

Base Deficit Profiling in Patients with Isolated Blunt Traumatic Brain Injury - Correlation with Severity and Outcomes

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Abstract : Objectives: To determine the utility of base deficit in traumatic brain injury in assessing the severity and to correlate with the conventional computed tomography scales in grading the severity of head injury. Methodology: Observational cross-sectional study conducted in a tertiary care facility from 1st January 2010 to 31st December 2012. All patients with isolated traumatic brain injury presenting within 24 hours of the injury to the emergency department were included in the study. Initial Glasgow Coma Scale and base deficit values were taken at presentation, the patients were followed during their hospital stay and CT scan brain findings were recorded and graded as per the Rotterdam scale, the findings were cross-checked by a radiologist, Glasgow Outcome Scale was taken on last follow up. Outcomes were dichotomized into favorable and unfavorable outcomes. Continuous variables with normal and non-normal distributions are reported as mean \pm SD. Categorical variables are presented as frequencies and percentages. Relationship of the base deficit with GCS, GOS, CT scan brain and length of stay was calculated using Spearman`s correlation. Results: 154 patients were enrolled in the study. Mean age of the patients were 30 years and 137 were males. The severity of brain injuries as per the GCS was 34 moderate and 109 severe respectively. 34 percent of the total has an unfavorable outcome with a mean of 18 ± 14 . The correlation was significant at the 0.01 level with GCS on presentation and the base deficit 0.004. The correlation was not significant between the Rotterdam CT scan brain findings, length of stay and the base deficit. Conclusion: The base deficit was found to be a good predictor of severity of brain injury. There was no association of the severity of injuries on the CT scan brain as per the Rotterdam scale and the base deficit. Further studies with large sample size are needed to further evaluate the associations.

Keywords : base deficit, traumatic brain injury, Rotterdam, GCS

Conference Title : ICEM 2014 : International Conference on Emergency Medicine

Conference Location : Paris, France

Conference Dates : December 30-31, 2014