

Study of Injuries among Road Traffic Accident Victim at LLR Hospital, GSVM Medical College, Kanpur U.P.

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ABSTRACT

In a bid to analyse the injured cases coming to tertiary care centre a casualty based descriptive study was taken up at G.S.V.M. Medical College, Kanpur, U.P., India. Of the total 6096 medicolegal cases road traffic accident were 1471 and accounted for 24.1% cases. Male victims were 1244, 84.5 % of road traffic accident and female victims were 227 a 15.4 % of Road Traffic Accident. Maximum no. of road traffic accident cases were in 21-30 age group (31.4%), and minimum in 0-10 age group, accounting for 1.42% cases. Head injuries were the commonest form of internal injuries seen in the victims (46.09%) Bone fracture was maximally seen in lower limbs. Traffic accidents occurred maximal during 6 p.m. to 12.00 a.m. Lacerations were the most prevalent type of mechanical injury accounting for 42.21% followed by abrasions 28.16% and the avulsions being the least. Alcohol related accidents were 12.37%.

Key Words: Road Traffic Accidents, Casualty, injuries, mechanical injury

INTRODUCTION

Any event occurring suddenly and without intention can be regarded as accident. A road traffic accident involves sudden events resulting in damage to vehicle and the human body involving either two vehicles or a vehicle and a pedestrian. India, ranks 1 in the number of road accident deaths across the 199 countries reported in the World Road Statistics, 2018. As per the WHO Global Report on Road Safety 2018, India accounts for almost 11%

of the accident related deaths in the World. The number of accidents in India has increased by 0.46 percent, over that of the previous year i.e 2017. ^[1] World Health Organization (WHO) states that injury accounts for up to 15% DALY loss globally; 20% due to RTI. ^[2] Road traffic accidents are a major cause of morbidity and mortality thereby causing increased pressure on law related persons, the medical professionals and the medical facilities. Increase in the requirement of vehicles has resulted in an epidemic like condition in road traffic accidents. ^[3]

Aims and objectives

- Study of the injury profile of victims of road traffic accidents.
- Planning of casualty department for maximal use of resources on the basis of study.

MATERIAL AND METHODS

As per Law all the road traffic accidents are regarded as medicolegal, all medicolegal cases with RTA reporting to casualty of Lala Lajpat Rai Hospital, GSVM Medical College, Kanpur, U.P. were studied from March 2018 to Feb 2019 for a period of one year. For purpose of study, RTA was defined as an accident taking place on the road between two or more objects, one of which must be any kind of moving vehicle. Any injury on the road without involvement of a vehicle, injuries due to stationary vehicles, deaths due to RTA, railway accidents were excluded from the study. The victims of the accidents were

interviewed to obtain the information about the circumstances leading to the accident. Where the condition of the victims was not

compos mentis the relatives or accompanying person was interviewed about the events of road traffic accident.

OBSERVATIONS

TABLE 1: Age and sex wise distribution of RTA

s.no	Age group in year	Total no. of cases	% of cases	Male	Male %	Female	Female%
1	0-10	21	1.42%	13	00.88%	8	00.13%
2	11-20	183	12.44%	147	9.99%	36	2.44%
3	21-30	462	31.40%	404	27.46%	58	3.94%
4	31-40	353	23.99%	307	20.87%	46	3.12%
5	41-50	222	15.09%	186	12.64%	36	2.44%
6	51-60	129	8.76%	104	7.07%	25	1.69%
7	61 & above	101	6.86%	83	5.64%	18	1.22%
total		1471		1244		227	

Of the total 1471 cases of RTA, Males accounted for 84.5% of cases while females were 15.43%. Maximum number cases were in 21-30 age group and minimum in 0-10 age group which was 1.42%.

TABLE 2 Factor responsible for RTA

S.No.	Factor responsible for RTA	No. Of cases	%
1	Human error	729	49.55
2	Alcohol taken by driver	182	12.37
3	Condition of roads	219	14.88
4	Adverse Weather conditions	96	6.52
5	Wandering animal	173	11.76
6	Unknown	72	4.89

Of the factors studied for causation of road traffic accidents human errors outnumbered other causes amounting to 49.55% of cases while condition of roads and alcohol consumption were ranked 2nd and 3rd. Significant number of accidents occurred due to wandering animals which accounted for 11.76% of cases.

