

ATRIAL FIBRILLATION: *Scope of the Problem*

October 2015

Purpose of the Presentation

- Review the worldwide incidence and prognosis associated with atrial fibrillation (AF)
- Identify the types of AF, clinical assessment, important considerations in managing the patient with non-valvular AF
- Outline the components of a comprehensive approach to patient education and shared decision making

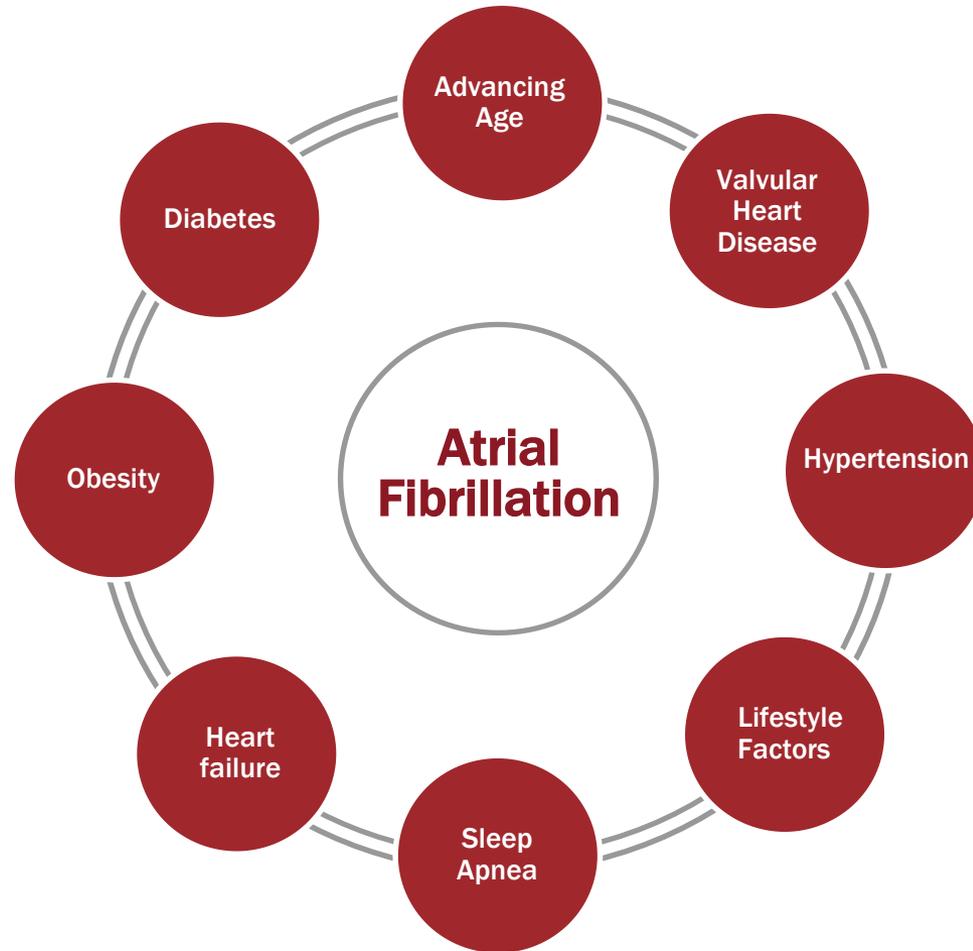
AF: Incidence

- Most common arrhythmia, increasing with age
- Affects 33.5 million worldwide
- Rates are higher in women
- Incidence increased 2-fold between 1990 and 2010
- Associated with 5-fold increased risk of stroke, 3-fold for HF and 2-fold for dementia and mortality
- Associated with a high risk of CV events and hospitalization

AF: Associated Outcomes

- AF-related strokes are more severe than other ischemic strokes
- Risk of death from AF-related stroke is double non-AF stroke and cost of care is increased 1.5 fold.
- The annual cost of AF is estimated at over €13.5 billion in the EU and 26 billion dollars in the US alone
- AF results in early retirement, reduced quality of life, increased need for rehabilitation, and increased burden to the health care system.

