

Original Article



Clinicodemographic Pattern of Death in Road Traffic Accidents at Tangail Medical College

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Abstract

Background: Rapid motorization brought a boon along with the curse of road traffic accidents toll. Injuries and death due to RTA are one of the major public health problems across the globe, especially in developing countries, due to lack of comprehensive legislative measures. RTA are responsible for the greatest number of injuries and fatalities worldwide by killing around 1.2 million people each year and injuring another 50 million. It will have an immeasurable impact on the families affected by RTA.

Objective: To evaluate the situation of RTA in Tangail and to find out the pattern of injuries present in the dead bodies in RTA.

Materials and Methods: This is a retrospective study based on autopsy reports conducted to find out the pattern of death due to road traffic accidents in Sheikh Hasina Medical College and Hospital, Tangail during the period from 1st January 2020 to 31st December 2020. After reviewing all postmortem reports 53 cases were found due to RTA, including railway accidents during this study period.

Results: A total of 391 postmortem were conducted during the study period from January 2020 to December 2020 and out of which 53 cases were RTA. Female deaths were only 12(22.64%) and the majority of the deaths were male 41(77.36%). The highest percentage of deaths were found in the age group 21-30 year 21(39.62%), followed by 31-40 (18.87%), 41-50 years(16.98%). According to the types of vehicles, buses and lorries were responsible for the deaths. Regarding the types of victim distribution, pedestrians 28 (52.83%) were the highest percentage and vehicle occupants were 15(28.30%). Among total cases, head injury (41.51%) was the highest percentage responsible for deaths, followed by fracture of the skull bone (41.51%), fracture of the long bone (16.98%), chest injuries(22.64%) and pelvis fracture (5.66%).

Conclusion: Strict enforcement of traffic law, using seatbelts, maintaining the fitness of vehicles, driving licenses, improving public awareness, etc., can reduce this economic burden and protect vulnerable groups of people in our country.

Key words: Road Traffic Accident, Head injury, Pedestrian.

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Introduction

Globalization has brought development in the field of automobiles, followed by a curse with rise of road traffic accidents. The accident has been defined by WHO in 1956 as an “Unpremeditated event resulting in recognizable damage.” Injuries and death due to RTA are a major health problem in developing countries where more than 85% of all deaths and 90% of disability-adjusted life years were lost from road traffic injuries. Road traffic accidents are responsible for the greatest number of injuries and fatalities worldwide by killing around 1.2 million people each year and injuring another 50 million. These victims occupy 30-70% of orthopedic beds in hospitals of developing countries.¹ Road traffic injuries in developing countries mostly affect pedestrians, passengers and cyclists as opposed to drivers who are involved in most of the deaths and disabilities occurring

in the developed world.² The RTA is the most common causes of death below the age of 50 years in developed countries and predicted to be the 3rd leading contributor to the global burden of disease.³ In developing countries, 90% of the disability-adjusted life years (DALYs) lost because of road traffic injury.⁴ World Bank estimates that road traffic injuries cost 1-2% of developing countries' gross national product (GNP), or twice the total amount of development aid received worldwide by developing countries.

Materials and Methods

The present retrospective study was conducted in Sheikh Hasina Medical College and Hospital, Tangail from January 2020 to December 2020 after approval from the institutional ethics committee. The present study includes all the victims of road

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traffic accidents (RTA) who were brought for medicolegal autopsy, either spot dead or hospital death. After reviewing all the PM reports 53 deaths were found due to road traffic accidents. Data were collected and recorded purposively from the postmortem reports. Data was entered and analyzed in the EPI INFO 2007 software.

Results

A total of 391 postmortems were conducted during the study period from January 2020 to December 2020. Out of which, 53 cases were Road Traffic accidents. Female deaths were only 12 (22.62%) and most were male 41 (77.36%). The highest percentage of deaths were found in the age group 21-30 years (39.62%), followed by 31-40(18.87%),41-50(16.98%) and 51-60 years(11.32%) of age. Among total cases, head injuries 22 (41.51%) were the highest percentage responsible for the deaths, followed by fracture of long bone 09(16.98%), chest injuries 12(22.64%), abdominal injuries 07(13.21%) and pelvis injuries 03(5.66%).

