

Prediction of motor and cognitive outcome in acute traumatic brain injury based on length of hospital stay, Glasgow coma scale score (GCS), mental status and substance abuse: a case study of emergency and neurosurgery section in Rasht PourSina Hospital

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ABSTRACT

Introduction: Understanding factors associated with motor and cognitive favorable outcomes in acute phase of traumatic brain injury (TBI) can be helpful in planning effective treatment protocols. This study aimed at evaluation of the influence of length of stay in the emergency and neurosurgery, GCS scores (admission and discharge time), mental status and history of substance abuse on predicting changes related with motor and cognitive outcomes in acute TBI patients is performed.

Materials and methods: 185 acute TBI patients with mean age 37.46 ± 17.42 year which averagely were bedridden 2 and 4 days respectively in emergency and neurosurgery section of PourSina hospital in Rasht, were chosen by consecutive sampling and evaluated with Glasgow coma scale (GCS) on admission and discharge time, functional independence measure (which has two motor and cognitive subscales) and mini mental status examination.

Results: Hierarchical regression analyses with control of confounding factors such as age, gender, education level, history of neurosurgery revealed that two variables of GCS on discharge and mental state could significantly predict any changes of the motor and cognitive outcomes and to explain 34% and 67% variance of motor function ($F= 8.60$; $p<0.0001$) and cognitive ($F= 33.67$; $p<0.0001$) respectively.

Conclusion: This research indicated that positive and strong relationship between motor and cognitive outcomes of acute TBI patients with GCS on discharge and mental status. Therefore is necessary to planning intensive

cognitive rehabilitation programs and physical exercise training to enhance cognitive and motor abilities in patients with TBI and immediately after discharge from the emergency and neurosurgery section is performed.

Keywords: Traumatic Brain Injury, Acute Phase, Motor Outcome, Cognitive Outcome