

Analysis of Ventricular Tachycardia in Children with Structurally Normal Heart: Six Years Experience From Turkey

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Objective: The aim of our study was to review the clinical characteristics and outcomes of otherwise healthy children with ventricular tachycardia (VT), in our clinic.

Methods: A single-center retrospective review of patients with VT between January 2010 and December 2015 was undertaken. Patient work-up include presenting symptoms, 12-lead ECG, ambulatory ECG recording, exercise testing, echocardiography to rule out structural heart disease and electrophysiologic study. Patients with underlying structural or functional heart disease, inherited arrhythmias or with significant systemic illness were excluded.

Results: A total of 72 patients [40 M (55%), 32 F (45%)] were eligible for inclusion. The mean patient age was 11.6 ± 9.5 years (range: 8 days - 18.6 years), and the mean patient weight was 48.5 ± 30.4 kg (range: 3.5 - 95 kg). The most frequent initial complaint was palpitation in 38 cases (53%), syncope in 5 (6%), chest pain in 5 (6%), and one (1%) had fetal arrhythmia as well. In addition, one infant (1%) was diagnosed with the complaint of prolonged crying. All patients were evaluated with echocardiographic examination and 10 patients with magnetic resonance imaging. 12 lead ECG and 3-channel Holter ECG monitoring were performed in all patients. In addition, exercise testing and 12 lead Holter ECG monitoring were performed in 46 (63%) and 12(16%) patients, respectively. Patients were grouped according to the origin of VT as follows; right ventricular tachycardia (right ventricle outflow tract(40) and para-Hisian(1) n = 41), left ventricular tachycardia (left ventricle posterior fascicular(13), anterior fascicular(1), coronary cusp (10), and purkinje fiber(2); n = 26). In 5 patients location of VT was not determined.

Antiarrhythmic treatment was instituted in 62 cases (86%). Electrophysiologic study and ablation were performed in 40(55%) of 72 patients which were symptomatic and had frequent PVCs and tachycardia. One patient underwent cryoablation and others had radiofrequency ablation as well. The mean follow-up period was 22.9 ± 0.5 months (range:1 months–6 years).

Conclusion: Management and prognosis of idiopathic ventricular tachycardia in patients with an anatomically normal heart, differs from ventricular tachycardia associated with structural heart disease. Ablation should be kept in mind as a curative treatment option in these patients.