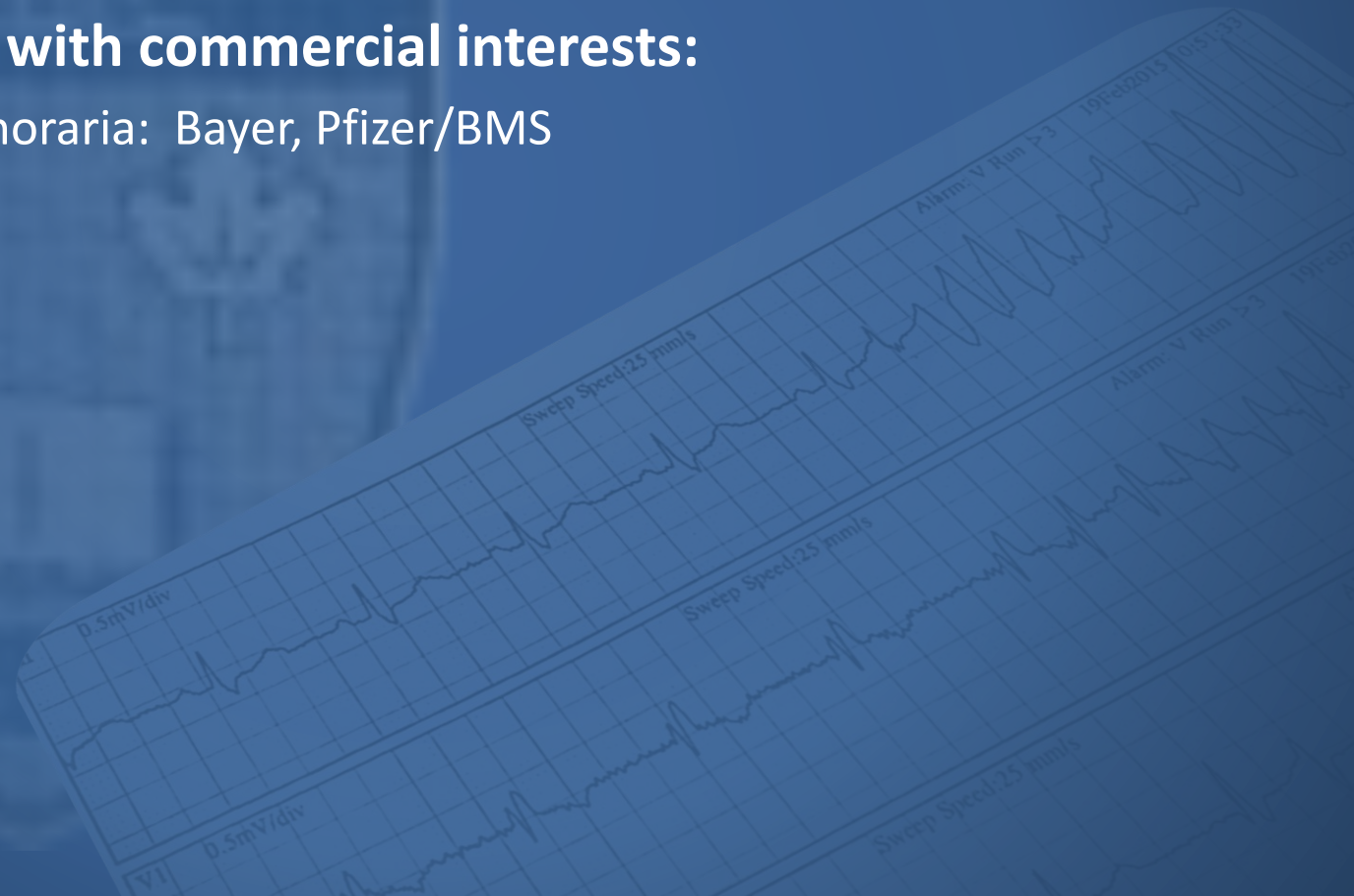


# What's New in Atrial Fibrillation 2017

Dr. Clarence Khoo, MD FRCPC  
Assistant Professor of Medicine  
University of Manitoba

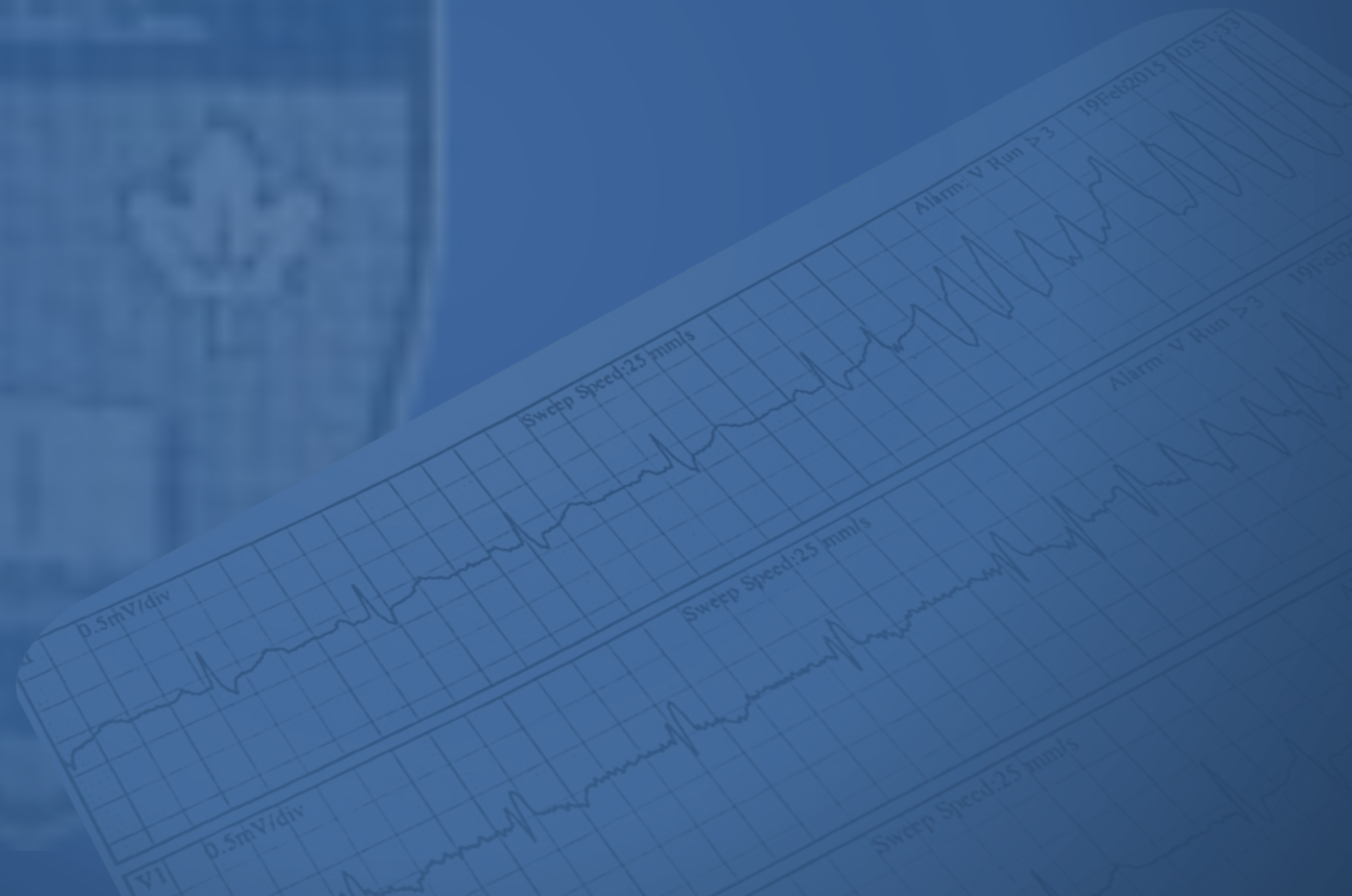
# Faculty/Presenter Disclosure

- **Faculty:** Clarence Khoo
- **Relationships with commercial interests:**
  - Speaking honoraria: Bayer, Pfizer/BMS

