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Incidence, cause and outcome of the road traffic accident in East singbhum, Jharkhand

Authors
Mirja Tudu[1], Anjali Tudu[2], Laxmi Tudu[3]
[1]MD (PSM) Associate Professor MGM Medical College Jamshedpur,
[2]MD (Obs & Gynae) RIMS Ranchi
[3](MBBS) MGM Medical College, Jamshedpur, India

Abstract
Road traffic accidents (RTAs) have emerged as an important public health issue which needs to be tackled by multi-disciplinary approach. Road traffic accidents are one of the major causes of death and illness which is preventable. There is tremendous rise in RTAs due to large number of vehicles on roads, rough driving, poor condition of roads, disregards to traffic rules, drunk driving, poor driving skills and lack of public awareness towards safe driving. The trend in RTA injuries and death is alarming in developing countries like India. This study highlights the incidence, etiology and consequences of the road traffic accident.

Keywords: *Road traffic accidents, road safety, drunk driving, preventive measures, fatal.*

Introduction

Road traffic accident (RTA) can be defined as, "An event that occurs on a way or street open to public traffic, resulting in one or more person being injured or killed, where at least one moving vehicle is involved. Thus, RTA is a collision of vehicles; between vehicles or geographical or architectural obstacles. Road traffic accidents are a human tragedy involving lot of suffering and socioeconomic loss in terms of unusual deaths, injuries, loss of productivity, and so on.[1]

Road traffic accident (RTAs) represent a major epidemic of non-communicable disease in present century. It is no longer accident but a part of price we pay for the technological advancement. RTA are among the top five causes of morbidity and mortality in Southeast Asian countries.[2]

During 2008, Road Traffic Injuries (RTI) rank fourth among the leading cause of death among young people aged 15-29 years and cost countries 1-3% of the gross domestic product (GDP). It is the main cause of death between 10-24 years of age group of males. India has one of the highest road traffic accidents in the world. Study done by WHO shows that road traffic accident account for 2.5% of the total death. In our country many infectious and tropical disease which claimed loss of life earlier have now been controlled by road traffic accidents; emerging as a new menace to mankind.

Thus, realising the consequences of RTA to human being, social and economic burden over society, in the form of mortality and morbidity, compelled us to carry out this study titled

incidence, causes and outcome of the road traffic accident in East singbhum, Jharkhand.

Aims and Objectives

To evaluate the incidence, causes and outcome of the road traffic accidents in East singbhum, Jharkhand.

Materials and Methods

The material for work comprises all the patients of road traffic accident admitted in emergency department of orthopedic surgery, General surgery, ENT and EYE of Central emergency MGM Medical College and Hospital, Jamshedpur from June 2017 to August 2017.MGM Medical college is a tertiary hospital in the East Singbhum, Jharkhand. 250 patients of road traffic accidents with injury to various part of the body were selected by simple random method.

Patients admitted with road traffic accident were follow up for 3 months. Outcome at discharge or at three months from the date of admission or death, was taken as the end point of study.

Observation

Table 1: Incidence between June 2018-August2018

Departments	Total RTA Patients	Percentage (%)
Orthopaedic Surgery	68	27.2
General surgery	155	62
ENT	18	7.2
EYE	9	3.6

Table 2: Showing age, incidence of road traffic accident of East Singbhum

Age (in years)	No of Patients	%
0-9	15	6
10-19	22	8.8
20-29	68	27.2
30-39	57	22.8
40-49	49	19.6
50-59	31	12.4
More than 60	8	3.2

Table 3: Sex wise distribution of patients

Sex	No of patient	%
Male	198	79.2
Female	52	20.8

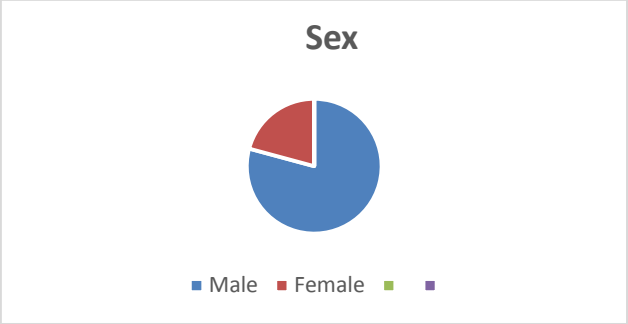

Table 4: History of road traffic accident

Mechanism	No of patients	%
Road traffic	246	98.4
Train accident	4	1.6

Table 5: Clinical examination of patient at the time of admission

General condition	No of patients	%
Stable	151	60.4
Irritable	57	22.8
Hemorrhagic shock	34	13.6
Neurogenic shock	8	3.2

