
An Autopsy Based Study on Fatal Road Traffic Accidents in the Mortuary of Patna Medical College, Patna (Bihar)

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How to cite this article: Ramanand Choudhary, Anil Shandil, Sanjeev Kumar. An Autopsy Based Study on Fatal Road Traffic Accidents in the Mortuary of Patna Medical College, Patna (Bihar). Indian Journal of Forensic Medicine and Toxicology 2022;16(4).

Abstract

Road Traffic Accidents (RTA) continue to be one of the leading causes of death in developing countries and constitute a medico-legal autopsy case conducted in India.

Objective: To study the demographic profile and pattern of injuries among victims of RTA.

Materials and Methodology: Autopsy based study was carried out in the department of Forensic Medicine & Toxicology, in the Mortuary of Patna Medical College, Patna from September 2018 to September 2021. The data source included post-mortem reports, police inquest reports. History noted in the sheet as given by relatives and friends of the deceased, crime scene, photographs, hospital, case records and laboratory investigation reports. The data collected was analyzed and descriptive statistics such as percentages, ratios and proportion were used.

Observation and Results: A total of 8120 autopsies were conducted during the study period and among them 2030 (25%) cases were of RTA of these 6334 (78%) were males and 1786 (21.99%) female. Majority of the victims 23.49% were in the age group of 21-30 years. Head injury 76.99% was the most common cause of death and subdural haemorrhage (80.68%) was the commonest among the intracranial haemorrhages.

Conclusion: Road traffic accidents are preventable cause of mortality and there is urgent need to enhance road safety by multi sector approach along with improving trauma care management in hospitals.

Keywords: road traffic accident, autopsy, injuries

Introduction

About 1.25 million people die every year as a result of RTA across the globe and it is expected to be become the seventh leading cause of death by

the end of 2030, if proper intervention is not made India accounts for the highest number of road traffic accidents in the world, with over 130,000 people dying every year.^[1]

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The main contributing factors as revealed by World Health Organization restraints and inefficient law enforcement. Trucks and two wheelers constitute for the majority of the cases. The most common occurrence is during peak afternoon and evening.^[2] The present study was undertaken with an objective to study the demographic profile and pattern of injuries among victims of fatal RTA.

Material and Methodology

The analytical study was carried out in the department of Forensic Medicine & Toxicology, in the Mortuary of Patna Medical College, Patna (Bihar). The data collected for study from Sept. 2018 to Sept. 2021. The data source included post-mortem reports, police inquest reports, history noted in sheet as given by relative and friends of the deceased, crime scene photographs, hospital case records and laboratory investigation reports. A structured performa was designed to enter the data which was pretested and validated by subject experts. The performa consisted three part, part X, Y and Z, part X included data of post-mortem examination, age of the deceased, sex of the deceased, marital status. Part Y consisted of injuries sustained and part Z cause of death. The data collected was analyzed and statistical methods used are descriptive statistics which includes percentages, ratio and proportion.

Observation

Table 1: Age V/s sex distribution of RTA Victims.

Age in years	Male	Female	Total
Upto 10	36	0	36
11-20	350	60	410
21-30	477	75	552
31-40	300	102	402
41-50	200	65	265
51-60	150	50	205
61-70	90	65	156
>70	07	03	10
Total	1610	420	2030

Table 2 : Cause of death in RTA Victims

Cause of death	No. (%) (n = total 2030)
Head injury	1561 (76.89%)
Multiple injuries	242 (11.92%)
Chest injury	61 (3.00%)
Abdominal and genitor urinary injury	15 (0.73%)
Spinal injury	30 (1.48%)
Fracture of Long bones and complication	101 (4.97%)
Neck injury	20 (0.99%)

Table 3: Intra Cranial haemorrhage in RTA Victims

Cranial haemorrhage	No. (%) (n = total 2030)
Subdural haemorrhage	1638 (80.68%)
Sub arachnoids haemorrhage	71 (3.49%)
Extra dural haemorrhage	206 (10.14%)
Intra cerebral and intra ventricular haemorrhage	115 (5.66%)

Table 4: Skull Fractures in RTA Victims

Skull Fracture	No. (%) (n = total 2030)
Fissured	605 (29.80%)
Comminuted	302 (14.87%)
Depressed	167 (8.22%)
Sutural	106 (5.22%)
Intact (without fracture)	850 (41.87%)

Observation and Results

A total of 8120 autopsies were conducted during the study period and among them 2030 (25%) cases were of RTA of these 78% we males. Majority of the victims were in the age group of 21-30 years followed by fourth decade 19.80%. Head injury 76.89% was the most common cause of death. Followed by multiple injuries 11.92% subdural haemorrhage 80.68% was the commonest type among intracranial haemorrhage followed by extra Dural haemorrhage 10.14%, 5.66% intra cerebral and intra ventricular haemorrhage. Fissured fracture 29.80% outnumbered other types of skull fractures.

Discussion

In the present study, RTA constituted 25% of the total cases of medico legal autopsy thereby emerging as the most common variety for which medico legal autopsies are conducted. This is in contrast with the study conducted by James et. al. in Fiji where only 7% of the autopsies conducted were due to RTA during the study period.^[3]

This study shows male predominance over females, similar to studied by Suresh et. al., Yogesh et. al. and Mariam et. al. where males outnumbered females.^[4,5,6] Major portion of the victims were in age group between 21-30 years. Which is in accordance with the study done by Yogesh G, Shruti et al, Singh and Mishra.^[5,7,8,9] This can be explained by the fact that historically India is a male dominated society where men are exposed to outside as compared to women, who spend most of the time inside the house. Third decade is the most vulnerable age group as they encounter more stress, strain and pressure due to personal and professional commitments and more so is the fact that it is in this age group people tend to start driving two and four wheelers, begin to consume alcoholic beverages, tend to take more risks, prefer to go outings as compared to elderly people who tend to take less risks and stay indoors.

In the present study, head injury was the most common type of regional injury encountered and also the most common cause of death, which is similar to the study done by Mariam, et. al. and Mishra et. al.^[6,9] However this study differs from the study made by Yogesh G where multiple injuries was the most common cause of death and extremities were the most common body region affected, head injury is a morbid stage resulting from gross or subtle structural change in scalp, skull and/or contents of the skull due to application of mechanical forces.^[5] Brain is the most susceptible visceral organ to trauma.^[10] In another study by Khajuria et al, limb injuries were the most common accounting for 31%.^[11]

Among the various types of intracranial haemorrhages, subdural haemorrhage was the most common type followed by EDH haemorrhage. This is in contrast with the study by James, et. al. where ED haemorrhage was the most common type, followed by subdural haemorrhage in the present study, there

was 10-18% incidence of which is in sharp contrast with the study done Khajuria et. al. where extra Dural haemorrhage constituted for 10.18% of cases.^[3,11]

Among the fractures of the skull, fissured fracture was the most common, followed by comminuted type, which is in contrast with observation made by James, et. al. where comminuted variety was the most common.^[3]

With respect to seasonal variation, April month recorded the highest number of cases and January recorded the least. This may be attributed to summer vacation for schools and colleges where families plan for outings leading to traffic congestion and mishaps.

Conflict of Interest: NIL

Financial Assistance: None

ETHICAL CLEARANCE NOT Required As this study is based on Hospital Mortuary Records

Conclusion

Road traffic accidents are preventable causes of mortality and morbidity. Hence ensuring road safety which includes avoiding over speeding and drunken driving along with use of helmets and children restraints is the need of the hour. There should be strict law enforcement to check road mishaps.

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