AF commonly travels with...



Common Comorbidities Among Medicare Beneficiaries >65

- Hypertension 83%
- Ischemic Heart Disease 63.8%
- Hyperlipidemia 62.1%
- Heart Failure 51.4%
- Anemia 42.3%
- Arthritis 39.8%
- Diabetes 36.5%
- CKD 32.3%
- COPD 23.2%

CMS Administrative Claims Data, Jan 2011 - Dec 2011,
from the Chronic Condition Warehouse. 2012;

AF Worsens the Prognosis of Patients with Comorbidities

Patients with new onset AF	Events	Risk
<p>Hypertension¹ <i>n</i> = 88518 Follow-up: 4.8 ± 1 year</p>	<p>Cardiovascular events</p> <p>Fatal and non-fatal stroke</p> <p>Hospitalization for heart failure</p>	<p>× 1.88</p> <p>x 2.82</p> <p>x 4.96</p>
<p>CHF² <i>n</i> = 382 Follow-up: 5.6 years</p>	<p>Mortality in men</p> <p>Mortality in women</p>	<p>x 1.6</p> <p>x 2..7</p>
<p>MI³ <i>n</i> = 17,749 Follow-up: 4 years</p>	<p>In-hospital mortality</p> <p>Long-term mortality (4 years)</p>	<p>x 1.98</p> <p>x 1.78</p>

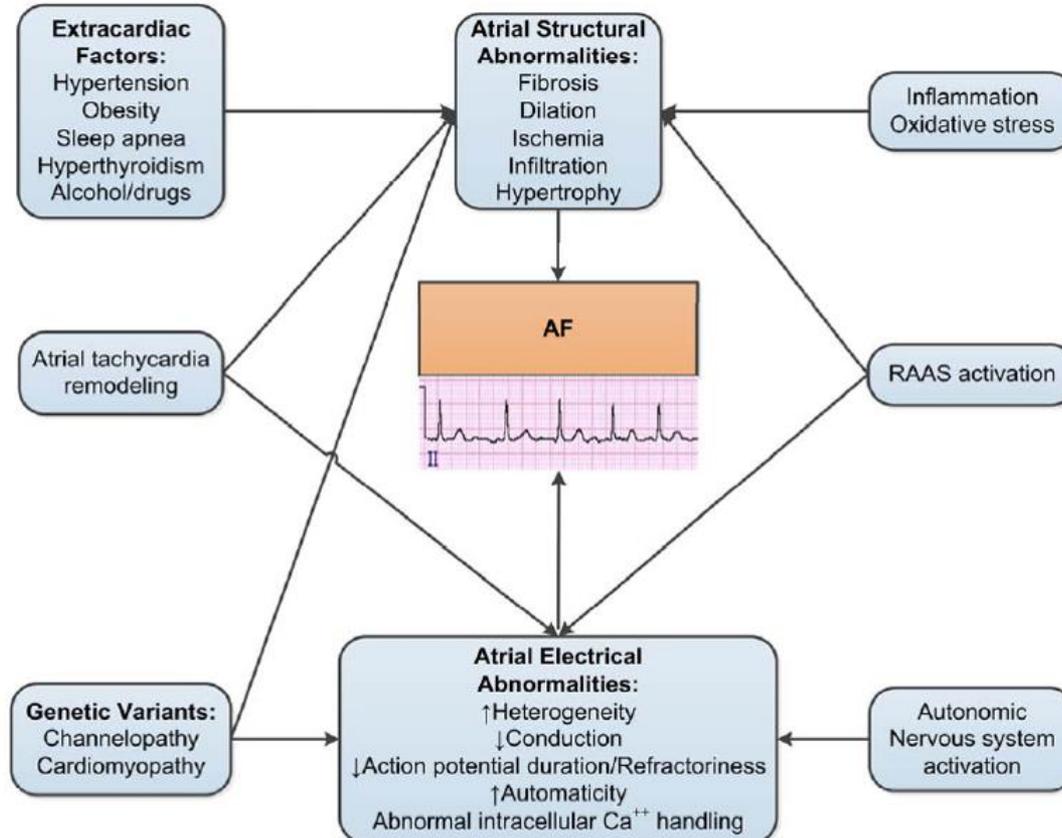
1. Adapted from Wachtell K et al. *J Am Coll Cardiol.* 2005;45:712-9.