Table 6: Mode of transportation of patients from the injury site totertiary hospital

Mode of Transportation	No of patients	%
Car + Jeep	131	52.4
Auto Rickshaw	49	19.6
Thela + Rickshaw	45	18
Ambulance	16	6.4
Cot	1	0.4
Manually	2	0.8
Bus +Truck	6	2.4

Table 7: Immediate treatment given at tertiary hospital

Treatment given	No of patients	%
I.V. fluid	170	68
Wound debridement& antiseptic dressing	39	15.6
Suprapubic cystostomy	1	0.4
Chest tube drainage	3	1.2
Blood transfusion	8	3.2
Intubation	0	0
Close reduction & immobilisation in POP slab or cast	29	11.6

Table 8: Outcome of the observed patients

Outcome	No of patients	%
Patients discharged home	157	62.8
Death	27	10.8
LAMA	34	13.6
Referred to higher centre	9	3.6
Referred to physical medicine for rehabilitation	23	9.2

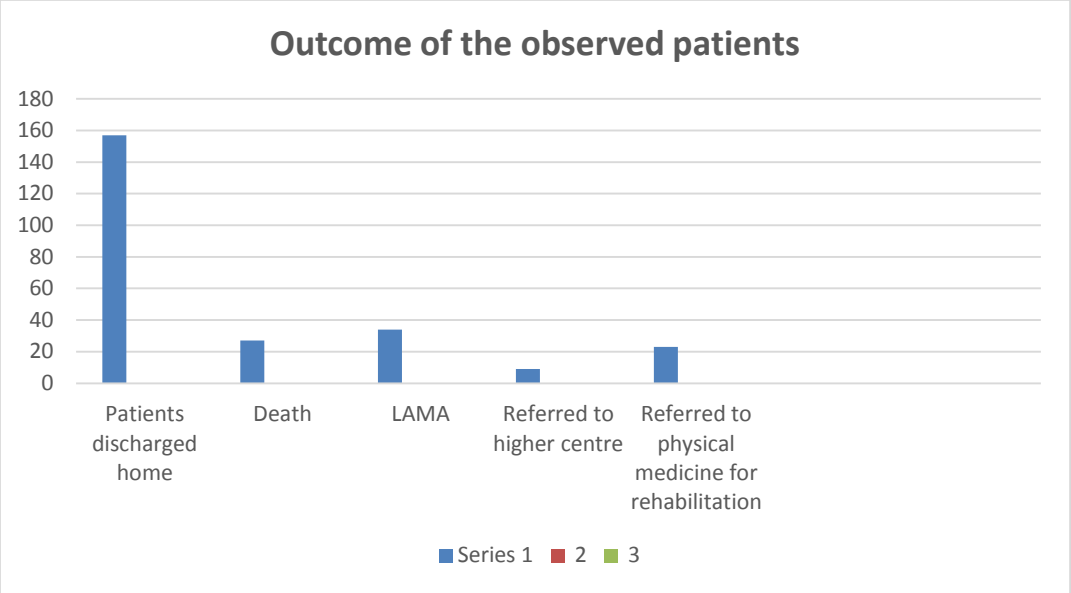

Table 9: Final outcome of patients

Outcome	No of patients	%
Mortality	27	13.0
Morbidity	4	1.9
Disability	19	9.1
Discharge	157	75.8

Table 10: Causes of accidents

Causes of accident	No of patients	%
Defective road	19	7.6
Negligent driving	9	3.6
Over speeding	48	19.2
Impaired vision	21	8.4
Pedestrians & animals	25	10
Drunken driving	43	17.2
Disregards of traffic rules	18	7.2
Negligent road crossing	28	11.2
Untrained driver	13	5.2
Others(helmet, seat belt, speed breaker,etc)	26	10.4

Discussion

Road traffic accidents are a major cause of mortality in adults which can be prevented. Males outnumbered females in ratio of 5:1[4]. Pedestrians and cyclist are the common group injured[3,4,5,6,7]. The cyclist or bikers are not wearing any protection helmet[4,5,8]. None of the injured received any treatment or first aid at the site of accident. Head injury were the main cause of death in adults.

Maximum number 155 (62%) of RTA patient were admitted in the department of general surgery, orthopaedic surgery 68 (27.2%), ENT 18(7.2%), followed by EYE 9(3.6%) respectively as shown in table 1

Table no 2 shows the Incidence of road traffic accident in different age group. The most common age group involved in road traffic accident is between 20-39 years (125 cases out of 250) consisting of about 50% of the total patients. This high rate of road traffic accident in the age group mentioned may be because of this age group being most active one. Most of them are outdoor workers; May drive vehicles and work in factories. They actively participate in outdoor works. On the other hand, increased violence in the present society add to these road traffic accidents further.