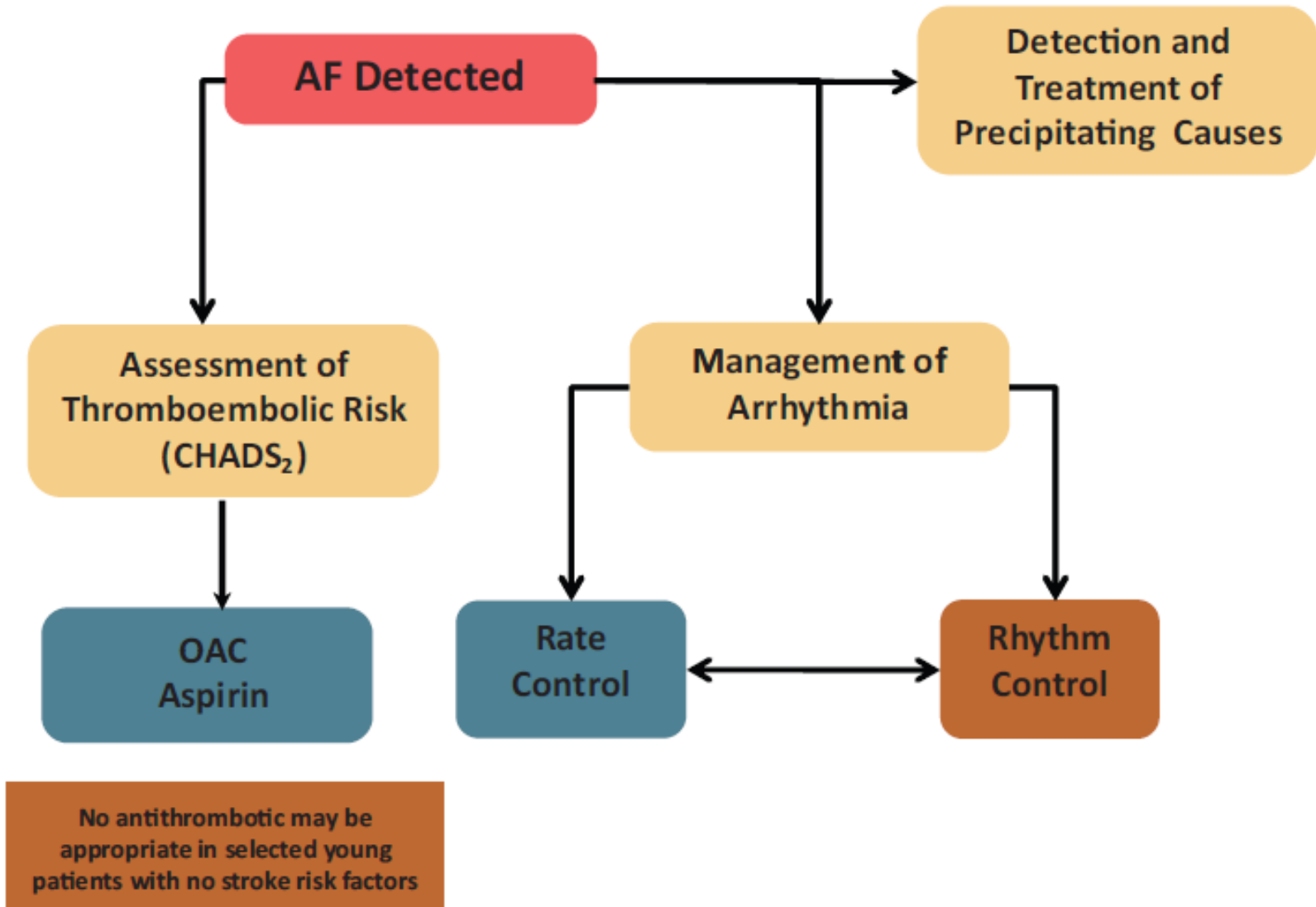


# Mitigating Potential Bias

- Discuss class effects of agents where possible



# Overview of AF Management



# DETECTION

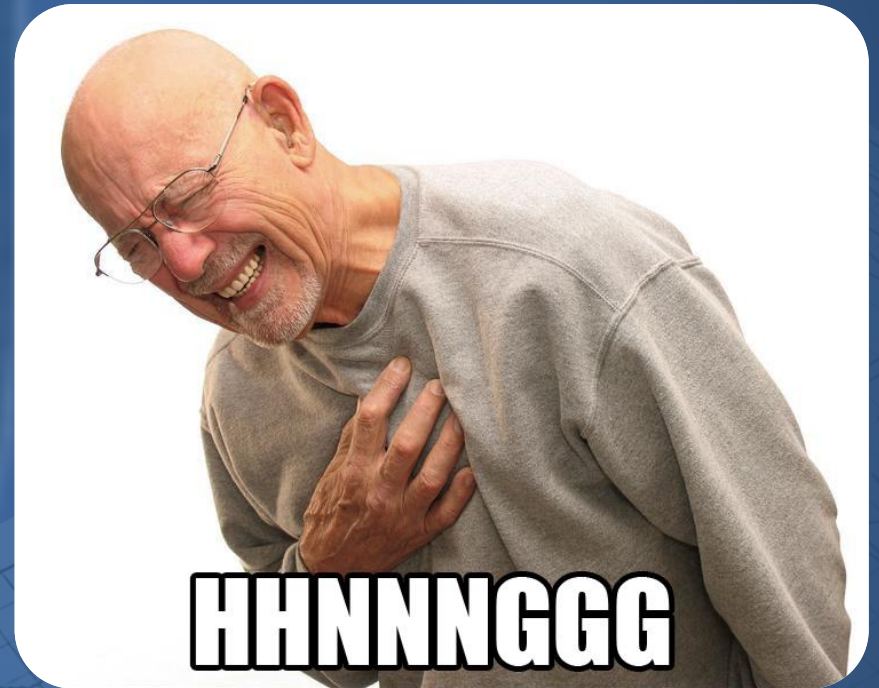


# Monitoring Strategies



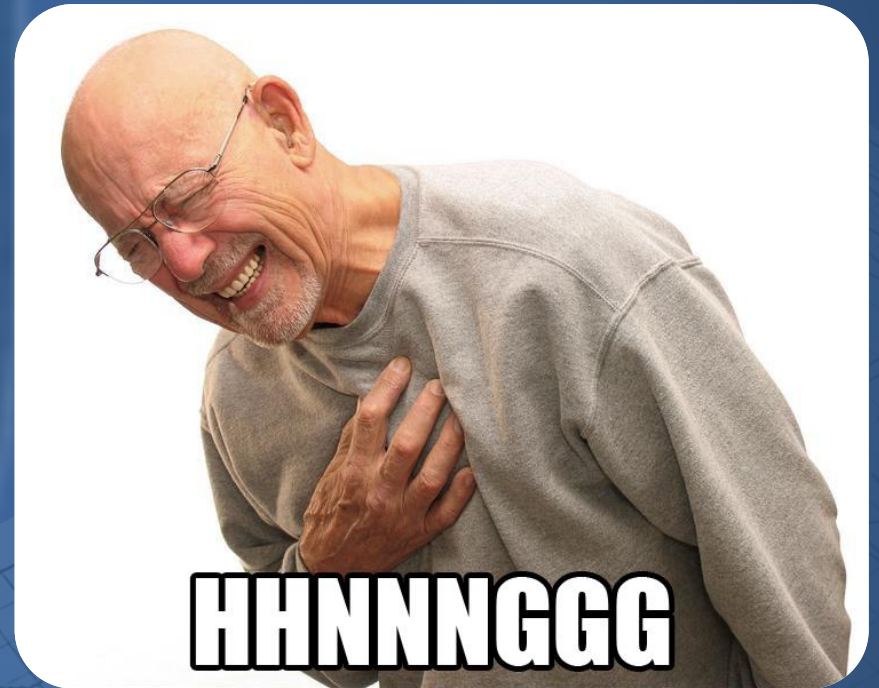
# Case

- 76M with a recent TIA
- Hypertensive and diabetic
- Left atrium dilated
- Holter – no AF, but lots of PAC's
- What test should we perform to look for AF?



