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Study on Life Threatening Vehicular Incidents leading to Unnatural Death.

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Abstract: *Vehicular incidents, a cause of unnatural death are the third major preventable one amongst all deaths. Road deaths in India are publicly glaring, while road safety is professionally lacking and politically missing. A retrospective study was conducted in the Department of Forensic Medicine in a tertiary care hospital between March 2015 to February 2017, with an objective to study the demographic, injury profile and mortality pattern in autopsy cases with an alleged history of vehicular incidents and to draw public attention and awareness in order to prevent/control vehicular incidents. Out of 900 autopsied vehicular incidents victims, 65% victims were between 21-40 years of age, males constituted 74.5% of the total victims, and pedestrians were involved in 46.8% vehicular incidents. Maximum vehicular incidents occurred during the daytime, between 6 AM to 12 noon(57.33%)& in the junction between two or more roads(64.2%)in rainy weather(45%).Injury to two & more body regions constituted 37.3% of the total injuries, followed by head injury.The study emphasizes that intervention in vehicular incidents should include combined efforts from the community,public & private sector,government &non-governmental organization.*

Keywords: *Autopsies, Demographic profile, Injury, Road safety,Vehicular incidents*

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I. Introduction

Accident is an event, occurring suddenly, unexpectedly and inadvertently under unforeseen circumstances. [1] An injury that takes place on the roadinvolving a vehicle is termed as road vehicular injury.India has 1% of vehicles in the world; but it accounts for about 6% of the total cases of unintentional injuries. Nearly three quarter of deaths resulting from motor vehicle crashes occur in developing country. [2] Each year, road traffic injuries take the lives of 1.2 million people around the world and seriously injure millions more. [3] India accounts for about 10 percent of road accident fatalities worldwide, 85% of all road accident deaths occurring in developing countries, and nearly half in the Asia-Pacific region. [3] Road traffic injuries are predicted to rise from ninth place in 2004 to fifth place by 2030 as a contributor to the global burden of diseases. [4] Injuries due to RTA depend upon a number of factors-human, vehicle and environmental factors play vital roles before, during and after a serious RTA. The important factors are human errors, driver fatigue, poor traffic sense, mechanical fault of vehicle, speeding and overtaking, violation of traffic rules, poor road conditions, traffic congestion, road encroachment etc. [5] The purpose of the present study is to describe the demographic and injury profile in autopsy cases with an alleged history of RTA, thereby drawing public attention and awareness in order to prevent/control Road traffic accidents.

II. Materials And Methods

The retrospective cross sectional study consisted of 900 medico-legal autopsy performed in the Department of Forensic Medicine in a tertiary care hospital during the period of 2 calendar years (from March, 2015 toFebruary, 2017).Necessary information for the study was gathered from Police, inquest report and dead body challan,PM reports.Interviews of the relatives, friends, and neighbors of the victims were also taken separately to collect the data.Measuring tape,hand lens were used as tools.In few cases adequate information could not be obtained and such cases were put under "Undetermined/ Unknown group"

III. Results & Discussion

The highest number of victims 585(65%) belonged to age group of 21-40 years. There were 670 (74.5%) male and 230 (25.5%) female casualties.[Table 1]In our study most of RTA cases 516 (57.33%) were

reported during the day time (6 a.m-12 noon) than of RTA cases 54 (6%) reported during late in the night (12 AM-6AM) [Table 2]. A greater number of accident cases 405 (45%) were registered in the rainy weather.[Table 3] Most of vehicular injury 578(64.2%) took place in junction in two or more roads and 232 (25.8%) & 90(10%) victims were belong to the both way road & single way road respectively [Table 4].Amongst the 900 victims, 623 victims (69.2%) died in the hospital and 277 victims (30.8%) before hospitalization. [Table 5]We observed that Injuries to multiple body regions (head, chest and limbs) were found in majority of cases 336 (37.3%) followed by head injury(fracture skull,SDH,ICH,Laceration etc.) in only 271 (30.1%) of the total number of cases.[Table 6] In the present study, males constituted 74.5% and females constituted only 25.5% of the total victims. Males being the breadwinner in majority of family are exposed more frequently to outdoor work than females. This explains the involvement of maximum number of males in traffic accident deaths. Our study showed a majority of victims being pedestrians (46.8%).A few studies reported pedestrians as the majority of

