

**ORIGINAL ARTICLE**DOI: <https://doi.org/10.3329/mediscope.v9i1.58520>**Head Injury is the most common cause of death due to Road Traffic Accident*****KS Ahmed¹, S Saha², SD Haque³****Abstract**

In developing countries including Bangladesh injuries and deaths due to Road Traffic Accident (RTA) are appeared to be major and alarming problems and it requires noticeable measures and efforts for prevention of morbidity and mortality rate. The objective of present study was to investigate the pattern of injuries in RTA. This descriptive cross-sectional study was conducted among the victims who died of RTA from 2006 to 2012 and were autopsied at Dhaka Medical College Morgue. Among 1000 cases of death due to RTA, the numbers of deaths only due to head injuries are 472, the numbers of death due to head & other injuries are 272 & the numbers of deaths only due to other injuries are 256. According to this study head injury is the most common cause of death due to RTA & which is about 47.2%.

Keywords: Head injury, Road traffic accident, Autopsy

Introduction

Road traffic accident has become the first public hazard in the world, resulting in one of the largest threats on human lives and safety. Day by day the incidence of road traffic accident is increasing costing the human lives from head injuries. Head is the heaviest part of the body relative to its size which accommodates one of the most vital organs of the body - the brain. Generally, it is well protected within the bony cranial cage. But once the impact of a force crosses the protective threshold, then life is invariably in danger.¹ So it is especially vulnerable and injuries to the head are very frequent as a result of traffic accidents.² In this study we observed that in Bangladesh the number of accidents and fatalities occurring each year are increasing over the time period. Head injury is the most common & most important injury in forensic practice among all the regional

injuries. It is a morbid state, resulting from gross or subtle structural changes in the scalp, skull and/or the contents of the skull produced by mechanical forces.³ The application of blunt force to the head may result in injury to the contents of the skull either alone or with a fracture of the skull. Most of the deaths are due to damage to vital cerebral areas located around the posterior hypothalamus, mid brain and medulla resulting in respiratory failure or paralysis leading to permanent cardiac arrest. Vital centers may be compressed and concussed directly or they may be injured by secondary changes.⁴ The majority of such deaths are among “vulnerable road users” – pedestrians, pedal cyclists and motorcyclists. In accordance with the recent report of WHO Road traffic injuries are a major but neglected global public health problem. In Bangladesh large number of pedestrians &

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tendency of using motor vehicles, poor traffic controlling, reckless driving etc. are the main cause of increasing road traffic accidents. So the incidences of head injuries are also increasing day by day.

Methodology

It was a descriptive cross-sectional study. While conducting the study the data was collected from the archive recorded over the period from 2006 to 2012 in the department of Forensic Medicine of Dhaka Medical College (DMC) & which were autopsied in the morgue of Dhaka Medical College. It should be noted that the procedure is done properly with the written permission of the Head of the same department. The analysis was done by using SPSS 11.5 and was presented in tabular form.

Results

In this study among 4,400 number of post mortem cases 1,000 RTA victims were examined (Table 01). Among these 1000 cases of death due to RTA, the numbers of deaths only due to head injuries are 472 (Table 02), the numbers of death due to head & other injuries are 272 (Table 03) & the numbers of deaths only due to other injuries are 256 (Table 04).

Table 01: Prevalence of RTA victims among cases autopsied (n = 4400)

Total number of cases autopsied	Death due to RTA	Percentage (%)
4400	1000	22.72

Table 01 shows that among 4400 post-mortem cases the number of death due to road traffic accidents are 1000 and the percentage is 22.72 %.

Table 02: Prevalence of death only due to head injuries among RTA cases (n = 1000)

Total number of deaths due to RTA	Number of deaths only due to Head Injuries	Percentage (%)
1000	472	47.2

Table 02 shows that among 1000 post-mortem cases of RTA the number of deaths only due to head injuries are 472 and the percentage is 47.2%.

Table 03: Prevalence of death due to head & other injuries among RTA cases (n=1000)

Total number of deaths due to RTA	Number of death s due to Head & other Injuries	Percentage (%)
1000	272	27.2

Table 03 shows that among 1000 post-mortem cases of RTA the number of death due to head & other injuries are 272 and the percentage is 27.2%.