Table 3: shows the sex ratio, out of 250 road traffic accident patients observed male predominating the scene with 198 (79.2%) and female 52(20.8%). This abnormal sex ratio may be due to male dominated society as they work outside as in offices and agriculture field etc.

Table 4: shows the history of road traffic accident (mechanism), 246(98.4%) out of 250 observed was due to road traffic accident followed by 4(1.6%) patients is train accident.

Table 5: shows the clinical condition at the time of admission. 151(60.4%) out of 250 the general conditions are stable. Whereas 57(22.8%) were irritable, 34(13.6%) patients were found in haemorrhagic shock due to excessive bleeding

who need urgent blood transfusion and8(3.2%) patients found in neurogenic shock.

Table 6:shows the mode of transportation of patients to tertiary hospital (MGM Medical college &Hospital) from the site of injury or from the first aid centre.131 (52.4%) patients transported by car plus jeep,49(19.6%) patients transported by Auto rickshaw,45 (18%) patients transported by Thela plus Rickshaw, only 16 (6.4%) patients transported by Ambulance, 1 (0.4%) patient transported by cot,2 (0.8%) patient transported by manually and 6 (2.4%) patient transported by bus plus truck. Patient even with severe trauma, operating to first aid centre came usually late by one hour. In most of the cases, no trained medical personnel are present at rescue site. Patients are rescued by the persons with meager acquaintance with rescue scene or paramedical skills. Most of patient transported to nearest health centre or to local private practitioners by conventional mode of transportation available in rural area. Even in urban and sub-urban area in Jamshedpur, patients are rescued by non-skilled persons and transported by conventional mode of transportation like car, jeep, auto rickshaw, rickshaw etc. Only few cases received ambulance service.

Table 7: shows patients of road traffic accident getting immediate treatment given at the tertiary hospital emergency, 170 (60%) patients got intravenous fluid infusion, 39 (15.6%) wound debridement and antiseptic dressing, 29 (11.6%) close reduction and immobilisation in POP slab or cast,1 (0.4%) suprapubic cystostomy, 3(1.2%) chest tube drainage, 8(3.2%) blood transfusion, and intubation is 0.

Table 8: shows total of 27(10.8%) death in my series. Most death occurred due to injury associated complication e.g. haemorrhagic shock, ARDS and pulmonary embolism etc. 157 (62.8%) patient were discharged from hospital after cured. Average hospital stay of my patients were four weeks. 23 (9.2%) patients were referred to physical medicine and rehabilitation, 9(3.6%) patient is referred to higher centre for better treatment and 34 (13.6%) patients left against medical advice (LAMA) perhaps due to lack of bed,long waiting period for operation due to inadequate operation theatre facility, poor nursing care, ill maintained ward or wanted better facilities.

Table 9: shows the final outcome of patients. During treatment and follow up for 3 months 34(13.6%) has left hospital against medical advice (LAMA) and 9(3.4%) referred to higher Centre. Finally, the total number of patient left are 207. Among these patients 157 (75.8%) discharged, 22(10.6%) died, 5 (2.4%) morbidity and 23 (11.1%) was disability.

Table 10: shows the causes of accidents, maximum was due to over speeding 48(19.2%), drunken driving 43 (17.2%), negligent road crossing 28(11.2%), followed by pedestrians and animals 25 (10%) respectively.

Conclusion

India has the highest incident of road traffic accidents and mortality in world which calls for better roads, better law enforcement measures, education and training of our youth in driving, and following the traffic rules.

Road traffic accidents are on increase due to large number of vehicles. speed driving, drunk driving, poor condition of roads, overloaded vehicles, ignorance of traffic rules, old vehicles, poor availability of the first aid at the site of injury, reduced pre-hospital time and absence of trauma centre are the main cause for accident related mortality. The cyclists should have proper training and should be encouraged to obey traffic rules. Wearing of safety helmets should be made compulsory even for the cyclists.

Pedestrian are 30 times more in involved in accidents as compare to cyclists and car occupants [3]. Drunk and high-speed driving has to be checked. Road traffic flow and discipline has to be coordinated between different agencies. Active surveillance and watch by traffic-regulating authorities and control of offenders by associating judiciary for instant punishment is the need of the

hour to save lives. Punishment to offenders including unexperienced drivers from the roads would bring down RTAs. The two factors, in pre-hospital treatment were important for the care of road traffic accident patients, first the duration of initial treatment and second quality of initial treatment.

Accident is an epidemic disease of modern age and like other epidemic disease, this is also preventable to great extent. It is said that "if accident is an epidemic, education for its prevention is its vaccine."

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