Table I: Distribution of deceased according to sex

Sex	No. of cases	Percentage (%)
Male	41	77.36
Female	12	22.64
Total	53	100

Table II: Age distribution of different types of victims of RTA

Age	No. of cases	Percentage (%)
0 - 10	1	1.88
11 - 20	3	5.67
21 - 30	21	39.62
31 - 40	10	18.87
41 - 50	9	16.98
51 - 60	6	11.32
61 - 70	3	5.66

Table III: Distribution of types of victims of RTA

Types of occupants	No. of cases	Percentage (%)
Pedestrian	28	52.83
Vehicle occupant (driver, passenger)	15	28.30
Motorcyclists	10	18.87
Total	53	100

Table IV: Distribution of cases based on the types of mechanical injury

Types of mechanical injury	No of cases	Percentage (%)
Head injuries	22	41.51
Fracture of long bone	09	16.98
Chest injuries	12	22.64
Abdominal injuries	07	13.21
Pelvis injuries	03	5.66
Total	53	100

Table V: Distribution of types of external injuries

External injuries	No. of cases	Percentage (%)
Abrasion	26	49.3
Contusion	17	32.3
Lacerated wound	8	15.2
Crushed injury	2	3.2
Total	53	100%

Discussion

In Bangladesh, unplanned roads and highways, incompetent traffic systems, violation of traffic laws by the drivers and pedestrians, overcrowding, reckless driving etc. all are the possible explanations for the highest figure of road traffic accidents in the city areas. The total number of accidents in Bangladesh in 2000 was 3419 and casualties were 3050. The number injured was 1,988 in 1987, which rise to 2653 in 2000, a rise of 33%. The available data covering a period of 13 years indicate that the total number of RTA were 38,464 and the number killed was 26,363.^{5,6} These injuries and deaths have an immeasurable impact on the families affected.⁷ There is no comprehensive legislation on 5 key risk factors for RTA, which include speeding, drink-driving, use of motorcycle helmets, seat-belts and child restraints in any of the Southeast Asia region countries.⁸ Road traffic injuries cause considerable economic loss to victims, their families and to the nation as a whole which include cost of treatment, decreased or lost productivity of the victims, For family members the effect is in terms of loss of work time while taking care of the injured.⁹ India has the highest RTA rates in the World; 1 out of 42 vehicles met with an accident in 1946. In the USA and Europe, the average is one in 100 vehicles. WHO study shows that RTA accounts for 2.5% of the total deaths.¹⁰ But 5-44 age group, it is 10% and is among the six leading causes of death. The peak morbidity and mortality from RTA are seen in the 15-24 years age group of males. In developing countries, exposure to potential road traffic injury has increased mainly because of rapid motorization, rapid population growth, lack of safety features in vehicles, crowded roads and lack of law enforcement. For example, in Vietnam, motorcycles grew by 29% in 2001, with an associated increase of 37% in road traffic deaths.¹¹

In our study it was observed that maximum deaths occurred in male (77.36%) followed by female (22.64%). Men are at higher risk of injuries than women because in our country they are predominantly the earning member of the family. They also have greater exposure to traffic and more risky behavior than females such as running to catch a bus, hanging on the side of bus, impatience, lack of attention and drinking alcohol (in case of driver) prior to driving etc.¹² In this study highest incidence of RTA was observed in the age group 21-30 years (39.62%). This coincides with other study reports which explains that more than one-half of all road traffic deaths globally occur among people aged 15-44 years, which is their most productive earning years.^{13,14} Lower proportion in the age group below 10 years and above 60 years because they are taken care by others during travels.

Several patterns of injuries are found in occupants (driver and passengers), mainly in drivers due to frontal impact. Even victims may be thrown out of the vehicles and hit the ground. In this study, out of 53 victims, 15 (28.30%) were vehicle occupants. In the study, it was observed that almost all the cases suffered from multiple types of injuries. Abrasions (49.3%) and bruises (32.3%) were the most common types of injuries, similar to the studies.^{15,16} Head injuries (41.51%) were observed as more common in the majority of cases, which are similar to the studies.^{17,18} followed by chest and abdominal injuries and fracture of long bone.

Conclusion

Most of the victims have suffered a grievous injury, reflecting the intensity with which the RTA has occurred. The attitude of the road users, along with the condition of the road plays a major role in the prevention of RTAs. Strict enforcement of traffic law, promoting efficient patterns of land use and providing shorter, safer routes for vulnerable pedestrians to reduce their exposure to highways, using seat belts, maintaining fitness of vehicles, driving licenses, improving public awareness etc. can reduce this economical burden and protect vulnerable groups of people of our country.

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