

中文題目：心房顫動合併快速心室反應在接受 Amiodarone 治療後轉變為病竇症候群之相關機轉探討

英文題目：The possible mechanism of atrial fibrillation with rapid ventricular response shift to sick sinus syndrome after amiodarone treatment

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Introduction: In atrial fibrillation (AF) management, there are two strategies: rate control and rhythm control. Amiodarone is the first-line medication of rhythm control in clinical practice. However, there are some patients with sinus bradycardia after amiodarone treatment, who presents as tachy-brady arrhythmia, implicating sick sinus syndrome.

Case presentation: This is a 67-year-old male patient denied any systemic history, he presented intermittent chest tightness for two weeks, other associated symptoms including of exertional dyspnea and dizziness. When he arrived upon emergency room, the initial electrocardiogram (ECG) showed atrial fibrillation with rapid ventricular response. Amiodarone was prescribed for rhythm control. However, after administration of amiodarone, sinus bradycardia with heart rate around 30-40 beats per minute was noted, electrocardiogram (ECG) showed sinus bradycardia with incomplete right bundle branch block. Tachy-Bradyarrhythmia syndrome was impressed, and sinus node dysfunction was also suspected. Under amiodarone use to control AF with rapid ventricular response, temporary transvenous pacing was used for sinus bradycardia. Because of persisted sinus bradycardia after holding amiodarone use, we suggested the patient receiving permanent pacemaker implantation. After permanent pacemaker implantation procedure, the patient's electrocardiogram showed sinus rhythm with paroxysmal atrial fibrillation. Then we kept prescribing amiodarone for rhythm control and arranged the patient discharge with regular follow up.

Discussion: Tachy-bradyarrhythmia syndrome is a pathological rhythm in clinical practice, which the electrocardiogram elucidates co-exist with bradycardia and tachycardia, including sinus bradycardia, sinus arrest, sinus tachycardia and atrial fibrillation (AF) with rapid ventricular response. The initial tachycardia symptoms are presented as palpitation, angina pectoris and heart failure in clinical practice. At the same time, the bradycardia symptoms are also elucidated including hypotension, fatigue and syncope after tachyarrhythmia management. There are so many causes of tachy-bradyarrhythmia syndrome, and sinoatrial node dysfunction is an important factor. In the presence of sick sinus syndrome, the sinus impulse is suppressed, and the pause may be prolonged, and ectopic atrial extra-systole signal to trigger atrial fibrillation. Besides, it is speculated that sinus node dysfunction may increase pulmonary vein arrhythmogenesis, further facilitating the trigger of atrial fibrillation. All in all, sick sinus syndrome may facilitate atrial fibrillation by ectopic atrial signal and long pause, which needs permanent pacemaker implantation.

Conclusion: Tachy-bradyarrhythmia syndrome is a pathological arrhythmia in clinical practice, which presents with both tachycardia and bradycardia. Sinus node dysfunction is an important

factor to cause tachy-bradyarrhythmia syndrome. Permanent pacemaker implantation with anti-arrhythmia medication use is usually needed in clinical practice

References:

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