Original Research Article

Prospective Study on Road Traffic Accident Cases in Sub-urban Region of Chennai, Tamil Nadu State

Savior Selva Suresh[1], O. Gambhir Singh[2*], M. Parasakthi[3]

[1]Professor, Dept. of Forensic Medicine, Sree Balaji Medical College and Hospital, Chrompet, Chennai, Tamil Nadu, India
[2]Professor, Forensic Medicine Department, S.R.M. Medical College, Kattankulathur, Tamil Nadu, India
[3]Professor, Dept. of Forensic Medicine, Govt. Chengalpet Medical College, Chengalpet, Chennai, Tamil Nadu, India
[*]Corresponding author email: **drgambhirsingh@yahoo.com**

International Archives of Integrated Medicine, Vol. 4, Issue 1, January, 2017.

Available online at http://iaimjournal.com/
ISSN: 2394-0026 (P) **ISSN: 2394-0034 (O)**
Received on: 03-01-2017 **Accepted on:** 09-01-2017
Source of support: Nil **Conflict of interest:** None declared.
How to cite this article: Savior Selva Suresh, O. Gambhir Singh, M. Parasakthi. Prospective Study on Road Traffic Accident Cases in Sub-urban Region of Chennai, Tamil Nadu State. IAIM, 2017; 4(1): 64-67.

Abstract

The present study consists of 100 road traffic injury cases admitted in our tertiary health care centre. In the present study, males victims (84 cases, 84%) outnumbered the females victims (16 cases, 16%) with an approximate male female ratio of 5:1. Four wheelers and two wheelers involving mainly pedestrians were the most common cause for fatal head injury seen in 66 cases, 66%. Multiple abrasions were the most commonly seen external injury, seen in 68 cases, 68%. Skull bone fracture was seen in 40 cases, 40%. Temporal and parietal bones were common site of fracture seen in 41 cases, 41%.The mean survival period was 73.42 hours, range being 6 hours to 600 hours.

Key words

Road Traffic Accident, Head Injury, Four Wheelers, Two Wheelers, Pedestrians.

Introduction

Road traffic injuries are a major cause of death and disability globally, with a disproportionate number occurring in developing countries [1]. The highest burden of injuries and fatalities is borne disproportionately by poor people in developing countries, as pedestrians, passengers of buses and minibuses, and cyclists [2]. Though

this tertiary care centre is located away from the Chennai City area it experiences quite number of Road Traffic Accident (RTA) cases as it is situated on the GST Road, one of the busiest national highway in the Southern Region of India. Moreover, the incidence of RTA cases is on the rise because of extension of urbanisation and developing educational institutions in this area. The present study has been carried out to know the various epidemiological, medico legal aspects of vehicular accidents in the region.

Materials and methods

We selected 100 cases of fatal road traffic accident (RTA) which were brought in for treatment during the study period. Railway accident cases were excluded from the present study. In some cases the type of vehicle was not known and we have included such cases in others category. Detail information such as name, age, sex, educational status, profession, date and time of accident, type of injury and other relevant data were noted. Other relevant information was also collected from the hospital investigation records, police papers and relatives. These data were tabulated for easy study and comparison with the previous available studies.

Results

Age and sex wise distribution of the victim was as per **Table - 1**. The ages ranged from 2 – 75 years (the mean age being 54.5 years). There were 7cases below 10 years of age.

If we combine all four wheelers i.e. bus, truck, car, jeeps and vans together then it contributes the maximum number of road traffic cases, seen in 54 cases, (54%). It is followed by cases involving two wheelers, seen in 36 cases (36%). Cases involving tractors, bullock carts, etc. which are generally used by farmers are grouped together under the category 'Others', seen in 11 cases (11%) as per **Table - 2**.

So far profession is concerned RTA cases were more common in unemployed group, 39 cases (39%) which was followed by farmer population, 27cases (27%). Professional wise distribution of cases was as per **Table - 3**. Incidence was very high amongst illiterate people, seen in 47cases (47%) as per **Table - 4**.

Table - 1: Cases Distribution According To Age and Sex.

Age in Years	Male	Female	Total (%)
0-10	5	2	7
11-20	10	2	12
21-30	36	4	40
31-40	21	5	26
41-50	5	1	6
51-60	3	1	4
61-70	0	1	1
Above 70	4	0	5
Total	84	16	100

Table - 2: Cases Distribution According To Vehicle Involved.

Type of Vehicle	No. of Cases	%
Bus	6	6
Truck	11	11
Four Wheelers (Car, jeep, van)	27	27
Three Wheelers	9	9
Motorized Two Wheelers	36	36
Others	11	11
Total	100	100

Table - 3: Cases Distribution According To Profession.

Profession	No. of Cases	%
Not applicable	1	1
Students	13	13
House wife	8	8
Unemployed	39	39
Farmer	27	27
Service	11	11
Retired	1	1
Total		100

Types of external injuries were as per **Table - 5**. Abrasions were seen in 49 cases, 49%. Head

injury emerges as the most important injury, seen in 58 cases, (58%). Multiple abrasions and contusions are more common on hands and lower limbs. Fractures are also more common in lower limbs, seen in 37 cases, 37%. Cases distribution according to internal injuries was as per **Table – 6**.

Table - 4: Cases Distribution According To Education.

