Original Article ISSN (O):2395-2822; ISSN (P):2395-2814

Epidemiological Trends of Trauma in Tertiary Care Centre

Vikas Siwach[1], Kirti Ahuja[2], Sanjay Middha[3]

[1]Associate Professor, Department of General Surgery, Faculty of Medicine & Health Sciences, SGT University, Gurugram, Haryana, India.
[2]Associate Professor, BPS Govt. Medical College, Khanpur Kalan, Sonipat, Haryana, India.
[3]Professor, Department of Orthopaedics, N.C. Medical College & Hospital, Israna, Panipat Haryana, India.

Received: November 2020
Accepted: December 2020

ABSTRACT

Background: Injury is a major, preventable public health problem in terms of morbidity, premature mortality or disability. The present study was conducted to assess epidemiological trends of trauma in tertiary care centre. **Methods:** 560 cases of trauma reported to emergency department was recorded. Time and date, nature and cause of injury, vital signs and outcome data were recorded. Types of vehicles and modes of collisions were also recorded. **Results:** Age group 0-10 years had 25, 11-20 years had 62, 21-30 years had 114, 31-40 years had 190, 41-50 years had 89 and >50 years had 80 patients. Causes was RTA in 320, fall in 110, violence in 70, alcohol in 40 and miscellaneous in 20 cases. The body parts involved in trauma was head & neck in 165, abdominal in 85, thoracic in 70 and limb in 240 cases. The difference was significant (P< 0.05). **Conclusion:** Maximum cases were seen in age group 31-40 years and the cause was road traffic accidents.

Keywords: Trauma, road traffic accidents, Thoracic.

INTRODUCTION

Injury is a major, preventable public health problem in terms of morbidity, premature mortality or disability. Worldwide, the projections for 2020 show that 8.4 million deaths are expected annually.[1] Trauma has its own natural history and it follows the same epidemic pattern as any other disease, that is, agent, host and environment interacting together to produce injury or damage. The mortality and economic losses imposed by morbidity which results from injuries are largely preventable. However, the development of effective injury prevention efforts depends on reliable and detailed information on the incidence and pattern of injury.[2]

Over 1.2 million people die each year on the world's roads with millions more sustaining serious injuries and living with long-term adverse health consequences. Globally, road traffic crashes are a leading cause of death among young people and the main cause of death among those aged 15–29 years.[3] Road traffic injuries are currently estimated to be the ninth leading cause of death across all age groups globally and are predicted to become the seventh leading cause of death by 2030. As well as being a public health problem, road traffic injuries are a development issue: low- and middle income countries lose approximately 3% of GDP as a result of road traffic crashes.[4]

Name & Address of Corresponding Author
Dr Kirti Ahuja
Associate Professor,
BPS Govt. Medical college,
Khanpur kalan, Sonipat,
Haryana, India.
kirtiahuja2812@gmail.com

Multifactorial causation of RTAs demands the insight of driver-agent-environment complex and its impact on the survivors. RTAs are determined by the spectrum of epidemiological factors like faulty/old vehicles with defective parts, rash driving, drunken driving, defective roads, bad weather conditions, poor lighting, and so on. The study of these factors will help to know the factual causes of accidents and to set the priorities for the prevention of such injuries.[5] The present study was conducted to assess epidemiological trends of trauma in tertiary care centre.

MATERIALS AND METHODS

The present study comprised of 560 cases of trauma reported to emergency department of both genders. All were informed and their written consent was obtained.

Demographic data such as name, age, gender etc. was recorded. Time and date, nature and cause of injury, vital signs and outcome data were recorded. Types of vehicles and modes of collisions were also recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

[Table 1, Figure 1] shows that age group 0-10 years had 25, 11-20 years had 62, 21-30 years had 114, 31-40 years had 190, 41-50 years had 89 and >50 years had 80 patients. The difference was significant (P< 0.05).

[Table 2] shows that causes was RTA in 320, fall in 110, violence in 70, alcohol in 40 and miscellaneous in 20 cases. The difference was significant (P< 0.05).

