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RESEARCH ARTICLE

COMPREHENSIVE STUDY OF INJURIES AMONG FATAL ROAD TRAFFIC ACCIDENTS (RTA) VICTIMS IN HAPUR, U.P.

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Abstract

Road traffic accidents (RTA) are considered as a part of 'diseases of development' because in developing countries, number of motor vehicles, environmental changes, increase in population density and pollution are increased day by day. The present study was conducted in the Department of Forensic Medicine & Toxicology, SIMS, Hapur, and included 256 cases of RTA. The aim of present study was to analyze the magnitude of deaths due to Road Traffic Accidents (RTAs) and to provide epidemiological data, so that the preventive measures can be undertaken. The result showed that males were the predominant victims than females. Maximum number of cases belonged to age group of 21-30 years; maximum victims were having head & neck injuries followed by upper and lower limb, chest and abdominal viscera. Present study suggests that RTAs can be reduced by improving road maintaining materials and quality, knowledge of engineering, well training to drivers in public service vehicles and personal both and follow driving rules, timely medical facilities and education of persons.

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Introduction:-

Road traffic accidents (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. In other words, the World Health Organization has defined Road Traffic Accidents as when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or utility pole. Any injury occurring as a result of Road Traffic Accident is referred to be as road traffic injury.¹ According to World Health organization (2004), around 16,000 people die from various injuries everyday worldwide, according for 12% of the global burden of disease, thereby making injuries the third most important cause of deaths overall. India accounts for 10% of road traffic fatalities worldwide.^{2,3} According to a study conducted by National Transportation Planning Research Centre, every 4 minutes a person is killed or injured in road traffic accidents in India.⁴ Human factors in vehicle collisions include all factors related to drivers and others who use road may lead to a collision. Examples include driver behaviour, fatigue, visual and auditory acuity, decision-making ability, reckless driving, negligence of pedestrians, driving under the influence of liquor, fatigue, falling asleep and reaction speed. Traffic collisions involve high human suffering and socioeconomic costs may result in injuries, premature deaths, loss of productivity, and damage to property and so on.⁵

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The present study was carried out with the aim to find the pattern and distribution of injuries occurred by RTA victims. The result of present study will be helpful in planning preventive and remedial steps to avoid RTA and also provide proper health care facilities for the victims.

Material and Methods:-

The present study was hospital based prospective study which was conducted in Forensic medicine and toxicology department in Saraswathi Institute of Medical Sciences (SMIMS), Hapur, UP. Total number 256 cases of RTA were included in the present study. All cases were admitted to emergency department or hospital due to RTA. In a pretested performa, the information regarding the history of accident was collected from victim or the relative or police as the case warranted. All patients were screened for the inclusion criteria and enrolled in the study. The data analysis was done using Chi-square test.

Result:-

The present study was carried out in the department of Forensic medicine and Toxicology, Saraswathi Institute of Medical Sciences (SMIMS), Hapur, UP. The present study included cases of road traffic accidents (RTA) who were admitted to emergency center of hospital.

Table 1:- Distribution of cases according to age groups and gender.

Age	RTA	Male	Female
0-10	9	5	4
11-20	54	43	11
21-30	79	65	14
31-40	49	34	15
41-50	40	33	7
51-60	13	6	7
>61	12	5	7
Total	256	191	65

In the present study, total 256 cases of RTA were included. Out of 256 cases, 191 were males and 65 were females. In males, maximum number of cases were included in age group of 21-30 and in females, maximum number of cases were in age group of 31-40.

Table 2:- Distribution of cases in Road Traffic accidents according to Type of injury.

Type of Injury	Number (n=256)	Percentage%
ABRASION	69	26.95
BRUISE	16	6.25
LACERATION	32	12.50
BLUNT MIXED	139	54.29
Total	256	100

According to type of injury in RTA cases, blunt mixed was observed the most common type of injuries, being 54.29% making a substantial contribution to RTA cases which were followed by the abrasion, laceration and bruise types. (Table 2)

Table 3:- Distribution of RTA cases according to Nature of injury.

Nature of injury	Number (n=256)	Percentage%
Simple	136	53.12
Grievous	120	46.88
Total	256	100

In the cases of road traffic accident (n=256), simple injuries were seen in 53.12 percent and grievous injury cases were 46.88 percent of the cases. (Table 3)

Table 4:- Body Part Involved in road traffic accident.

Body part involved	Numbers (n=504)	Percent
Head, Neck& face	206	40.87
Upper limb	135	26.78
Lower limb	129	25.59
Chest	24	4.76
Abdomen with Pelvis & Genital	10	1.99
Total	504	100.00

In the study distribution of injury on different body parts in isolated cases of road traffic accident was tabulated. Maximum number of cases showed involvement of head, neck and face (40.87%) followed by upper limb involvement in 26.78 percent of cases and lower limb involvement in 25.59 percent of cases. Least number of cases showed abdomen with Pelvis and Genital injuries involving 1.99 percent of cases. As many cases presented with multiple body parts thus there were overlapping in number of injuries. (Table 4)

Discussion:-

In the developing country like India, major cause of mortality were infectious diseases, but recently non-communicable diseases and RTA injuries are increasing the rate of mortality in India day by day. Vander Sluis et al describe that vehicles or traffics are the most significant cause of the severe injuries to the victims died during hospitalization.⁶

In the present study, males were the predominant victims in comparison to females. This finding was similar with the findings of previous studies Hemanth KRG et al (2016)⁷. Males are the most vulnerable the victims because males are the main earning members in the most of the families and they are using roads to a greater extent for their daily routine work. In the present study, maximum cases of RTA were males which belonged to age group of 21-30 and females belonged to 31-40 age group while in the previous study of Peden M (2002) et al found that RTA rates were higher in men than in women in all regions regardless of income level.⁸ According to the study of Pathak AK et al (2020), the gender difference in mortality rates may be related to both exposure and risk-taking behavior.⁹

Similar findings were observed by Kaul A et al (2005)¹⁰ that incidence of RTA were higher in the age group of 25-44 years (33.68%) and Kochar (2002) et al¹¹ had reported that maximal fatal accidents occurred in the age group of 31-40 years and preponderance of males 85%.