# Case

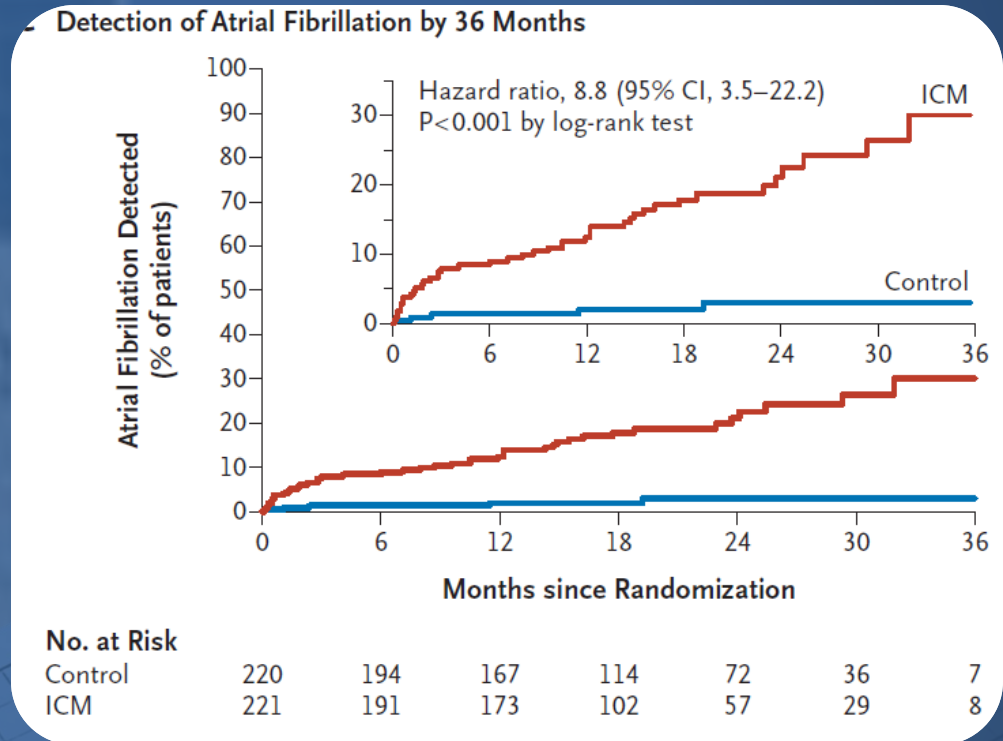
- 76M had a 14-day patch performed in N. Dakota
- Hypertensive and diabetic; no stroke
- Analysis shows 40 sec of AF
- Should we anticoagulate?





# Screening for Atrial Fibrillation

- CRYSTAL-AF
  - 441 patients with unexplained stroke
  - Increased detection of AF with a loop recorder vs. conventional testing (ECG, Holter)



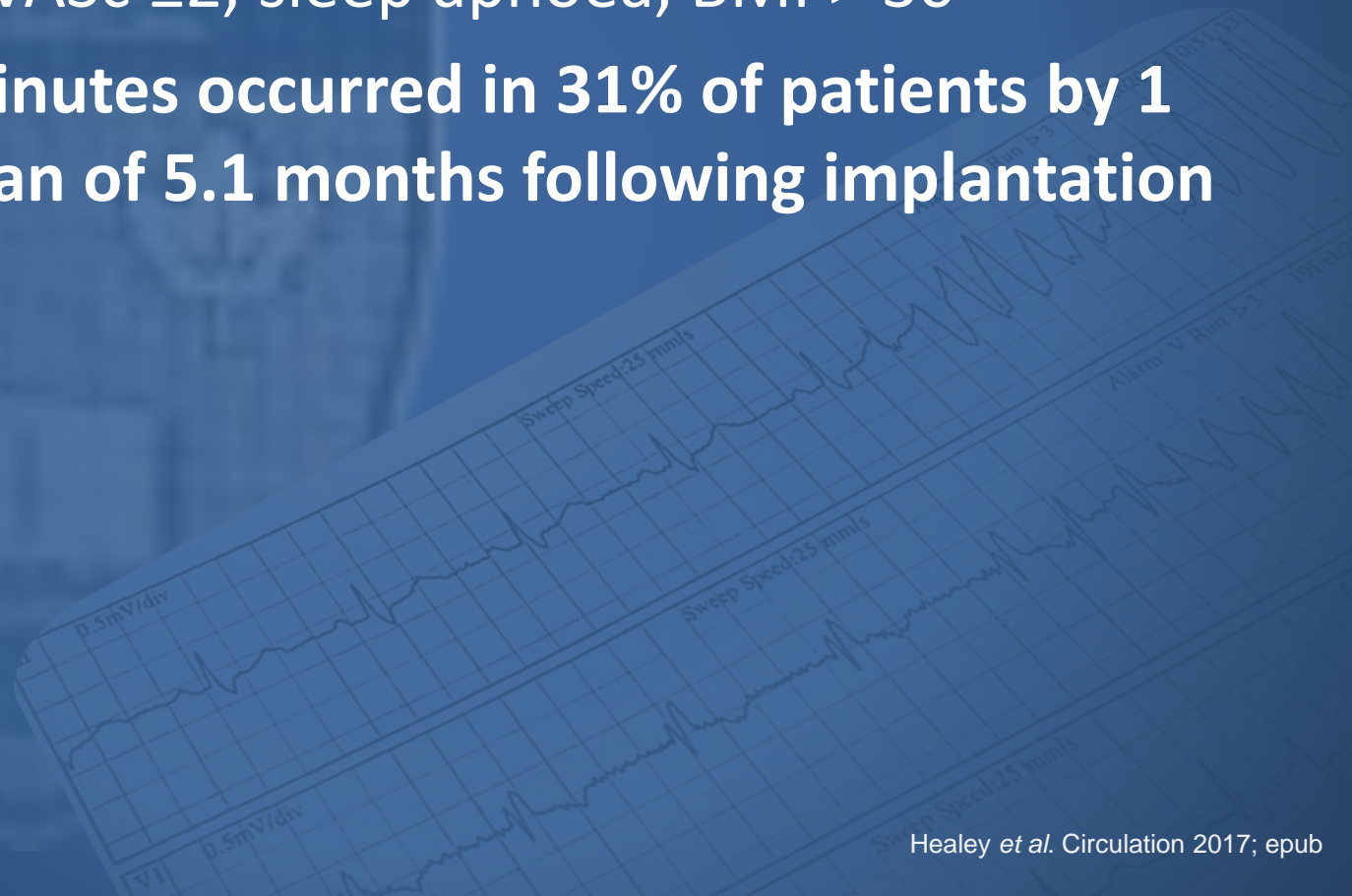
# Screening for Atrial Fibrillation

- Reveal AF
  - 394 individuals with no AF, CHADS2  $\geq 3$  or at high risk for stroke, implanted with a loop recorder

Months	Rate (%)
1	6.2
6	20.4
12	27.1
18	29.3
24	33.6

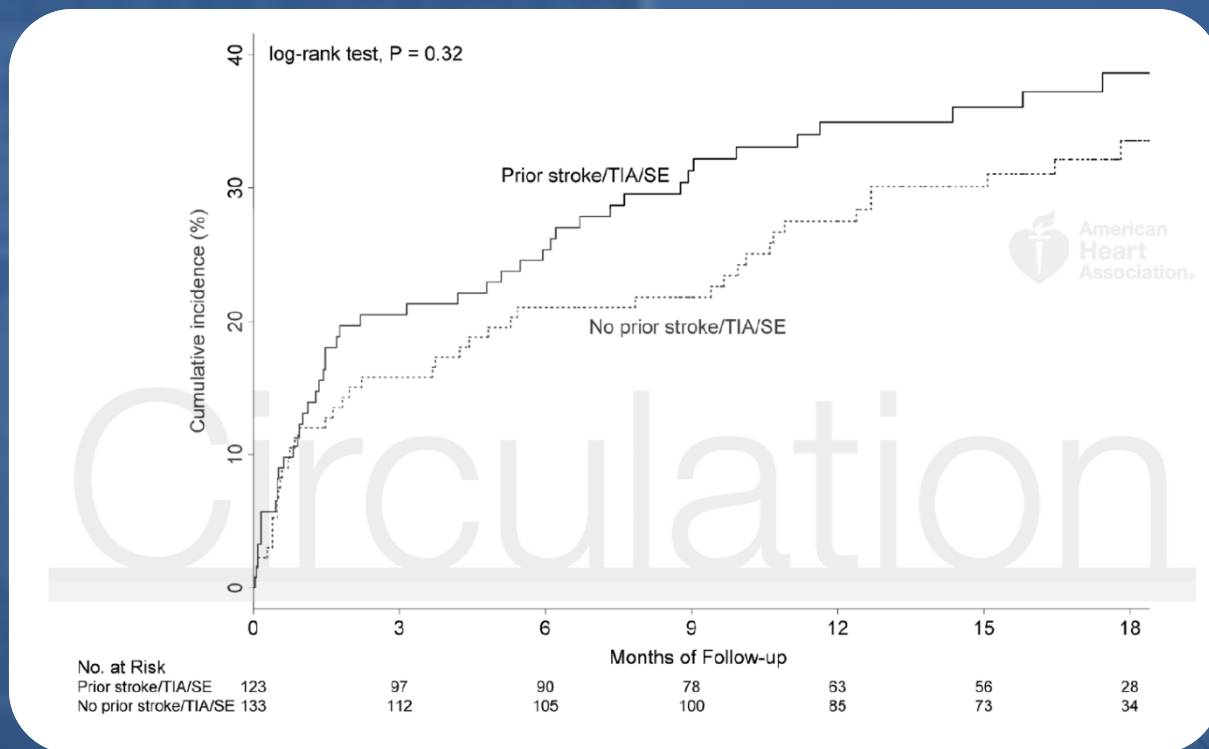
# ASSERT-2

- 256 patients with no AF
  - CHA<sub>2</sub>DS<sub>2</sub>VASc  $\geq 2$ , sleep apnoea, BMI > 30
  - **AF  $\geq 5$  minutes occurred in 31% of patients by 1 year, mean of 5.1 months following implantation**



