



ORIGINAL RESEARCH PAPER

Neurosurgery

HOSPITAL OCCUPANCY IN TRAUMATIC BRAIN INJURY PATIENTS

KEY WORDS: Traumatic Brain Injury, length of stay, age, prognosis.

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ABSTRACT	<p>Traumatic brain injury is the leading cause of morbidity and mortality in young adults. As per report by the ministry of road transport, Government of India (2007) 1.4 lakhs road accident happened in 2007 with 40,612 people killed and 1.5 lakhs people injured.[1]Often, patients with even mild TBI need hospitalisation in order to rule out the possibility of delayed deterioration. A total of 89 patients admitted over a 6 month period were included in the study. The average age of the study group was 30.97. The age group ranged from 14 to 65 years of age. The average duration of stay was 12.8. Of them 80 patients were discharged having made varying degrees of recovery. The average age of those that were discharged was 30.18 yrs. The mean duration of stay was 13.5 days. It ranged from 2 days to 51 days. The average duration of stay was 6.3 days. It ranged from 2 days to 13 days. 6 patients who were part of the study expired during the course of treatment. The average age was 41 yrs. The LOS in this group ranged from 2 to 10 days while the mean LOS was 6.3 days.</p>
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1. INTRODUCTION

Traumatic brain injury is the leading cause of morbidity and mortality in young adults. As per report by the ministry of road transport, Government of India (2007) 1.4 lakhs road accident happened in 2007 with 40,612 people killed and 1.5 lakhs people injured.[1]Often, patients with even mild TBI need hospitalisation in order to rule out the possibility of delayed deterioration. The length of stay for TBI tends to be more than the average length of stay for other emergencies. This increased length of stay and the morbidities often result in lost man power and are a source of financial burden to the family. In addition, prolonged stay also leads to increased cost incurred by the healthcare provider. TBI is also associated with significant socioeconomic losses in India as well as in other developing countries.[1,2] Our study aims to determine the average duration of hospital stay in patients with TBI..

2. Background

As a developing nation going through rapid industrialisation, urbanisation and motorisation, India faces a myriad of unique problems. This has lead to a shift of balance from the burden of communicable diseases to the emergence of non communicable diseases. India with an HDI of 0.624 is ranked 131 in the world. An emerging problem here, due to the unpredictable and variable interaction between humans, vehicles and the environment coupled with the lack of sustainable preventive programs is the concept of traumatic brain injury. The rapidly changing demographics and the socioeconomic transition have contributed to the silent epidemic of head injuries. The mortality due to TBI is. Worldwide it is a major public health problem and is predicted to surpass many diseases as a major cause of death and disability by the year 2020.[3] The majority (60%) cases are due to road traffic injuries (RTI), followed by falls (20-25%) and violence (10%).[4]

Due to rapid surge in urbanization, motorization and economical liberation, many Asian countries have an increased risk for TBI.[5] In India, TBI is the most common cause of mortality. RTAs are the commonest cause of TBI. Also for each reported death there are several cases that need hospitalisation and prolonged rehabilitation. With severe paucity of trained physicians to treat TBI, considerable burden is placed on health care providers. Epidemiological information is vital for planning activities and developing interventions to prevent Neuro trauma and its debilitating consequences. Young male are commonly affected population in TBI.[6,7] In children younger than 15 years, head

injury is the leading cause of mortality[8,9] but in elderly most frequent cause of TBI is fall.[10,11] 69% cases of injury were reported from age group 15-35.[7]

Recovery from TBI is dependent on a number of factors including but not limited to age, severity of the injury, associated injuries, length of stay and comorbidities. While the outcome can vary from complete recovery through neurological deficits to Vegetative state, there is no denying the cost in terms of lives lost, days lost and monetary losses incurred by both the victim and the healthcare provider.

