

ABSTRACT

Background: patients with head trauma may have a variety of electrocardiographic changes. These changes may be disturbance of rate , rhythm , P wave , QRS complex , PR interval , T wave , ST segment , QT interval or ischemic like changes .

Aim of the study: To determine if there are electrocardiographic changes with isolated traumatic brain injury and if these changes are related to certain type of head injury.

Methods: A 50 adult patients with isolated traumatic brain injury who were admitted to El Helal trauma center and Cairo university hospital were included in a prospective cross-sectional study. A -12 lead ECG was done within 24 hours of admission. Patients with severe chest trauma or preexistent cardiac diseases were excluded.

Results: Nine patients (18%) had sinus bradycardia (HR < 60 beat per minute) , 19 patients (38%) had sinus tachycardia (HR > 100 beat per minute) , 12 patients (24%) had short PR interval (< 0.12 second) , one patient (2%) had long PR interval (> 0.20 second) , one patient (2%) had ST segment elevation , 8 patients(16%) had T wave inversion . These changes showed statistically significant p-value with certain types of isolated traumatic brain injury as brain edema, intracerebral hemorrhage and subarachnoid hemorrhage. There were no significant electrocardiographic changes with other types of isolated traumatic brain injury as subdural hemorrhage, extradural hemorrhage, intraventricular hemorrhage and skull fractures.

Conclusion: Isolated traumatic brain injury may be associated with significant electrocardiographic changes in non-cardiac patients. These changes are significantly related to certain types of brain injury as brain edema, intracerebral hemorrhage and subarachnoid hemorrhage.

Keywords: Traumatic brain injury, electrocardiographic changes.