

Title: Correlation Between EGC Abnormalities and Marijuana Use in the Pediatric Population

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Purpose: The effects of marijuana on the cardiac conduction system is not defined in pediatric patients. The purpose is to describe the association between electrocardiogram (ECG) findings and positive urine drug screening (UDS) for marijuana in the pediatric population.

Methods: A retrospective chart review from 10/13 to 11/14 of all patients \leq 18 years of age with positive UDS for marijuana in the Emergency Department (ED). All ECGs performed on these patients were reviewed by two blinded pediatric cardiologists. Abnormal ECG findings were categorized based on the date of positive UDS.

Results: The median age of the 174 patients presenting to the ED for all reasons with a positive UDS was 15 years (0-18), 42% male. Of these, 37 (21%) had an ECG performed at the time of positive UDS for marijuana. An abnormal ECG finding was identified in 16/37 (43%). A follow-up ECG was performed in 15/16, of which 11 (73%) were normal at baseline. The differences noted when the UDS was positive for marijuana included ST segment changes (4), borderline left ventricular hypertrophy (3), and one each: atrial fibrillation, QT prolongation, Mobitz type I block, and right ventricular conduction delay.

Conclusion: Abnormal ECG findings, including rhythm disturbances and conduction abnormalities may be associated with marijuana use. An ECG should be considered on all patients with a positive urine drug screen for marijuana.