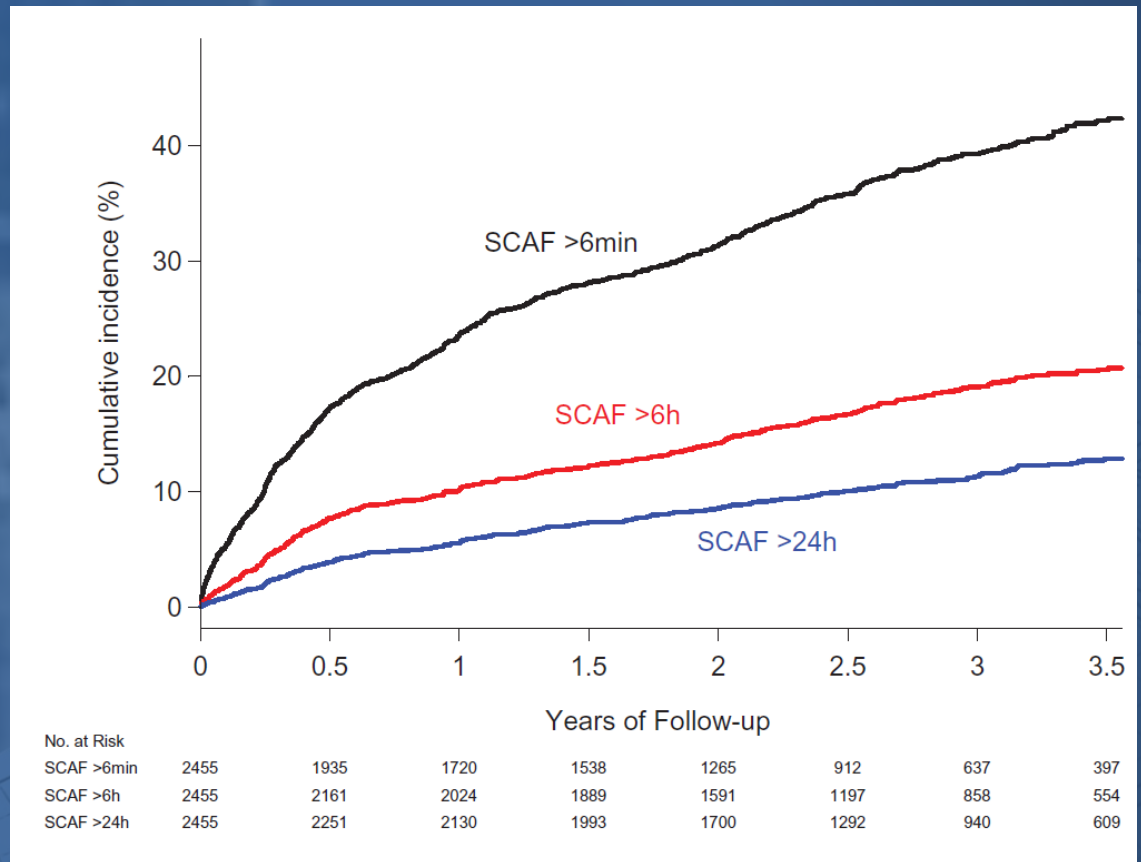
# ASSERT-2

- If previous stroke/TIA – 39.4%/year AF
- If no stroke/TIA – 30.3%/year AF



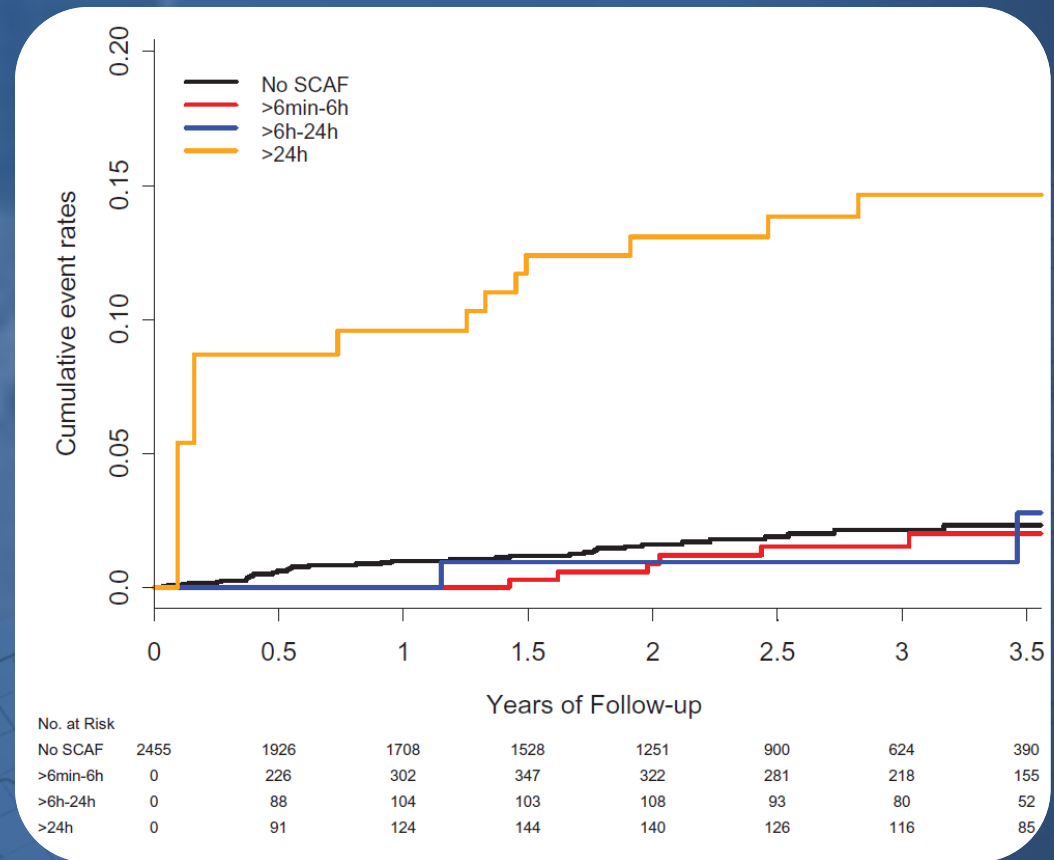
# ASSERT Post-hoc Analysis

- Short bursts of subclinical AF (SCAF) are common



# ASSERT Post-hoc Analysis

- Risk of stroke or thromboembolism only rises substantially >24 hours
- HR 5.37 (2.08 – 13.87)



# Future Directions

- Trials ongoing looking at anticoagulation for SCAF
  - **ARTESiA** – Apixaban vs. ASA for SCAF between 6 min and 12 hours
- Is there any role in screening? Do we need to see atrial fibrillation? Should we just anticoagulate patients at risk?
  - **NAVIGATE ESUS** – Rivaroxaban vs. ASA in embolic stroke without a diagnosis of AF on routine screening