Result of present study showed that blunt mixed was commonest type of injury to the victims while Pathak AK et al (2020)⁹ and Shaken khan P (2018) et al¹² showed the lacerations commonest type of injury to the victims. Hemanth KG et al (2016)⁷ found abrasion (44.92%) commonest type of injury to the victims.

In the present study, maximum victims (40.87%) were having head & neck and face injuries which were followed by upper limb, lower limb, chest and abdominal viscera. Similar in the findings of Kumar N et al (2015)¹³, Kalougivai J(2014) et al¹⁴ and Pathak AK et al (2020)⁹, H& N region were involved in maximum victims. Also in the previous study of Kaul A et al (2005)¹⁰, majority of cases had brain and H&N injuries followed by chest and abdominal viscera.

The result of present study showed that there is an urgent need to take preventive measures for RTA. Most of the cases of RTA occur due to human errors and mistakes and these errors would be preventable after proper planning of roads and taking strict actions. The road safety and traffic rules awareness at all levels of society should be strengthened and directed at high risk groups with more emphasis placed on the human errors and enforcement of current national traffic laws.

Recommendations:-

1. Issue driving licenses with proper testing and care
2. Government should improve the road conditions.
3. Road side medical assistance and better ambulance can also put down the fatality rate.

4. Design the traffic system with advanced technology for pedestrians and for riders of two wheeler vehicles separately from the four wheelers. Because pedestrians and two wheelers are the main bearer of accident related disabilities and fatalities.

Conclusion:-

The present study was conducted in the Department of Forensic Medicine & Toxicology, SIMS, Hapur, to analyze the magnitude of deaths due to Road Traffic Accidents (RTAs) and to provide epidemiological data, so that the preventive measures can be undertaken.

Our study showed that majority of the fatal road traffic accidents victims; the most common age group was (21-30 years) with predominance of male population.

The study highlighted the interaction of several factors involved in the occurrence of road traffic accidents especially the low awareness about the safety measures, lack of experience of drivers, narrow and broken roads with poor traffic lighting facilities, over speed, overloaded vehicles and at the crossing point.

The common problems associated with the two-wheeler accidents were conditions of roads, avoidance of helmet, alcohol influence on driver and condition of the vehicle.

The results of this study could be useful for strategic planning in the control of road-traffic accidents. There is a need to increase the traffic police force and volunteers at heavy traffic points to control the traffic especially during weekends.

References:-

1. Thube HR, Chikhalkar BG, Nanandkar SD. A Prospective Study of Injury Pattern in Victim of Assault Attended in South Mumbai Government Hospital. *J Indian Acad Forensic Med.* 2015, Vol. 37, No.1.
2. Institute of Road Traffic Education, NGO based in New Delhi. <http://www.news.indiatimes.com/2002/09/13> Med as accessed on 21 May 2008.
3. Chakraborty PN, Sarkar SC. Epidemiological Study of Patterns of Head Injuries in fatal Road Traffic Accidents in Tripura. *Indian Journal of Forensic Medicine & Toxicology*, January-June 2017, Vol.11, No. 1
4. World Health Organization. World report on road traffic injury prevention. Geneva: WHO.2004:3-29.
5. Ruikar M. National statistics of Road traffic accidents in India. *J. Orthopedics, Trauma Rehabilitation.* 2013;6(1):1.
6. Vander Sluis CK, Geertzen JHB, Werkman HA and Duis HJT: Epidemiological data from severely injured patients: a retrospective study over the period 1985-1989. *Nederlands tijdschrift voor Geneeskunde.* 1994;138:2285.
7. Hemanth KRG, Vani AC. Pattern and distribution of injuries among road traffic accident victims in North Karnataka. *Ind J Forensic Med Toxicol.* 2016;10(1):1-3.
8. Peden M, Mcgee K, Sharma G. The injury chart book: a graphical overview of the global burden of injuries. Geneva. World Health Organization. 2002.
9. Pathak AK, Dev R, Awasthi PMC, Verma S, Kumar A. Study of injuries among road traffic accident victim at LLR hospital, GSVM medical college, Kanpur, UP. *Gal Int J Health Sci Res.* 2020; 5(1):80-83.
10. Kaul A, Sinha US, Pathak YK, Singh A, Kapoor AK, Sharma S, Singh S. Fatal road traffic accidents, study of distribution, nature and type of injury. *J Indian Acad Forensic Med.* 2005;27:71-6.
11. Kochar A, Sharma GK, Atul M and Rehan HS. Road traffic accidents and alcohol: A prospective study. *Int J Med Toxicol Legal Med.* 2002;5:22-24.
12. Shakeer Kahn P, Bayapa Reddy n, Chandrasekhar C, Altaf Hussain R, Reddy JBK. A study on injuries of road traffic accident victims attending a tertiary care hospital, Tirupathi. *Int J Community Med Public Health.* 2018;5:2357-60.
13. Kumar N, Kumar M. Medicolegal study of fatal road traffic accidents in Varanasi Region. *Int J Sci Res (IJSR).* 2015; 4(1):1492-1496.
14. Kalougivaki JJVP, Goundar RPS. Retrospective autopsy based study of fatal road traffic accidents in Fiji. *J Forensic Res.* 2014;5(6):1-6.