Original article:

Clinical and Radiological investigations assessment in Head injury cases: Observational study in Urban Population

[1]Dr.Mubashshir Ali* , [2]Dr.Deepak Ranade, [3]Dr.Ashish Chugh , [4]Dr.Sarang Gotecha , [5]Dr.Prashant Punia [6]Dr.Dushyant Kashyap , [7]Dr.Vybhav Raghu , [8]Dr.Shobhit Chhabra

[1,6 , 7, 8]Neurosurgery Resident , [2,3]Professor ,[4] Asso.Professor , [5]Asst.Professor

Department Of Neurosurgery, Dr.D.Y.Patil Medical College, Pune

*Corresponding Author

Abstract:

Introduction: For the aim of to assess the level of consciousness as well as prediction of outcome of the patient, Glasgow coma scale is widely used and accepted criteria. The numerical grading of three separate responses provided degree of flexibility in defining the continuum of altered level of consciousness. Head injuries are including both injuries to the brain and those to other parts of the head, such as the scalp as well as skull. Head injuries can be closed or open.

Methodology: This was an observational study conducted in our Department. The sample size was estimated with the help of expert. Out of 50 cases of head injuries attended in emergency department of our Hospital, 43 were admitted and out of them 35 patients need operative intervention. We prepared and collected data of these cases . The CT scan as well as MRI findings were correlated in this observational work. The clinical information also assessed. Glasgow coma scale was used to assess level of consciousness.

Results: The type of lesion on CT scan certainly predicts about severity of injury and outcome. In our study recovery was maximum in patients having depressed fractures without intracranial pathology. Recovery was seen good (82%) in patients having extradural haematoma.

Conclusion: Our study concluded that subarachnoid haemorrhage as highest prevalence with unconsciousness to be most common clinical finding.

Introduction:

Head injuries are one of the most common cause of death in adults. The injury can be as mild as a bump, bruise (contusion), or cut on the head, or can be moderate to severe in nature due to a concussion, deep cut or open wound, fractured skull bone(s), or from internal bleeding and damage to the brain. A head injury is a broad term that describes a vast array of injuries that occur to the scalp, skull, brain, and underlying tissue and blood vessels in the head. Head injuries are also commonly referred to as brain injury, or traumatic brain injury (TBI), depending on the extent of the head trauma.

Head injuries are rising dramatically--about 1.7 million people have a TBI each year. Millions of Americans are alive today who have had a head injury and now need help with the activities of daily living, costing the country more than $56 billion per year..[1]

The mechanical brain damage that occurs at the time of injury cannot be repaired or reversed by therapy. But management should ensure that secondary damage does not occur. The primary neurological management is the identification and rapid treatment of localized mass lesion and raised intracranial pressure.[2]

Methodology

The study was approved by IEC . The sample size was estimated with the help of expert. Out of 50 cases of head injuries attended in emergency department of our Hospital, 43 were admitted and out of them 35 patients need operative intervention. We prepared and collected data of theses clinicoradiological aspects was included criteria.

The patients having history of antecedent ahead injury were examined.

We used Glasgow coma scale to assess level of consciousness. It includes three responses viz. eye opening, best motor response and best verbal response. Accordingly patients can be categorized as mild (13-15). Moderate (9-12) or severe (3-8).

The Glasgow Coma Scale is a neurological scale which aims to give a reliable and objective way of recording the conscious state of a person for initial as well as subsequent assessment. A person is assessed against the criteria of the scale, and the resulting points give a person's score between 3 and either 14 or 15.

Results:

The data was collected and filled in excel sheet. Analysis was done.

Table 1) Gender wise distribution:

	Number of cases (N)	Percentage (%)
Male	37	86
Female	06	14

Table 2) Patients needed operative intervention

	Number of cases (N)	Percentage (%)
Male	35	83
Female	08	17

www.ijbamr.com P ISSN: 2250-284X , E ISSN : 2250-2858

Table No. 3: Recovery and Investigations

Type of Injury in admitted patients (N=43)	Radiological Investigations	Recovery in Cases (%)
Generalized Cerebral Edema (N= 32)	CT / MRI	91
Fracture without pathology (N= 09)	CT / MRI	97
Subdural hematoma (N=09)	CT / MRI	89
Extra dural Hematoma (N=08)	CT / MRI	82
Intracranial Hemorrhage (N=07)	CT / MRI	89

We observed recovery was seen and correlated with the type of CT scan abnormality. The type of lesion on CT scan certainly predicts about severity of injury and outcome. In our study recovery was seen 97% in patients having depressed fractures without intracranial pathology. Recovery was also good (82%) in patients having extradural haematoma.

Discussion:

In our study patients having abnormal papillary and planter reflex showed abnormal CT scan findings in many of the cases and these signs were related to poor outcome of the patient. Recovery was observed and correlated with the type of CT scan abnormality. The type of lesion on CT scan certainly predicts about severity of injury and outcome. In our study recovery was maximum in patients having depressed fractures without intracranial pathology. Recovery was also good (82%) in patients having extradural haematoma and 89% in cases of Intracranial cases.

The Glasgow coma scale is used to assess patients in a coma. The initial scorecorrelates with the severity of brain injury and prognosis. The Glasgow Coma Scaleprovides a score in the range 3-15; patients with scores of 3-8 are usually said to be in a coma.

In our study , subarachnoid haemorrhage as highest prevalence with unconsciousness to be most common clinicoradiological finding observed with concern with CT scan abnormality noted in reports.

As a part of body, head is one of the most accessible and vulnerable to injury. Continued and facility based injury surveillance helps in understanding the effects of trauma to the head and facility preparedness in trauma care. Vehicle usage is related with age and gender of the population. The present study observed peak injury incidence at the age group of 21-40 years (51.2%) as reported in other studies[3]. Male involvement found to higher (81%) as

predisposed to vehicular mobility and reported from other evidences .[4]Work timings associated with high traffic congestion on the road found to be associated as in present study, majority of the incidents occur morning and evening hours as reported earlier in India .[5] Almost all (94.9%) of the accidents were reported to be occurred on the metallic road.[6] Based on motor responsiveness, verbal performance, and eye opening to appropriate stimuli, the Glascow Coma Scale was designed and should be used to assess the depth and duration coma and impaired consciousness.

As the maximum number of cases of head injury is due to vehicular accidents and proved to be fatal for life, the safety measures, for both the drivers and the passengers of the respective vehicles should be addressed.

Conclusion:

Our study concluded that subarachnoid haemorrhage as highest prevalence with unconsciousness to be most common clinical finding.

References:

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