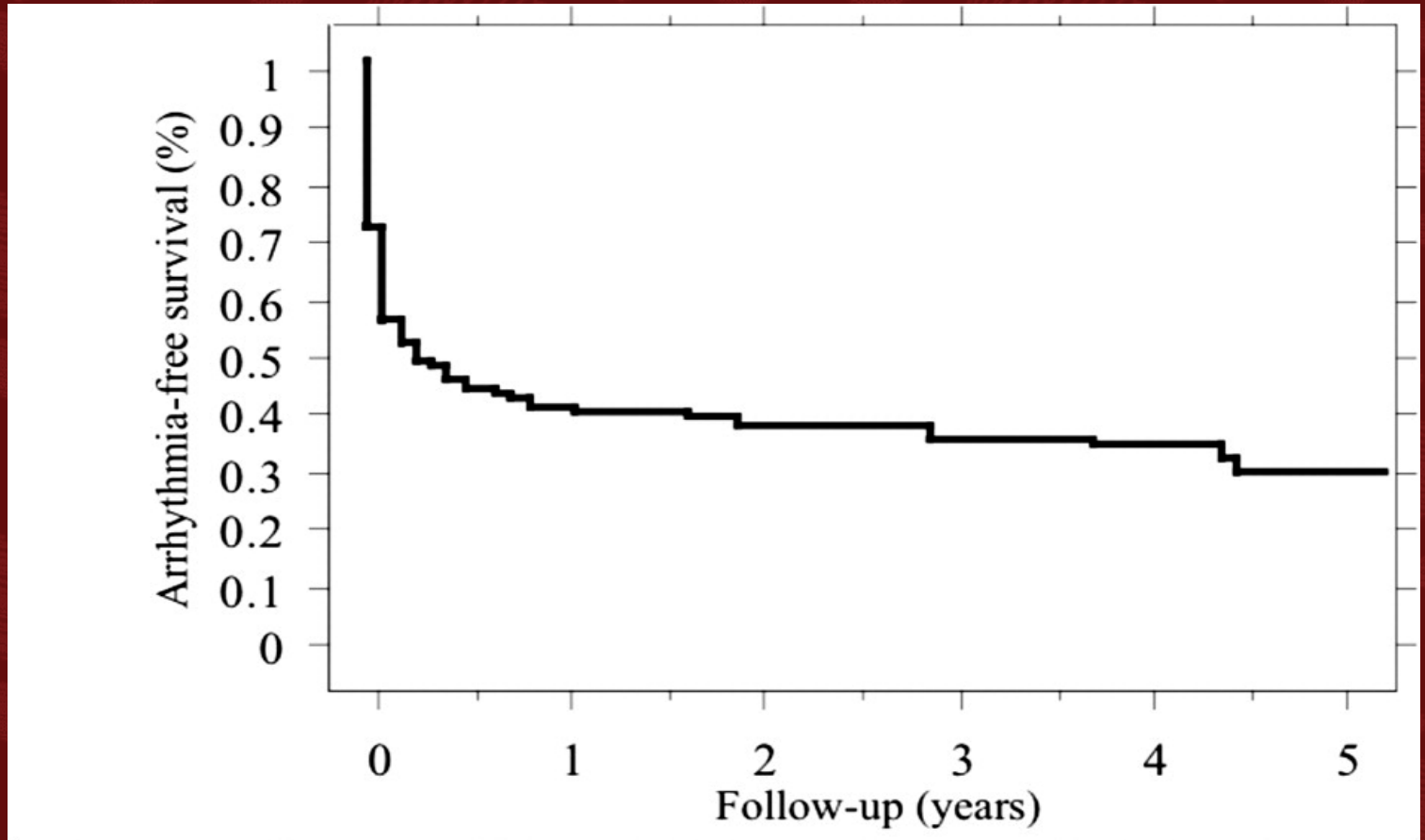


Catheter Ablation for Atrial Fibrillation



Ames A , Stevenson W G Circulation 2006;113:e666-e668

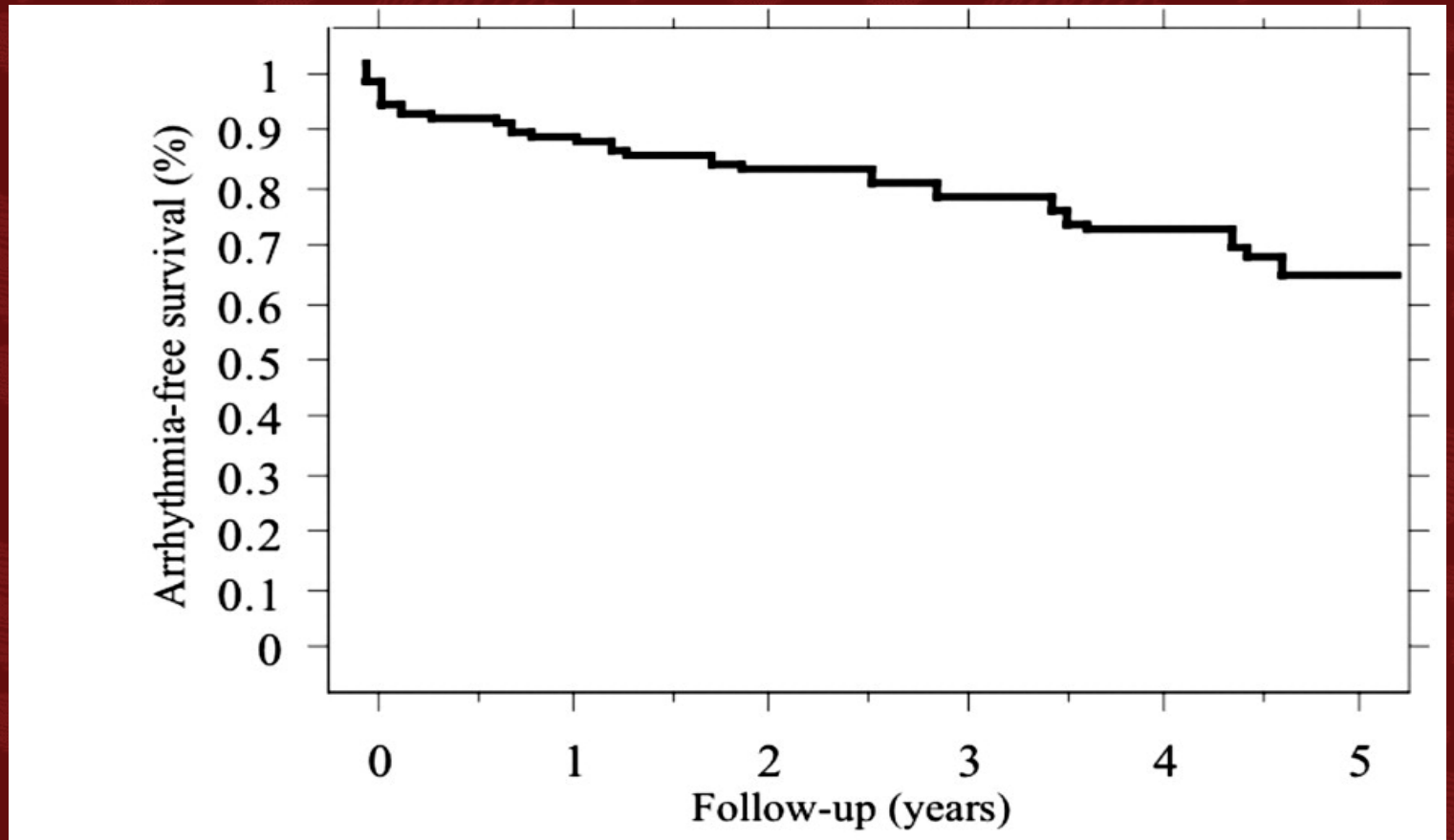
Single Ablation Outcomes



Number at risk	100	36	33	31	29	10

Weerasooriya R et al. J Am Coll Cardiol. 2011 Jan 11;57(2):160-6.

