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Causes and Outcome of Road Traffic Accidents Admitted in The Emergency Department of A Secondary Care Hospital of A Populous District of Central Uttar Pradesh, India

KEYWORDS: Secondary care hospital, Intoxicants, outcome

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ABSTRACT *Objective: To find out the risk of accidents and its outcome among the road traffic injured cases admitted in the emergency department of a secondary care hospital of a populous district of central Uttar Pradesh.*

Methods: This was a cross-sectional study conducted among the road traffic injured cases admitted in the emergency department of a secondary care hospital after the injury. All the patients admitted due to road traffic accidents were included in this study. Results: A total of 518 injured cases were included in the study. More than one third (38.4%) of the injured cases did not use any of the intoxicants. The percentage of alcohol and drug use was 13.7% and 9.7% respectively. The human error as a cause of accident was found among 29.7% of injured cases and environmental conditions was among 26.6% of the cases. The mechanical failure in the vehicle was seen in 16.2% of the cases. Conclusion: Strengthening and undertaking research on the public health burden and impact, understanding the risk factors, characteristics of trauma, and measuring the impact of interventions through well-designed public health and clinical research methods is the need of the hour.

INTRODUCTION

Accidents, tragically, are not often due to ignorance, but are due to carelessness, thoughtlessness and over confidence. The road accidents were associated with numerous problems each of which needed to be addressed separately. Human, vehicle and environmental factors play roles before, during and after a trauma event. Accidents, therefore, can be studied in terms of agent, host and environmental factors and epidemiologically classified into time, place and person distribution. The morbidity and mortality patterns are changed due to health and the consequent demographic transition. The health system has to face the double burden of disease as a result of the epidemiological transition including communicable as well as non-communicable diseases like - cerebrovascular diseases, cardiovascular diseases, neuropsychiatric condition, malignant neoplasm, injuries etc. All types of Injuries like road traffic Injuries, interpersonal violence (IPV), war and self inflation injuries etc., are large and neglected health problem in all regions, accounting five millions persons died in 2000. It accounts for 12% of global burden of disease worldwide. The injury related disease burden is expected to raise over the next 20 years particularly in case of road traffic injuries, IPV, war and self inflation injuries. For adult men aged 15-44 years road traffic accidents (RTAs) are the biggest cause of ill health and premature death worldwide[1].

It has been predicted that by 2020, road traffic injuries will rank as high as third among causes of disability adjusted life years (DALYs) lost[2,3]. The Indian Council of Medical Research (ICMR) study on "Causes of Death by Verbal Autopsy" has revealed that injury rank among the first five major cause of death in adults. It is the leading cause of mortality for young adults less than 45 years and a major burden of disease across all age group[4].

The present cross-sectional study was conducted to find out the risk of accidents and its outcome among the road traffic injured cases admitted in the emergency department of a secondary care hospital.

MATERIALS AND METHODS

This was a cross sectional study conducted among the injured cases admitted in the emergency department of a tertiary care hospital in the central part of Uttar Pradesh, India. A total of 518 road traffic accidents (RTA) cases reported to the emergency department of the secondary care hospital in the district were included in the study. People of all ages with RTA who reported to the emergency department were included. All the patients admitted due to road traffic accidents were included in this study. The cases able and willing to provide informed consent were included in this study. Injuries on road without involvement of the vehicle were excluded from the study (eg. person slipping or/and falling on the road and sustaining injury). An injury involving a stationary vehicles were excluded from the study. The subjects were requested to answer the questionnaire to the best of their knowledge to avoid missing responses.

RESULTS

A total of 518 injured cases were included in the study. Table-1 presents the age-wise distribution of road accidents cases in relation to use of intoxicants. More than one third (38.4%) of the injured cases did not use any of the intoxicants. However, 18% were smokers and 12.4% used tobacco. The percentage of alcohol and drug use was 13.7% and 9.7% respectively. The alcohol (28.3%) and drug (17.7%) use were higher among the age 25-45 years (28.3%) than others.

The alcohol use was higher among the injured cases belonging to SES IV (23.8%) than V (18.2%), III (10.8%), I (10.6%) and II (7.1%). However, 21.3% of SES I and 9.2% of SES II had drugs. Only 7.8% of SES III and 7.1% of SES IV had drugs. No intoxicants was observed to higher among SES II (56.7%) than IV (34.1%), I (31.9%), III (30.4%) and V (27.3%) (Table-2).

The human error as a cause of accident was found among 29.7% of injured cases and environmental conditions was among 26.6% of the cases. The mechanical failure in the vehicle was seen in 16.2% of the cases. No pre-dominant somatic disorder was found among 69.5% of the cases (Table-3).

