

Epidemiology of Head Injuries in a Rural Tertiary Care Hospital in West Bengal

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Abstract

Aim: This study was aimed at understanding the epidemiology of head injury patients admitted at a tertiary care hospital situated in a semi urban area of West Bengal. **Methods:** This institutional based cross sectional descriptive study was carried out over a period of one year in a tertiary care centre in West Bengal catering to rural and semi urban population. Demographic and clinical data was collected from all the patients admitted with head injury in the surgical ward of the hospital. **Results:** Among the 300 cases of head injuries studied, the ratio of M:F was 67:33 with majority(90%) of the patients being from the rural areas. Age ranged from three months to 84 years, the maximum concentration of head injury patients being in the 0-24 years age group. Most of the people were illiterate and unemployed. Road traffic accidents (RTA) were the most common most common cause of head injury accounting for 55% of the study population. Fall from height was the second major cause (25%) of head injury and physical assault was the third major cause of head injury (12%). Unconsciousness and vomiting were the most common presenting symptoms. 54% of patients had normal CT scan reports. Regarding management, it was seen that conservative treatment was given to 69% of the patients and 31% of the patients were treated with surgical measures. Majority (83%) were discharged by 5 days. **Conclusion:** Understanding the extent of the disease in a population, the group mostly affected, and the causes will be helpful in prevention.

Key Words: Head Injury, trauma, epidemiology

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I. Introduction

Head injury covers a wide range of severity from patients who die before admission to hospital to those with head injuries so mild that they do not even attend hospital. In between are those in coma, either initially or as a result of complications, those who are less serious but are admitted to the hospital, and the much larger number who attend hospital but are sent home (1). TBI (Traumatic brain injury) is often called the “silent epidemic” because problems resulting from it are often not immediately visible. It also further reflects the common underestimation of the actual incidence and that society is often unaware of the impact (2, 3). Much of the difficulty in comparing different reports about the features and frequency of head injury stems from differing criteria for the minimum degree of severity required for classification as a head injury. Most reports depend on administrative categories based on management or process, rather than on clinical criteria or outcome. The assumption is that cases admitted to hospital were more severe than those sent home, and that those transferred to a neurosurgical unit were more severe again (1). This study was aimed at understanding the epidemiology of head injury patients admitted at a tertiary care hospital situated in a semi urban area of West Bengal.

II. Methods

This institutional based cross sectional descriptive study was carried out over a period of one year in a tertiary care centre in West Bengal catering to rural and semi urban population. Data was collected from all the patients admitted with head injury in the surgical ward of the hospital during the mentioned time period. Age, sex, socioeconomic profile, etiology of the injury, symptoms and management were recorded.

III. Results

Among the 300 cases of head injuries studied, the ratio of M:F was 67:33 with majority(90%) of the patients being from the rural areas. Age ranged from three months to 84 years, the maximum concentration of head injury patients being in the 0-24 years age group (**Table 1**). Most of the people were illiterate or just had primary education (**Chart 1**). A large part of the study population were either unemployed, did other jobs or were unskilled workers with income of less than two thousand per month.

Road traffic accidents (RTA) were the most common most common cause of head injury accounting for 55% of the study population. Fall from height was the second major cause (25%) of head injury and physical assault was the third major cause of head injury (12%) (**Chart 2**). Among the road traffic accidents, 53% were motorbike riders of whom 78.93% were without helmets. Maximum number of cases of fall from height were due to either fall from roof or fall from stairs, and most number of cases of fall from height had occurred in the age group of 1-10 years. Most of the physical assault cases were due to injuries by a blunt weapon.

Unconsciousness and vomiting were the most common presenting symptoms (**Chart 3**). The distribution according to CT scan reports is given in(**Chart 4**). It was seen that 54% of patients had normal CT scan reports. Most of the patients with an abnormal CT scan finding had fracture of skull, epidural hemorrhage or combined injury. Regarding management, it was seen that conservative treatment was given to 69% of the patients and 31% of the patients were treated with surgical measures. Majority (83%) were discharged by 5 days. The outcome was that 73% of the patients were well and discharged and 26% of the patients were transferred out. Mortality in this series was 1% (3 patients).

IV. Discussion

Head injury is a frequent cause of death and disability among young people. Prevalence of head injuries managed in hospitals has not been well reported in developing countries. Most of the literature available are from developed countries (4).

