

# Trauma Registry: Our Experience

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**Abstract:** *Aim: To analyze the data of patients admitted in trauma center in initial 100 days. Material and methods: A retrospective study conducted at Trauma center, BHU. Data of patients registered in initial 100 days (20 April 2015- 30 July 2015), analyzed and interpreted. Results: Total number of registered patients was 2695 in these 100 days. Most of the patients were of road traffic accidents 984 cases (36.5%), fall from height 783 (29%), physically assaulted cases were 313 (11.6%), gunshot injuries 19 (0.70%) and other categories includes 845 (31.35%) cases. Most of the patients we treated efficiently and discharged. Mortality rate in our trauma center 147 (5.45%). Conclusion: Rising number of road traffic accidents is the major area of our concern as most of the patients registered in trauma center were of RTA. High quality patient care, availability of superspeciality doctors and highly sensitive equipments, for 24 hours and 7 days will able to manage any grave situation or mass casualty.*

**Keywords:** trauma center, RTA, critical care.

## 1. Introduction

A trauma center is a hospital equipped and staffed to provide comprehensive emergency medical services to patients suffering traumatic injuries. Trauma centers grew into existence out of the realization that traumatic injury is a disease process unto itself requiring specialized and experienced multidisciplinary treatment and specialized resources. Rising number of road traffic accidents, severity of accidents and resulting morbidity and mortality among younger age group is area of our major concern. We are providing a data, which gives an idea of magnitude of the problem worldwide and in our country. Countries are passing through significant urbanization, motorization, industrialization and a change in the socioeconomic values.<sup>1</sup> India is no different to this change. Due to these changes, road traffic accidents (RTAs) have become the first public hazard in the world, which results in one of the largest threat against human lives and safety.<sup>2</sup> Road traffic accidents kill more than 120 lakh people and injured more than 50 Crore people worldwide every year. Everyday about 6600 deaths and 3300 serious injuries occur due to RTAs. The global annual cost due to RTA is a whopping 2, 30, 000 million US dollars.

Accidents in India, 1, 20, 000 people die and 12, 70, 000 sustain serious injuries every year in Road Traffic. As per the statistics, there is one death on the Indian road every six minutes and this is expected to escalate to one death every three minutes by 2020.<sup>3</sup>

Even this may be an underestimation, as according to the Institute of Road Traffic Education (2006) New Delhi, out of the estimated 1.4 million serious road accidents/ collisions occurring annually in India, hardly 0.4 million are recorded. Many road traffic deaths in rural areas are not recorded. Similarly, accidents which result in late deaths after the discharge from hospital due to the effects of morbidity also are not recorded.<sup>2</sup> India accounts for about 10% of road accident fatalities worldwide Although India accounts for only 1% of the registered motor vehicles, it accounts for nearly 9 % of RTA deaths. World Health Organization has revealed in its first ever Global Status Report on Road Safety (2009) that more people die in road accidents in India than anywhere else in the world, including the more populous China. There should be emphasis on making strict

traffic rules and guidelines and their implementation to prevent so the RTA cases number can be reduced. Functioning of trauma centre is based on team work, a team of neurosurgeon, orthopedicians, emergency medicine, anesthetist, plastic surgeons and other specialties and blood bank and well trained nursing staff are the pillars to run the whole system.

## 2. Materials and Methods

This was a retrospective study done among the patients registered in initial 100 days of trauma centre of BANARAS HINDU UNIVERSITY (20 APRIL-30 JULY 2015). All the patients registered in emergency of trauma centre and were taken for treatment, were our sample size. Patients of road traffic accidents, fall from height physical assault or trauma due to any reasons were admitted. Cases of head injury, multiple fractures, facial injuries and polytrauma were managed. Data collected, analyzed and interpreted.

**Results:** Total number of registered patients was 2695 in these 100 days. Mode of trauma or injury was different for patients admitted in trauma centre and referred to us from different places of eastern India. Age group of patients were between children (<20 years to > 50 yrs) upto elderly involved.

