

Pattern of injuries from road traffic accidents at tertiary care teaching hospital

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Abstract

Background: A steady rise in travel, industrialization, urbanization and population growth is responsible for road accidents. The condition has escalated, in particular in the developing countries, owing to inadequate traffic management and a lack of common sense. **Objective:** To study pattern of injuries in victims of road traffic accidents. **Duration:** The study was carried out from April 2018 to August 2019. **Methods:** A study was undertaken at Osmania General Hospital to find out the types of injury patterns occurred due to the road traffic accidents. All Case histories and records, reports pertaining to road traffic accident victims were collected and analyzed to see different types of injury patterns sustained in the accident and data was compiled based on the findings with SPSS 20 software. **Results:** The study population consisted of 470 patients. Majority of them were males (84.25%) and belonged to the age group of 21 to 30 years with 25.31%. Majority of the patients had injury to Head neck and face constituting 53.61% and least had injury to the abdominal region constituting 9.14%. Abrasion was seen in most of the cases around 64.89% and Lacerations was the least found in 14.46%. Majority of the patients around 42.81% had skull and maxillofacial fracture and the least type of fracture observed was Ribs fracture observed in 4.79% of the cases. **Conclusion:** All efforts need to undertake to prevent a Road Traffic injury which is an important cause of mortality, morbidity and disability.

Key Words: Road Traffic accident, Road Traffic injuries, Fractures, Pelvic, Rib, Extremities

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INTRODUCTION

India's population has risen quite steadily over the five decades from 48 million to 1.2 billion. Today the population is increasing at a rate of 1.4% annually well beyond China's rate of 0.7%. Fast urbanization, industrialization, population explosion and people migration in India have contributed to tremendous rise in road transport in the last two decades. This contributed to an increasing level of road traffic, resulting in an increased

probability of road accidents. Research from developed and, in particular, emerging countries shows that traffic deaths are rising and ranks as the fifth leading cause of mortality worldwide. More than 1.2 million fatalities per year occur from traffic accidents worldwide which are the main causes of death among the middle aged. Eighty percent (80%) of these deaths occurred in low and middle income countries.¹ Investigations of transport and traffic related injuries may call upon the entire spectrum of forensic sciences and medico legal expertise.² RTAs involve forensic investigations that allow risk factors and cause of death to be examined. The forensics experts often assess if an RTA has induced disabilities and if so, they quantify the percentage of impairment.³ The most prevalent injury was fracture of bones, particularly head and neck, and the lower limbs and then upper limbs followed closely while the least injured portion is the abdomen.⁴ The best treatment of patients with severe injuries involves a structured strategy from the point of accident to recovery systems across a facility designed to

address the demands of multi-system issues, which will re-enact the patient's maximum potential role in community.⁵ This research was conducted to examine the pattern of injuries in road traffic accidents.

MATERIALS AND METHODS

Place Of Study: Department of Forensic and Emergency

Type Of Study: A prospective study

Sample Collection: 470 cases

Sampling Methods: Consecutive sampling

Inclusion Criteria: All patients with Road Traffic Accidents were included in the study across all age ranges and gender.

Exclusion Criteria: All patients without the involvement of Road Traffic Accidents and those patients who were transferred to other hospital based on their family demands were excluded from the study.

Statistical Methods: The statistical analysis was done with the help of SPSS Version 20 program. The data is presented in the form of statistical tables.

In depth, the sequence, extent and distribution of the injuries were examined for all the cases admitted to the hospital. Factors such as age, gender, injury nature and intoxication have been examined. All fatal and non-fatal accidents were recorded. Throughout this time a total of 470 cases were examined.