Table 1: Distribution of patients

Age group (years)	Number	P value
0-10 year	25	0.01
11-20 year	62	
21-30 year	114	
31-40 year	190	
41-50 year	89	
>50 year	80	

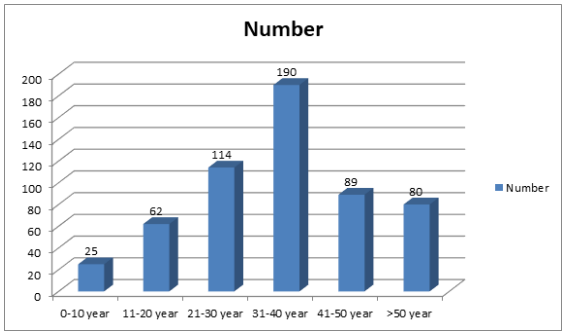

Figure 1: Distribution of patients

Table 2: Cause of injuries patterns

Causes	Number	P value
RTA	320	0.01
Fall	110	
Violence	70	
Alcohol	40	
Miscellaneous	20	

Table 3: Commonly affected body parts

Body parts	Number	P value
Head & neck	165	0.02
Abdominal	85	
Thoracic	70	
Limb	240	

[Table 3, Figure 2] shows that body parts involved in trauma was head & neck in 165, abdominal in 85, thoracic in 70 and limb in 240 cases. The difference was significant (P< 0.05).

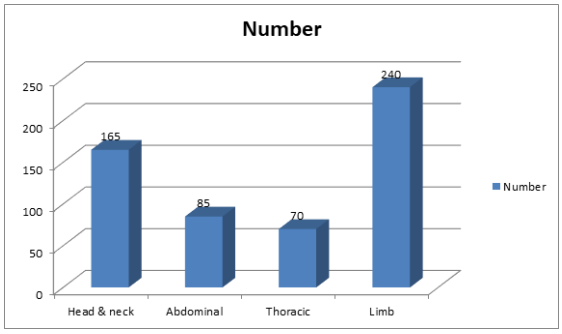

Figure 2: Commonly affected body parts

DISCUSSION

Road transport is a critical structure for economic development of a country. It influences the pace, structure and pattern of development.[6] Surge in population and motorization in the country along with expansion of road network contributes to the number of road accidents, injuries and fatalities.[7] RTAs are a major public health problem in all over the world. In developing countries like India, exposure to potential road traffic injuries have increased largely because of expansion in road network, rapid motorization, urbanization, poor road condition, lack of safety feature in vehicles, crowded roads, poor road maintenance and lack of prevailing law enforcement by the police.[8] The present study was conducted to assess epidemiological trends of trauma in tertiary care centre.

In present study, age group 0-10 years had 25, 11-20 years had 62, 21-30 years had 114, 31-40 years had 190, 41-50 years had 89 and >50 years had 80 patients. Chaurasia et al,[9] in their study showed that the majority of crash victims were males in the age group 20-44 years accounting for huge economic losses for their families and the country at large. Motorized two-wheeler accounted for 46.78% of the accidents. Out of total accident victims, 45% were drivers and riders; 49.47% of accidents occurred between 4 pm to 12 pm. Most drivers/riders mentioned had not taken safety measure (Helmet/seat belt) during accident. Fractures (87.97%) were the most common nature of injuries and lower limb was more commonly involved than the upper limb.

We found that causes was RTA in 320, fall in 110, violence in 70, alcohol in 40 and miscellaneous in 20 cases. Hadaye et al,[10] estimated the proportion of fatal and nonfatal accidents and to determine the epidemiological factors related to nonfatal accidents. The proportion of nonfatal to fatal accidents was found to be 1.8:1. Around 72.9% of drivers did not use any safety measure while driving. Two-wheelers (39%) and light motor vehicles (28.3%) were mostly involved, 45% of drivers had speed more than 60 km/h. Obstacles in the road (41%), defective roads (36.5%), and poor street lighting (11.4%) were reported as contributing factors of the accident. Lower extremities and head neck and face were involved in 47.2% and 27.1% of cases, respectively. Around 40.4% of cases had a single-site fracture.