Clinical evidence of damage to the head is the most reliable way to recognise that a head injury has occurred, but all definitions exclude injuries confined to the face and foreign bodies in the nose or ears. Scalp, skull, or brain may each be injured independent of the other (1). In our study we found that the younger male population was mainly affected. This has been seen in other studies (4). Most of the patients in our group were below 24 years. The male to female ratio was about 2:1. The probable reason may be that the male population move out of their home more frequently for work (5). The percentage of males were much higher in some other studies (4, 6). The fact that most of our patients came from the low income group can be explained by the fact that this is a free hospital run by the government. Another reason is the lack of safe housing and transportation which makes them more prone to various types of injuries. The time taken to reach the hospital was also more as the patients came from remote areas.

Previous studies have shown that in cases of trauma related mortality, traumatic head injury was the leading cause of death (7). All reports show that the main causes of head injury are road accidents, falls, and assaults. There is, however, considerable variation from place to place, with the proportion of admissions due to road accidents ranging from 24% in Scotland to 90% in Taiwan (1). In our study the most common cause of head injury was RTA. This points to the fact that road safety is still a major public health issue in our country. A study from Nigeria show similar findings (4, 6). But there are studies which show a higher incidence of falls from height (5). Data from developed countries show that in cases of RTA, majority are vehicle occupants but in developing countries it is more common in motorbike riders and pedestrians (1). In our study, among the road traffic accidents, 53% were motorbike riders of whom 78.93% were without helmets. Falls are a significant cause of head injury, particularly in young children and elderly people. Many falls in adults are related to alcohol and others result from assault, so that falls are likely to be underreported and the details are often inaccurate (1). In our study most of the cases of falls from height occurred in children below 10 years of age.

In our study 69% of the patients could be managed conservatively and majority had a good outcome. This has been seen in other studies too (5). TBI is a significant public health problem worldwide and requires appropriate attention from researchers and policy makers regionally through the development of ongoing surveillance programs and the implementation of effective evidence-based interventions (5). Understanding the extent of the disease in a population, the group mostly affected, and the causes will be helpful in planning interventions towards reducing brain injury (8). India being a developing country, knowledge about the epidemiology of traumatic head injuries will help in its prevention.