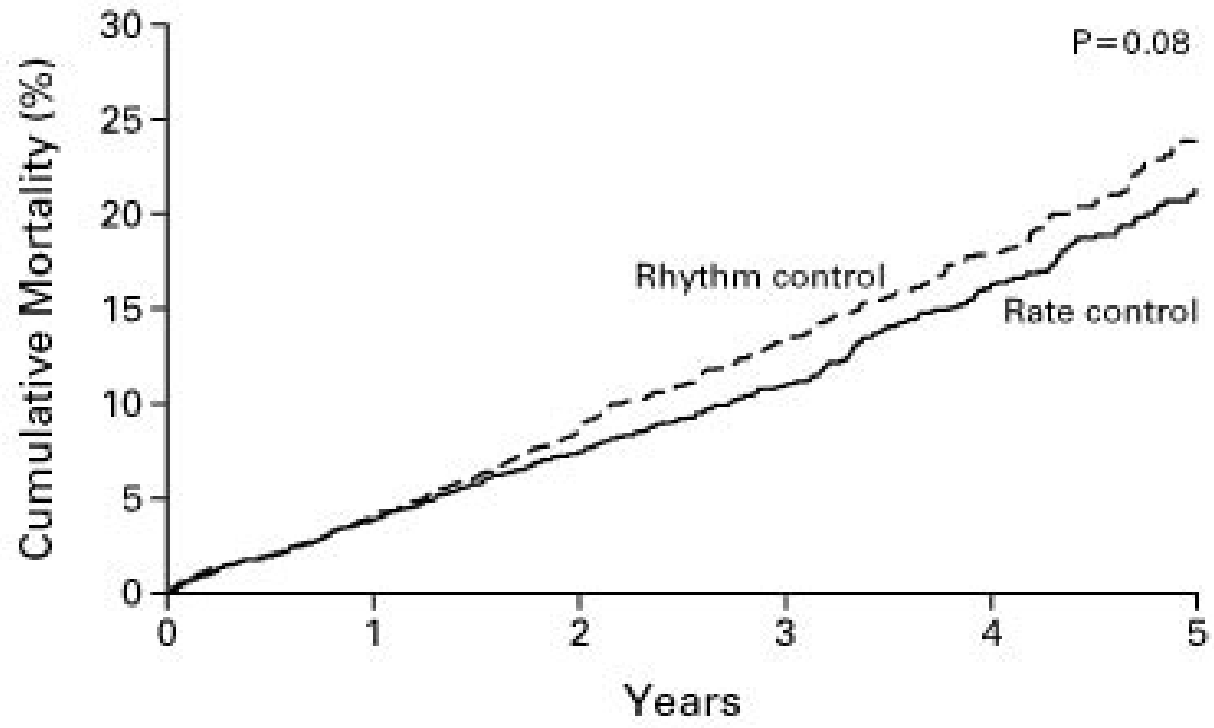
Multi-Ablation Outcomes



Number at risk	100	78	71	67	54	18

Weerasooriya R et al. J Am Coll Cardiol. 2011 Jan 11;57(2):160-6.

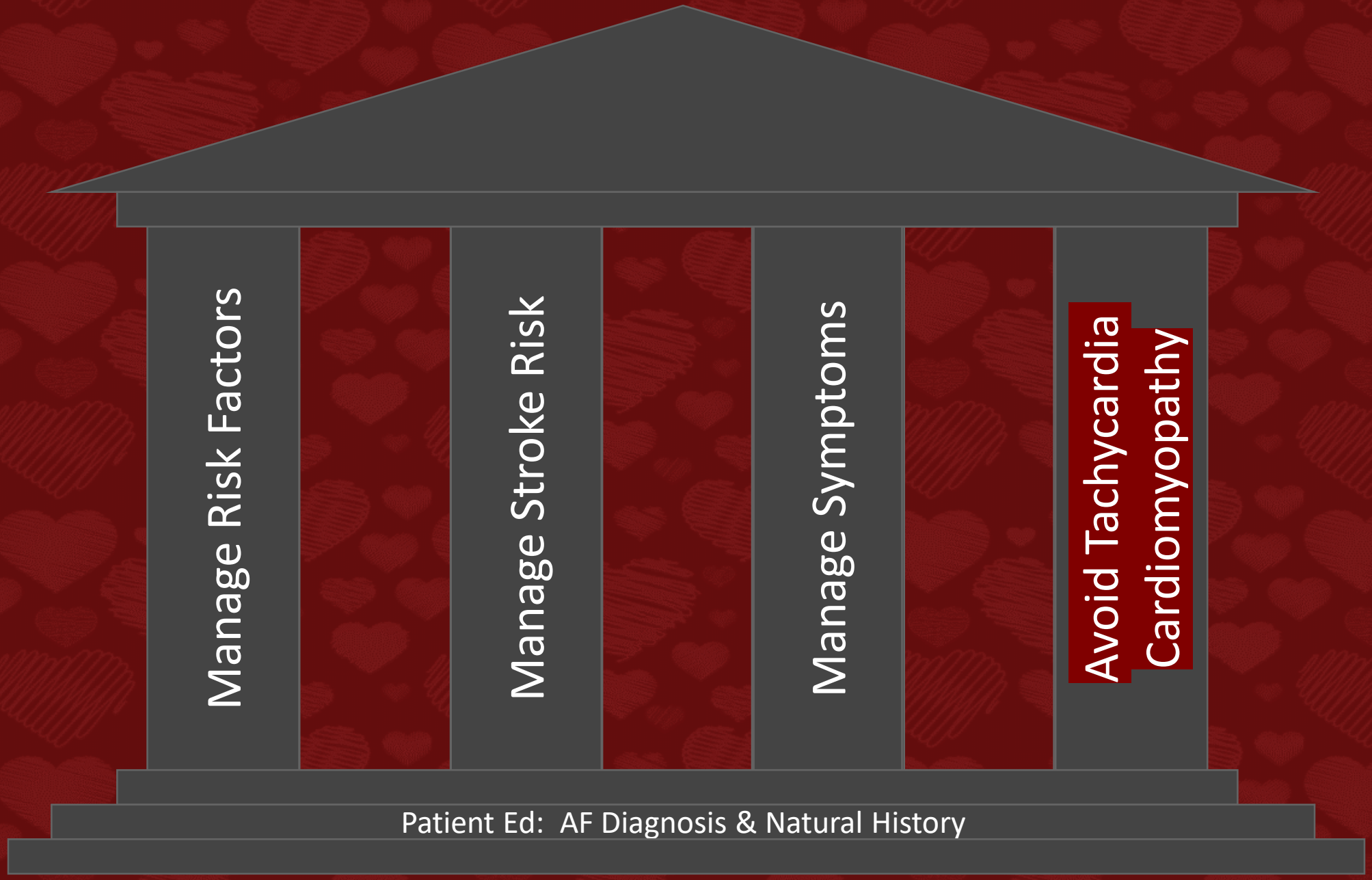
Rate vs Rhythm in AFFIRM



No. of Deaths		number (percent)				
Rhythm control	0	80 (4)	175 (9)	257 (13)	314 (18)	352 (24)
Rate control	0	78 (4)	148 (7)	210 (11)	275 (16)	306 (21)

The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) Investigators. N Engl J Med 2002;347:1825-1833.