We found that body parts involved in trauma was head & neck in 165, abdominal in 85, thoracic in 70 and limb in 240 cases. Dsouza et al,[11] assessed the pattern and burden of trauma cases which presented to a tertiary care centre. The annual incidence of trauma at our centre was 15.96% (1140 cases). Most of the injuries were reported in 21-30 years age group. The male to female ratio was approximately 2.3:1. Limb injury (66.92%) constituted the commonest form of injury. Among the various injuries, fall was the commonest cause of injury (60.78%), followed by RTA (16.75%) and assault (11.6%). A majority of the cases were admitted during night time (61.24%). Study done by Ranjana

Singh et al,[12] showed that peak time for accident was between 6 am to 6 pm. Similar results were obtained by many other researchers. The data is comparable and may be attributed to bad light condition, fast and reckless driving increased traffic load and frustration of tired drivers. It was attributed to the travelling frequency and vehicle use in this region, which is maximum during this time.
The shortcoming of the study is small sample size.

CONCLUSION

Authors found that maximum cases were seen in age group 31-40 years and the cause was road traffic accidents.

REFERENCES

1. Dalbir Singh, Satinder PS, Kumaran M, et al. Epidemiology of road traffic accident deaths in children in Chandigarh zone of north west India. Egyptian Journal of Forensic Sciences 2015.
2. Shrivastava SR, Pandian P, Shrivastava PS. Pre-hospital care among victims of road traffic accident in a rural area of Tamil Nadu: a cross-sectional descriptive study. Frost a J Neurosci Rural Pract 2014;5(1):S33-8.
3. Pranab Jyoti Bhuyan, Faruquddin Ahmed. Road traffic accident: an emerging public health problem in Assam. Indian J Community Med 2013;38(2):100–104.
4. Manisha Ruikar. National statistics of road traffic accidents in India. 2015;IP 49.14.249.108. www.jotr.in .
5. Kirti Jaiswal, Sandip K, Santhosh KS, et al. Injury pattern of road traffic accident cases in a rural hospital of central Uttar Pradesh. International Journal of Medical Science and Public Health 2015;4(10):1347- 1350.
6. Seth Sharad, Keshav A, Parnnika A, et al. A retrospective study of road traffi c accidents-injurycharacteristics, management and outcome at Rohilkhand. International Journal of Medical Science Research and Practice 2015;2(2):72-76.
7. Suresh Katageri, Ram Babu Sharma, Govindaraju HC, et al. Pattern of injuries in road traffic accidents at Chitradurga Karnataka: an autopsy based atudy. J Indian Acad Forensic Med. 2015;37(2):173-175.
8. Maduakonam DE, Miriam DU, Arthur N. Retrospections on road traffic injuries as a social burden: the role of public health education initiatives in a developing country. Niger J Med 2015;24(2):169-74.
9. Shamim Haider, Shalini S, Mithilesh K, et al. An epidemiological study of road traffic accidents in Rajendra institute of medical sciences (RIMS) Ranchi. International Journal of Interdisciplinary and Multidisciplinary Studies 2015;3(1):18-24.
10. Chaurasia AK, Ahlawat P. Prevalence of orthopaedic injuries due to road side accidents in East Madhya Pradesh region of Central India. J. Evolution Med. Dent. Sci. 2016;5(21):1080-1085.
11. Hadaye RS, Rathod S, Shastri S. A cross-sectional study of epidemiological factors related to road traffic accidents in a metropolitan city. J Family Med Prim Care 2020;9:168-72.
12. Dsouza C, Rao VV, Kumar A, Diaz E. Epidemiological trends of trauma in tertiary care Centre in Dakshina Kannada district of Karnataka, India. Journal of clinical and diagnostic research: JCDR. 2014 Mar;8(3):66.

How to cite this article: Siwach V, Ahuja K, Middha S. Epidemiological Trends of Trauma in Tertiary Care Centre. Ann. Int. Med. Den. Res. 2021; 7(2):SG29-SG31.

Source of Support: Nil, **Conflict of Interest:** None declared