

ECG changes that indicate disturbances in repolarization periods in Epilepsy patients

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Abstract :

Background: Both abnormal lengthening and shortening of the corrected QT interval (QTc) on the electrocardiogram indicating substantial disturbance of autonomic function in epilepsy have been reported.

Aim: We hypothesized that children with epilepsy and abnormal EEG comparative to healthy children may have ECG abnormalities in the corrected QT (QTc) interval that can indicate chanellopathy disturbances in the re-polarization period that is more pronounced during acceleration of heart rate.

Methods: Rest ECG and Holter ECG were done for 75 children that were devised into three groups: Group I : 25 children with epilepsy and normal EEG. Group II: 25 children with Epilepsy and abnormal EEG. Group III 25 healthy children .ECG data from healthy children, children with epilepsy and normal electroencephalogram (EEG), and children with epilepsy and abnormal EEG were prospectively reviewed in rest ECG and during maximal heart rate in acceleration of rhythm in Holter ECG traces. Corrected QT interval (QTc), and QTC dispersion were assessed in 25 healthy children, 25 children with epilepsy and normal EEG, and 25 children with epilepsy and abnormal EEG.

Results: In children with epilepsy and normal EEG the mean QTc was 0.426 mesc, and the mean QTc dispersion was 0.076 mesc. In the group of children with epilepsy and abnormal EEG the QTc 0.448 was and QTc dispersion was 0.152. In the healthy children, the control group, mean QTc was 0.372 mesc, and the mean QTc dispersion was 0.003 mesc.

Conclusion : Our data suggest a significant substantial disturbance of autonomic function in patients with epilepsy. QTc and QTc dispersion were found to be significantly prolonged in children with epilepsy, especially in patients with abnormal EEG.