

# Evaluation of Head Injuries in Road Traffic Accidents: An Institutional Based Study

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## ABSTRACT

**Background:** The injury characteristics for road traffic crashes in developing countries differs in important ways from the profile seen in developed countries, and it can provide guidance for making policies to improve prevention and control. Hence; the present study was undertaken for assessing head injuries in road traffic accidents.

**Materials & Methods:** A total of 50 patients who were admitted with head injuries were enrolled. Complete demographic and clinical profile was assessed. Thorough clinical examination of all the patients was carried out. A Performa was prepared and all the clinical findings of all the patients were recorded. All the results were compiled in Microsoft excel sheet and were analyzed by SPSS software.

**Results:** Loss of consciousness was seen in 33 patients while post-injury vomiting was seen in 12 patients. Persistent headache was seen in 11 patients.

**Conclusion:** Brain injuries due to road traffic crashes

constitute a significant public health problem the young adult male are mostly involved.


**Key words:** Head Injuries, Road Traffic Accident.

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## INTRODUCTION

The incidence of traumatic brain injury (TBI) varies between 0.9 and 7% according to the place of study, years of study and types of study. TBI predominantly affects young adults, with significant impact on the quality of life among survivors; at least 30 of patients having major neurological sequelae. Road traffic accidents are one of the leading causes of morbidity and mortality worldwide, accounting for over one million deaths per year.<sup>1-3</sup> Road traffic accidents are defined as a collision involving at least one vehicle in motion on a public or private road that results in at least one person being injured or killed. The injury characteristics for road traffic crashes in developing countries differs in important ways from the profile seen in developed countries, and it can provide guidance for making policies to improve prevention and control.<sup>4</sup> Pedestrians are most vulnerable to injury and death. This may be due to a number of factors, including lack of pedestrian facilities in road design, poor knowledge and practice of road safety measures by the general population, recklessness behaviour of motorists, high speed driving, and low levels of vehicle ownership.<sup>5-7</sup>

Hence; the present study was undertaken for assessing head injuries in road traffic accidents.

## MATERIALS & METHODS

The present study was conducted in the Department of Forensic Medicine, Krishna Mohan Medical College & Hospital, Mathura, Uttar Pradesh (India) and it included assessment of head injuries in road traffic accident cases.

Ethical approval was obtained from institutional ethical committee. A total of 50 patients who were admitted with head injuries were enrolled. Complete demographic and clinical profile was assessed. Thorough clinical examination of all the patients was carried out. A Performa was prepared and all the clinical findings of all the patients were recorded.

All the results were compiled in Microsoft excel sheet and were analyzed by SPSS software.

## RESULTS

In the present study, a total of 50 patients who were admitted due to brain injuries were enrolled. Mean age of the patients was found to be 39.5 years. There were 31 males and 19 females. In the present study, loss of consciousness was seen in 33 patients while post-injury vomiting was seen in 12 patients. Persistent headache was seen in 11 patients.

**Table 1: Demographic data**

Parameter	Value
Mean age (years)	39.5
Males	31
Females	19

**Table 2: Clinical findings**

Clinical findings	Value
Loss of consciousness	33
Vomiting post-injury	12
Persistent headache	11

## DISCUSSION

The increasing use of motorcycles particularly for commercial service is a source of concern in this regard because motorcycles cause many more fatal road crashes than other vehicles worldwide. As motorcycles are relatively unsafe vehicles, the riders must be considered as unprotected vehicle users and their injuries are usually severe.<sup>8, 9</sup> Hence; the present study was undertaken for assessing head injuries in road traffic accidents.