Table 04: Prevalence of death only due to other injuries among RTA cases (n = 1000)

Total number of deaths due to RTA	Number of death s only due to other Injuries	Percentage (%)
1000	256	25.6

Table 04 shows that among 1000 post-mortem cases of RTA the number of deaths only due to other injuries are 256 and the percentage is 25.6%.

Discussion

Head injury is most common because transportation injuries are more frequent in our country. The world Health Organization published research in 1996 revealed that, in rank order the leading cause of death from road accidents would change from 9th in 1990 to the 3rd by 2020 in the world. Worldwide, the number of people killed in road traffic crashes is estimated to be 1.3 million, with another 50 million injured each year. However, by the year 2020 forecasts suggest that as a cause of death, road accidents will move up to sixth place. In case of Bangladesh, the number of accidents and fatalities are on road are also stepping up with the passage of time. Head injury is a morbid state, resulting from gross or subtle structural changes in the scalp, skull and/or the contents of the skull produced by mechanical forces. The application of blunt force to the head may result in injury to the

contents of the skull either alone or with a fracture of the skull. Most of the deaths are due to damage to vital cerebral areas located around the posterior hypothalamus, mid brain and medulla resulting in respiratory failure or paralysis leading to permanent cardiac arrest. Vital centers may be compressed and concussed directly or they may be injured by secondary changes. The majority of such deaths are currently among “vulnerable road users” – pedestrians, pedal cyclists and motorcyclists. The world faces a global road safety crisis that has not yet been fully recognized and that will continue to grow unless appropriate action is taken. International organizations – including United Nations agencies, nongovernmental organizations and multinational corporations and donor countries and agencies have important roles to play in addressing this crisis and strengthening road safety around the world. Road traffic accidents have now become a great social concern in Bangladesh and the situation is deteriorating. An accident is an unexpected occurrence of physical damage to animate inanimate structure.

Bangladesh experiences a huge death each year due to head injuries resulting from road traffic accidents. However, it should be taken into account that the impact responsible for the injury need to be applied directly to the head.⁵ With an enormous population, Bangladesh has a poor infrastructure and unsecured road traffic system that causes these fatal casualties. In 1998, it is found that about 85% of all road deaths in the world occurred in developing countries. In a study it is showed that head injury cases comprised of 69.5% of all the fatal road accident cases. According to Adelson the reasons are head is the target of choice in the majority of assaults involving blunt trauma, on being pushed or knocked to the ground the victim usually strikes his head, its coverings are vulnerable to that degree of trauma as would rarely prove fatal, if applied to other parts of the body.⁶ A majority of medico-legal autopsy in Bangladesh are done on the victims involved in road traffic accidents. This study has identified that road traffic accident is the leading cause of death among the death which are

autopsied in our country & head injury comprises the maximum part of this death.

With an enormous population Bangladesh has a poor infrastructure and unsecured road traffic system that causes these fatal casualties. This alarming state promoting to explore into the facts and matter intensively so that the study eventually can contribute to the safety and wellbeing of the public health. A number of measures including fitness of the vehicle, improve the road condition, good traffic controlling, prohibition of reckless driving by installation of CC camera by the traffic police, ensuring license of the drivers etc. have been taken by the Government along with social organization for the prevention of RTA. The study, we believe, would certainly mention the pathway to resolve the crisis and uphold the benefit of public health to reduce such accidents.

Conclusion

The numbers of head injury cases are increasing day by day due to increasing the use of high velocity transports, poor traffic controlling, reckless driving, bad road conditions, inexperience of the drivers etc. Head injury is the most common & important injury that causing death of many individuals in the world specially in our country. Road traffic crashes are predictable and therefore preventable. As in the perspective of Bangladesh it is often found that the risk factor is mostly exposed to head injuries that eventually results in death, it is imperative now to explore widely and look into the matters taking preventive measures. And it is possible to combat the problem through close coordination and collaboration, using a holistic and integrated approach, across several sectors and disciplines.

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