Premature Ventricular Contractions in Children With a Structurally Normal Heart: A Single Center Experience from Turkey

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Objectives
Premature ventricular contractions (PVCs) in a structurally normal heart generally are a benign condition, especially if they disappear during exercise. The aim of our study was to evaluate the clinical characteristics and outcomes of otherwise healthy children with PVCs.

Methods
We retrospectively evaluated patients with PVCs by 12 lead ECG, echocardiography, 24-h Holter monitoring (three channel, and 12lead if necessary) and exercise test. Patients were excluded if PVCs was considered to be secondary to any systemic disease, structural cardiac abnormality, or inherited arrhythmias. And also patients with ventricular tachycardia were not included in the study.

Results
Between January 2012 and November 2014, 10260 24-h Holter monitoring was performed. Among them 256 patients had PVCs (135 male (52.7%) / 121 female (47.3%) ) with a structurally normal heart. Age at the first visit was 11.2 ± 4.5 (range: 5 days- 17.8 years). 118 patient (46%) were symptomatic. The most commonly associated symptoms were palpitation (n=70; 27.3%), chest pain (n=34; 13.3%), syncope (n=14; 5.5%).

Patients were grouped according to the burden of PVCs as follows; <500 PVCs/24-h(n = 82; 3%), 500-5% PVCs/24-h(n = 93; 36.3%), 5%-10% PVCs/24-h(n = 26; 10.2%), >10% PVCs/24-h(n = 55; 21.5%). In 243 patients (94.9%) uniform PVCs was noted. Ventricular couplets were seen in %16.8 of patients(n = 43).

PVC with left bundle branch block was seen in 60.9% of the patients (n = 156); with right bundle branch block in 8.9 % (n = 23); and in 30.1%(n = 77) the origin of the PVC could not be determined. Antiarrhythmic treatment was instituted in 64 cases (25%). Of the 55 patients with frequent and symptomatic PVCs (>10%/24-h), 4 patients(7.3%) underwent an electrophysiologic study; 3 had inducible ventricular tachycardia and had ablation. The mean period of follow-up was 13.3±9.6 months (range: 1-34 months), none of the patients developed left ventricular dysfunction. PVCs disappeared in 34.3% of patients, while PVC frequency decreased in 35%, increased in 9.5%, and was unchanged in 28.5% of the patients.

Conclusion
PVCs in structurally normal hearts have benign prognosis and during follow-up, they may disappear or decrease in time.