The Professional Medical Journal
www.theprofesional.com

DOI: 10.17957/TPMJ/16.3243

ORIGINAL PROF-3243

PREVALENCE OF ROAD TRAFFIC ACCIDENTS; ADMITTED IN ONE SURGICAL WARD AT ALLIED HOSPITAL FAISALABAD DURING ONE YEAR

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Article received on:
07/01/2016
Accepted for publication:
30/03/2016
Received after proof reading:
12/04/2016

ABSTRACT: To see the percentage, the different groups affected and pattern of injury by road traffic accidents among patients attending a unit of surgery in a teaching hospital. **Objectives:** To see the percentage of trauma among patients admitted in one surgical unit of a tertiary hospital in one year and to compare this with the patients admitted in all surgical units of same tertiary unit. To evaluate the pattern of trauma, male to female ratio, affected age groups, mechanism of injury, the organs affected, and the mortality rate in one surgical unit of a tertiary hospital of 3rd most populated city of Pakistan during one year. **Study Design:** Prospective study. **Setting:** Surgical Unit II at Allied Hospital Faisalabad. **Period:** January 2009 to February 2010. **Materials and Methods:** Patients admitted during this period for road traffic accidents in surgical unit II of Allied Hospital Faisalabad were 94 (4.8 %) out of total 1956 patients presented and admitted in surgical unit II during this year. Total number of patients admitted in all surgical units of this hospital were 7388 while 21,400, patients received and admitted by all other specialties through emergency units of Allied Hospital Faisalabad. Patients with road traffic accidents admitted in surgical unit II through emergency unit of this hospital were part of this study. Among these 94 patients 78 patients (82.97%) were adults and 18 children (19.14%). Patients with all other emergencies modalities and minor injuries treated and discharged from emergency were excluded from this study. **Results:** Out of 1956 patients admitted in Surgical Unit II from total 7388 of all surgical admissions and 21400 all emergencies ward patients, 94 patients (4.8%, 1.27%, and 0.439% respectively) were injured by road traffic accidents. Out of these 94 patients, 78 patients (82.97%) were adults and 18 children (19.14%) patients. 58 patients (61.70%) were males and 36 patients (38.29%) were females. 43 patients (45.74%) were pedestrians, 10 patients were (10.63%) on bicycles, 26 patients were (27.65%) on motorcycle while 15 patients (15.95%) were in other vehicles. 52 patients (55.31%) developed head injuries, 10 patients (10.93%) blunt trauma abdomen, 5 patients (5.31%) blunt trauma chest and 26 patients (27.65%) skeletal injuries (10 patients forearm bones fracture, 6 patients with fracture mid-shaft of tibia, another 5 patients with fracture lower 1/3rd of femur and 5 patients with hand bones fracture). All patients were treated by combined specialty trauma surgeons. 3 patients (3.19%) died out of which 2 patients (2.12%) with severe head trauma and one pedestrian (1.06%) with blunt trauma abdomen and lower chest. All other patients survived and recovered with some morbidity. **Conclusion:** Road traffic trauma is one of major dilemma of our society. 94 road traffic accidents causalities were admitted during one year in one surgical unit of a tertiary care center and 3 patients died. It is an alarming sign to properly protect people, educate general population, employ dedicated road safety staff and follow rules and regulation of traffic authorities.

Key words: Road traffic accidents, Head injury, Skeletal injury, Blunt trauma abdomen, Multiple organ injury, Morbidity, and mortality

Article Citation: Shah TA. Prevalence of road traffic accidents; admitted in one surgical ward at allied hospital Faisalabad during one year. Professional Med J 2016;23(4):378-382. **DOI:** 10.17957/TPMJ/16.3243

INTRODUCTION

Road traffic accidents accounts for a great number of injuries and deaths, about 1.2 million[1] people die annually and 1/3rd of these accidental deaths occurred between 0 to 14 years of age and half of deaths between 15-29 years of age.[2,3] Road traffic accidents are a sort of different causalities than other accidental injuries like fall from height and firearm injuries because roads are heavily monitored, well-constructed and controlled by traffic staff, general population guidelines are advertised and safety measures are taken to

decrease these causalities.

By for the traffic laws, less than 16 years of age is defined as a child. About 2/3rd people develop serious road traffic injuries while they are pedestrian and among the dead, almost half of them are pedestrian.[4] Slight injuries are bruising, minor skin loss, hematomas, and mild shock while severe injuries are head trauma, skeletal deformities, blunt trauma abdomen and chest, multiple organ injury, hand and foot injuries.

Worldwide data indicates that road traffic accidents are decreasing leading to decreased injuries and deaths every year.[5] All this is achieved by employing well trained traffic staff, adopting road safety measures, public education, traffic monitoring and implementation of traffic rules and regulations strictly. Furthermore, certain safety measures should be taken to protect children and adults from road traffic accidents; the children under the age of 12 years should sit in the back seat, buckled with seat belts and the adult drivers must be fully restrained, wearing seat belts, helmets when they are riding cars, heavy vehicles, bicycles, motorcycles or skates.[6] Moreover the passengers should also be fully restrained. Pedestrians should always walk on foot paths and should not cross the roads except zebra crossing.