2. Adapted from Wang TJ et al. *Circulation.* 2003;107:2920-5.

3. Adapted from Pizzetti F et al. *Heart.* 2001;86:527-32.

Mechanisms of AF

Figure 1. Mechanisms of AF



AF indicates atrial fibrillation; Ca⁺⁺ ionized calcium; and RAAS, renin-angiotensin-aldosterone system.

Types of AF

- Paroxysmal AF
 - AF that terminates spontaneously or with intervention within 7days of onset
 - Episodes may recur with variable frequency
- Persistent AF: Continuous AF that is sustained >7days
- Longstanding persistent AF: continuous AF > 12 months duration

Types of AF (continued)

- Permanent
 - Permanent AF occurs when there has been a joint decision by patient and clinician to cease further attempts to restore and/or maintain sinus rhythm
 - Acceptance of permanent AF represents a therapeutic attitude on the part of patient and clinician rather than an inherent pathophysiological attribute of the AF
 - Acceptance of permanent AF may change as symptoms, the efficacy of therapeutic interventions, and patient and clinician preferences evolve

Types of AF (continued)

- Nonvalvular AF: AF that occurs in the absence of rheumatic mitral stenosis, a mechanical or bioprosthetic heart valve, or mitral valve repair

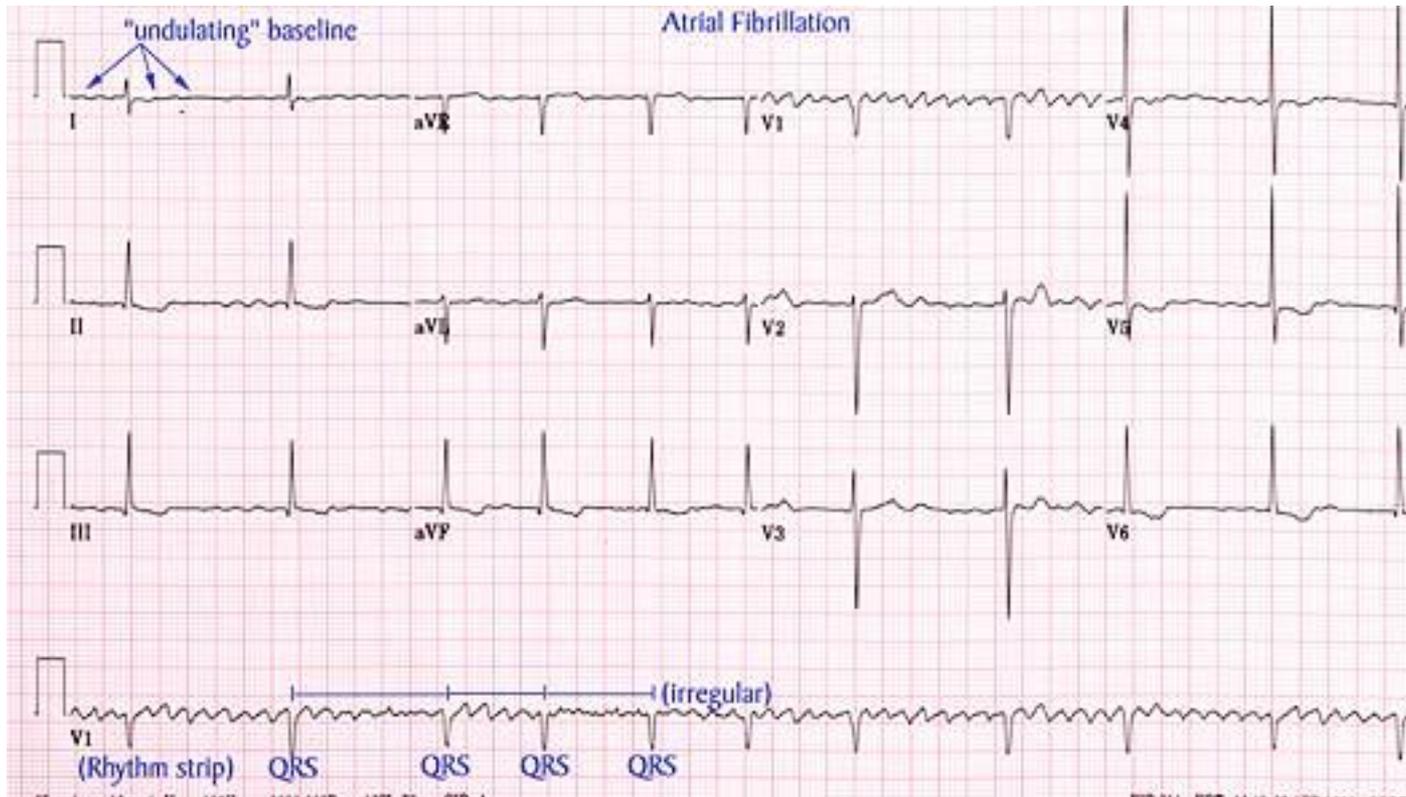
Goals of Management for AF

- Reduce morbidity and mortality and improve quality of life.
- Urgent care is required for:
 - Unstable patients (collapse / syncope or rapid heart rate [> 120 bpm]),
 - Transient ischemic attack or stroke, and heart failure
 - AF associated with a cardiac ischemic event or metabolic disorder requires treatment of the underlying cause

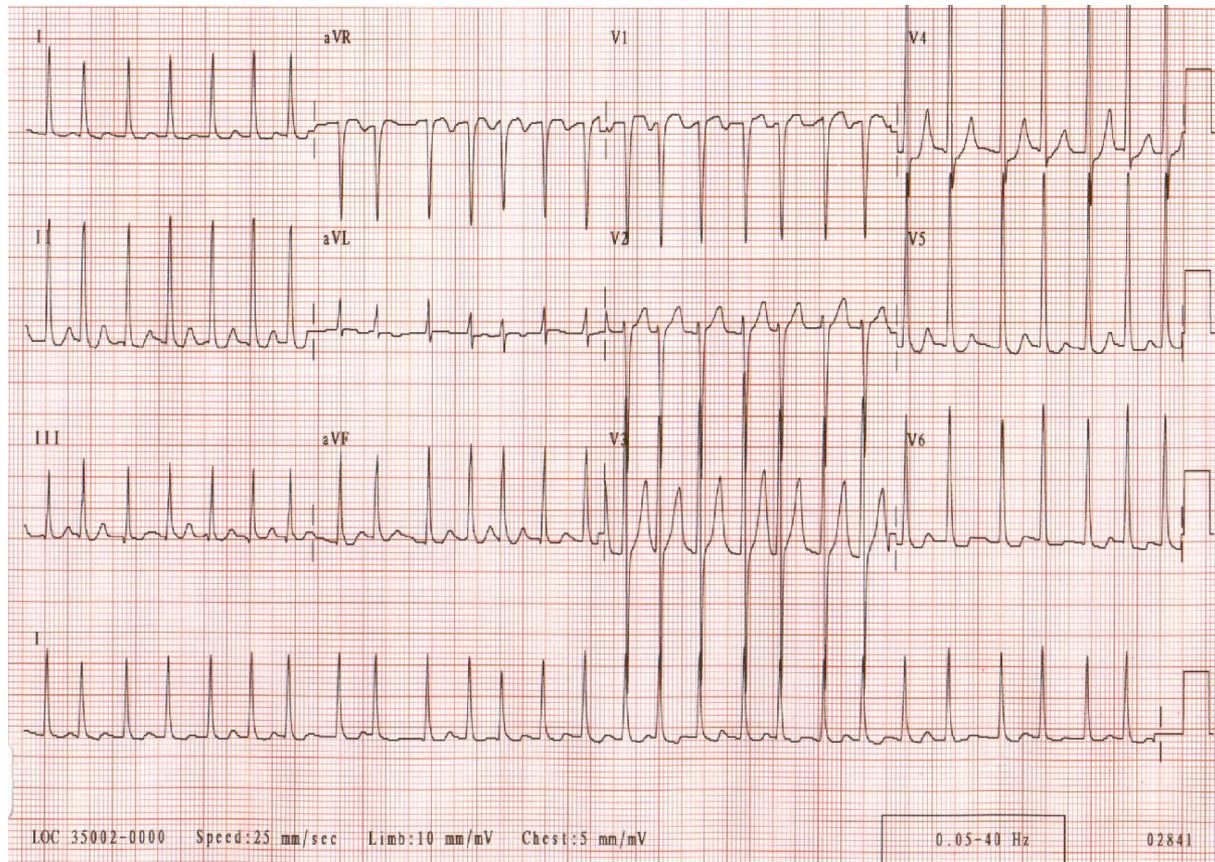
Goals of Management for AF (continued)

