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TO STUDY EPIDEMIOLOGICAL ASPECTS OF ACUTE HEAD TRAUMA AT TERTIARY CARE CENTER BIKANER RAJASTHAN

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Abstract

Background: Worldwide, traumatic brain injury (TBI) is the single largest cause of death and disability following injury. Most TBI's are due to road side accidents. According to WHO data, by the year 2020, head trauma will be third largest killer in the developing world.

Methods: The present study was conducted in Department of Neurosurgery, Trauma center of S. P. Medical College and A.G. of Hospitals, Bikaner. The study group consisted of a total of 100 head injury patients presenting to the Trauma center and admitted in neurosurgery ward.

Results: The incidence of injury with respect to the time of occurrence in a day has shown a maximum number of incidents occur between 6.00 pm and 12.00 midnight (40.00%), followed by 12 noon to 6 pm having (28.00%).

Conclusion: The lack of awareness among the pedestrians and disregard for traffic rules by the motorists were important reasons for most of the accidents.

Keywords: Neurosurgery, Trauma, Injury

Introduction

Head injury is a significant public health problem worldwide and is predicted to surpass many diseases as a major cause of death by 2020. Data indicate that majority of traumatic brain injury cases (60%) are as a result of road traffic accident, followed by falls (20-30%), and violence (10%). Traumatic head injury is a leading cause of death and disability in children and adults. Each year in India nearly 2 million people are injured with about 1 million deaths due to head injury. 60% of total cases are due to road traffic accidents followed by falls and violence [1].

Worldwide, traumatic brain injury (TBI) is the single largest cause of death and disability following injury. Most TBI's are due to road side accidents. According to WHO data, by the year 2020, head trauma will be third largest killer in the developing world. The statistics from India are even more alarming. Studies by traffic police have shown that on an average one person dies in every six min, 70% of these being directly attributable to head and spinal trauma. The annual social costs of road accidents are estimated at Rs. 55,000 crores (3% of India's GDP). The accident rate of 35 per 1000 vehicles in India is also amongst the highest in the world.[2]

Computerized tomography (CT) is the primary screening modality of investigations in head trauma [2]. The merits of CT for assessment of head injury are its sensitivity for demonstrating bone injuries apart from mass effect, ventricular size, configuration and acute haemorrhage. [3]

Material and Methods

The present study was conducted in Department of Neurosurgery, Trauma center of S. P. Medical College and A.G. of Hospitals, Bikaner. The study group consisted of a total of 100 head injury patients presenting to the Trauma center and admitted in neurosurgery ward. The data were analyzed from the medical records. Unknown patients were excluded from the study.

Basic demographic characteristics- Age, sex, place of injury, time and date, mode of injury, the first aid providers, mode of transport to the hospital, alcoholic intoxication, Glasgow coma scale (GCS) score, severity of head injury (defined as mild [GCS - 13-15], moderate [GCS - 9-12] and severe [GCS - 3-8]), associated injuries, computed tomography results, type of management, surgical intervention or intensive care units care or conservative and Glasgow outcome scale score were recorded.

In the case of road traffic injuries, type of vehicle involved and execution of safety measures at the time of the incident were recorded.

The collected data are analyzed using Microsoft excel and EPI-Info software.

Results

Table 1: Age wise distribution of cases

Age group (Yrs)	No. of cases	Percentage
0-10	3	3.00
11-20	10	10.00
21-30	38	38.00
31-40	20	20.00
41-50	16	16.00
51-60	8	8.00
>61	5	5.00
TOTAL	100	100

Out of 100 cases maximum case(38.00%) were from 21-30 year age group and minimum case(3.00%) were from 0-10 year age group.

Table 2: Gender wise distribution of cases

Gender	No. of cases	Percentage
Male	88	88.00
Female	12	12.00
Total	100	100.00

Out of 100 cases 88.00% were male and 12% were female.

Table 3: Distribution of cases of head injuries by external Cause

External cause	No. of cases	Percentage
Traffic accident	89	89.00
Fall	4	4.00
Assault	7	7.00
Unknown	0	0.00
Total	100	100.00

The most interesting causative factor which was came across during the case study was the handful contribution of 89.00% cases of the Road Traffic Accidents followed by cases of assault 7.00% and rest 4.00% fall from height.

Table 4: Manner of Injury

Manner of injury	Male		Female	
	No.	%	No	%
Traffic accident	79	89.77	10	83.33
Fall	3	3.40	1	8.33
Assault	6	6.81	1	8.33
Unknown	-	-	-	-
Total	88	100	12	100

Out of total 88 male cases 79 cases were traffic accident, out of total 12 female cases 10 cases were traffic accident.

Table 5: Time of injury

Time of injury	No. of cases	Percentage
6.00-12.00	15	15.00
12.00-18.00	28	28.00
18.00-0.00	40	40.00
0.00-6.00	17	17.00
Total	100	100.00

The incidence of injury with respect to the time of occurrence in a day has shown a maximum number of incidents occur between 6.00 pm and 12.00 midnight (40.00%), followed by 12 noon to 6 pm having (28.00%).

Discussion

Changing and evolving trend of socio-economic factors especially in developing countries like India has made the injuries no more a hidden epidemic, but a major epidemic in par with other communicable and non-communicable disease epidemics. The need to implementation of safety protocols and the future progression of the injury burden was emphasized by WHO way back in 1990's, stating trauma will ascend the top 10 causes of disease burden from the ninth position to third by 2020 globally.[4] With the implementation of the trauma protocols and safety measures lawfully, the epidemic wave has slowed in western developed countries, but the wave is exponentially growing in developing countries. Implementation of protocols in India, which were proven worth full in developed countries are necessary for decreasing the burden of injuries, is the main challenge for public health to execute. The WHO has taken initiative formulated - The Global Plan for the Decade of Action for Road Safety 2011-2020, for this decade (http://www.who.int/roadsafety/decade_of_ action/plan/en/).

In our study, 21-30 years age group (38.00%) are the major suffers which are similar to other studies.[5-6] This is also the same age group who are breadwinning and bread earning members of the family, mortality, and morbidity of the same drives the family deeper into financial crisis and psychological stress especially in families belonging to the lower middle class and below the poverty line. It also leads to economic loss to the country indirectly.

Conclusion

The lack of awareness among the pedestrians and disregard for traffic rules by the motorists were important reasons for most of the accidents. Almost no use of helmets, though mandated by law, use of seat belts sparingly by the vehicle occupants, poor condition of roads, and increased social violence are recognised factors to which attention should be paid. All these aspects are preventable and need to be addressed. with the economic development, trauma care is reforming in India in the recent decade, with rapid industrialisation and motorization, the trauma care should also advance at a much faster rate to achieve the GOAL "Trauma Care for All". The present study is first of its kind to depict the epidemiology of head injuries in and around Bikaner, though a hospital based, multi centric population-based studies are needed for complete epidemiological data. Such similar studies from various regions helps in planning

and formulating public health intervention policies and development of a trauma system national wide which is cost effective, at the same time providing universal emergency care which is accessible to all as a basic right.

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