Comparison of Different Parameters with Number of Road Side Accidents Cases & its Severity, Presenting to MYH Hospital Indore

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ABSTRACT

Introduction: RTAs are a burden on the national economy and may lead to disablement, death, damage to health and property, social suffering, general degradation of environment and hence burdens the society. Every year 1.2 million people are killed and approximately 20-50 million people are grievously injured in road accidents. If current scenario continue road traffic accidents are predicted to be third leading contributor to the global burden of Disease and injury by 2020. Transportation network is a heart of a nation and transport services are considered as growth engine of economy and prosperity of country.

Material and methods: The prospective observational study was carried out on 1000 RTA cases presented in MYH trauma centre, INDORE from May 2018 to April 2019. All patients of roadside accidents presenting to trauma centre underwent a detailed history taking including general examination after their primary management.

Result: Among those affected, 61.8% were driver of one or the other vehicle, while 25.2% were passengers and another 13% were pedestrians. Out of total no of accident cases of 4 wheelers (62) only 33.9% % person were using seatbelt and 66.1% persons were not using seatbelt. Out of total no of accident cases 67.0% RTA cases occurred in the areas where traffic signals were absent. Among the total no of RTA cases 50.4% accidents occurred where the speed breaker were absent nearby and 49.6% cases occurred were the speed breaker were present.

Conclusion: Aiming to save time and extra ride for a kilometre, motorists and car drivers often go to wrong direction to cross the road. This is leading to frequent accidents on road.The segregation of traffic especially pedestrian is very important from the standpoint of accident prevention.

Keywords: Traffic Signal, Seat Belt, Speed Breaker

INTRODUCTION

Transportation network is a heart of a nation and transport services are considered as growth engine of economy and prosperity of country.[2] More the lengths of roads, more the prosperity of the nation. As per data registered by the WHO, nearly 12 lakhs people are known to die each year in road accidents globally, out of which more than 83,000 people are killed in India, while roughly Five times of this number (approx 4 lakhs) are seriously injured in India. Throughout the world, the growth of transport system has been and continues to be a key element in economic development. In both developed and developing countries, an increase in gross national product is accompanied by greater movement of people & goods, and greater investment in both vehicles & transport infrastructure.[3] Prevention is often considered as depending on the "three E's" – Engineering, Education & Enforcement. According to an interesting suggestion, A fourth "E" should be added; epidemiology. With the rapid increase in the number of motor vehicles, there is also an increasing trend in India in the number of road accidents. Cities are high accident risk areas and some of the capital cities alone account for more than half of the accidents recorded in the state. At every turn, we inevitably come back to the three main factors involved in any accident on the roads: the driver, the vehicle and the roadway. With very few exceptions, all accidents are related to these three factors, and the analysis of many thousands of accidents has shown that more than one of the factors is usually involved.[4]

Study was aimed at comparison of different parameters with number of Road side accidents cases & its severity, presenting to MYH hospital Indore.

MATERIAL AND METHODS

The prospective observational study was carried out on 1000 RTA cases presented in MYH hospital trauma centre between May 2018 to April 2019. All patients of road side accidents presenting to trauma centre underwent a detailed history taking including general examination after their primary management. Questionnaire was filled according to the history provided by the attainder or patients himself/herself. After the proper examination and relevant investigations severity of the injuries was categorized.

Inclusion criteria: Road traffic accidents/mishaps on roads of Indore city and cases presenting to casualty of MYH Indore.

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Exclusion criteria: Accidents other than roadside, unknown and unconscious patients having no attenders.

RESULTS

Table No. 01: Condition of Road wise comparison of severity of injury.

86.6% RTA cases happened on dry roads whereas only 6.9%and 6.5% cases occurred on muddy and wet roads respectively (table-1, graph-1).

Among those affected, 61.8% were driver of one or the other vehicle, while 25.2% were passengers and another 13% were pedestrians (table-2,graph-2).

Among fatal accidents the proportion of driver was 65%, 23.5% were passenger & pedestrians were 11.2%, and among the total no of cases in whom driver were injured 35.4% having simple injury and grievous injury, 29.1% having fatal injury (table-3,graph-3).

Out of total no of accident cases of 4 wheelers (62) only 33.9% person were using seatbelt and 66.1% persons were not using seatbelt. In the comparison of severity of injury and use of seatbelt, among the total no of fatality in 4wheelers vehicles only 38.1% persons had fatal injury, and 51.2% fatal injury occurred in person not using the seatbelt (table-4, graph-4).