The NEW ENGLAND JOURNAL of MEDICINE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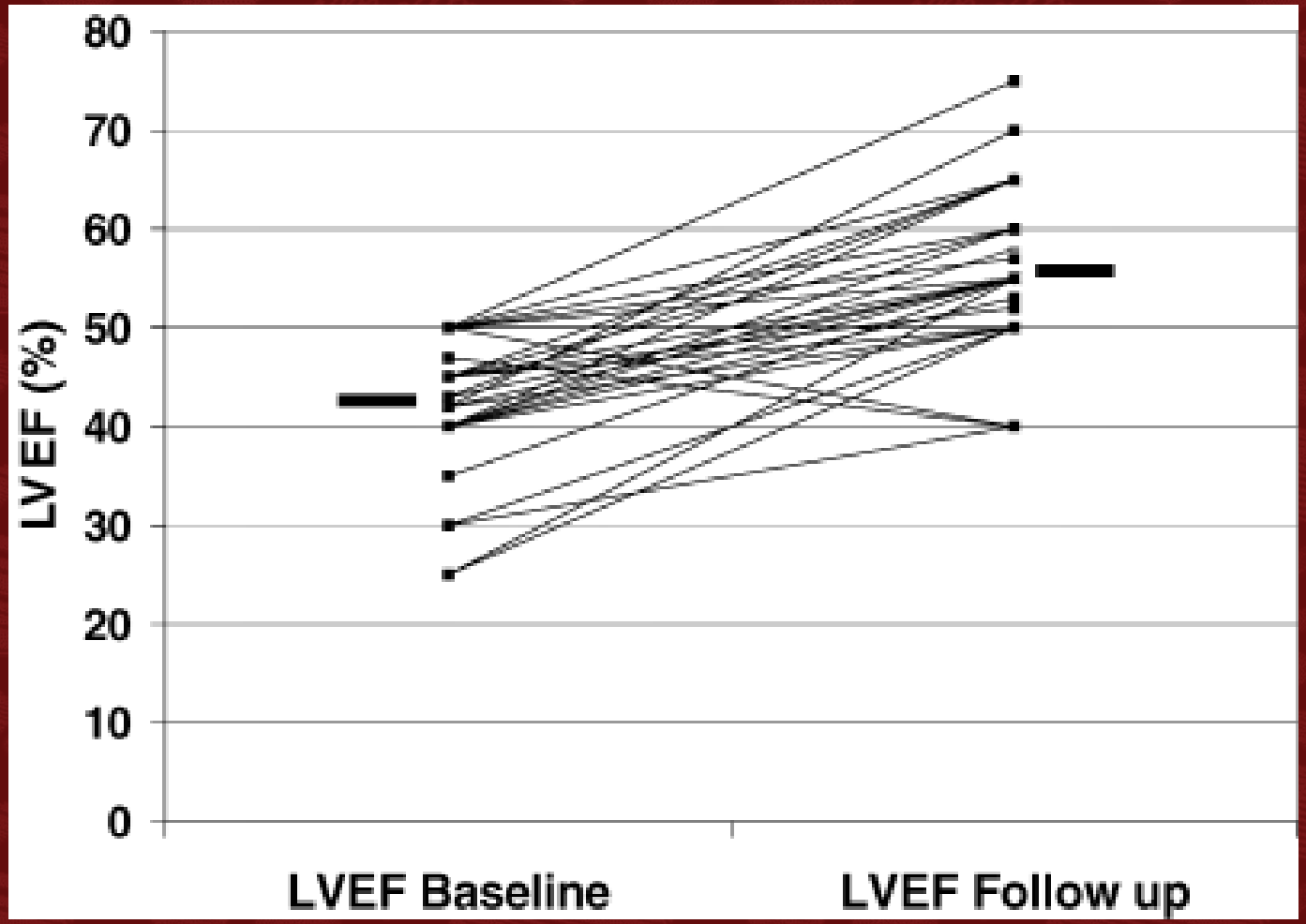
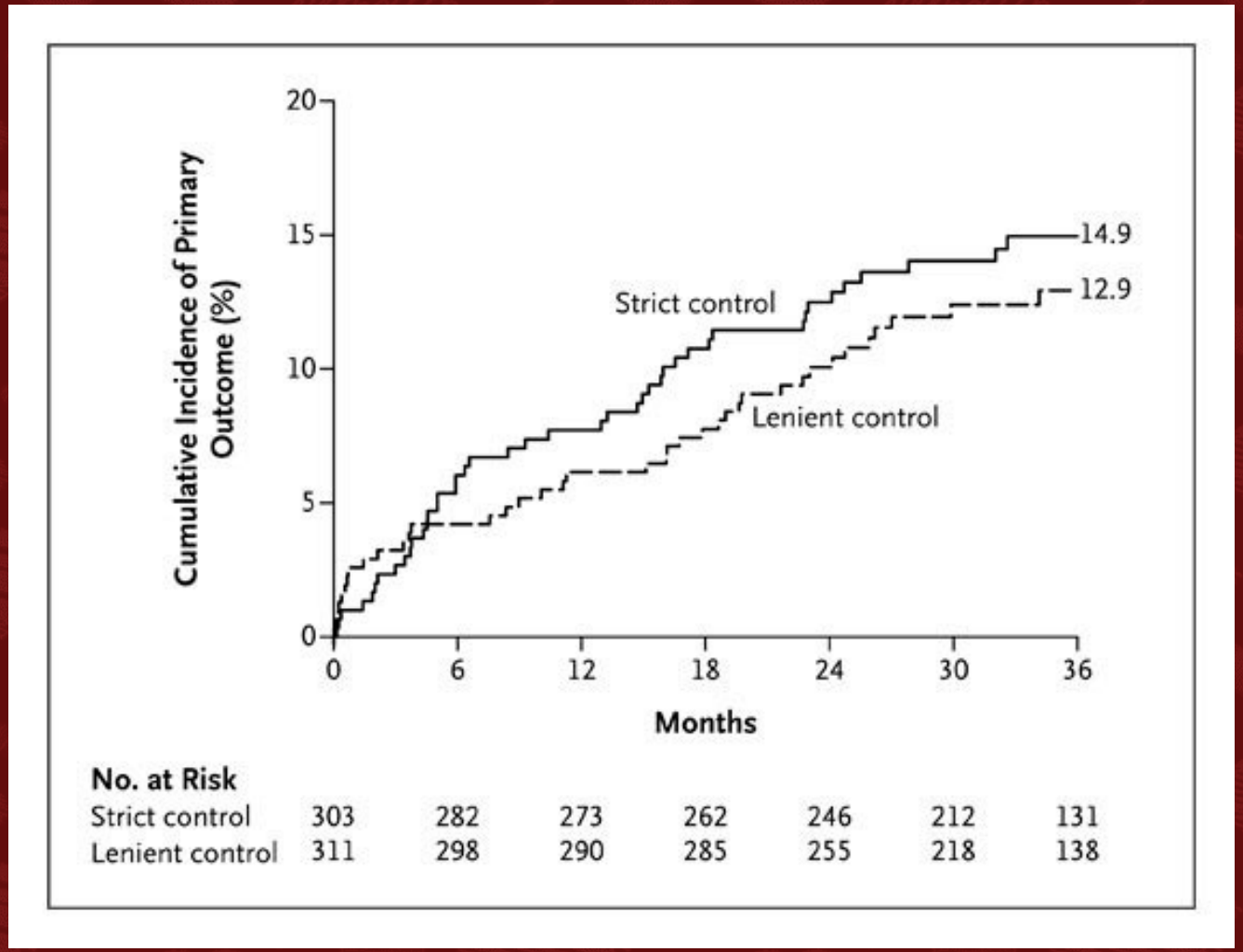
LVEF improves after AF ablation in patients with AF RVR and NICM