Mode of injuries (Table 1)

1. Road traffic accidents
2. Fall from height
3. Physical assault
4. Gunshot injuries
5. Others( cut injury, due to slipping, etc)

Number of patients admitted with different mode of injury comprises in various ratios or percentages, giving the magnitude of the problem due to different etiological factors.

This is shown with the diagram given:

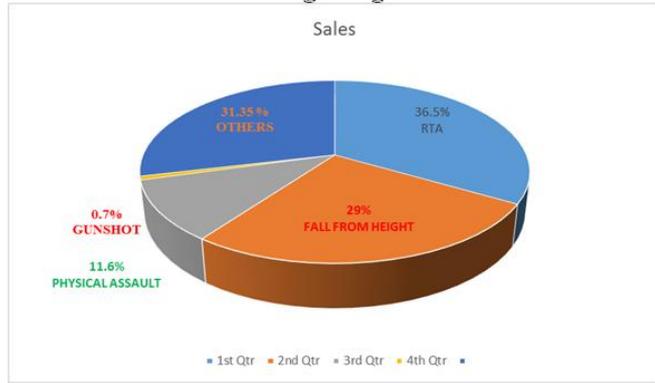


Figure 1:

The age wise distribution is also given and the mode of injury among different age group is shown in table 1.

Table 1: Age wise distribution and mode of injury

Age group	RTA	Fall from height	Physical assault	Gun shot injury	Other causes
< 20 years	151	256	29	6	155
20- 50 years	687	137	254	13	285
>50 years	146	390	30	0	156
Total	984	783	313	19	596

Total 597 (22.15%) patients belong to < 20 years age group, most of the patients injured due to fall from height. Among 1376 (51%) patients belong to age group of 20-50 years and the maximum number (687) of the patients injured because of road traffic accidents. More than fifty years age 722 (26.7%) patients belongs, and 390 patients again fall in category of fall from height.

AGE WISE DISTRIBUTION

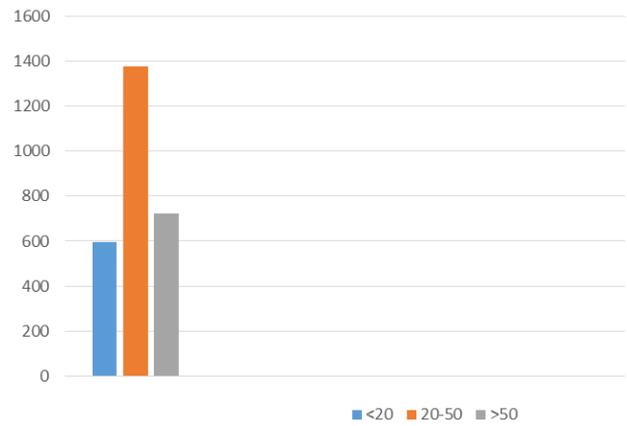


Figure 2

Among the admitted patients 752 (27.9%) are females and 1943 (72.09%) patients are males. According to mode of injury these males and females are further categorized.

SEX DISTRIBUTION

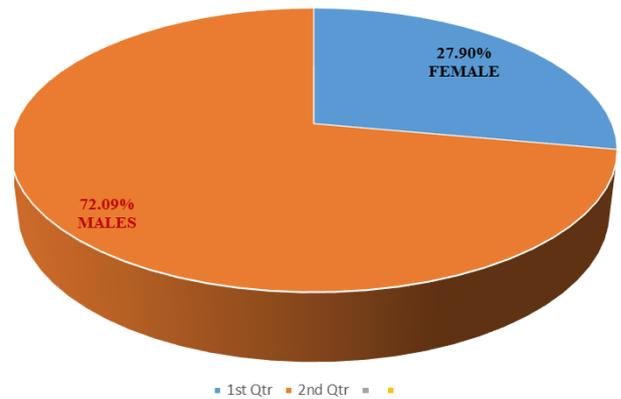


Figure 3:

The distributions are given in table 2

Sex	RTA	Fall from height	Physical assault	Gun shot	others
Total	984	783	313	19	596
Female (752) total	217(22.05%)	229(29.2%)	102 (32.5%)	1 (5.26%)	213(35.7%)
Male (1943) total	767(77.94%)	554(70.7%)	211(67.4%)	18(94.73%)	383(64.2%)

Among all the patients admitted in trauma center, RTA accounts for maximum cases, and males are affected in road traffic accidents. Number of patients admitted in ICU 136. All the patients well treated except 72 patients who left against medical advice. Mortality among 147 (5.45%) patients resulted who were severely injured.

3. Discussion

Ours being the largest trauma center of the country, we are giving the data of first initial 100 days. Total admissions were 2695, and variety of injury cases admitted. External causes are shown to be the most prevalent cause of death among young individuals of productive age, especially aggression and traffic accidents, which constitute a severe public health problem that increases social and economic cost through what is required for the treatment and

rehabilitation of victims. In India increasing RTA -annual rate 3 %. India loses approximately 2-2.5% of its GDP to only road traffic injuries. RTA leads to tremendous burden of disability. Mostly the age group involved is between 20 – 50 years of age group, the productive age group. Males outnumber females as males are busy in outside activities more than females. In cases fall from height, there is bimodal variation, one peak is seen at less than 20 years age group including cases of children and another peak is at elderly age group. Both the age group involvement indicates the lack of alertness in this age group and the lack of boundaries at roof in most of the houses in rural areas are responsible for these cases. Next is the physical assault cases, in this there is male to female ratio is 2:1, females represent good ratio 102(32.5%), as it includes the cases of domestic violence, and physical assault by males. Although it represents the percentage which is known to us, many of

the females are still facing assault at their houses, which we don't know. Gun shot injuries constitute a small portion 18 (94.72%), and mostly males are affected. Other form of trauma includes, slipping on floor, cut injuries, injuries during playing and others.

Majority of the patients of RTI (44.6%) belonged to 16 to 30 years age group, followed by 33 percent of the patients in 31 to 45 years age group. Males (87.3%) outnumbered females (12.7%) giving a Male: Female ratio of 6.85: 1, study done by Chauhan A, et al (2014)<sup>4</sup>, this is similar to our study.

Fall from height is the second cause of injuries affecting spinal cord and pelvic fractures, this is similar to study done by Different behavior patterns in different populations can affect the spinal cord injury etiology.<sup>5</sup> In Indian scenario, houses are usually of poor design and they lack wall surrounding the roof, due to which persons sleeping on the roof are liable to fall during night. Study done by V.V Anantharaman et al<sup>6</sup> (2015) showed, majority of the victims of RTA (90.8%) were in the age group of 18-59 years and males (85.8%), and Road traffic accidents were fatal in 5.2% of the victims, all the findings are comparable to our study. In our study the productive age group is most commonly affected and male to female ratio is 6.5: 1, it is Similar finding of predominance of young and productive age group was reported by Badrinarayan Mishra et al<sup>7</sup> in west Nepal and Manna N et al<sup>8</sup> in a tertiary care hospital in Kolkata, Nilambar Jha et al<sup>9</sup> from south India and Abhishek Singh et al in a tertiary care hospital in rural Haryana.<sup>10</sup> Mortality in trauma cases ranges from 5-6% like in our study.

#### 4. Conclusion

Patients of various injuries admitted in trauma center but major area of concern is road traffic accidents, as this involves the young generation of our country. Resulting disability and disability adjusted life has major impact on GDP, as it is a burden and loss of country. There is need to reduce the number of accidents by making the strict laws of traffic, use of seat belts, limiting the speed and alcohol analyzer. Injury by other means should be also provided immediate critical care and simultaneously need of a strong referral system from various areas. Still there is lots of efforts to improve health services provided at our trauma center.

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