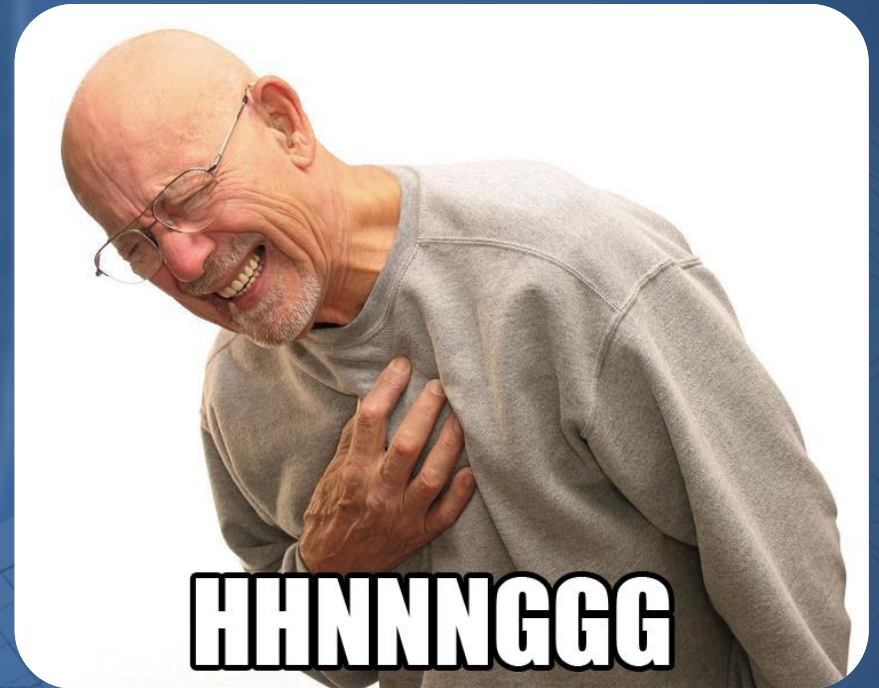
# ANTICOAGULATION



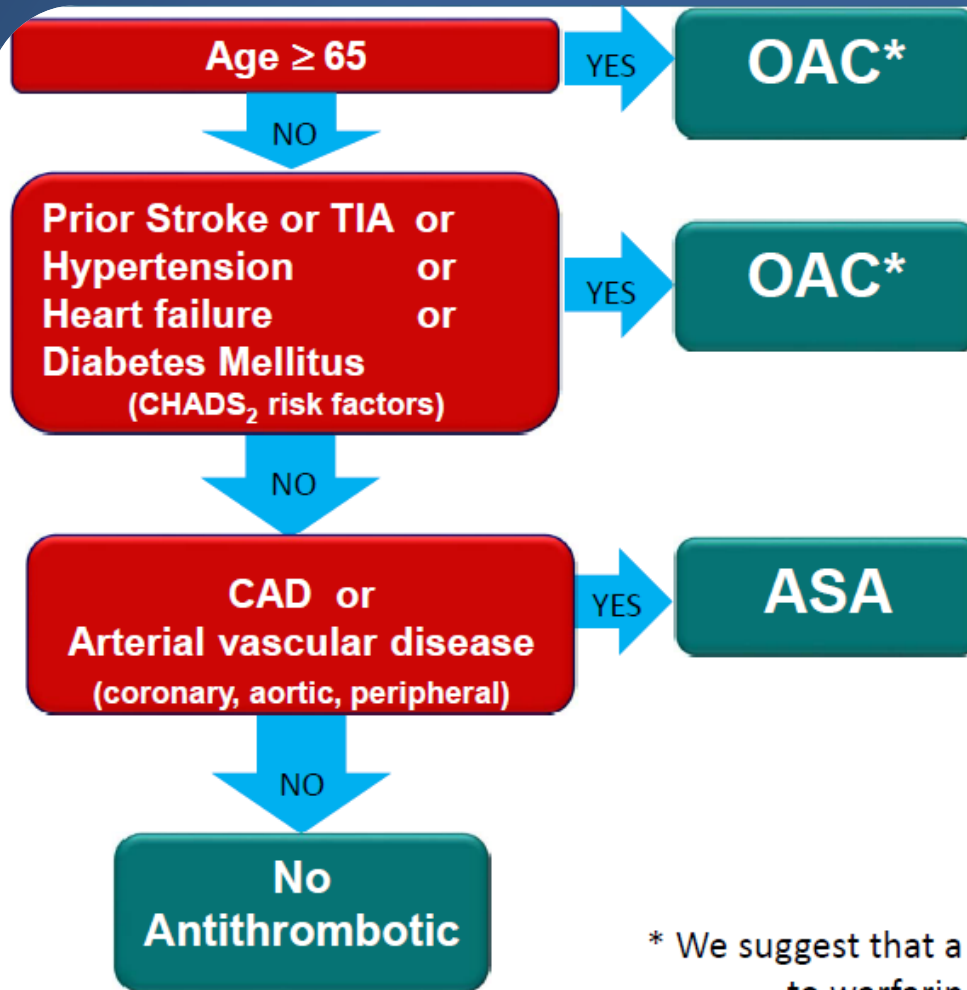


# Case

- 65M
- Persistent atrial fibrillation diagnosed on routine follow-up
- No history of hypertension, diabetes, stroke or TIA
- CHADS2 = 0. Should he be anticoagulated?



# The CCS Algorithm for OAC Therapy in AF



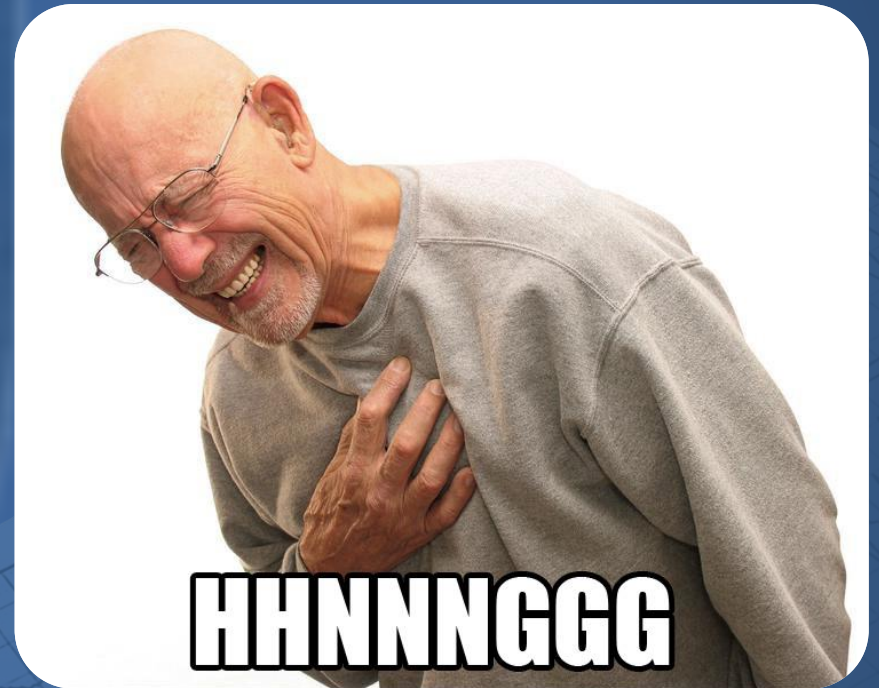
Consider and modify (if possible) all factors influencing risk of bleeding on OAC (hypertension, antiplatelet drugs, NSAIDs, excessive alcohol, labile INRs) and specifically bleeding risks for NOACs (low eGFR, age ≥ 75, low body weight)\*\*

\*\*may require lower dosing

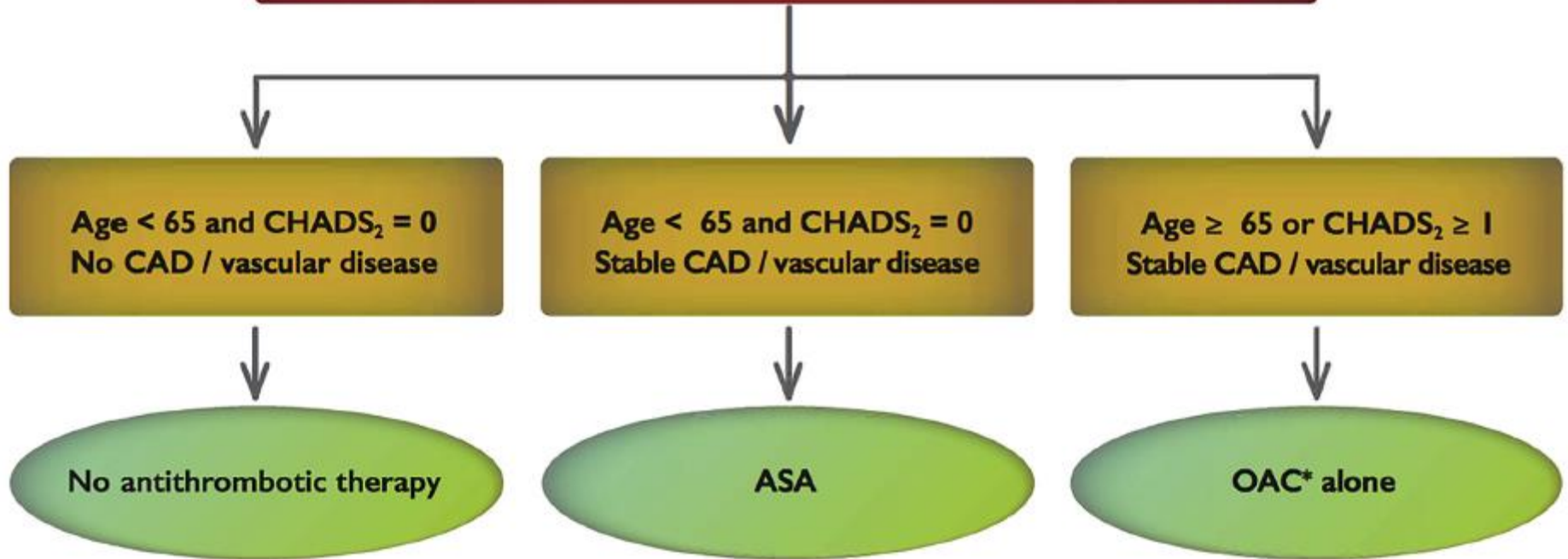
\* We suggest that a NOAC be used in preference to warfarin for non-valvular AF.

