Management of Atrial Fibrillation

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KEYWORDS

• Atrial fibrillation • Ventricular rate • Sinus rhythm • Thromboembolism
• Catheter ablation • Antiarrhythmic drugs

KEY POINTS

- Management of atrial fibrillation includes the management of its risk factors and the underlying cardiac disease, prevention of thromboembolism, control of ventricular rate during atrial fibrillation, and restoration and maintenance of sinus rhythm.
- Prevention of thromboembolism should always be individualized to each patient.
- Control of ventricular rate during atrial fibrillation is essential for all patients.
- Restoration and maintenance of sinus rhythm are done through antiarrhythmic drug therapy, cardioversion, and catheter or surgical ablation.

INTRODUCTION

Atrial fibrillation (AF) is a very common clinical problem affecting more than 2.3 million US adults.[1] This high prevalence is expected to rise over time because of increasing risk factors (age, obesity, hypertension, and so forth).[1] About 35% of patients who are older than 80 years have AF.[2] This high prevalence is also associated with high cost because AF represents about 1% of overall health care spending.[3]

MANAGEMENT OF ATRIAL FIBRILLATION

The management of AF involves multiple facets: (1) management of underlying disease if present and the management of AF risk factors, (2) prevention of thromboembolism, (3) control of the ventricular rate during AF (rate control), and (4) restoration and maintenance of normal sinus rhythm (rhythm control).

MANAGEMENT OF THE UNDERLYING DISEASE AND RISK FACTORS

Management includes the treatment of modifiable predisposing or exacerbating factors including hypertension, obesity, heart failure, sleep apnea, and hyperthyroidism.

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PREVENTION OF THROMBOEMBOLISM

Thromboembolism and stroke can have lethal or devastating consequences. This issue needs to be addressed in every patient with appropriate measures taken. The first step is assessment of the risk of thromboembolism. This risk is used to individualize the recommended therapy, and is based on clinical characteristics and not on whether AF is paroxysmal or persistent and regardless of whether or not AF is symptomatic.[2]

The following recommendations regarding anticoagulation for stroke and thromboembolism prevention are made in patients who have no contraindication for such therapy. Patients who have mechanical heart valves should be anticoagulated with warfarin.[2] Target international normalized ratio is 2 to 3 or 2.5 to 3.5 depending on valve type and location.[4]

Patients who have nonvalvular AF should be assessed using the CHA2DS2-VASc scoring system (**Table 1**).[5] Patients who have a CHA2DS2-VASc score of 2 or more should be considered for anticoagulation for stroke and thromboembolism prevention. This can be performed using warfarin therapy or with use of a direct thrombin or factor Xa inhibitor (dabigatran, rivaroxaban, or apixaban). Renal function is a major factor in choosing an agent for anticoagulation for stroke and thromboembolism prevention. Patients with end-stage renal disease are usually anticoagulated with warfarin.

Patients who have a CHA2DS2-VASc score of 1 may be treated with aspirin or warfarin or a direct thrombin or factor Xa inhibitor (dabigatran, rivaroxaban, or apixaban).[2] In patients who have a CHA2DS2-VASc score of zero it is reasonable not to use antithrombotic drug therapy.

Aspirin is usually prescribed as 325 mg by mouth daily, which is the dose that was used in the Stroke Prevention in Atrial Fibrillation trial.[6] This is the only study that showed benefit for aspirin alone in stroke prevention in patients with AF.[2]

Before prescribing aspirin, it is important to review the result of the Apixaban Versus Acetylsalicylic Acid to Prevent Strokes study,[7] which compared apixaban with aspirin in patients for whom vitamin K antagonist therapy was unsuitable. The study was prematurely terminated given the superiority of apixaban over aspirin in preventing stroke or systemic embolism, even though apixaban and aspirin had similar risk of major bleeding.[7]

When selecting the anticoagulant type and its dose it is critical to assess renal function and assess possible drug interactions. For an overview of the newer oral anticoagulants see **Table 2**.

Table 1
CHA2DS2-VASc scoring system for assessing thromboembolic risk in patients with nonvalvular atrial fibrillation

CHA2DS2-VASc Acronym	Score Points
Congestive heart failure	1
Hypertension	1
Age >75 y	2
Diabetes mellitus	1
Stroke/transient ischemic attack/thromboembolism	2
Vascular disease (prior myocardial infarction, peripheral vascular disease, aortic plaque)	1
Age 65–74 y	1
Sex category (ie, female sex)	1