Table 3 RTA according to time of occurrence

s.no.	Time of reporting	No. of victims	% of victims
1	6 am to 12 pm	357	24.2
2	12 pm to 6pm	465	31.6
3	6 pm to 12 am	577	39.2
4	12 am to 6 am	72	4.8
total		1471	

Maximum incidence of cases, 577 victims (40.78%), happened between 6 pm to 12 am and least incidence occurred between 12 am to 6 am with only 72 (4.8%) cases. Between 12 pm to 6 pm incidence of occurrence was 31.6% (465 cases) of total number of RTA cases of

TABLE 4 Distribution of cases based on type of mechanical injury

Type of mechanical injury	Number of cases	Percentage (%)
1. Laceration	621	42.1
2. Fracture	334	22.7
3. Abrasion	421	28.61
4. Contusion	76	5.16
5. Avulsion	19	1.29

Observations made regarding type of mechanical injuries showed results that lacerations were the most common type of injuries, being 42.1% making a substantial contribution to RTA cases. Avulsions were the least seen a meagre 1.29%.

TABLE 5 Distribution of injuries according to body part involvement

Body part	No. of cases	% of cases
Head injury	678	46.09
#femur	263	17.87
crush	27	1.83
tibia	26	1.76
spinal	17	1.15
Upper limb	09	0.61
chest	10	0.67
pelvis	09	0.61
	1471	

Head injury cases were maximum in numbers in our study. They contributed 46.09% of cases followed by fracture of femur, a percentage of 17.87%; upper limb fractures were 0.67%

TABLE 6 Age and Sex Wise Distribution of RTA associated with head injury

s.no	Age group in year	Male with head injury	Female with head injury
1	0-10	13	1.91
2	11-20	81	11.9
3	21-30	222	32.74
4	31-40	159	23.45
5	41-50	93	13.71
6	51-60	63	9.29
7	61 & above	50	7.37
		571	107

Head injury was more common in males 84.21% while females were 15.78%. Maximum number of head injuries occurred in age group of 21-30 yrs. being 32.74% while minimum were in age group of 0-10 yrs. being 1.91%.

DISCUSSION

Road traffic accidents (RTAs) are increasing with rapid pace and presently these are one of the leading causes of death in developing countries. Vander Sluis et.al [4] has reported that traffic is the most important cause of severe injuries and three quarters of severely injured cases who died during hospitalization are victims of traffic accidents. The study revealed that RTA constituted 24.1% of the total medicolegal cases. In our study the highest numbers of RTA victims (31.4%) were found between the age group of 21-30 years. Similar results were reported by others also. [5-7] A male predominance was noticed in the study with Males accounting for 84.5% (1244) of cases while females were 15.43% (227) (table 2). This was also observed in Delhi, whereas, another study from Delhi has reported very high male and female ratio (9:1) [8,9] thus demonstrating the male predominance of more mobility in the India.

Most of the road traffic accidents were due to human errors followed by alcohol consumption their percentage being 49.5% and 12.37% respectively (Table 3), our findings of study related to head injury are at variance to those of Singh & Dhatarwal [10] who have reported on incidence of 50.4% of head injury. This study had maximum RTA injured patients between 6p.m. to 12.a.m. amounting to 39.2 % of cases closely followed patients between 12 p.m. and 6 p.m. accounting for 31.6% (Table 4). This is in contrast to the study conducted by Shakeer Kahn P, Bayapa Reddy N, Chandrasekhar C et.al. whose study showed maximum cases between 6 a.m. and 12 p.m. [11] Observations made regarding type of mechanical injuries showed results that lacerations were the most common type of

injuries, being 42.1% making a substantial contribution to RTA cases. Avulsions were the least seen a meagre 1.29% (Table 5). Similar observations by Shakeer Kahn P, Bayapa Reddy N, Chandrasekhar C et.al. support the outcome of our study although percentage wise our study shows lower percentage. [11]

Head injury was commonest injury 46.09% followed by lower legs 17.87%. this is supported by the many studies [11-14] (Table 6) Head injury was more common in males 84.21% while females were 15.78%. Maximum number of head injuries occurred in age group of 21-30 yrs., being 32.74% while minimum were in age group of 0-10 yrs. being 1.91%.

CONCLUSION

Majority of the victims has suffered grievous injury which reflects the intensity with which the RTA has occurred. Head injury was found to be most common during the road traffic accidents. Depending on the severity, it may land up into fatal accident. Most of the injuries were grievous in nature. Further accidents occurred during late noon and evening hours probably because of higher traffic.

Issuing of driving licences with care, improvement in road condition can reduce injuries due to road traffic accidents. Road side medical assistance and better ambulance services can curb down the fatality and also the chance of victim getting disabled by their timely action in the management during the golden hour.

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