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Flecainide Therapy Suppresses Exercise-induced Ventricular Arrhythmias in Patients with CASQ2 Associated Catecholaminergic Polymorphic Ventricular Tachycardia

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Background:
Calsequestrin (CASQ2) associated Catecholaminergic polymorphic ventricular tachycardia (CPVT2) can cause sudden death in young individuals in response to stress. Beta blockers are the mainstay medical treatment for CPVT2 patients. However, they do not prevent syncope and sudden death in all patients. Flecainide was reported to reduce exercise-induced ventricular arrhythmias (EIVA) in patients with CPVT1. The role of flecainide in CPVT2 is not known.

Objective:
To summarize our experience in combining flecainide and beta blockers in high risk CPVT2 patients.

Methods:
All CPVT2 patients who have high risk features (syncope, EIVA, or appropriate ICD shocks) despite beta blockers with or without calcium channel blockers were treated with combination of flecainide and beta blockers. Exercise test was done before and after starting treatment with flecainide.

Results:
Seven patients were treated with flecainide, 4 patients because of appropriate ICD shocks, and 3 because of EIVA. All patients already had ICD implantation. All patients have ventricular arrhythmia (ventricular premature beats and or ventricular tachycardia) during exercise test while on high dose beta blockers with or without calcium channel blockers before treatment with flecainide. In all patients combination of flecainide and beta blockers suppressed EIVA. At 24 months follow-up, 5 patients kept symptoms free. Two patients had one VT storm episode with recurrent ICD shocks each, despite negative stress test and symptoms free.

Conclusion:
Flecainide can completely prevent ventricular arrhythmia during exercise and partially prevent recurrent ICD shocks in high risk CASQ2 associated CPVT patients