

Inducibility of atrial fibrillation atrioventricular pacing with varying intervals: role of atrial electrophysiology and autonomic nervous system.

陳亦仁

Chen YJ;Tai CT;Chiou CW;Wen ZC;Chan P;Lee SH and Chen SA

摘要

Abstract

INTRODUCTION: Patients receiving VVI pacemakers have a higher incidence of paroxysmal atrial fibrillation (AF) than those receiving DDD pacemakers. However, the mechanism behind the difference is not clear. The purpose of this study was to investigate whether atrial electrophysiology and the autonomic nervous system play a role in the occurrence of AF during AV pacing. **METHODS AND RESULTS:** The study population consisted of 28 patients who had (group I, n = 15) or did not have (group II, n = 13) AF induced by a single extrastimulus during pacing with different AV intervals. Atrial pressure, atrial size, atrial effective refractory periods, and atrial dispersion were evaluated during pacing with different AV intervals. Twenty-four-hour heart rate variability and baroreflex sensitivity also were examined. Atrial pressure, atrial size, effective refractory periods in the right posterolateral atrium and distal coronary sinus, and atrial dispersion increased as the AV interval shortened from 160 to 0 msec. During AV pacing, group I patients had greater minimal (52 ± 17 vs 25 ± 7 msec; $P < 0.005$) and maximal (76 ± 16 vs 36 ± 9 msec; $P < 0.005$) atrial dispersion than group II patients. The differences in atrial size and atrial dispersion among different AV intervals were greater in patients with AF than in those without AF. Baroreflex sensitivity (6.6 ± 1.7 vs 3.9 ± 1.0 ; $P < 0.00005$), but not heart rate variability, was higher in patients with AF than in those without AF. **CONCLUSION:** Abnormal atrial electrophysiology and higher vagal reflex activity can play important roles in the genesis of AF in patients receiving pacemakers.