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TABLE 1 DISTRIBUTION OF HEAD INJURY PATIENTS ACCORDING TO AGE

AGE	NO. OF CASES
0-12	96
12-24	63
24-36	51
36-48	45
48-60	27
60-72	9
72-84	9
TOTAL	300

CHART 1: DISTRIBUTION OF HEAD INJURY PATIENTS ACCORDING TO EDUCATION

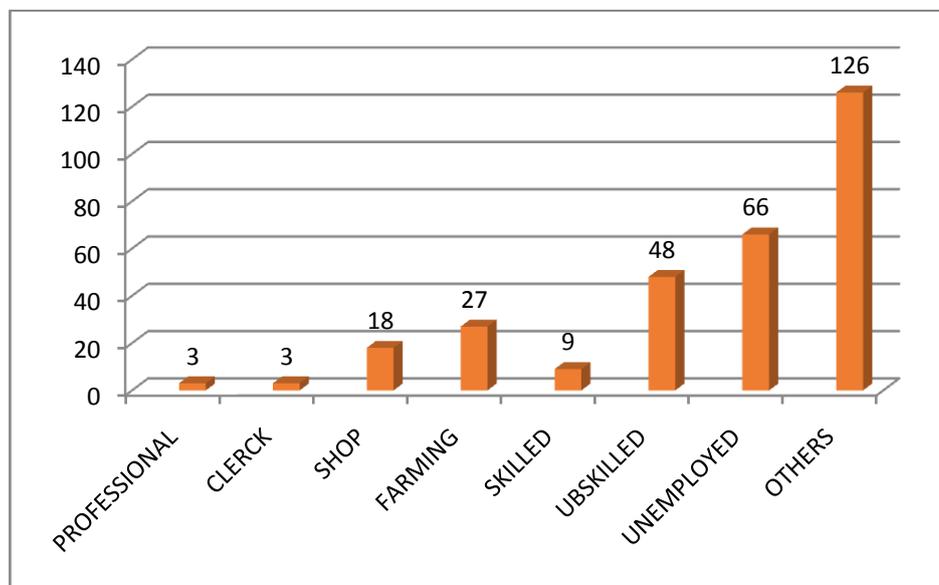


CHART 2 : DISTRIBUTION OF HEAD INJURY PATIENTS ACCORDING TO TYPE OF MECHANISM OF INJURY

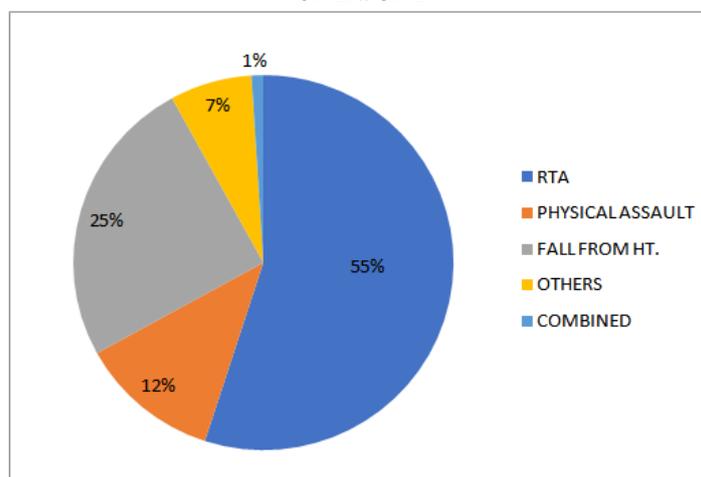


CHART 3: DISTRIBUTION OF HEAD INJURY ACCORDING TO SYMPTOMS

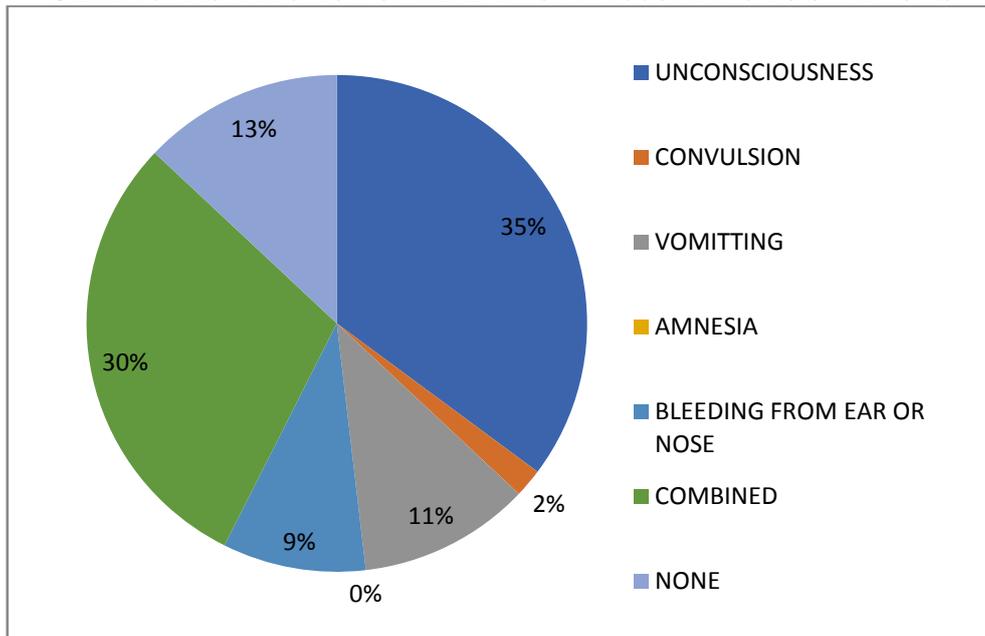
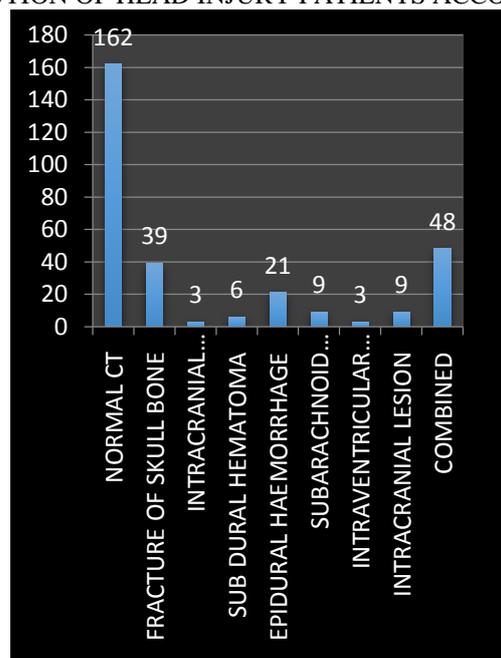


CHART 4 : DISTRIBUTION OF HEAD INJURY PATIENTS ACCORDING TO CT SCAN REPORTS



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