MATERIAL AND METHODS

This prospective study was conducted in Surgical Unit II at Allied Hospital Faisalabad which is a teaching hospital in 3rd most populated city of Pakistan. Patients presented in emergency ward were shifted to surgical bays and then to surgical unit II on 2 days emergency call per week rotation. All affected patients by road traffic accidents were part of this study while patients injured or affected by other means were excluded. Three different age groups were designed. Group A includes 0-14 years of age; group B 15-29 years of age and group C 30 years and above. Detailed histories concerning mechanism of accident; whether the affected patients were pedestrian or cyclist; riding on motor cycle or some other vehicles; sitting on front seat or rear seats; speed of vehicle and shifting tools to tertiary care center were recorded in protocol proforma. Necessary investigations like x-rays skull, chest and abdomen, USG abdomen and chest and CT scan were done in causality department. All patients were treated by specialized team for trauma in Surgical Unit II.

DISCUSSION

Total 94 patients (4.8%) suffered road traffic accidents out of total 1956 patients admitted in one surgical unit II for all surgical problems while some international studies shows 6.66%[12] admission rate in such type of tertiary units during one year period. The total number of patients that presented in all surgical units were 7388 (1.27% accidental cases in one unit) out of total patients 21,400 (0.439%---affected by road traffic accidents in one unit) presented in emergency ward including surgical and medical causalities during this one year period.

Among these 94 patients 78 patients were adults and 18 patients were children. Patients were divided into three groups. Group A with age range from 0-14 years had 21 patients (22.34%), Group B had 53 patients (56.38%) with age range 15-29 years and Group C with age 30 years and above comprised of 20 patients (21.27%) as drawn below.

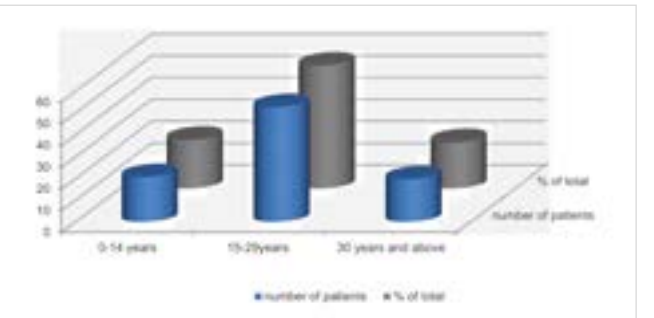

Figure 1 - This chart demonstrate different age groups affected in road traffic accidents.

Worldwide this incidence is 38.30% to 40.83%[7,8] in younger age groups from 15-30 years while children up to 15 years affected were 11.67 to 18.9%.[12]

Among these 94 patients 58 patients (61.70%) were males and 36 patients (38.29%) were females while certain internationally studies have documented male to female ratio of 3:1.[9,13]

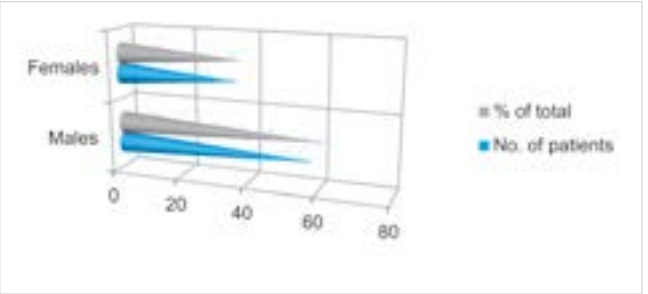

Figure 2 - A chart plotted above shows sex affected by road traffic accidents.

43 patients (45.74%) admitted were pedestrians while internationally it has been reported up to 56.54%[13] in some studies. 10 patients were (10.63%) on bicycles and 26 patients were (27.65%) riding motorcycles (combined two wheelers 37%) while internationally 55.09 have been reported[8] while 15 patients (15.95%) were in other vehicles like cars or buses.

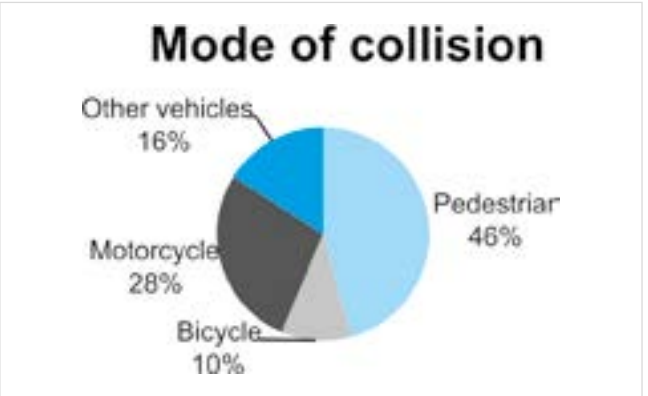

Figure 3 - This chart elaborate % age of patients with modes of collision

The pattern of injuries among these road traffic accident affected individuals were categorize as; 52 patients (55.31%) developed head injuries, while internationally it has been reported to be 52%[14] that well correspond with this study. 10 patients developed (10.93%) blunt trauma abdomen which was observed in an international study as10%[15], 5 patients (5.31%) had blunt trauma chest and in an international study it has been reported as 8.5%[16] and 26 patients (27.65%) got skeletal injuries while in different worldwide studies it has been reported from 24.46 to 37%[16,17] (15 patients developed upper limb bones fractures, 11 patients with lower limb bones fracture (6 mid-shaft of tibia, another 5 patients with fracture lower 1/3rd of femur).