OBSERVATIONS AND RESULTS

Table 1: Distribution of patients by age and gender

Age (in years)	GENDER				TOTAL	%
	Male	%	Female	%		
1 - 10	7	1.48%	7	1.48%	14	2.97%
11- 20	33	7.02%	6	1.27%	39	8.29%
21 - 30	110	23.40%	9	1.91%	119	25.31%
31 - 40	91	19.36%	12	3.24%	103	21.91%
41 - 50	75	15.95%	15	3.19%	90	19.14%
51 - 60	44	9.36%	11	2.34%	55	11.70%
61 - 70	30	6.38%	12	2.55%	42	8.93%
71 - 80	6	1.27%	2	0.42%	8	1.70%
TOTAL	396	84.25%	74	15.75%	470	100%

Majority of the patients were males constituting 84.25% and females were less constituting 15.75%. Majority of the patients belonged to the mid age range group of 21 to 30 years with 25.31% and the least belonged to the age group of 71 to 80 years.

Table 2: Distribution of body regions injured in the accident

Site of Injury	ABRASION	CONTUSION	LACERATIONS	Total	Percentage
Extremities	31	12	9	52	11.06%
Lower Limb	29	2	19	50	10.63%
Upper Limb	59	11	3	73	15.53%
Abdomen	23	15	5	43	9.14%
others	163	57	32	252	53.61%

Majority of the patients had injury to Head neck and face constituting 53.61% and least had injury to the abdominal region constituting 9.14%. Abrasion was seen mostly totaling 64.89% of the cases and Lacerations was the least found in 14.46%.

Table 3: Distribution of fracture across various body region

Region of Fracture	Total	Percentage
Skull and maxillofacial	143	42.81%
Lower limb	50	14.97%
Upper Limb	73	21.85%
Spinal	27	8.08%
Ribs	16	4.79%
Pelvic	25	7.48%

Majority of the patients around 42.81% had skull and maxillofacial fracture followed by upper limb fracture seen in 21.85%, lower limb fracture seen in 14.97%, spinal fracture seen in 8.08%, pelvic fracture observed in 7.48% and the least type of fracture observed was Ribs fracture observed in 4.79% of the cases.

DISCUSSION

Injuries in road traffic is a significant public safety concern. These result not only in mortality but also in disabilities among survivors who could be burdensome to the community. As a developing country, India is experiencing a social, epidemiological and economic transformation that has dramatically altered the health scenarios. This shift contributed to the non-communicable diseases issue, like Road Traffic Accidents resulting in grievous Injuries becoming a key concern of the health care system. Since the road traffic accident is an important cause for morbidity and mortality, this study was taken up to find out the epidemiological factors determining the accidents. The majority of the victims are males and the sole bread earners of the family. They are greatly exposed on roads.^{6,7,8,9} Frank *et al.* also observed a higher male: female ratio.¹⁰ Majority of the accidents took place in the city premises in the evening, night and early morning and were a result of speeding and negligence of traffic rules by the people returning from work, pubs or outing with friends and family, majority of it was result of fatigue, work place tensions, drunk driving resulting in crashing into pedestrians, dividers, barricades or other vehicles. The findings of our study coincide with other studies.^{11,12,13,14} Majority of the injuries were on the face, head and neck with 53.61%. Similar was the result of study done by Wong *et al.* in 1980.¹⁵ Abrasion, bruises and lacerations were seen in all the cases with abrasion being most common. The lower end fractions again are attributed to the interplay of gravity and speed of the automobile during collisions, which contributes to kinetic energy production that in effect contributes to fractures. Brain damage is a significant cause of morbidity in survivors; impairment may arise regardless of the original extent of the head injury and recovering patients with brain injuries are more affected than patients with injury to other areas of the body. The reasons for a greater number of RTA cases may be due to the inadequate knowledge about road safety among people, bad condition of the roads and improper lighting of the roads at night and drunk driving.

CONCLUSIONS

Injury is the leading cause of death and injuries puts a rising pressure on developed world health services. The usage of motor cars is increasing globally, with the rapid urbanization, the overcrowding and inadequate observance of "road rules," becoming the standard in the developing world. The life of

majority of the victims can be saved by early treatment, as the initial few hours following injury forms the critical time. Thus the injuries due to RTA can be prevented or at least can be reduced by preventing the occurrence of traffic accidents and by early hospitalization and treatment. All measures should be taken to avoid road accidents that are a significant cause of disability, mortality and morbidity.

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