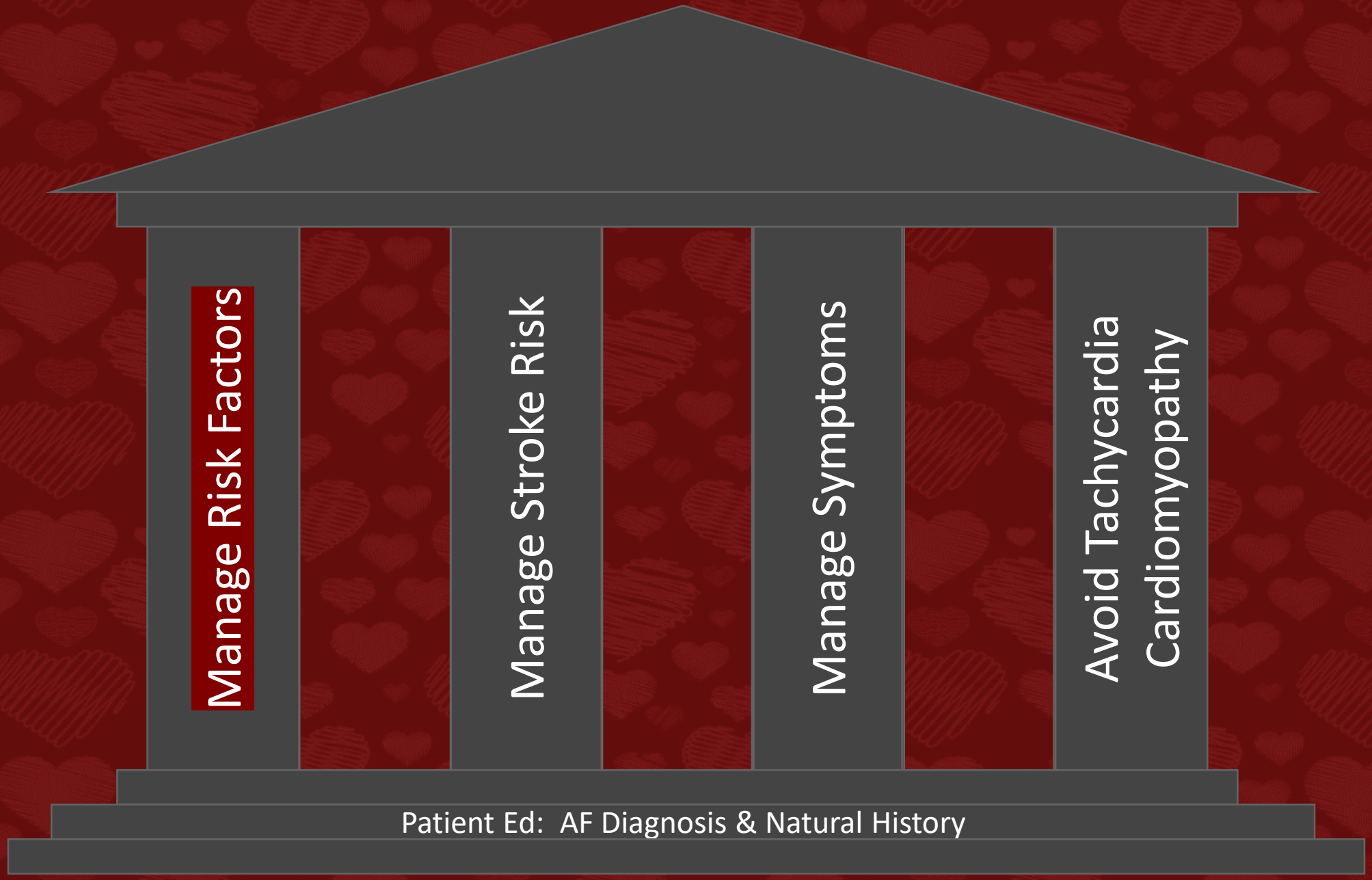


Journal of Cardiovascular Electrophysiology, Volume: 18, Issue: 1, Pages: 9-14, 2008

Lenient rate-control strategy (resting <110) vs Strict strategy (resting <80 and during moderate exercise <110)



Van Gelder IC et al. N Engl J Med 2010;362:1363-1373.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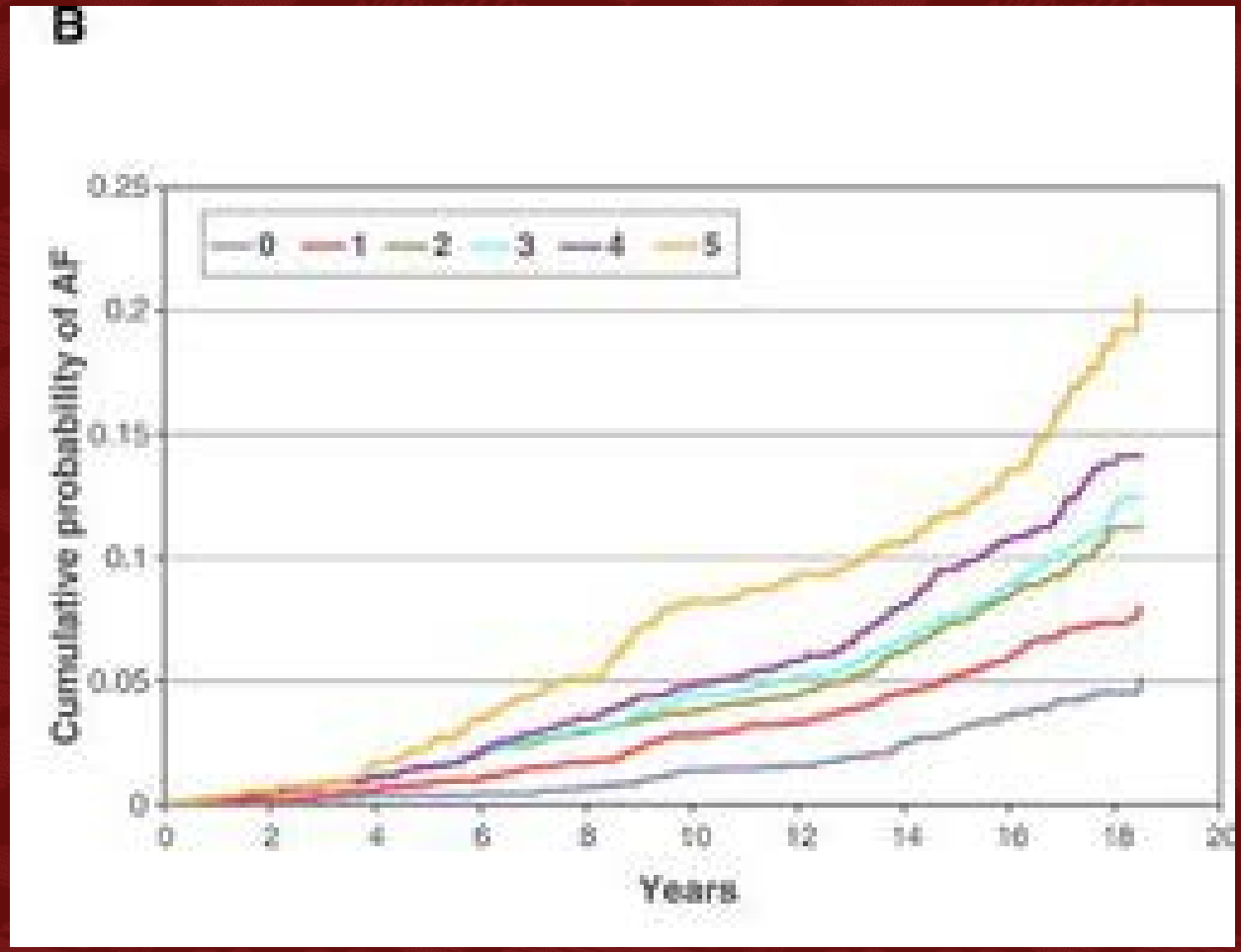
Risk of AF