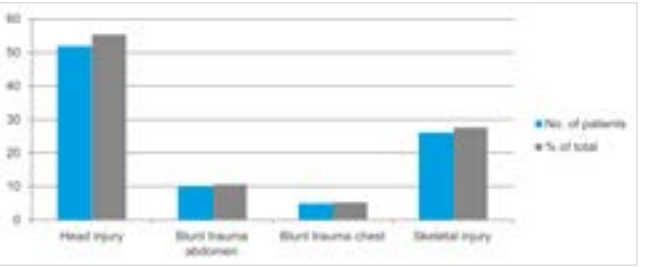

Figure 4 - Above chart demonstrating pattern of injury among affected groups

Three patients (3.19%) died out of total 94 road traffic accidents admitted in this surgical unit of a tertiary care hospital while in an international study 2.6%[18] mortality rates has been reported. Two patients 2.127% out of 94 (66.6% out of total died) died from severe head injury while in above international study it is reported as 47.2%[19]. One 19 years old male riding on motor cycle hit by trolley tractor and developed huge sub-dural hematoma and another one 27 years old pedestrian who fell down on road after hit by high speed car, developed fracture at occipital-parietal area with shift to left. Third patient 1.023% out of 94 (33.34% out of total death toll) was a child 13 years old who was hit by bump of donkey carriage in epigastric region and multiple organs were found to be severely damaged underwent laparotomy and died due to uncontrolled hemorrhage from splenic rupture, grade IV liver trauma, duodenal hematoma and right sided three lower ribs fracture (multiple organ injury).

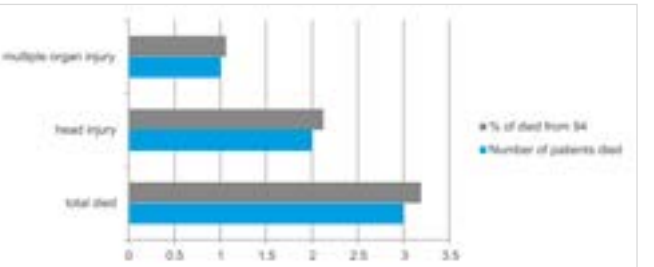

Figure 5 - Chart indicating cause of death among different pattern of injury

Patients were managed according to the type and severity of injury by a team of surgical specialists including neurosurgeons, general surgeons,

pediatric surgeons and orthopedic surgeons. Patients with head injuries were graded and severity pattern well defined and patients with other injuries were also categorized. Most of the patients recovered well but with some sort of morbidities while 3 patients died as discussed in above paragraph.

RESULTS

The results of this study indicates that 78 adults (82.97%) and 18 children (19.14%) out of 94 suffered from road traffic accidents among 1956 patients presented or admitted in surgical Unit II from 7388 all surgical emergencies out of total 21,400 patients admitted to emergency unit including all surgical and medical patients in a tertiary hospital. About 2/3 patients were males and 1/3rd were females. The major age group affected between 15-29 years of age, more than half (56.38%). Most of the affected patients were pedestrian (46%), and the remaining on some sort of vehicles. Among the patients on vehicles; about 1/3rd (28%) were on motorcycles; 1/10th on bicycles (in total two wheelers around (38%) while rests of them were using cars or heavy vehicles. This indicates that major number of accidents happened while these patients were un-protected or less protected such as pedestrian and two wheelers that accounts for 84% causalities in combination. Being un-protected or probably less sort of protection more than half (55.31%) of the patients developed head trauma and about 1/3rd skeletal trauma in the form of extremity fractures or thoracic cage injuries. As for mortality is concerned mainly it was due to head trauma about 2/3rd of total mortality and the remaining admitted patient died of multiple organ injuries.

CONCLUSION

Road traffic accidents accounts for 4.8% of general population affected and admitted for certain emergency reason in tertiary care centers with 3:1 ratio of males and females. Main victimized age group is teenagers up to 30 years of age, pedestrian, two wheelers and less protected individuals. Major cause of mortality is head trauma and multiple organ injury. All these are preventable causes for increased morbidity and mortality and these people could be prevented and protected by implementing traffic authority's rules and regulations, mass communication, adopting full safety measures and taking care for all.

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"Don't count the days, make the days count."

Muhammad Ali

AUTHORSHIP AND CONTRIBUTION DECLARATION

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