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Repolarization Patterns in Congenital Heart Disease

Abstract

Aim: of this study is to study the repolarization patterns in pediatric patients with cyanotic and acyanotic congenital heart diseases (CHDs) as prolonged QT indicates a myocardium at risk for ventricular arrhythmia. METHODS: A cross-sectional case-controlled study included 30 patients with acyanotic congenital heart diseases and 30 patients with cyanotic congenital heart diseases who presented to Catheterization unit of Cairo University Pediatric Hospital between March 2013 and June 2014. We included 30 healthy children as a control. For all the patients' measurement of oxygen saturation, echocardiography and 12 leads electrocardiogram (ECG) were done and the corrected QT (QTc) was measured. RESULTS: The mean QTc was significantly higher in acyanotic congenital heart diseases with volume overload than control; 0.426 s vs. 0.4 s, (P = 0.009). Increased left ventricular end diastolic dimension (LVEDD) was a significant association with QTc prolongation (p=0.01). Early repolarization was higher in congenital heart diseases (14% in acyanotic patient, 48% in cyanotic patients) than control 6%. Decreased oxygen saturation was a significant association with Early repolarization (p=0.01). CONCLUSIONS: Prolonged QTc was higher in acyanotic congenital heart diseases with volume overload and increased left ventricular end diastolic dimension was a significant association. Decreased oxygen saturation was a significant association with early repolarization.

Key words: Congenital heart diseases, Early repolarization, QT interval