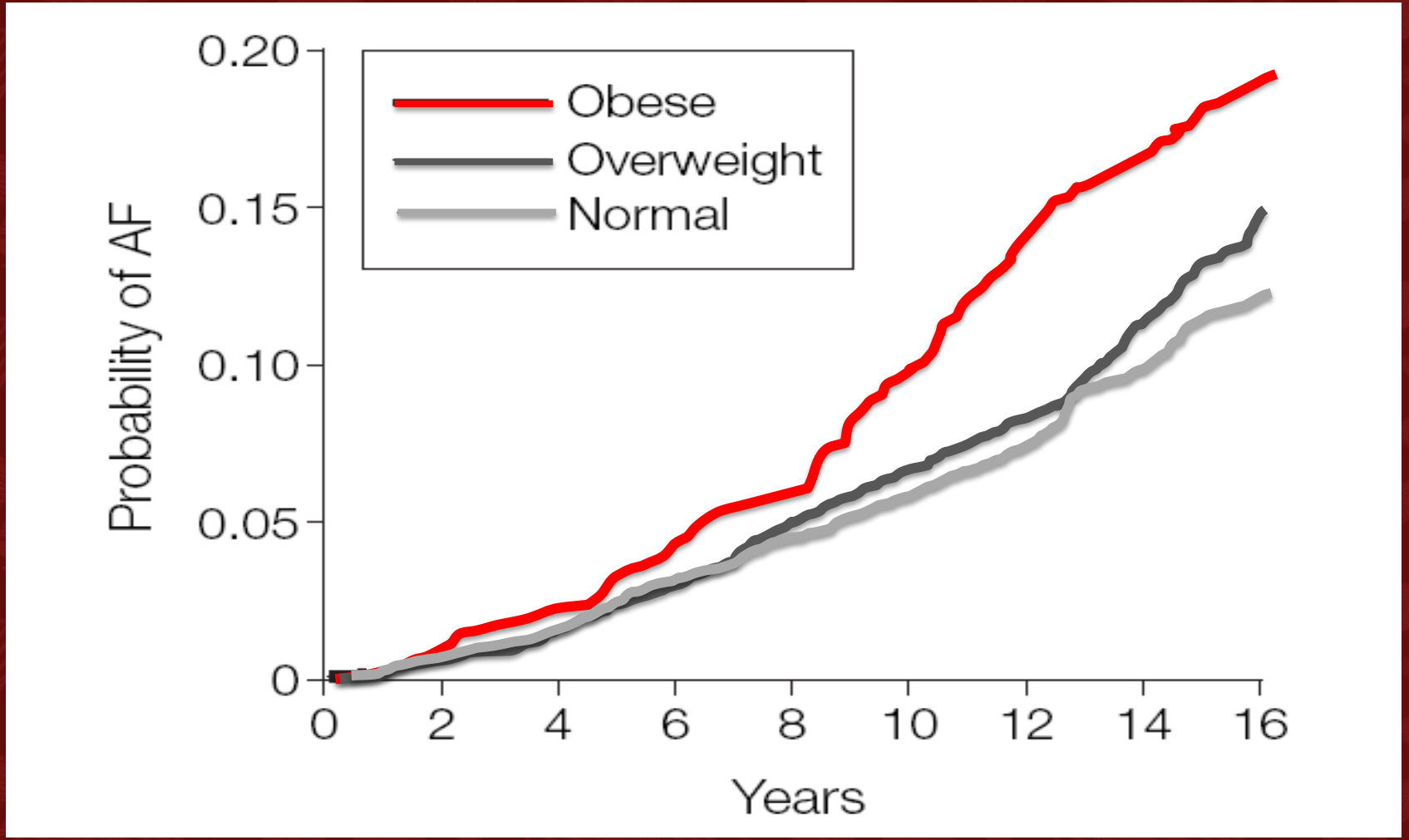
Metabolic Syndrome

Waist
HTN
Triglycerides
Low HDL
Impaired Fasting Glucose



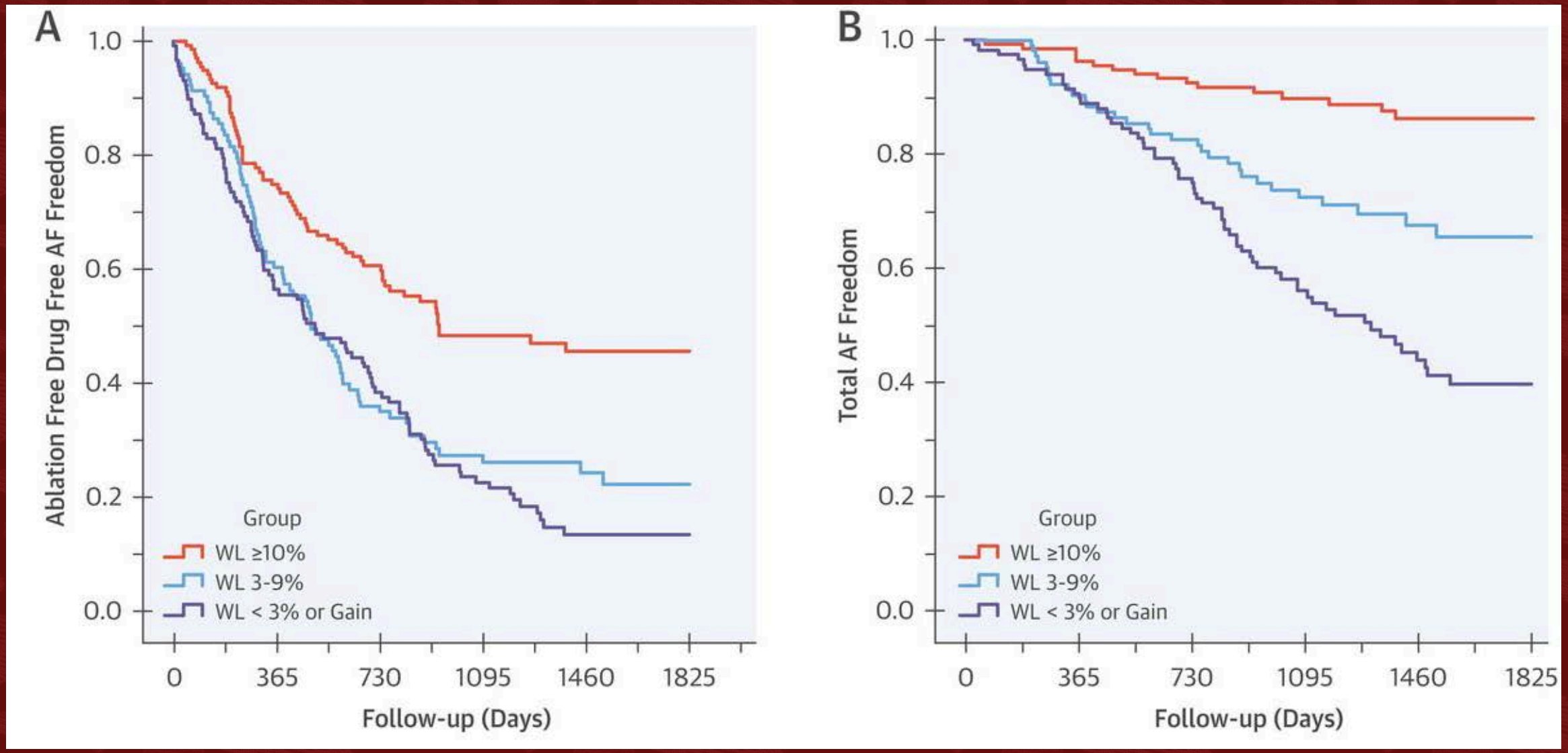
Dennis H. Lau. Circulation. Modifiable Risk Factors and Atrial Fibrillation, Volume: 136, Issue: 6, Pages: 583-596,