Out of total no of accident cases 67.0% RTA cases occurred in the areas where traffic signals were absent. Among the

Severity of injury		Road condition			Total
		Dry	Muddy	Wet	
Simple	Count	302	18	18	338
	%	89.3%	5.3%	5.3%	100.0%
Grievous	Count	339	29	17	385
	%	88.1%	7.5%	4.4%	100.0%
Fatal	Count	225	22	30	277
	%	81.2%	7.9%	10.8%	100.0%
Total	Count	866	69	65	1000
	%	86.6%	6.9%	6.5%	100.0%

Table-1: Condition of Road wise comparison of severity of injury.

Injured	Frequency	%
Driver	618	61.8
Passenger	252	25.2
Pedestrian	130	13.0
Total	1000	100.0

Table-2: Category of person injured no of RTA cases.

Severity of injury		Category of injured person			Total
		Driver	Passenger	Pedestrian	
Simple	Count	219	92	27	338
	%	64.8%	27.2%	8.0%	100.0%
Grievous	Count	219	95	71	385
	%	56.9%	24.7%	18.4%	100.0%
Fatal	Count	180	65	32	277
	%	65.0%	23.5%	11.6%	100.0%
Total	Count	618	252	130	1000
	%	61.8%	25.2%	13.0%	100.0%

Table No.03: Comparison between category of person injured and Severity of injury in Road Traffic Accidents.

Severity of injury		Seatbelt		Total
		Yes	No	
Simple	Count	9	8	17
	%	42.9%	19.5%	100.0%
Grievous	Count	4	12	16
	%	19%	29.3%	100.0%
Fatal	Count	8	21	29
	%	38.1%	51.2%	100.0%
Total	Count	21	41	62
	%	33.9%	66.1%	100.0%

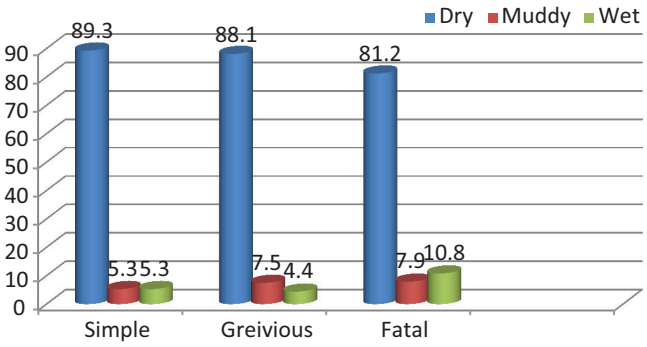
Table-4: Use of Seatbelt (in 4 wheelers) wise comparison of severity of injury.

Severity Ofinjury		Traffic signals		Total
		No	Yes	
Simple	Count	227	111	338
	%	67.2%	32.8%	100.0%
Grievous	Count	251	134	385
	%	65.2%	34.8%	100.0%
Fatal	Count	192	85	277
	%	69.3%	30.7%	100.0%
Total	Count	670	330	1000
	%	67.0%	33.0%	100.0%

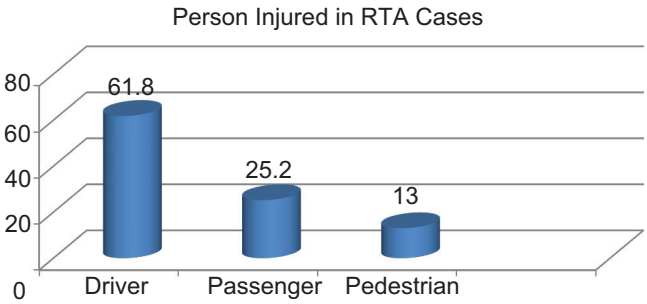
Table-5: Traffic signal (nearby) wise comparison of severity of injury.

Severity of injury		Speed breaker		Total
		No	Yes	
Simple	Count	203	135	338
	%	60.1%	39.9%	100.0%
Grievous	Count	187	198	385
	%	48.6%	51.4%	100.0%
Fatal	Count	114	163	277
	%	41.2%	58.8%	100.0%
Total	Count	504	496	1000
	%	50.4%	49.6%	100.0%

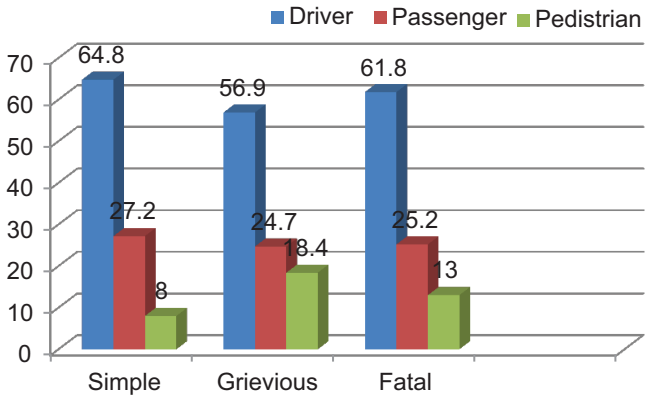
Table-6: Speed breaker (nearby) wise comparison of severity of injury.



