4 Pillars of AF Management

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NORMAL SINUS RHYTHM

ATRIAL FIBRILLATION

Waktare Circ 2002; 106: 14-16
ECG Diagnosis

NORMAL SINUS RHYTHM

ATRIAL FIBRILLATION
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

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) © 2000 by the American College of Cardiology
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
Manage Risk Factors

Manage Stroke Risk

Manage Symptoms

Avoid Tachycardia
Cardiomyopathy

Patient Ed: AF Diagnosis & Natural History
Stroke risk is increased 4-5 fold for AF patients

Left Atrial Appendage
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
Warfarin Challenges

1-3% annual risk of major bleeding on warfarin

INR monitoring

Time in therapeutic window
Dabigatran vs Warfarin

Rivaroxaban vs Warfarin

A Events in Per-Protocol Population

Cumulative Event Rate (%)

No. at Risk

Rivaroxaban 6958   6211   5786   5468   4406   3407   2472   1496
Warfarin    7004   6327   5911   5542   4461   3478   2539   1538

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)
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
- Med(s) to slow heart rate
- +/- Pacemaker to avoid too slow heart rate
- Pacemaker + AV node ablation (PM dependent)

### Rhythm Control
- Antiarrhythmic drugs
- Catheter ablation
- Cardiac surgery (MAZE)
Cardioversion

Electric Shock

Medication
Catheter Ablation for Atrial Fibrillation

A

B

C

D

Triggerring focus

Left atrium

Pulmonary veins

Atrial Fibrillation

Ablation Lesions

Left atrium

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

Multi-Ablation Outcomes

Rate vs Rhythm in AFFIRM

LVEF improves after AF ablation in patients with AF RVR and NICM
Lenient rate-control strategy (resting <110) vs Strict strategy (resting <80 and during moderate exercise <110)
Patient Ed: AF Diagnosis & Natural History

- Manage Risk Factors
- Manage Stroke Risk
- Manage Symptoms
- Avoid Tachycardia Cardiomyopathy
Risk of AF

Metabolic Syndrome

Waist
HTN
Triglycerides
Low HDL
Impaired Fasting Glucose
Obesity and Atrial Fibrillation

Wang TJ JAMA. 2004;292:2471-2477
Weight loss benefits AF patients with BMI $\geq 27$
Weight Loss & Fitness significantly benefits AF patients with BMI $\geq 27$
Sleep Apnea and Atrial Fibrillation

Obstructive Sleep Apnea

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

![Graph showing AF-free survival over follow-up months for different treatment groups: Ablation, (-) OSA, Ablation, (+) OSA, (+) CPAP, Ablation, (+) OSA, (-) CPAP, No Ablation, (+) OSA, (+) CPAP. The graph illustrates that CPAP improves AF ablation outcome.](image-url)
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