The electrophysiological characteristics in patients with ventricular stimulation inducible fast-slow form atrioventricular nodal reentrant tachycardia.

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摘要

Abstract

BACKGROUND: Atrioventricular nodal reentrant tachycardia (AVNRT) can usually be induced by atrial stimulation. However, it seldom may be induced with only ventricular stimulation, especially the fast-slow form of AVNRT. The purpose of this retrospective study was to investigate the specific electrophysiological characteristics in patients with the fast-slow form of AVNRT that could be induced with only ventricular stimulation. METHODS: The total population consisted of 1,497 patients associated with AVNRT, and 106 (8.4%) of them had the fast-slow form of AVNRT and 1,373 (91.7%) the slow-fast form of AVNRT. In patients with the fast-slow form of AVNRT, the AVNRT could be induced with only ventricular stimulation in 16 patients, Group 1; with only atrial stimulation or both atrial and ventricular stimulation in 90 patients, Group 2; and with only atrial stimulation in 13 patients, Group 3. We also divided these patients with slow-fast form AVNRT (n = 1,373) into two groups: those that could be induced only by ventricular stimulation (Group 4; n = 45, 3%) and those that could be induced by atrial stimulation only or by both atrial and ventricular stimulation (n = 1.328, 97%). RESULTS: Patients with the fast-slow form of AVNRT that could be induced with only ventricular stimulation had a lower incidence of an antegrade dual AVN physiology (0% vs 71.1% and 92%, P < 0.001), a lower incidence of multiple form AVNRT (31% vs 69% and 85%, P = 0.009), and a more significant retrograde functional refractory period (FRP) difference (99 +/- 102 vs 30 +/- 57 ms, P < 0.001) than those that could be induced with only atrial stimulation or both atrial and ventricular stimulation. The occurrence of tachycardia stimulated with only ventricular stimulation was

more frequently demonstrated in patients with the fast-slow form of AVNRT than in those with the slow-fast form of AVNRT (15% vs 3%, P < 0.001). Patients with the fast-slow form of AVNRT that could be induced with only ventricular stimulation had a higher incidence of retrograde dual AVN physiology (75% vs 4%, P < 0.001), a longer pacing cycle length of retrograde 1:1 fast and slow pathway conduction (475 +/- 63 ms vs 366 +/- 64 ms, P < 0.001; 449 +/- 138 ms vs 370 +/- 85 ms, P = 0.009), a longer retrograde effective refractory period of the fast pathway (360 +/- 124 ms vs 285 +/- 62 ms, P = 0.003), and a longer retrograde FRP of the fast and slow pathway (428 +/- 85 ms vs 362 +/- 47 ms, P < 0.001 and 522 +/- 106 vs 456 +/- 97 ms, P = 0.026) than those with the slow-fast form of AVNRT that could be induced with only ventricular stimulation. CONCLUSION: This study demonstrated that patients with the fast-slow form of AVNRT that could be induced with only ventricular stimulation had a different incidence of the antegrade and retrograde dual AVN physiology and the specific electrophysiological characteristics. The mechanism of the AVNRT stimulated only with ventricular stimulation was supposed to be different in patients with the slow-fast and fast-slow forms of AVNRT.