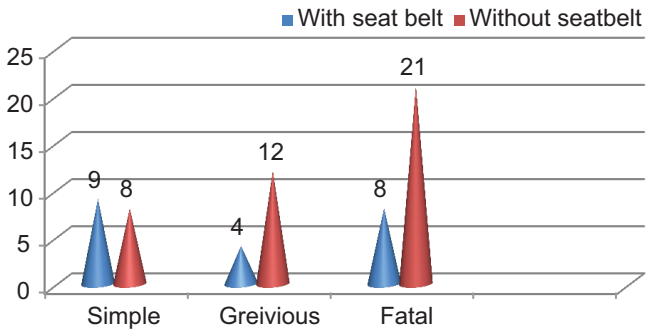
Graph-1: Showing Condition of Road wise comparison of severity of injury



Graph-2: Showing category of person injured in RTA cases.



Graph-3: Showing Comparison between category of person injured and Severity of injury.



Graph-4: Use of Seatbelt (in 4 wheelers) wise comparison of severity of injury.

total no of simple injury, grievous injury and fatal injury cases, 67.2%, 65.2% and 69.30% cases respectively occurred where the traffic signal were absent (table-5).

Among the total no of RTA cases 50.4% accidents occurred where the speed breaker were absent nearby and 49.6% cases occurred were the speed breaker were present. Among the total no of simple injury, grievous injury and fatal injury cases , 60.1%, 48.6% and 41.2% cases respectively occurred where the speed breaker were absent (table-6).

DISCUSSION

A total of 1000 Accidents cases were taken for study from

emergency department of MY hospital Indore. 86.6% RTA cases happened on dry roads whereas only 6.9%and 6.5% cases occurred on muddy and wet roads respectively. Among total no of fatal cases most no of the fatality (81.2%) occurred on dryroads. Roads may be slippery, sandy, corrugated, narrow and with many pot-holes. There is a strong association between road traffic accident rates and the design, construction and surfacing of roads.[5] (table no.01& graph1).

Among those affected, 61.8% were driver of one or the other vehicle, while 25.2% were passengers and another 13% were pedestrians. (table no.02&graph 02). Among fatal accidents the proportion of driver was 65%, 23.5% were passenger & pedestrians were 11.2%, and among the total no of cases in whom driver were injured 35.4% having simple injury and grievous injury, 29.1% having fatal injury. (table no.03 & graph 3)This shows that the drivers & passengers are at the highest risk of fatality.

Out of total no of accident cases of 4 wheelers (62) only 33.9% % person were using seatbelt and 66.1% persons were not using seatbelt. In the comparison of severity of injury and use of seatbelt, among the total no of fatality in 4wheelers vehicles only 38.1% persons had fatal injury, and 51.2% fatal injury occurred in person not using the seatbelt. Out of total no of accident cases 67.0% RTA cases occurred in the areas where traffic signals were absent.(table no .04&graph 04)[6]

Out of the total no of RTA cases, maximum no of cases where traffic signals were found to be absent.Among the total no of simple injury, grievous injury and fatal injury cases, 67.2%, 65.2% and 69.30% cases respectively occurred where the traffic signal were absent .

(table no.05)

Among the total no of RTA cases 50.4% accidents occurred where the speed breaker were absent nearby and 49.6% cases occurred were the speed breaker were present. Among the total no of simple injury, grievous injury and fatal injury cases ,60.1%, 48.6% and 41.2% cases respectively occurred where the speed breaker were absent.(table no. 06)

CONCLUSION

Aiming to save time and extra ride for a kilometre, motorists and car drivers often go to wrong direction to cross the road. This is leading to frequent accidents on road. The driver is simply exhorted to drive safely, and is blamed for every accident. In planning roads and legislation to reduce accidents, it is important that the Behavioural characteristics of the man should be considered, so that his abilities can be exploited with the minimum of risk. “A man drives as he lives” was originally put forward by Tillman and Hobbs.[7]

The segregation of traffic especially pedestrian is very important from the standpoint of accident prevention. Information campaigns should be used to raise awareness to reduce road casualty levels, Traffic awareness campaigns such as the "one false move" campaign documented by Hillman et al. action, road traffic crashes are predicted to result in the deaths of around 1.9 million people annually by2020.Rules of the road and driving etiquette are the general practices and procedures that road users are required to follow. In addition to the rules applicable by default, traffic signs and traffic lights must be obeyed, and instructions may be given by a traffic officer, either routinely (on a heavy rush crossing instead of traffic lights) or as control around a construction zone, accident, or other road disruption.[8]

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