- Prevention of AF-related complications
 - Attempt conversion to sinus rhythm
 - Antithrombotic therapy
 - Rate control
 - Control of concomitant cardiac diseases
- Relief of Symptoms – Can be urgent:
 - Rate control - medical therapies
 - Rhythm control therapy
 - Cardioversion
 - Antiarrhythmic drug treatment
 - Ablation

AF with well controlled ventricular rate



AF with rapid ventricular rate



Clinical Evaluation of AF: Electrocardiogram

- Electrocardiogram, to identify
 - Rhythm
 - LVH
 - P-wave duration and morphology or fibrillation waves
 - Pre-excitation syndrome
 - BBB
 - Prior MI
 - Other atrial arrhythmias

Clinical Evaluation of AF: Echocardiogram

- Transesophageal Echocardiogram
 - Detect underlying structural/valvular heart disease
 - Atrial size
 - Presence of left atrial thrombi
 - 15% of patients will have LA thrombi
 - If present, cardioversion deferred until therapeutic anticoagulation is achieved

AF: Clinical Evaluation

- Electrophysiology (EP) study to evaluate presence of other atrial arrhythmias (AF with rapid rate and aberrant conduction can be mistaken for VT)
- Chest X-Ray to rule out cardiomegaly, pulmonary disease
- Comprehensive Blood tests
 - Thyroid
 - Renal Hepatic function
 - CBC, BNP, CRP
 - Others

AF: Functional Evaluation

- Six minute walk test
 - Assess for rate response and symptoms
- Exercise Testing
 - To reproduce exercise induced AF
 - Evaluate for ischemia
- Holter monitor, long-term monitor or event recorder
 - To assess type, frequency, duration, rate and associated symptoms with arrhythmia

Keeping Patients Safe: The “Need to Knows”

- Understand treatment options for re-establishing sinus rhythm
- Understand how to monitor symptoms
- Understand how to take pulse and what to do in case of an unusually fast or slow heart rate
- Understand the use and indications for calculation of bleeding risk
- Support adherence to oral anticoagulation therapy (OAT) - essential to stroke prevention
 - Pill boxes and other reminders can be helpful
 - What to do in case of illness