Majority (78%) of the cases were cured. Only 4% of cases died and 18% had some type of deformities (Fig.1).

DISCUSSION

The proportion of fatal accidents in the total road accidents has consistently increased since 2002 from 18.1 to 24.4% in 2011. The severity of road accidents measured in terms of persons killed per 100 accidents has also increased from 20.8 in 2002 to 28.6 in 2011[5]. During 2011, driver's fault (77.5%)

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was the single most important factor responsible for accidents, as revealed by an analysis of road accident data by the Ministry of Road Transport and Highways[6].

In the present study, 13.7% road traffic crash victims were found to have consumed alcohol prior to the accident. This is similar to the findings like 8%, 14.9% and 16.9% reported respectively by others[7-9].

WHO estimates that 100% of severe, 50% of moderate and 10% of mildly injured persons need long term rehabilitation Services[10]. A few hospital-based studies reveal that disabilities persist for a long time among 20%–40% of people discharged after an RTI[11, 12, 13]. Injuries are responsible for nearly one third of all disabilities and RTIs contribute nearly half of them[14]. It is estimated that nearly 3.5 million people in India have a disability from injuries with about 2 million being due to RTI-related disability. Disabilities following RTI are varied and affect physical, social, economic, spiritual and psychological spheres of life. In the present study, 18% had some type of deformities (Fig.1). The current study had a mortality rate of 4%, which is lower than that reported by Twagirayezu et al[15].

One of the limitations of this study was that it was conducted in a secondary care hospital of the district. To understand better representative figures, a large scale study covering other hospital is required.

CONCLUSION

Strengthening and undertaking research on the public health burden and impact, understanding the risk factors, characteristics of trauma, and measuring the impact of interventions through well-designed public health and clinical research methods is the need of the hour.

Table-1: Age-wise distribution of road accidents cases in relation to use of intoxicants

Habits	Age in years									
	<15		15-24		25-45		>45		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Alcoholic	8	4.3	18	12.7	32	28.3	13	16.9	71	13.7
Smokers	11	5.9	49	34.5	24	21.2	9	11.7	93	18.0
Drugs	3	1.6	21	14.8	20	17.7	6	7.8	50	9.7
Tobacco	20	10.8	17	12.0	12	10.6	15	19.5	64	12.4
Others	11	5.9	8	5.6	9	8.0	13	16.9	41	7.9
No intoxicants	133	71.5	29	20.4	16	14.2	21	27.3	199	38.4
Total	186	100.0	142	100.0	113	100.0	77	100.0	518	100.0

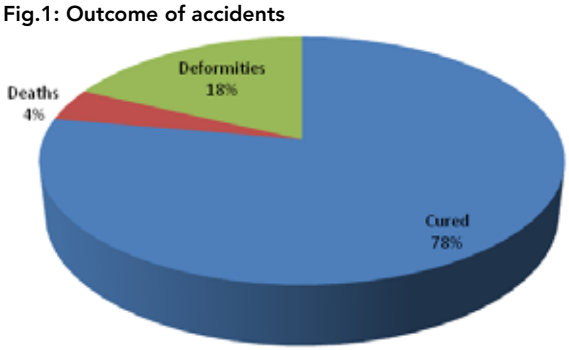
Table-2: Socio-economic status in relation to habits in road accident cases

Habits	Socio-economic status (SES) of the injured cases									
	I		II		III		IV		V	
	No.	%	No.	%	No.	%	No.	%	No.	%
Alcoholic	10	10.6	10	7.1	11	10.8	30	23.8	10	18.2
Smokers	25	26.6	25	17.7	32	31.4	3	2.4	8	14.5
Drugs	20	21.3	13	9.2	8	7.8	9	7.1	0	0.0
Tobacco	9	9.6	13	9.2	9	8.8	29	23.0	4	7.3
Others	0	0.0	0	0.0	11	10.8	12	9.5	18	32.7
Non intoxicants	30	31.9	80	56.7	31	30.4	43	34.1	15	27.3
Total	94	100.0	141	100.0	102	100.0	126	100.0	55	100.0

Table-3: Causes of accidents

Causes	No. (n=518)	%
Main cause		
Human error	154	29.7
Mechanical failure	84	16.2
Environmental conditions	138	26.6
Others	142	27.4
Pre-dominant somatic disorder		
Defects in vision	46	8.9
Defects in CNS	62	12.0
Defects in CVS	26	5.0
Others	24	4.6
No disorder	360	69.5

Fig.1: Outcome of accidents



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