# Case

- 77M
- Previous NSTEMI 3 years ago treated with a stent
- Newly diagnosed with AF
- Hypertensive
- Still on ASA and clopidogrel
- What combination of antiplatelets / anticoagulants is recommended?

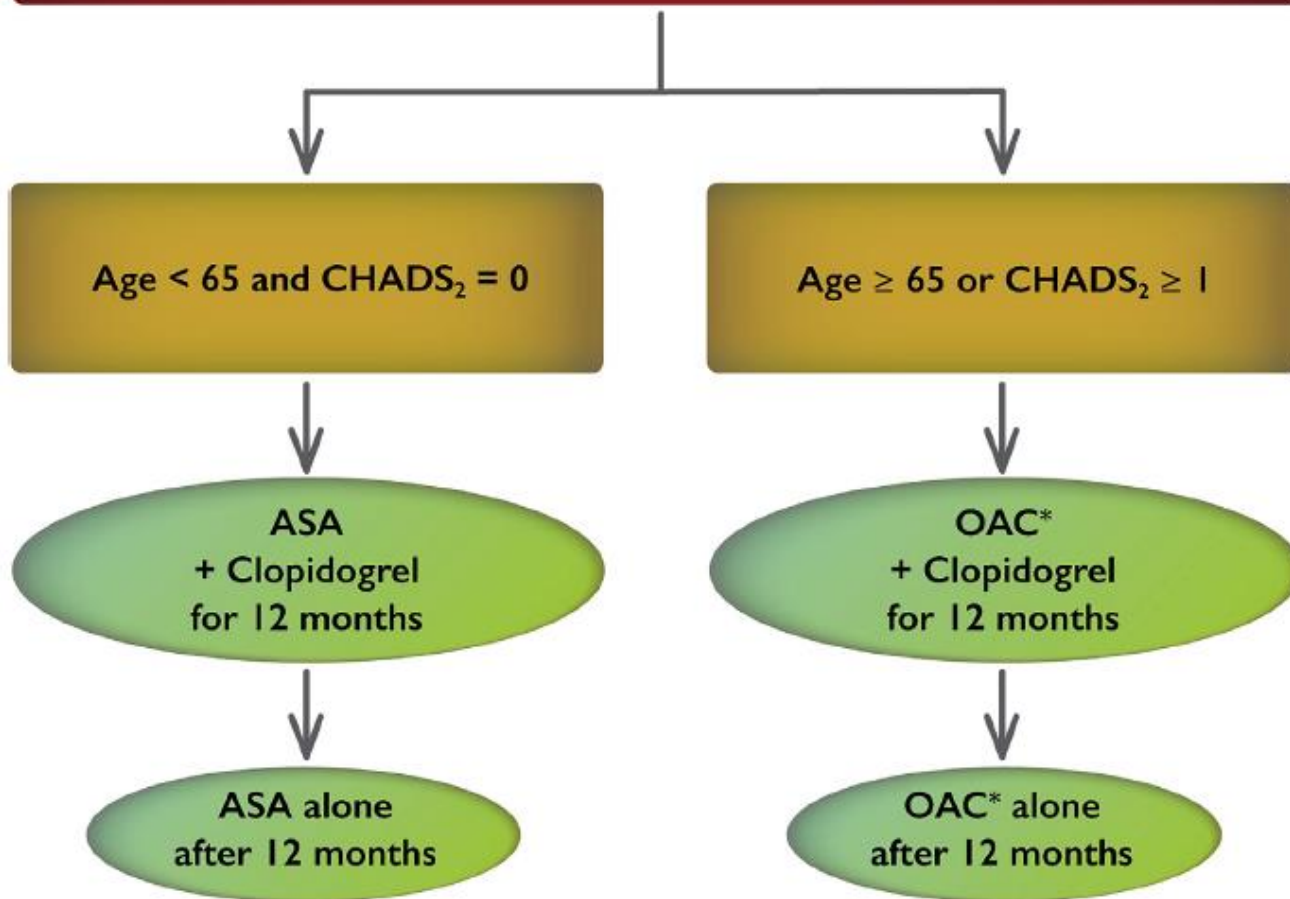


**For patients with AF with an indication for primary CAD prevention or stable CAD/arterial vascular disease**

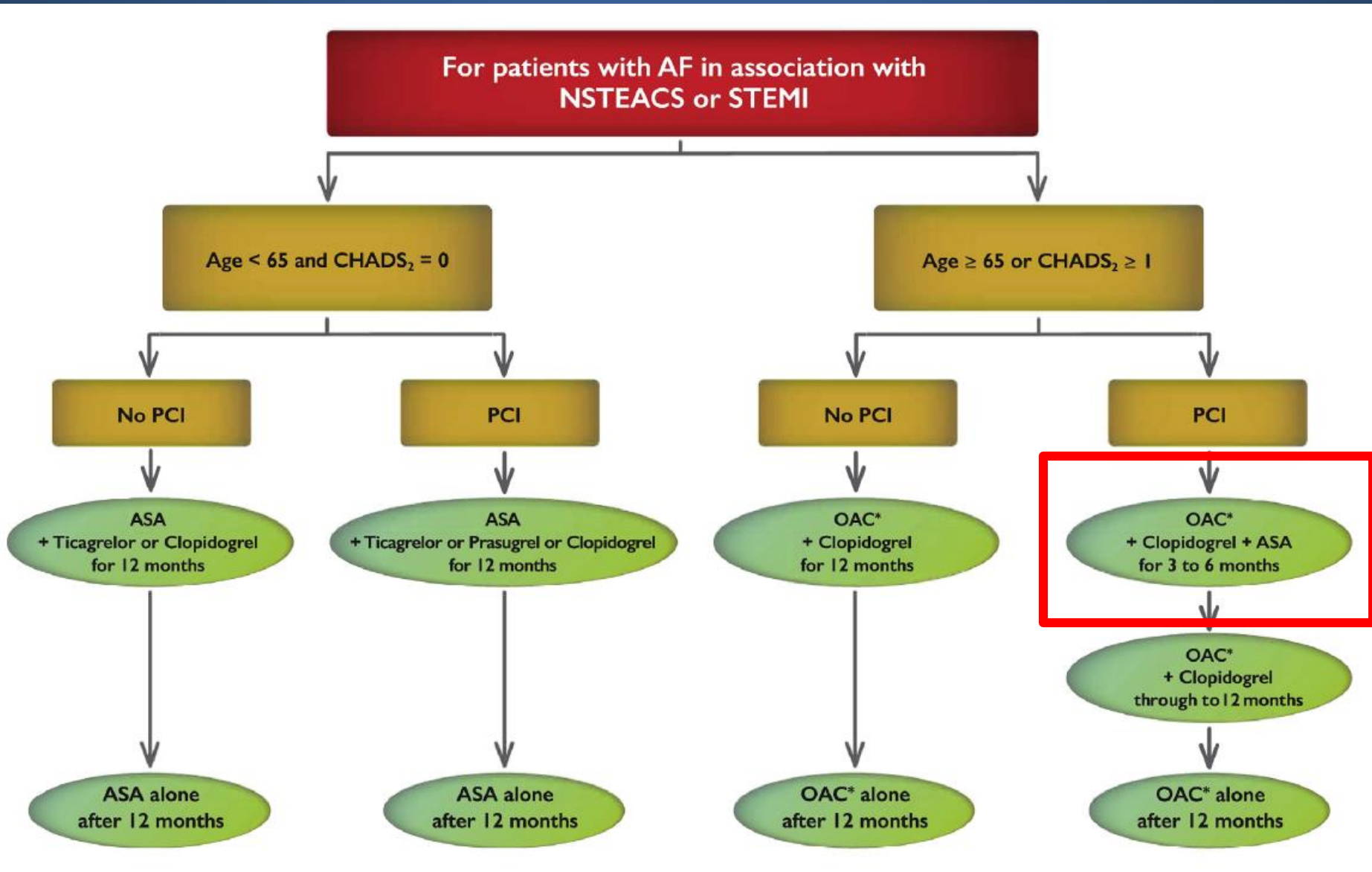


**\* A NOAC is preferred over warfarin for non-valvular AF**

## For patients with AF and recent elective PCI



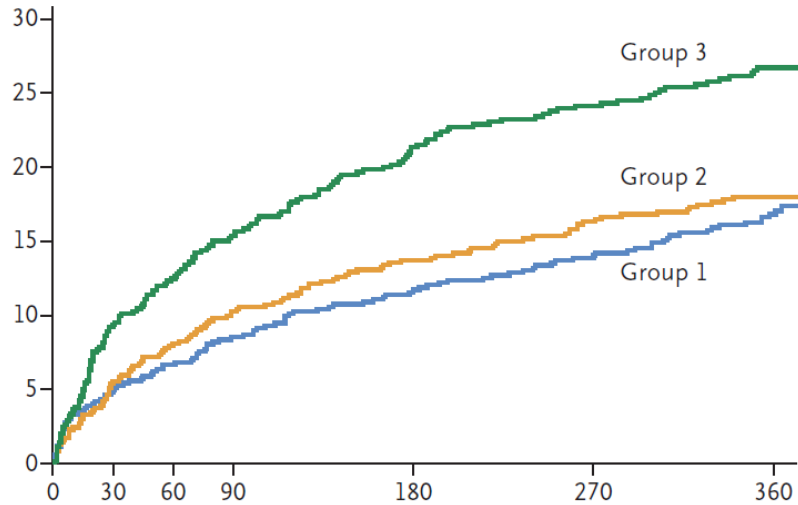
\* A NOAC is preferred over warfarin for non-valvular AF



