

**Benign early repolarization pattern: Is there any risk of sudden cardiac death ?**

*Kayali S. (1), Demir F. (2)*

*Univcrity of Health Sciences, Keciören Training and Research Hospital, Pediatric Cardiology, Ankara, Turkey (1);Univcrity of Health Sciences, Keciören Training and Research Hospital, Department of Pediatrics, Ankara, Turkey (2).*

**Introduction:**

Early repolarization (ER) is a common electrocardiographic (ECG) finding. Although it has been known a benign phenomenon, recent studies have shown that it can be an important marker of cardiac vulnerability and leads sudden cardiac death. Therefore, new studies have been made to distuinguish malignant and benign pattern of ER. However, there are still conflicting datas regarding the prognostic significance of ER in asymptomatic subjects especially in children.

In this study, some spesific ECG markers that reflect ventricular repolarization were investigated in children with benign ER including, QT interval dispersion (QTdis), corrected QT interval dispersion (QTcdis), interval between the peak and the end of T wave (Tp-e), Tp-e interval dispersion (Tp-e dis), ratios of Tp-e/QT and Tp-e/QTc to predict the risk of sudden death.

**Methods:**

Eighty healthy children (mean age:13,7+/-3,2 years and 71 boy) with benign ER pattern on ECG who have no history of syncope, no history of arrhtymia, no known arrhtymia susceptibility sendromes, no known coronary arter disease, no family history of sudden death were made as the study group and 51 children with normal ECG were included in the study as control group. Benign ER pattern was defined as terminal QRS notching or slurring accompanied by rapidly ascending ST elevation (>1 mV from baseline) in two or more in anterior or inferolateral leads. The following ECG parameters were evaluated at rest by one blinded experienced pediatric cardiologist : QT dis, QTc dis, Tpe dis, Tp-e/QT and Tp-e/QTc.

**Results:**

ER was present in anterior derivations in 52 (65%) and in inferolateral derivations in 28 (35%) children in study group. QRS slurring was observed in 67 (83.8%) and QRS notching in 13(16.3%) children with ER.

Study group had higher QT dis, QTc dis, Tpe dis, Tp-e/QT and Tp-e/QTc measurements when compared to controls. ( p: 0,05, p: 0,04, p<0,01,p<0,01,p<0,01,p<0,01 respectively). There were no significant differences among the studied ECG parameters regarding the ER location (anterior, inferolateral),the ER type (slurring or notching).

**Conclusion:** These findings suggest that benign ER in children may also increase the risk of sudden cardiac death by alterations in ventricular repolarization.