Obesity and Atrial Fibrillation



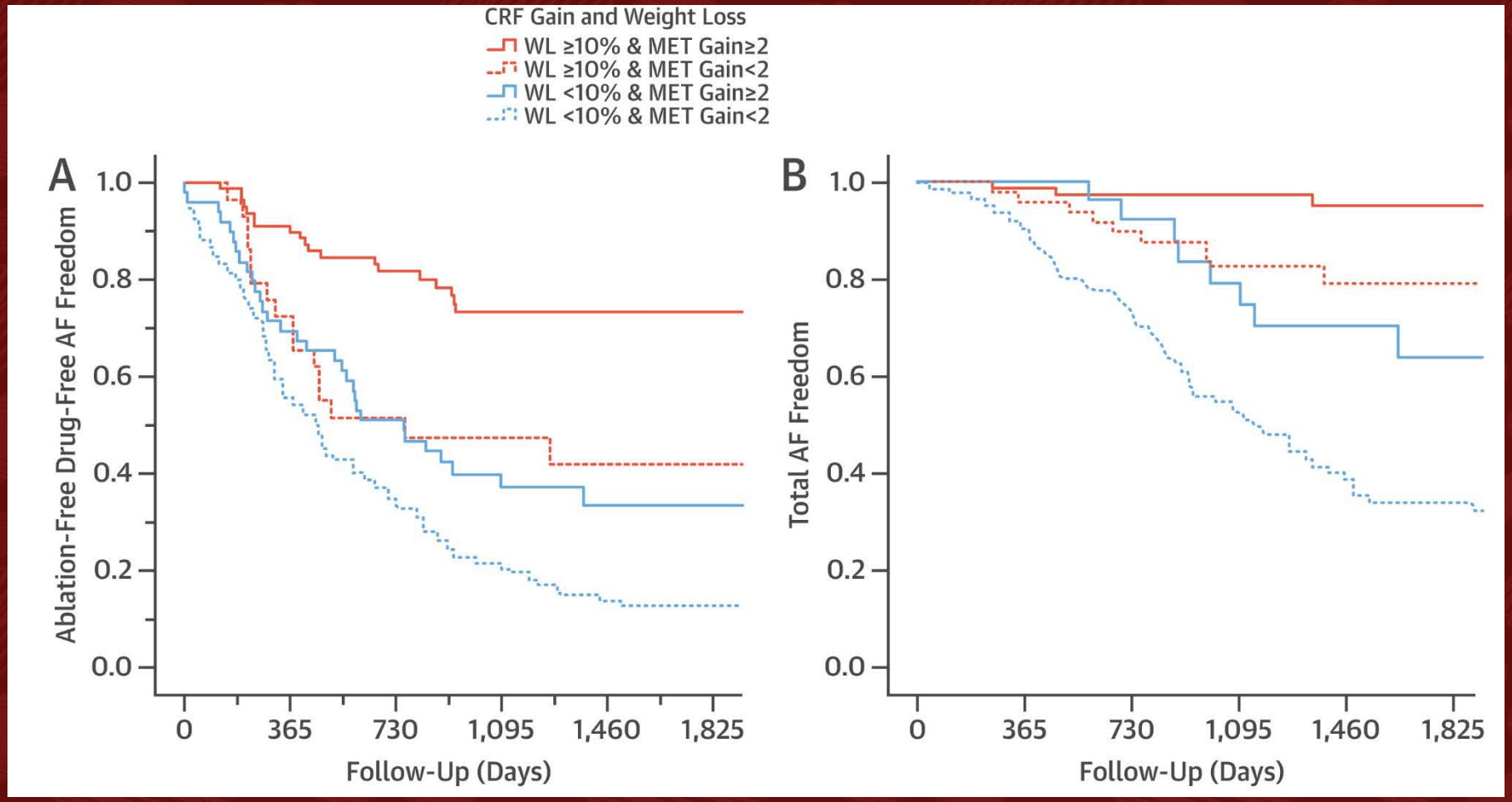
Wang TJ *JAMA.* 2004;292:2471-2477

Weight loss benefits AF patients with BMI >=27

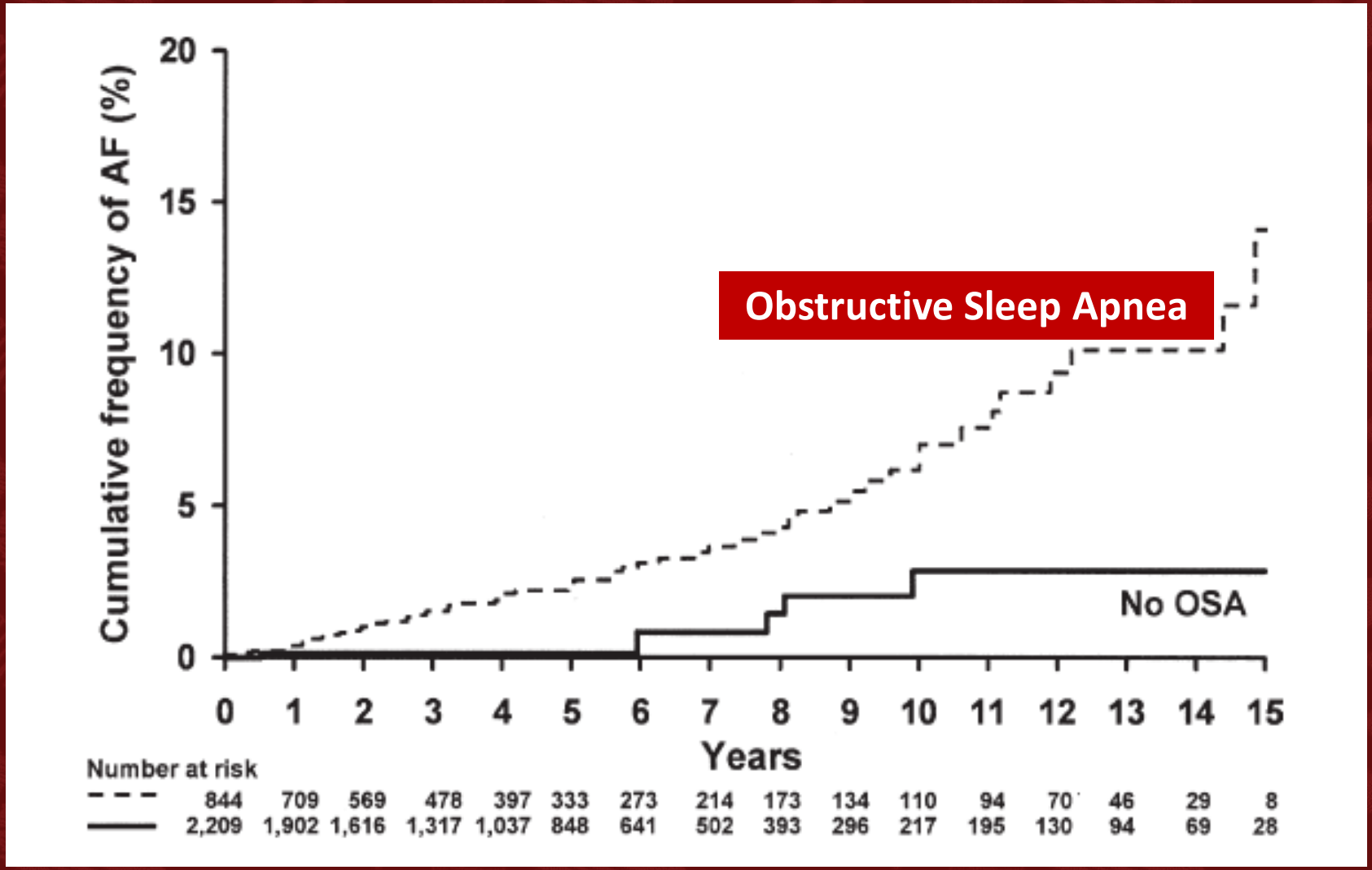


Rajeev K. Pathak et al. JACC 2015;65:2159-2169