Educational Status	No. of Cases	%
Not applicable	1	1
Illiterate	47	47
Undergraduate	33	33
Graduate	9	9
Post graduate	2	2
Unknown	8	8
Total	100	100

Table - 5: Cases Distribution According To External Injury.

Type of Injury	No. of Cases	%
Abrasions	49	49
Contusions	23	23
Laceration	36	36
Fractures	37	37
Multiple injuries	13	13

Table - 6: Cases Distribution According To Internal Injuries.

Internal Injury	No of Cases	%
Head injury	58	58
Liver injury	12	12
Kidney injury	2	2
Lungs injury	5	5
Multiple	14	14
Others	9	9

Discussion

In the present study male victims (84 cases, 84%) outnumbered the female victims (16 cases, 16%) with an approximate male female ratio of 5:1. Similar findings of male dominance were also reported by various researchers [3-5] and is attributed to the fact that males are more exposed to the outer world than females. Male preponderance was observed in all age groups, most common affected age range being 21 to 50 years. Similar findings pertaining to age group were also reported by [4-6]. RTA emerged as the single most common cause for fatal head injury, 58 cases, 58%. Most of the victims were two wheelers or four wheelers users in the age group of 20 plus to 40 years. In this respect our findings were consistent with the works of [7-10]. In our study two wheelers contributes the highest number of RTA cases, 27cases, 41.53%. In Indian scenario RTA cases involving two wheelers is more or less constant observation. However, in the western countries the majority of people injured in road traffic accidents are car occupants [11-13].

RTA cases were more common amongst the unemployed and farmer category of population. The incidence is also high amongst the illiterate and undergraduate population. This may be due to the fact that our tertiary care centre is located about 40 km away from the Chennai city area mainly covering the wide vast village area inhabited by farmers and laborers. Ignorance of traffic norms amongst farmers and illiterate people may also be a contributing factor. Its incidence decreases with the increase in age because most of the elderly people will remain indoors.

Abrasions, contusions and lacerations are frequently encountered injuries in RTA cases. Head injury is the single most important injury which governs the prognosis in such cases. It is seen in 58 cases, 58%. Fractures in the lower limbs (37 cases, 37%) are more common than that of the upper limbs (11 cases, 11). In the lower limb the fracture of the upper end of tibia is more common. Fracture of shaft of femur or head of femur is rare in the present study. Fracture of pelvic bone was very rare except in one case of run over by a truck. Internal organ injury is seen in 21 cases, 21%, laceration of liver being the most common injury type, seen in 12 cases, 12%.

References

1. Tedeschi CG, Eckert WG, Tedeschi LG. In "Forensic Medicine: A study in trauma and environmental hazards, Vol. I, Mechanical Trauma "section 1, Mechanical Injury: Chapter 3: Head injury at p 30. WB Saunders Co. Philadelphia, 1977.
2. Bailey & Love's Short Textbook of Surgery, 23rd edition, Skerr R C and Maartens NF (Eds). The Cranium, Scalp, Skull, Brain, Arnold, London, 2001, p. 548 – 552.
3. Kumar A, Lalwani S, Agrawal D, Rautji R, Dogra TD. Fatal road traffic accidents and their relationship with head injuries: An epidemiological survey of five years. IJNT, 2008; 5(2): 63-67.
4. Amit M Patil, Walter F Vaz. Pattern of Fatal Blunt Head Injury: A Two Year Retrospective / Prospective Medico Legal Autopsy Study. J Indian Acad Forensic Med, 2010; 32(2).
5. Shukla D, Mahadevan A, Sastry K.V.R., Shankar S.K. Pathology of post traumatic brainstem and hypothalamic injuries, Clinical Neuropathology, 2007; 26(5): 197-209.
6. Tyagi A K, Sharma G K, Bishnu Kumar. Cranio cerebral damage by blunt force impact. J Indian Academy of Forensic medicine, 1986; 1: 24-39.
7. Akang E E U, Okati M A O, Osunkaya A O, Komolate E O, Malomo A O, Shokunbi M T, Amutta S B. Pattern of fatal head injuries in Ibadan – A 10 year review. Medicine Science and Law, 2002; 42(2): 160-166.
8. Yavuz M, Asirdizer M, Cetin G, Balci G Y, Kok M A. The correlation between skull fractures and intracranial lesions due to traffic accidents. American Journal of Forensic Medicine and Pathology, 2003; 24(4): 339-345.
9. Tirpude BH, Naik RS, Anjankar AJ, Khajuria BK. A study of the pattern of Cranio-cerebral injuries in road traffic accidents. JIAFM, 1998; 20(1): 9-12.
10. Ghosh P K. Postmortem Study of pattern of injury involving pedestrian victims. J of Forensic Medicine & Toxicology, 1991; 3 & 4: 1-7.
11. Fimate L, Chandra J, Dikshit PC. Survival time in relation to consciousness and severity of head injury. Journal of Forensic Medicine & Toxicology, 1992; 8(3&4): 15-19.
12. Salgado MSL, Colombage SM. Analysis of fatalities in Road Accidents. Forensic Science International, 1988; 36: 91-96.
13. Johnson MR, McCarthy MC, Miller SF, People JB. Craniofacial trauma in injured motorcyclists: The impact of helmet usage. J Trauma, 1995; 38(6): 876-8.