In the present study, a total of 50 patients who were admitted due to brain injuries were enrolled. Mean age of the patients was found to be 39.5 years. There were 31 males and 19 females. Majdan M et al analyzed the severity and outcome of traumatic brain injury (TBI) caused by road traffic accident (RTA) in different types of road users in five European countries. The demographic, severity and outcome measures of 683 individuals with RTA-related TBI were analyzed. Five types of road users (car drivers, car passengers, motorcyclists, bicyclists and pedestrians) were compared using univariate and multivariate statistical methods. Short-term outcome [intensive care unit (ICU) survival] and last available long-term outcome of patients were analysed. In data set, 44% of TBI were traffic related. The median age of patients was 32.5 years, being the lowest (25 years) in car passengers. The most severe and extensive injuries were reported in pedestrians. Pedestrians had the lowest rate of ICU survival (60%) and favorable long-term outcome (46%). Drivers had the highest ICU survival (73%) and car passengers had the best long-term outcome (59% favorable). No differences in the outcome were found between countries with different economy levels. TBI are significantly associated with RTA and thus, tackling them together could be more effective.<sup>10</sup>

In the present study, loss of consciousness was seen in 33 patients while post-injury vomiting was seen in 12 patients. Persistent headache was seen in 11 patients. Pathak SM et al elucidated the role of various factors involved in road traffic accidents. Road traffic accident cases admitted to a tertiary care hospital between 01 Oct 2009 and 28 Feb 2011 were included in the study. A total of 182 patients were studied. Information was collected through questionnaire, hospital records and on-site visit. 3 Two-wheelers were the commonest vehicle involved in vehicular accidents. Most accidents happened at a speed of 40–60 km/h (37.9%). Most of the patients were aged between 20 and 30 years. Majority had a driving experience of less than 5 years. Monsoons witnessed 46.7% cases. Most cases occurred between

6 and 10 pm. Among severe injuries, the commonest was lower limb fractures (19.8%). There are multiple factors associated with road traffic accidents which due to the lack of road safety measures in the country are playing their role.<sup>11</sup> Majdan M et al analyzed the differences in severity and in short- and long-term outcome of TBIs with different causes. This study analysed data on 1109 patients with severe TBI by dividing them into three injury-cause groups: 'traffic-related', 'falls' and 'other causes'. Severity and outcome was evaluated using chosen direct and indirect indicators. The most severe trauma occurred in the traffic-related group followed by falls and injuries with other causes. On the other hand, patients with traffic-related TBI had the best outcome. Age improves the outcome in the traffic-related group significantly. However, in the multivariate analysis after adjusting for age (and other important predictors including level of care) the odds for favorable long-term outcome stayed significantly higher in the traffic-related group. It is concluded that the causes of TBI should be considered by both clinicians and public health professionals as a lead in prognosis of outcome and policy planning.<sup>12</sup>

Ghadipasha M et al conducted a study based on the investigation and prevention of traffic injuries. In their study, 1185 victims of road accidents have been under supervision. Furthermore, statistical information such as age, sex, education, career, position of the occupant (Car drivers, motorcycle drivers and pedestrians), injuries related to the accident, type of vehicle, City-location of the accident and Place of death are observed. In total 1185 people, there are 939 men (79.2%) and 246 women (20.8%). Most deaths occurred in young adult, 26.7% (19-24 years, n = 316). Injuries recorded during the autopsy examination include abrasion (n = 267, 22.5%) and laceration (n = 201, 17%) That was different significantly (p = 0.0001). In comparing of the skin lesions and Fractures between the hospital clinical records and autopsy finding, the difference was significant (p = 0.0001). The most common brain injury in hospital was epidural hematoma (n = 152, 12.8%). There was significant difference when compared with autopsy (n = 165, 13.9%) then brain contusion was most autopsy findings (n = 144, 12.2%). Whereas 141 cases was diagnosed in the hospital (11.9%) (p = 0.0001), And the diagnosis of diffuse axonal injury in both groups was similar (n = 75). The morbidity and mortality caused by head injury not only caused by traumatic brain injury, but it is sometimes due to cause delay in diagnosis and surgical procedures. They recommended abrasion & laceration injuries that could be suggestive of more serious injuries to more accurately assess the patient's bedside. In spite the high rate of deaths in road accidents, Epidemiological data on road accidents in this area is still low.<sup>13</sup>

## CONCLUSION

Brain injuries due to road traffic crashes constitute a significant public health problem the young adult male are mostly involved. However, further studies are recommended.

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