

# RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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## Management of AF: rate control vs. rhythm control

Atrial fibrillation (AF) is the most common sustained arrhythmia, and is associated with increased cardiovascular mortality and morbidity including stroke. The incidence and prevalence of AF rise with age, with a prevalence of 8% in people older than 80 years. Main objectives in the management of AF include identifying and treating associated or causative factors, deciding and implementing treatment on 'rate control or rhythm control', as well as preventing thromboembolism, balancing the risk of stroke against the risk of bleeding on the use of anticoagulants. The decision on a rate control or rhythm control approach in the management of AF depends on patient age and comorbidities, symptoms and haemodynamic consequences of the arrhythmia.

### *Rate Control*

Most patients with AF require control of the heart rate for symptomatic relief in both the acute and long term setting, and to prevent tachycardia-induced cardiomyopathy.  $\beta$ -blockers are the most effective agents for monotherapy, followed by verapamil and diltiazem. These agents are effective in controlling both resting and exertional heart rate. Digoxin is often used in the acute setting but is rarely used as monotherapy due to its ineffectiveness in controlling ventricular rate in active patients. However sedentary patients, especially those with heart failure, can often benefit from digoxin. Amiodarone is recommended for use as a rate controlling agent for patients who are intolerant of or unresponsive to other agents.

### *Rhythm Control*

Several antiarrhythmic drugs, such as flecainide, propafenone, amiodarone and sotalol, have established efficacy in the pharmacologic conversion of AF to sinus rhythm. However it is known that drug therapy is relatively ineffective for long term maintenance of sinus rhythm (60% in sinus rhythm at 1 year on amiodarone and 40% with sotalol) and patients must be closely monitored for potential cardiac and non-cardiac toxicities associated with drug therapy.

### *Guidelines for the Management of AF*

The recent publication of several studies, such as the AFFIRM and RACE study, which compared rhythm control with rate control in patients older than 65 years old, led to the conclusion that rhythm control is not superior to rate control as it neither improves patient survival rate or functional status nor reduces the risk of stroke in patients with AF.

The results generated from these studies have led to the development of consensus guidelines in 2006 from ACC/AHA/ESC\* on strategies in the management of AF in different patient groups. As a general recommendation, older patients (>65 years) with structural heart disease (i.e. left ventricular hypertrophy, prior myocardial infarction, reduced ejection fraction) are less likely to remain in sinus rhythm and are more likely to have serious side effects from antiarrhythmic drugs, therefore long term rate control is the focus of their treatment. On the other hand, young patients with highly symptomatic paroxysmal AF may derive a greater benefit from a rhythm control approach. Ultimately the management of AF must involve thorough assessment of individual patient's clinical condition and comorbidities so that treatment can be optimised.

\*American College of Cardiology, American heart Association, European Society of Cardiology

This E-Bulletin is based on work by Jody Chu, Senior Clinical Pharmacist, RGH.

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