Study of Pattern & Distribution of Injuries in Fatal Road Traffic Accident Cases Autopsied at MIMS, Mandya

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Abstract

Accidents are now one of the major causes of death. The present study was carried out between Jan 2016 to Dec 2017 at Department of Forensic Medicine, Mandya Institute of Medical Sciences, Mandya, to study the type of injury, pattern and distribution of injuries, body parts involved, fatal injuries and causes of deaths noted at the actual autopsy examination of the victim. During the period of study 1013 total autopsies were conducted, out of which 15 cases were of road traffic accidents.

Keywords: *Road traffic injuries, head injury, visceral injuries.*

Introduction

The term accident has been defined as an occurrence in the sequence of events which usually produced unintended injury or death or property damage. (1)

Among all types of accidents, those caused by motor vehicles claim the largest toll of life and tend to be serious. There are almost 98,000 deaths from road accidents annually in India and total causalities worldwide is 1.2 million each year. Studies done by WHO shows that road traffic accidents accounts for 5% of total deaths in India and in age group of 10-50 years is amongst top three leading causes of death. (2)

According to study conducted by National Transportation Planning and Research Centre, Delhi, a person is killed or injured in every 4 minutes in traffic accidents in India.

Accidents constitute a complex phenomenon of multiple causation. There is steep rise in vehicular accidents in present Era due to urbanization, growth in transport sector, population explosion, compounded by high speeding, consumption of alcohol and inadequate traffic planning for the rising growth of population. (3)

The present study has been carried out at MIMS, Mandya regarding Epidemiological, medico-legal aspects of vehicular accidents in Mandya district making an effort to establish various causative factors, pattern and distribution of injuries and therapy to plan measures to prevent them in future.

Material and Method

150 cases of fatal road traffic accidents brought to mortuary department of Forensic Medicine, MIMS Mandya, during 2 years period 01/01/2016 to 31/12/2017 compromised the study population. Various demographic and Epidemiological characters related to victim's accidents were gathered from Police or from guardians and relatives. The gender distribution, type of injury, body parts involved, cause of deaths were noted at actual autopsy examination of victim and analysed statistically.

Results

It was observed that out of 1013 cases received for postmortem examination at our department, 150 (14.80%) cases were of road traffic accidents. It was observed that 113(75.33%) subjects were males and 37 (24.66%) were females. As per WHO guidelines, cases were divided into five groups with respect to age wise

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distribution and the observation made was that maximum age group involved was between 20-40 years (56.66%).

Table No 1- Age wise distribution

Age Group	Total	Male	Female	Percentage
0-20 years	40	28	12	26.66%
20-40 years	85	65	20	56.66%
40-60 years	18	14	04	12%
60-80 years	06	05	01	4.12%
>80 years	01	01	0	0.66
Total	150	113	37	100%

Motorcyclist (Two wheelers) compromised 70 (46.66%), followed by pedestrian 50(33.33%), occupants of four wheelers 20(13.33%) and three-wheeler 10(6.66%) maximum deaths in motorcyclist followed by pedestrian.

Table No 2 - Type of Road Commuters

Type of Road Commuters	No. of Person	Percentage
Motor cyclist	70	46.66%
Pedestrian	50	33.33%
Occupants of 4 wheelers	20	13.33%
Three wheelers	10	6.66%

It was observed that commonest external injury was abrasions, contusion 70% followed by 65% fractures and lacerations.

Head injury seen in 93 cases (62%), thoraco abdominal in 50 cases (33.33%), multiple injuries in 04 cases (2.66%), cervical spinal cord injury in 02 cases (2.66%). (4)

Table No 3: **Distribution of cases according to type of victim and injury.**

Type Of Victim	Type of Injury			
	Abrasion	Contusion	Fractures	Laceration
Motorcyclist (70)	35	20	30	28
Pedestrian (50)	33	18	28	20
Occupant of 4 wheelers (20)	10	17	11	07
Occupants of 3 wheelers (10)	06	05	05	04
Total (150)				

Table No 4: Type of victim & Body Parts involved

Type of Victim	Injuries present over body region				
	Head	Chest	Abdomen	Limbs	Neck
Motorcyclist (70)	35	25	10	14	03
Pedestrian (50)	25	11	10	11	0
Occupants of 4 wheelers (20)	15	07	06	04	03
Occupants of 3 wheelers (10)	10	08	04	03	0

The maximum victims had succumbed within one hour 75(50%), 35 cases (233.33%) within 48 hours and 20 cases (13.33%) by 72 hours and 20 cases (13.33%) within 2 weeks of road accidents.[5]

Deaths at different kinds after road accidents (survival periods)

TABLE NO 5: The commonest cause of death was head injury 93 cases (62%) followed by shock and hemorrhage due to thoraco- abdominal visceral injuries in 57 (38%) cases. (6&9)

Survival Period	Motorcyclist	Pedestrian	Occupants of 4 wheelers	Occupants of 3 wheelers
0-1 hr	35	30	05	05
1 hr – 48 hrs	15	10	04	03
48 hrs – 72 hrs	13	04	02	01
3 days – 2 weeks	11	04	03	02

Discussion

Motor vehicle accidents rank first among all total accidents throughout the world. The 150 cases of deaths due to road traffic accidents out of 1013 cases constituting (14.80%). This is accordance with Srivastav and Gupta. The most common age group involved was between 20-40 years and males outnumbered females. This study is similar to studies conducted by Mc Carrolet al, PK Ghosh and Tirpude et al [4, 8, 10].

Motorcyclist are commonest group of victims involved 70 cases (46.66%) followed by pedestrians. Similar trends were seen by Gallway & Patel, Sevitt.[7]

Conclusion

A total of 1013 cases of postmortem conducted out of which 150 deaths were due to road traffic accidents (14.80%). It was observed that males had out membered the females and maximum number of victims were motorcyclist and pedestrians, with cranio- cerebral injuries being cause of fatality.

This district being predominantly rural and agricultural population, human errors in the form of not wearing helmets and not obeying traffic rules, consuming alcohol and driving the vehicles were leading causes of mortality and morbidity. The other causes were mud roads / bad rural roads, absences of street lights and pavements for pedestrians in rural areas, no traffic signals or Police to monitor the traffic resulted in preventable human error related deaths. Following measures could reduce deaths due to road traffic accidents like compulsory helmet wearing for both Pillion rider and riders irrespective of age and sex, providing safe crossings, sidewalks for pedestrians, increasing public transport, improving the street lights at night, segregating two wheelers and pedestrians from

high ways, zebra crossing, avoiding drunk driving by strictly enforcing legislation and frequent checking by Police, emergency medical care training the medics and paramedics at Taluk and hobli level about intubation, airway maintenance transportation to tertiary care centers can certainly reduce the mortality.

There is no Panacea that will prevent road traffic accidents, what is required is an organized team work by multi disciplinaries like law enforcement agencies, Engineering and Medical graduates, public education and awareness creation.[11]

Ethical Clearance: Taken From Institutional Ethical Committee Mandya Institute Of Medical Sciences (Letter Enclosed)

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