Oral procainamide as pharmacological treatment of recurrent and refractory ventricular tachyarrhythmias

Toniolo M.; Grilli G.; Proclemer A.; Rebellato L.; Muser D.; Daleffe E.; Facchin D.
University Hospital Santa Maria della Misericordia, Division of Cardiology, Udine, Italy

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Background: The antiarrhythmic therapy of recurrent ventricular arrhythmias in patients having undergone catheter ablation and in whom amiodarone and/or beta blockers were ineffective or contraindicated, is a controversial issue.

Purpose: The present study sought to evaluate the efficacy and tolerability of oral procainamide in patients with recurrent ventricular arrhythmias, when the standard therapy strategy failed.

Methods: All patients with an implantable cardioverter defibrillator (ICD) treated with oral procainamide for recurrent ventricular tachycardia (VT) or ventricular fibrillation (VF) in our institution between January 2010 and May 2019 were enrolled. The primary endpoint was the total number of ICD interventions after the beginning of procainamide therapy. Secondary endpoints were total number of VTs and VF s recorded on the ICDs controls, and discontinuation of therapy. The events occurring during procainamide treatment were compared with a matched duration period before the initiation of therapy with procainamide. Patients therefore served as self-controls.

Results: A total of 33 consecutive patients (31 males, 93.3%; mean age 73.3 ± 10 years) were included in the retrospective analysis. The mean time of procainamide treatment was 12.5 ± 13.5 months. The mean dose of procainamide was 1194 ± 495 mg/die. Procainamide therapy significantly decreased ICD interventions (DC shock: 102 vs 132; anti-tachycardia pacing: 418 vs 603; 12 patients manifested DC shock after the beginning of treatment vs 25 patients before treatment). Procainamide also decreased the total number of VT/VF episodes (514 vs 1078 episodes) [p < 0.01]. Only 2 patients (6%) presented severe side effects (hypotension) requiring discontinuation of therapy.

Conclusions: Procainamide was associated with a significant decrease of ICD therapies and ventricular arrhythmias showing an optimal profile of tolerability.