Rhythm Control vs. Rate Control Strategy in the Era of Emerging New Antiarrhythmic Drugs for Atrial Fibrillation

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Atrial fibrillation (AF) is the most common sustained arrhythmia in clinical practice. It may cause significant symptoms, impair functional status, and increase risk of systemic embolism and stroke. Inadequacies in current therapies for atrial fibrillation have made new drug development crucial. Conventional antiarrhythmic drugs increase the risk of ventricular proarrhythmia. There are three main goals to attain when treating a patient with Atrial Fibrillation, regardless of whether the rate control or rhythm control strategy is employed: alleviation of AF symptoms (palpitations, chest discomfort, fatigue or light-headedness, fainting or shortness of breath); prevention of thromboembolic complications; and control of the ventricular rate to prevent tachycardia-induced cardiomyopathy.　'Rhythm control' would result in fewer symptoms, lower stroke risk, eventual discontinuation of anticoagulation (with its attendant bleeding risk), better exercise tolerance, better quality of life, and lower mortality. However, more recent studies have meant that these concepts must be reappraised. In drug development, the focus has been on favourable multichannel-blocking profiles, and atrial-specific ion-channels. Molecular modification of the highly effective multichannel

blocker, amiodarone, to improve safety and tolerability has produced promising analogues such as dronedarone, although this drug seems less effective than does amiodarone. Vernakalant, an atrial-selective drug with reduced proarrhythmic risk, might be useful for cardioversion in AF. Ranolazine, another atrial-selective agent initially developed as an antianginal, has efficacy for AF and is being tested in prospective clinical trials.