Weight Loss & Fitness significantly benefits AF patients with BMI >= 27

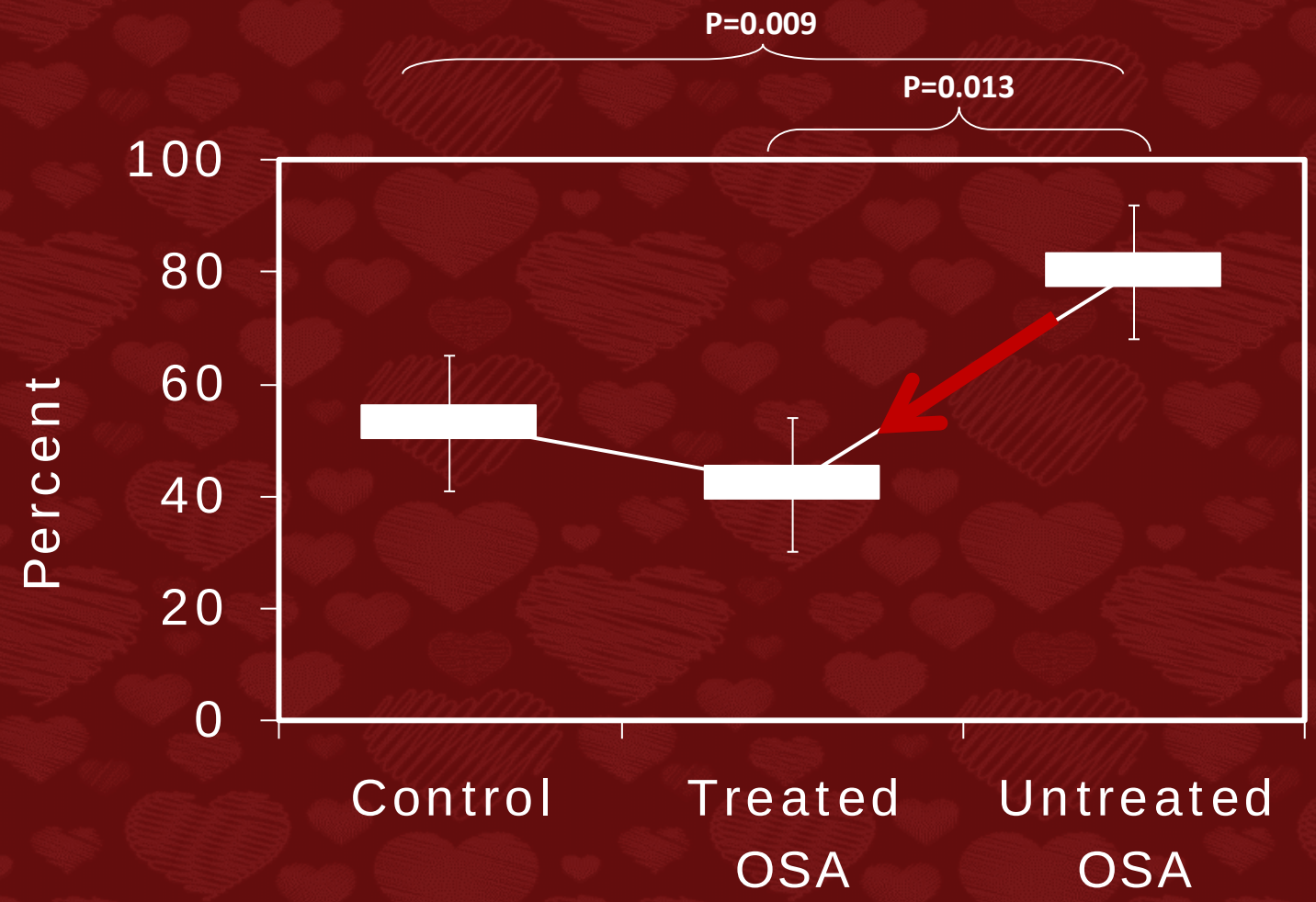


Sleep Apnea and Atrial Fibrillation



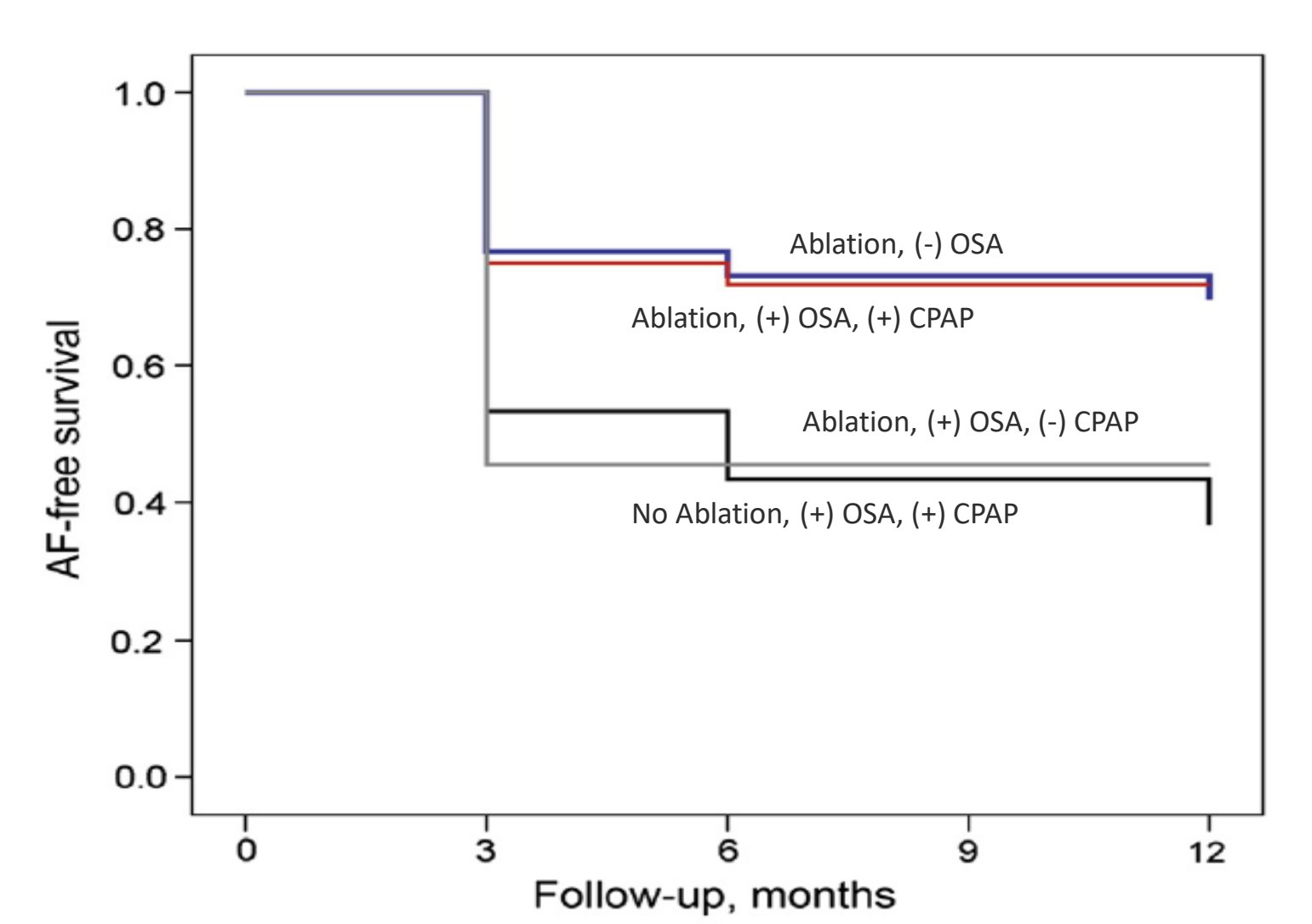
Gami AS *J. Am. Coll. Cardiol.* 2007;49;565