Cumulative Incidence of Clinically Significant Bleeding (%)

Hazard ratio for group 1 vs. group 3, 0.59 (95% CI, 0.47–0.76)  
P<0.001

Hazard ratio for group 2 vs. group 3, 0.63 (95% CI, 0.50–0.80)  
P<0.001

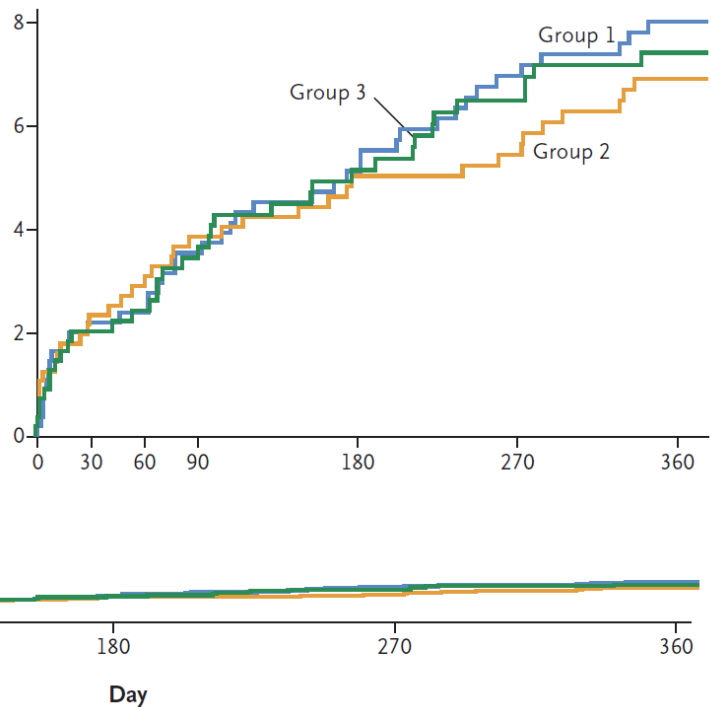


Riva  
15 r

Cumulative Incidence of a Major Adverse Cardiovascular Event (%)

Hazard ratio for group 1 vs. group 3, 1.08 (95% CI, 0.69–1.68)  
P=0.75

Hazard ratio for group 2 vs. group 3, 0.93 (95% CI, 0.59–1.48)  
P=0.76





# CONTROLLING ATRIAL FIBRILLATION



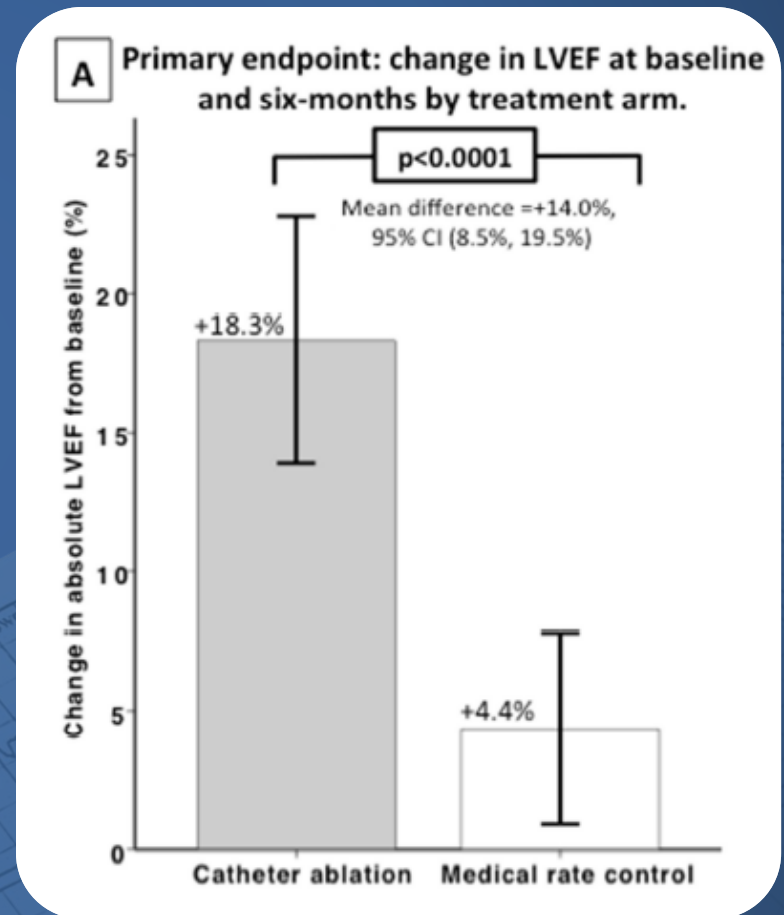
# Case

- 58F
- Paroxysmal atrial fibrillation with hypertension and Type II diabetes
- Nonischaemic cardiomyopathy, LVEF 35%
- Currently on amiodarone 200 mg daily with frequent breakthrough episodes
- Can ablation be helpful?



# CAMERA-MRI

- 301 patients with persistent AF, LVEF  $\leq 45\%$ 
  - Randomised to AF ablation vs. rate control
- Normalisation of LVEF in 58% of ablation patients vs. 9% of rate control ( $p = 0.0002$ )



# CASTLE-AF

- 363 patients with LVEF  $\leq$  35%, NYHA II+, failed medical therapy with ICD/CRT in situ
- Randomised to AF ablation vs. conventional therapy

Endpoint	Hazard Ratio	P
All-cause mortality & worsening CHF	0.62 (0.43 – 0.87)	0.007
All-cause mortality	0.53 (0.32 – 0.86)	0.011
Worsening CHF	0.56 (0.37 – 0.83)	0.0004
Cardiovascular mortality	0.49 (0.29 – 0.84)	0.008
Cardiovascular hospitalisation	0.72 (0.52 – 0.99)	0.041

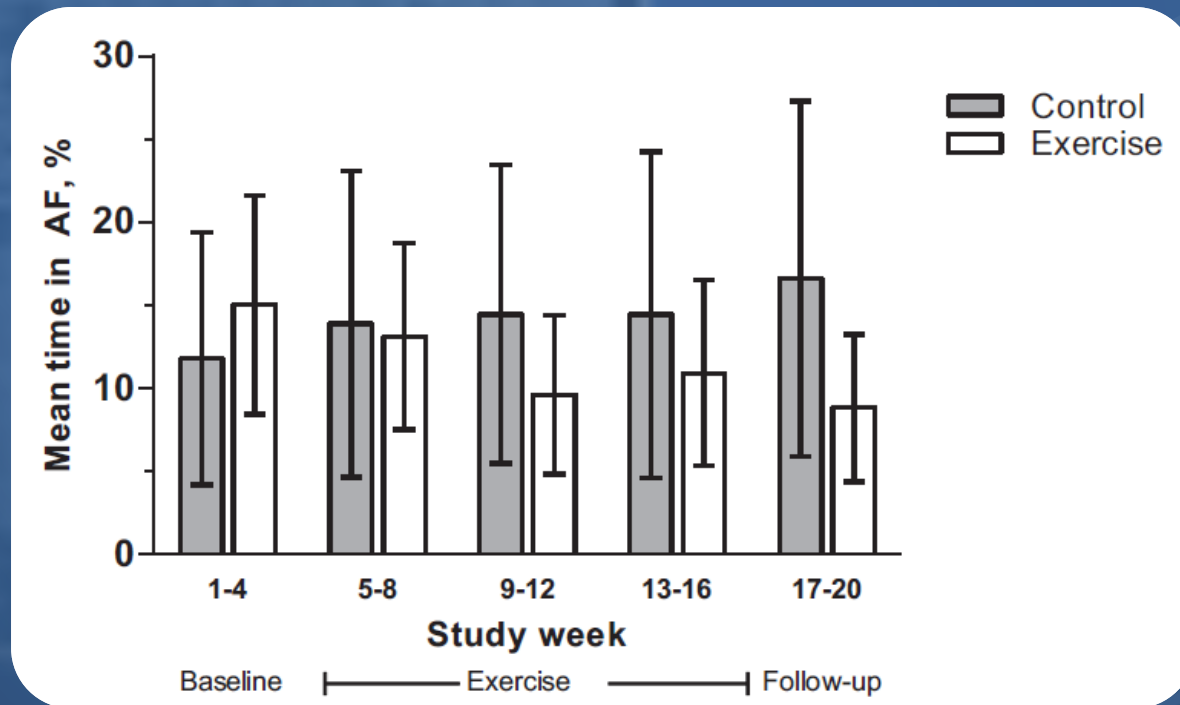
# Case

- 52F
- Paroxysmal atrial fibrillation with hypertension and Type II diabetes
- Sedentary – told previously that exercise would worsen AF
- BMI 32
- Is exercise helpful or harmful for this patient?



