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Case Report

Epidemiological study of fatal road traffic accident cases

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ABSTRACT

The present study is an epidemiological study of fatal Road Traffic (RTA) cases brought and admitted in our tertiary health care centre from Nov 2017 to December 2019. There were 148 fatal RTA cases involving 112 males and 36 female. In the present study males cases outnumbered the female with an approximate male female ratio of 3.1:1. Many cases of fatal head injuries were due to four & two wheelers. Most commonly seen external injuries were abrasions. Lower limbs showed fractured in 31 cases, 20.95%, and upper limbs showed fractured in 22 cases, 14.89%. So, far case fatality is concerned involvement of head plays the most important role.

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1. Introduction

Road traffic injuries are major causes of morbidity and mortality especially amongst the developing countries.^{1,2} The highest burden of injuries and fatalities are borne disproportionately by the poor people in developing countries as there is poor road condition & overcrowding road services. As this tertiary care centre is located along the Grand Southern trunk Road Highway it experiences quite number of fatal Road Traffic Accident (RTA). Moreover, the incidence is increasing day by day because of the extension of urbanisation, housing colonies, industries & developing educational institutions in this area. This study is conducted to know the various aspects RTA cases in this region.

2. Materials and Methods

Out of the total 256 RTA cases, 148 fatal RTA were selected for the present study. Railway accident cases and minor RTA cases were excluded from the present study. Details of each and every cases such as name, age, sex, educational status,

profession, type of injury and other relevant information were noted. Available information were also collected from the hospital case records, relatives, etc. Then the collected data were tabulated for study and comparison with the previous studies.

3. Observation

In the present study it was observed that fatal RTA cases occupied a sizable number of bed occupancy in the Emergency Intensive Care Unit. However, out of total 256 RTA cases, only 148 cases (57.81%) were fatal requiring prolonged hospital admission and some of them even expired during their stay in hospital.

Table 1 shows the distribution of cases depending on age and sex of the victims. The age range spread from 2 – 75 years, the mean being 54.5 yrs. There were 13cases below 10 years of age. Approximate male-female ratio was 3.1:1. If we consider all four wheelers like buses, trucks, cars, etc. collectively then they formed the maximum number of RTA cases, 52 cases, 35.14%. It is closely followed by cases of motorized two wheelers, 47cases, 31.76%. In 9cases, (6.08%) type of vehicle involve as not known as shown in

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Table 2.

Profession wise RTA cases were more common amongst the services category seen in 40 cases, 27.02%. This was closely followed by farmer population, seen in 27 cases, 27%. Case distribution according to profession is shown in Table 3. Table 4 shows types of external injuries. Abrasions were seen in 49 cases, 49%. Head injury was the most important fatal injury which was seen in 58 cases, 58%. There were about 288 external injuries out of which multiple abrasions are the commonest type. Abrasions & contusions were commonly seen on hands and lower limbs. Fractures are also more common in lower limbs.

Table 1: Age & sex distribution of cases

Age in Years	Male	Female	Total	%
0-10	9	4	13	8.78
11-20	18	3	21	14.19
21-30	39	12	51	34.46
31-40	24	5	29	19.60
41-50	12	8	20	13.51
51-60	6	2	8	5.40
61-70	2	1	3	2.02
Above 70	2	1	3	2.02
Total	112	36	148	100

Table 2: Types of vehicle involved

Type of Vehicle	No. of Cases	%
Bus	11	7.43
Truck	18	12.16
Four Wheelers (Car, truck, van, etc)	52	35.14
Three Wheelers	11	7.43
Motorized Two Wheelers	47	31.76
Unknown	09	6.08
Total	148	100%

Table 3: Profession wise distribution

Profession	No. of Cases	%
Not applicable	9	6.08
Students	13	8.78
House wife	15	10.14
Unemployed	24	16.21
Farmer	38	25.68
Service	40	27.02
Retired	9	6.08
Total	148	100%

4. Discussion

Male victims outnumbered the female victims with an approximate male female sex ratio of 3.1:1. This type of male dominance were also reported by various researchers,^{3–8} and the reason is probably due to the fact

Table 4: Types of external injury

Type of Injury	No. of Cases	%
Abrasions	79	27.43
Contusions	63	21.87
Laceration	56	19.44
Fractures	37	12.85
Multiple injuries	53	18.40

N.B: Total External Injury = 288

Table 5: Types of internal injuries

Internal Injury	No of Cases	%
Head injury	58	61.05
Liver injury	12	12.63
Kidney injury	5	5.26
Lungs injury	8	8.42
Multiple	13	13.68
Others	9	9.47
Total	95	100

N.B: Total number of internal injuries=95

that males are more mobile and exposed to the outer world than females. This male dominance was also observed in all age groups, the most common involved age range being 21 to 50 years. This finding is in accordance with previous researchers.^{9–15} Fatal RTA cases were more common amongst the service category which was closely followed by farmers. This may be due to unique location of our study area, being close to Chennai City, Mahindra & Ford Industrial areas. As this area is also close to many villages along the highway fatal cases were also common amongst the farmers. Ignorance & violations of traffic rules amongst farmers and illiterate people may also be a contributing factor. The incidence of RTA cases decrease in the elderly age group because most of the elderly people will remain indoors mostly.

So for external injuries are concerned abrasions, contusions and lacerations were frequently encountered in many cases. Our findings are consistent with works of previous researchers. Graze abrasions are commonly seen on shoulders, chest, back of chest, etc. and they are commonly seen on knee, outer aspects of thighs in the lower limbs.

Lower limbs showed less number of fractures, seen in 31 cases, 20.95%. Upper limbs showed are more number of fractures, seen in 22 cases, 14.89%. Fracture of the upper end of tibia is more common so far lower limbs are concerned. In the present study fracture of femur bone is not so common. Except in few cases of run over, the incidence of pelvic bone fracture was very less. Internal organ injury was seen in 48 cases, 32.43%.

RTA constituted the single most common cause for fatal head injury, seen in 58 cases, 61.05%. Majority of the victims were two wheelers or four wheelers users. The most frequently encountered age group ranged between 20 to

40 years. In this respect our findings were consistent with other authors.¹⁵⁻¹⁷ In our study two wheelers contributes the highest number of RTA cases, 27cases, 41.53%. Majority of the Indian authors observed that RTA cases involving two wheelers is more common throughout the country. In contrast to this, in the western countries the majority of people injured in road traffic accidents are car occupants.^{8,18} So, far case fatality is concerned involvement of head plays the most important role.

5. Source of Funding

None.

6. Conflict of Interest

The authors declare no conflict of interest.

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