OSA Tx reduces AF risk after Cardioversion



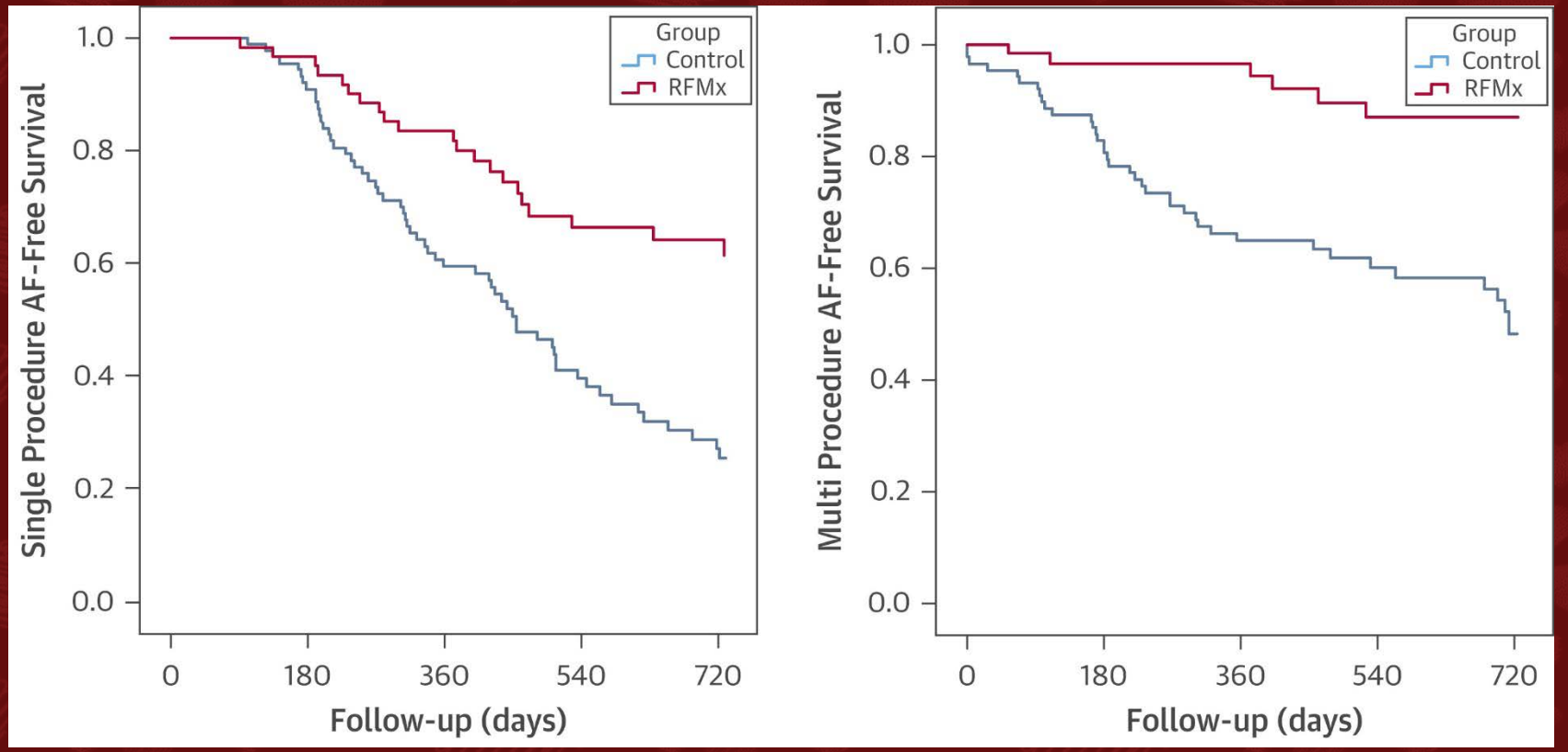
Kanagala R *Circulation* 2003;107;2589

CPAP Improves AF Ablation Outcome



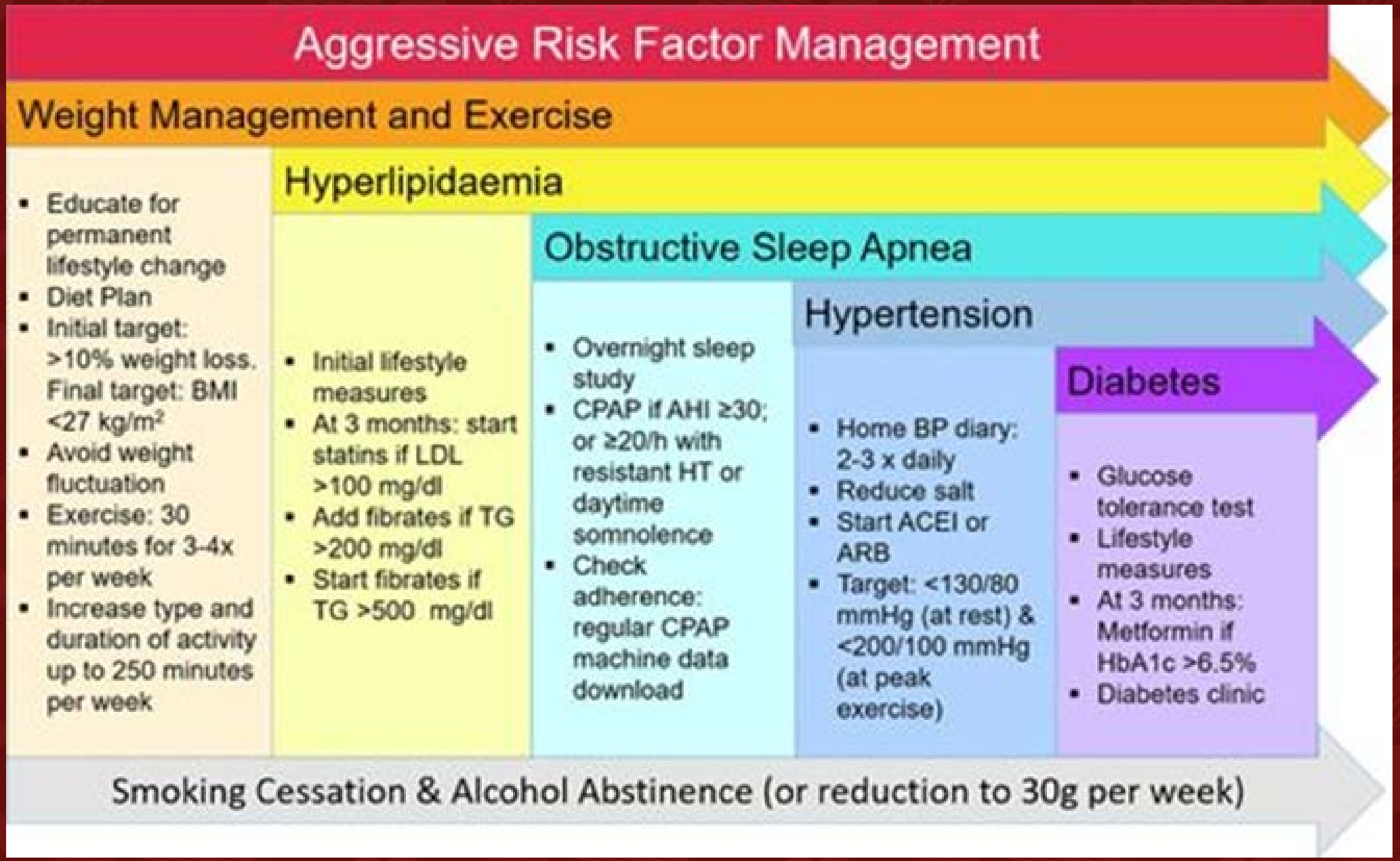
J Am Coll Cardiol 2013;62:300–5

Risk Factor Modification and AF ablation



RFM Clinic q 3 months
Standard ACC/AHA guidelines
Target BP < 130/80; Target BMI <=25; Lipids, OSA tx, smoking, EtOH

J Am Coll Cardiol 2014;64:2222–31



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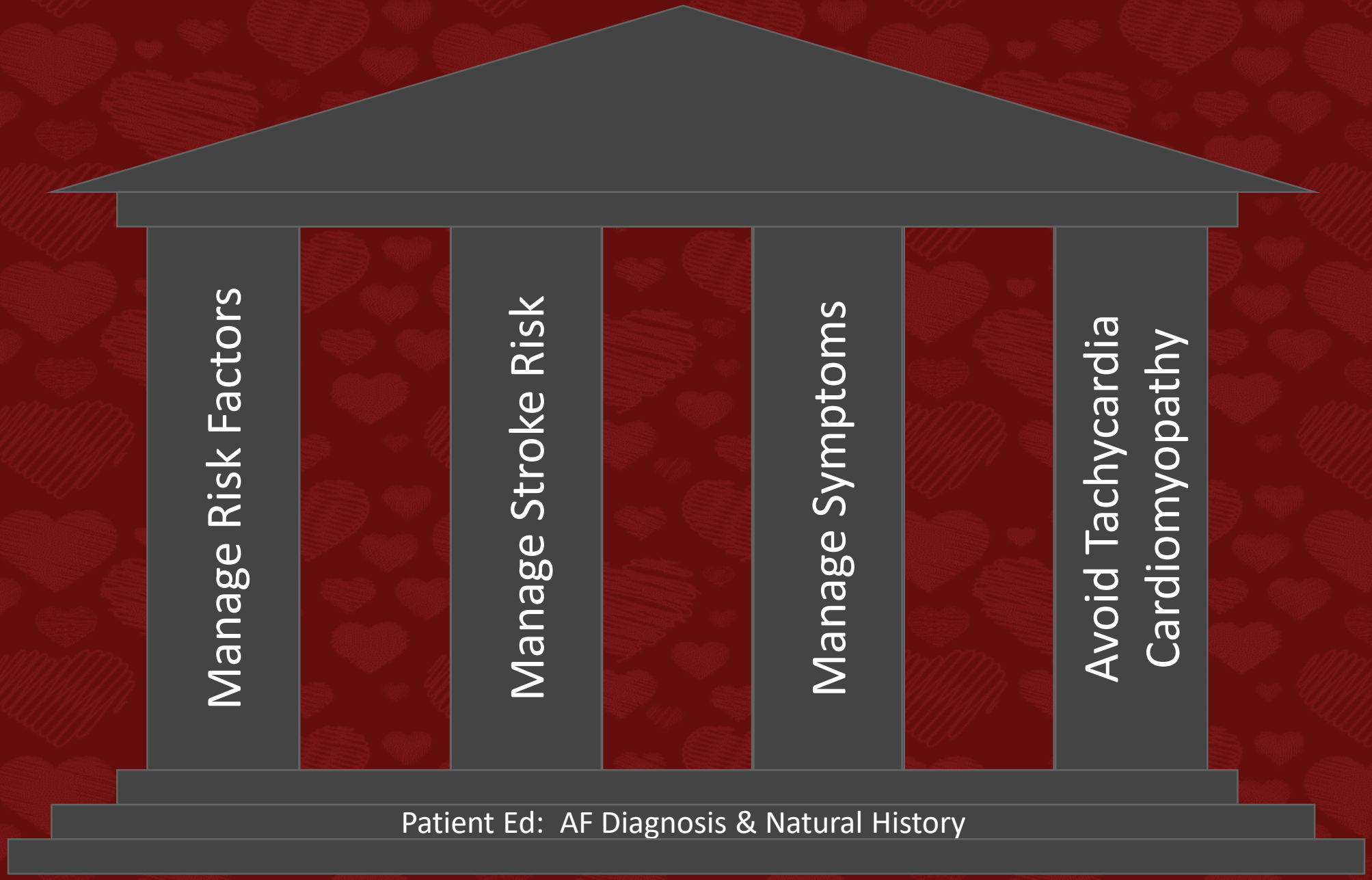
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