Keeping Patients Safe: The “Need to Knows”

- Encourage regular follow up for those patients taking novel oral anticoagulants (NOACs) when the opportunities of INR interface are not needed
- Evaluate fall risk and fall precautions
- Review signs of bleeding and when to seek immediate care
- Notify the provider caring for their AF before making changes in medication regimen, including OTC agents

Keeping Patients Safe: The “Need to Knows”

- Patients and family members/caregivers need to be fully informed of the goals of therapy, signs and symptoms of concern and when to seek medical care.
 - Chest discomfort indicative of ischemia
 - Fast or slow heart rhythms, new irregularly irregular rhythm
 - Pre-syncope or syncope
 - Evidence of bleeding
 - Unusual shortness of breath

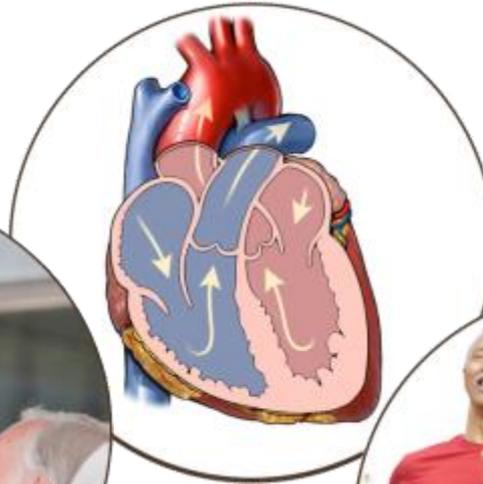
Keeping Patients Safe: The “Need to Knows”

- Discuss OAT usage with all health care providers, including dentist and podiatrist prior to any invasive or surgical procedure (including colonoscopy, dental extraction, skin cancer removal etc.).
- Understand the need for regular lab and follow up visits
- Understand that many medications (including over counter medications) may interact with OAT (especially warfarin) and rate/rhythm control medications.
- Be aware of which medications are most likely to interact with the OAT and rate/rhythm control medications

Atrial Fibrillation

The Beat Goes On Living with AFib

Discover
Your
Choices.



Know
Your
Heart.

Live
Your
Life.



Shared Decision Making

“Shared decision-making is the process by which a health care provider communicates to the patient personalized information about the options, outcomes, probabilities, and scientific uncertainties of available treatment options and the patient communicates his or her values and the relative importance he or she places on benefits and harms.”

Shared Decision Making

- Preference sensitive condition?
- Both parties share information
- Clinician introduces the concept of patient participation in decision-making
- Clinician offers options and describes the associated risks, benefits
- Patient expresses his/her preferences/values: What matters to the patient and his family
- When more than one option exists, decision aids may be utilized prior to achieving consensus

Shared Decision Making

- Early shared decision-making (SDM) tools were in the oncology space
- Tools are now being created for SDM for managing cardiovascular conditions and cardiovascular risk
- SDM Tool for use in the AF patient is available at:
- <http://www.acc.org/tools-and-practice-support/quality-programs/anticoagulation-initiative/anticoagulation-shared-decision-making-tool>

References

- January CT, Wann LS, Alpert JS, Calkins H, Cleveland JC, Cigarroa JE, Conti JB, Ellinor PT, Ezekowitz MD, Field ME, Murray KT, Sacco RL, Stevenson WG, Tchou PJ, Tracy CM, Yancy CW. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *Circulation* 2014;129.
- The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC), Guidelines for the management of atrial fibrillation, *European Heart Journal* 2010;31;2369–2429.
- The Global Burden of Atrial Fibrillation and Stroke A Systematic Review of the Epidemiology of Atrial Fibrillation in Regions Outside North America and Europe. Gregory Y. H. Lip , MD ; Carolyn M. Brechin , PhD ; and Deirdre A. Lane , PhD. *CHEST* 2012; 142(6):1489–1498.