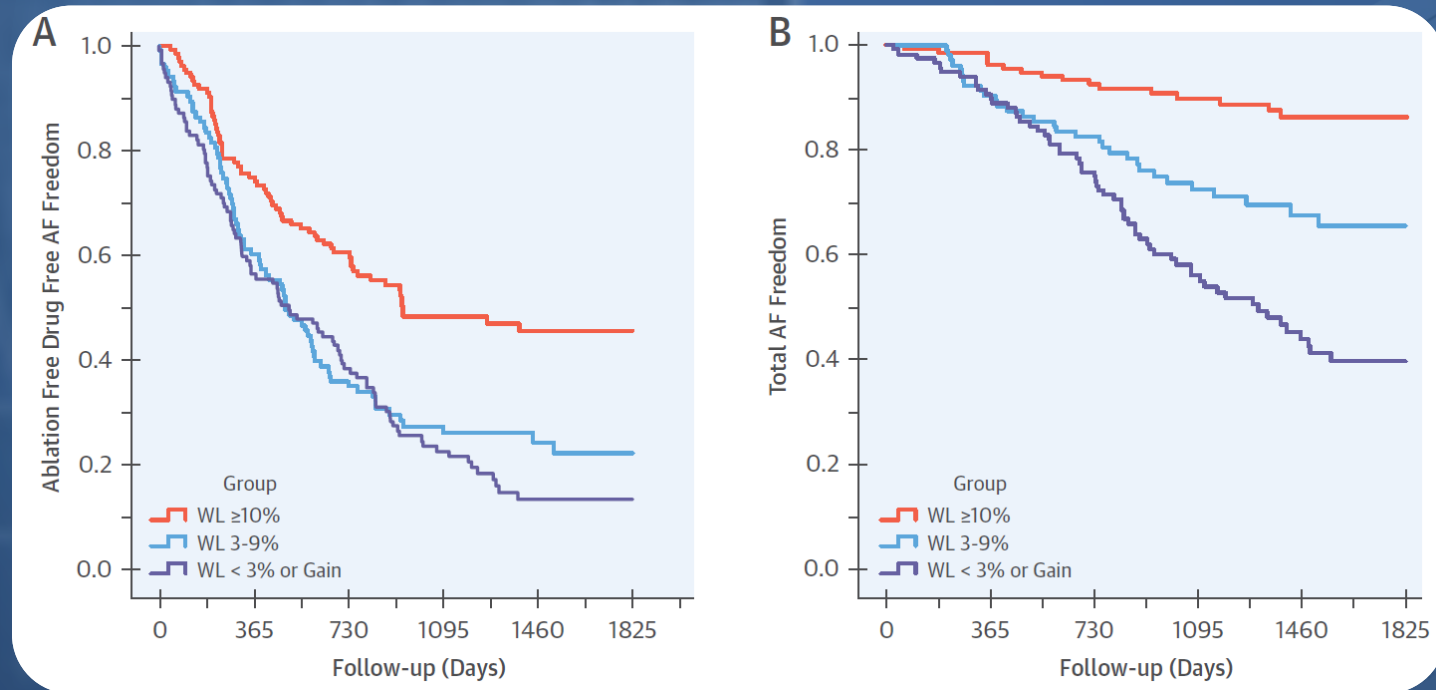
# Exercise & AF

- 51 patients with AF randomised to aerobic interval training vs. regular exercise regimen
  - 4 x 4 min intervals at 85 – 95% of max HR
  - 3 times per week for 12 weeks



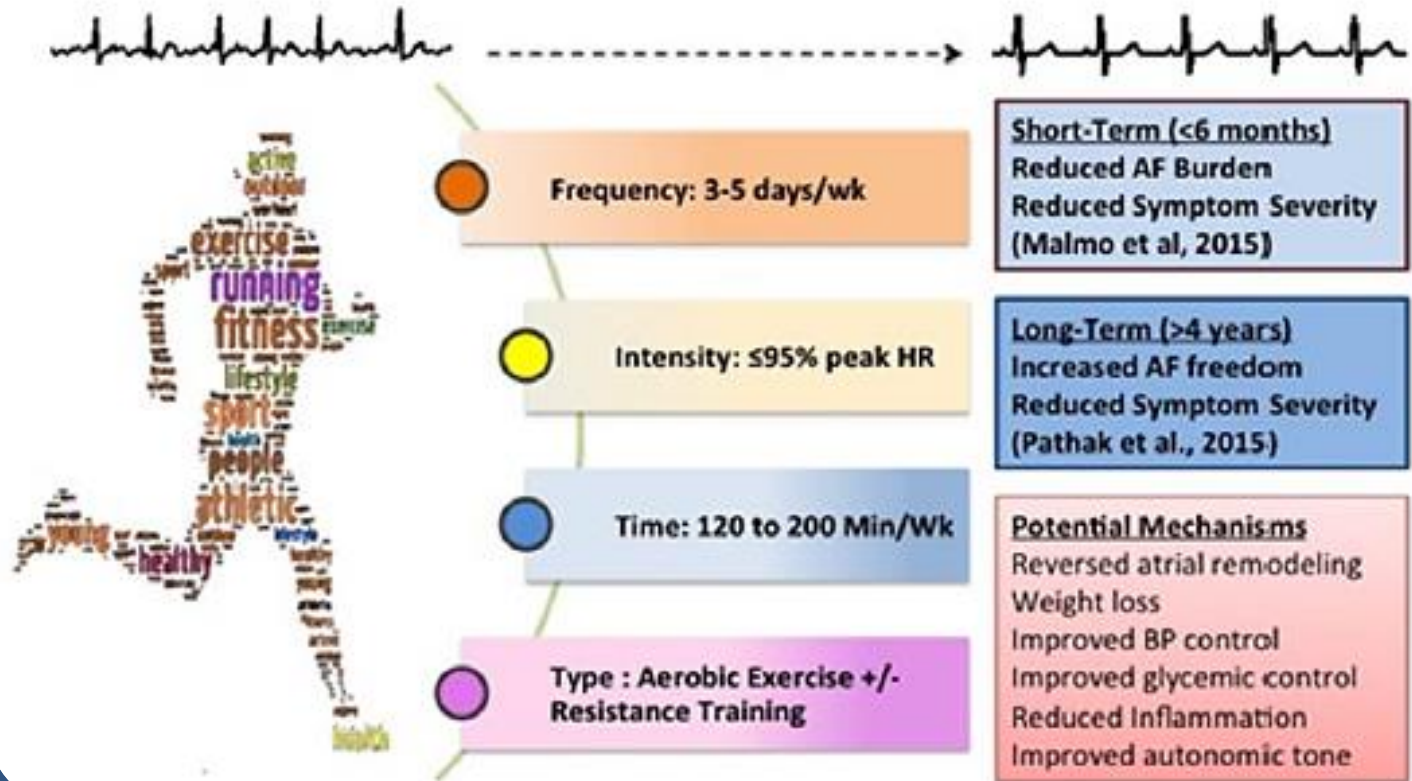
# LEGACY Trial

- 1,415 patients with AF, BMI  $\geq 27$  provided with weight management counselling, including dietary changes and exercise regimen



# Exercise and AF

## Benefits of Exercise Training in AF



# Summary

- Various long-term strategies for AF detection are becoming available and may be useful in select circumstances
- Management of short-duration AF remains uncertain
- Anticoagulation for AF – remember CHADS65!
- AF ablation roles may expand in near future, especially with CHF patients
- Encourage exercise for patients with AF!





**THANKS FOR YOUR ATTENTION!**