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The prognostic role of ECG in brain trauma injuries at emergency department

Mehrdad Soltani Delgosha
Alborz University of Medical Sciences, Iran

Background & Aim: Electrocardiograph (ECG) changes along with brain trauma injuries have been reported in many studies. The brain injuries accompanied with ECG abnormalities had more mortality rate. The aim of study is assessing the relationship between Electrocardiograph (ECG) changes and Glasgow Coma Scale (GCS) among patients with traumatic brain injury.

Method: This cross-sectional study was performed on the brain trauma patients admitted to the Emergency Department (ED) of Imam Hossein Hospital, Tehran, Iran during January 2015 to February 2016. After stabilization of the patients, according to the inclusion criteria, GCS was determined and ECG was taken. This process was repeated three times with the interval of two hours and the relation between GCS and ECG changes was determined and reported. After one year the Glasgow Outcome Score (GOS) was measured by telephone the patients and getting the history.

Result: After consideration of the inclusion criteria, 200 patients were assessed (168 males and 32 females). During the first ECG assessment, 42% of the patients had ST alteration, while in the second and third ECG assessments, 46% of the patients had ST changes, which was in relation to lower GCS and severity of the brain injury. According to the analysis, there was also a direct association between QT correction (QTc), QT dispersion (QTd) and GCS, GOS.

Conclusion: The ECG changes would be in association with the GCS and GOS, therefore, the evaluation of ECG parameters can be useful in determining the early outcome of patients.

Biography

Mehrdad Soltani Delgosha is a Specialist of Emergency Medicine and Trauma Consultant in Alborz University of Medical Sciences, Assistant Researcher of Reza Oncology Center and Assistant Researcher in Human Genetic Center in Mashhad University of Medical Sciences.

delgosha.ms@gmail.com

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