3. MATERIALS AND METHODS:

Our study was carried out in the emergency department of government general hospital for a period of 6 months between. 89 consecutive patients were included in the study irrespective of the mode of injury or admitting GCS. The length of stay was determined from the date of admission to the day of discharge/death. Outcomes were studied with respect to duration of stay and the age of the patient. All patients underwent CT scans upon admission and were treated on existing protocols. All consultations, medicines administered and surgeries performed were free of cost and the imaging facilities were offered at highly subsidized rates. Data was collected and analysed with MS excel and statistical studies done with SPSS software.

4. RESULTS

In our study, a total of 89 patients were included. The average age of the study group was 30.97. The age group ranged from 14 to 65 years of age. The average duration of stay was 12.8. It ranged from 2 days to 51 days. Of them 80 patients were discharged having made varying degrees of recovery.

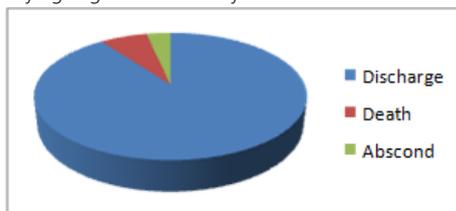


Figure 1. Total Patients

The average age of those that were discharged was 30.18 yrs. The age group ranged from 17 years to 54 years. The mean duration of stay was 13.5 days. It ranged from 2 days to 51 days. Three patients absconded from the ward during the course of study. Their average age was 32 and it ranged from 25 to 36 years.

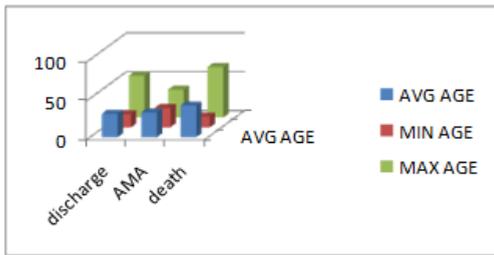


Figure 2. Age Distribution

The average duration of stay was 6.3 days. It ranged from 2 days to 13 days. 6 patients who were part of the study expired during the course of treatment. The average age was 41 yrs and it ranged between 14 and 65 years. The LOS in this group ranged from 2 to 10 days while the mean LOS was 6.3 days.

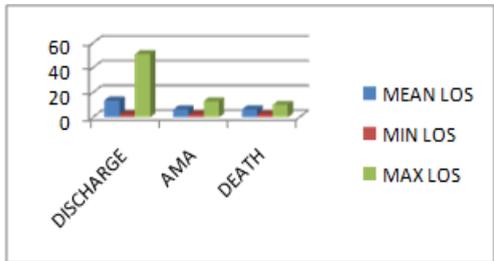


Figure 3. Length of Stay

We were not able to establish a statistically significant association between the outcome and duration of stay. But there was a correlation between age and duration of stay. (p value 0.03)

1. CONCLUSION

Our study was able to assess the average LOS for patients with traumatic brain injury and was also able to correlate between outcome and the LOS. Also, it outlines the need to address the existing lacunae in the management of TBI and the need to implement known and proven control measures. In India injury patterns/modes are different from the developed nations. We are in a fast transient phase of development with a wide gap between large poor population and rich people. The present health infrastructure is not able to meet the demand of common people, further aggravated with the ever expanding slum population in urban areas. Prevention of Prevention and care of injury is a multidisciplinary area and requires inter-sectoral coordination for planning.

Prompt treatment of head injuries involves immediate GCS, radiological evaluation, surgical intervention and intensive care in all appropriate cases, as the first few minutes are crucial for the final outcome. Surgeons should follow the general management plan — Resuscitation, Review and then Repair. The Advanced Trauma Life Support (ATLS) guidelines should be adhered to, while treating all cases of suspected head injury.

By improving our system with better reporting and documentation of cases, we will be able to make a better plan to decrease the incidence of TBI and their timely appropriate multimodality approaches to achieve better outcome of these cases within our limited resources. Given the complexity of geopolitical structures and the intricate micro environments facilitated by the heterogeneity, the solutions to address the issues should be tailored to suit the local sociocultural mileau for better acceptability.

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