Victims involved in vehicular incidents, as reported in our study. [6,7] This reflects the ignorance of traffic rules and traffic signal, talking over the mobile phones, lack of assessment of speed of the vehicle by the pedestrians and poor lighting of streets.The next common category was motorcyclists, which accounted for 326 (36.2%) of the cases.Our study also showed that majority(25% + 12% =37% in total) of occupants as driver (of motor cycle & others)have alcoholic smell in their stomach content.[Table no7] Age between 21-40 years was found to be more vulnerable to Vehicular incidents. In our present study maximum cases among males in the age group of 21 to 40 years are 585(65%).[7] Analyzing the time of vehicular incidents, it was found that, incidents were highest within 6 am-12 noon. The reason for this incidence is due to traffic rush at peak hours as most of the people head from their houses to the offices, colleges and business premises. Poor enforcement of traffic safety regulation, inadequacy of health infrastructure, alcohol intake etc. has contributed significantly to the rise in number of cases of traffic accident deaths.Injury to multiple body regions (head, chest and limbs) were found in majority of cases (37.3%).On considering injury to one body region as the major cause of death, head injury(Fracture skull,SDH,ICH,Laceration etc.) only cases outnumbered the rest (30.1%),as reported earlier by Chaudhary B L, et al. [7] Least fatalities in older people of age 41-60 years and above are 153(17%) was noted and it is due to more experience, more traffic sense, less tendency to take undue risks and remaining mostly indoor and leading less active life. Our findings were not in agreement with Gissane and Bull who observed higher incidence of vehicular incidents in persons above 60 years. [8]

Tables

Table-1 Age& sex wise distribution

AGE	SEX		TOTAL(%)	SEX RATIO
	MALE(%)	FEMALE(%)		
0-20	108(12%)	54(6%)	162(18%)	2.0
21-40	459(51%)	126(14%)	585(65%)	3.64
41-60	78(8.7%)	36(4%)	114(12.7%)	2.17
>60	25(2.8%)	14(1.5%)	39(4.3%)	1.78
TOTAL	670(74.5%)	230(25.5%)	900(100%)	2.9

Table 2 Time of occurrence

Time	No of Cases	Percentage
12 A.M – 6 A.M	54	6%
6 A.M-12 NOOON	516	57.33%
12 NOON-6 P.M	189	21%
6 P.M-12 A.M	141	15.67%
TOTAL	900	100

Table 3 Weather of Occurrence

Weather	No. of cases	Percentage
Rainy	405	45%
Summer	360	40%
Winter	135	15%
Total	900	100%

Table 4 Place of Incidence

Place of incidence	No. of cases	Percentage
One way road	90	10%
Both way road	232	25.8%
Junction of two or more roads	578	64.2%
Total	900	100%

Table 5 Place of Death

Place	No. of cases	Percentage
Before Hospitalization	277	30.8%
After Hospitalization	623	69.2%
Total	900	100%

Table 6 Type of fatal injuries sustained

Body region involved	No.ofcases	Percentage
Multiple body region involved	336	37.3%
Head injury only(fracture skull,SDH,ICH, Laceration etc.)	271	30.1%
Chest injury only(fracture ribs,bruise lungs etc.)	098	10.9%
Abdomen injury only(laceration of liver,kidneys, intestines etc.)	085	9.5%
Pelvis injury only(fracture pelvis,bladder laceration etc.)	063	7%
Limb injury only(fracture long bones with laceration)	047	5.2%
Total	900	100%

Table 7 Alcoholic smell in stomach content & type of victims

Alcoholic smell in stomach contents / Type of victims	Present		Absent		Total	
	No of cases	percentage	No of case	Percentage	No of cases	percentage
Pedestrians	20	2.2%	401	44.6%	421	46.8%
Occupants as driver: Motor cyclists	225	25%	101	11.2%	326	36.2%
Occupants as driver: Others	108	12%	45	5%	153	17%
Total	353	39.2%	547	60.8%	900	100%

IV. Conclusion

As preventive measures---

1. Traffic police posting with electronic signaling system
2. Public awareness
3. Maintenance of good road condition
4. Safe drive saves life strategy.

As treatment part---

Trauma care center facility will be beneficial along with prevention of shock from blood loss either by blood transfusion &/or early surgical intervention.

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