

## **ABSTRACT**

### **AIM:**

It can be clearly stated that the Glasgow Coma Score has already been validated as an excellent assessment for monitoring and predicting the prognosis in patients with head injury, however, this study will take the next step and compare each component of the Score and identify which of the three has more weight in the overall Score in predicting the outcome of the patient.

### **OBJECTIVES:**

Score assessment was based on the following design objectives:

- (I) To evaluate the efficacy of Glasgow Coma Scale scoring in predicting the prognosis of head injury patients.
- (II) To assess each individual component of the Glasgow Coma Scale and identifying which of the three is significantly predicting the outcome of a patient's prognosis.
- (III) To predict the outcome of a patient's prognosis with the initial assessment of the patient and comparing it to the Glasgow Outcome Scale during the 6-month follow up.

## **METHODOLOGY:**

Cases of isolated head injury that follow the inclusion/exclusion criteria will be selected from the trauma cases that come through the emergency department.

### **Study Design:**

Observational Cohort Study

### **Study Population:**

Head Injury Patients aged 16 years and above.

### **Study Sample:**

30 cases

### Inclusion Criteria:

1. GCS 12 or less
2. Age 16 years and above
3. Closed and Open Head injuries
4. Apparently healthy individuals

### Exclusion Criteria:

1. GCS 13 or more
2. Age 15 years or less
3. Cases with associated major abdomen/chest/orthopaedic trauma
4. Known Case of
  - a. Liver Pathology/Failure
  - b. Renal Failure
  - c. Cardiac Failure
5. Patient on Heparin/Warfarin

The following Scales will be used for assessment of the selected head injury cases:

#### **Glasgow Coma Scale:**

Initial Assessment will be made upon arrival to the Emergency Medicine Department and 6 hours after patient has been received in the emergency department. This allows for rehabilitation and resuscitation of the patient. If the patient has alcohol intoxication, this 6 hour period allows for the patient to be cleared of the alcohol content in his blood and prevents the intoxication giving a false GCS score before and after the resuscitation.

Criteria for patients with an acute head injury has been suggested by National Institute of Clinical Excellence: Clinical Guideline.

**Pupillary Assessment:**

Pupillary reactivity to light is one of the major prognostic factors in head injury patients. Asymmetrical pupils are significant in the prognosis of the patient.

**Glasgow Outcome Scale:**

All head injury patients can finally be scored with regards to their outcome after medical/surgical management. The following table illustrates the different levels of outcome. These five outcomes can be further categorized as favorable (good recovery, moderately disabled) and unfavorable (severely disabled, vegetative and death). The outcome of the head injury patients were assessed during the 6-month follow up appointment.

**RESULTS:**

A majority of patients (18/30) with no verbal response, whether intubated or not, had a poor Glasgow Outcome Scale (85.7%). It was a significant finding ( $p < 0.01$ ) compared to that of motor response which had a p value of 0.109.

Predicting the precise outcome of a patient's prognosis in the form of Glasgow Outcome Scale, could be done only to a certain extent. According to the results of this study, patient with no verbal response conferring to GCS score, will not have good recovery compared to that of absent motor response.

## **DISCUSSION:**

This study revealed that of the 30 patients, being of moderate to severe head injury cases, none of them were of vegetative state or dead by the sixth month of follow up according to Glasgow Outcome Score. Statistical analysis of the results of this study was done and presented as tables which were portrayed earlier. A comparison between the results of this study and that of other similar studies have been cleared below.

This study has revealed much of the same knowledge we know about the Glasgow Coma Scale and its components; this being the fact that out of the three components, eye response was of lowest stature in predicting Glasgow Outcome Scale. The number one predictor of GOS, in this study, was found to be motor response, even though verbal component had a more significant p value ( $<0.01$ ). This is explained by the fact that a majority of patients (18/30) with no verbal response, were intubated causing a stir in the final result.

## **CONCLUSION:**

In contrast to many of the other studies analyzing the Glasgow Coma Scale in relation to prediction of Glasgow Outcome Scale, this study showed significant light on verbal response as a prognostic variable.