

An Analysis of 100 Road Traffic Accident Victims

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This study was conducted among the autopsy victims in the morgue of Sylhet MAG Osmani Medical College from January 2009 to December 2009. The incidence of head injuries, age, sex, and type of victims were evaluated. Causes of death were also determined. In this study 100 road traffic accident victims were analyzed of whom 41.88% were in age group of 20-30 years followed by 22.2% in the 10-20 years age group, the least affected were in the age group < 10 years followed by > 60 years group. Male female ratio was 6:1 and most of the victims were pedestrians. Of 61 head injury victims only 15 were pure head injuries, 11 of them had lacerated wounds in the scalp. The remaining had skull fracture, brain contusion, haematoma and diffuse brain injury. Rest of 100 had associated severe trauma or major bone fracture in other body regions. The cause of death was found to be circulatory failure, brain death and multiple organ failure.

[Dinajpur Med Col J 2011 Jul; 4 (2):67-70]

Key words: Head injury, traffic accidents

Introduction

Head injury is recognized as a major public health problem and throughout the world road traffic accident accounts for the great majority of cases. 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.¹ The commonest cause of head injury is road traffic accident next to which lies assault and fall from height.² Head injuries are basically classified into two types depending on the involvement of dura mater

(a) closed head injury, where in dura mater is intact and (b) open head Injury, where in dura mater is torn.³

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. Markedly raised intracranial pressure, infections, hypostatic Pneumonia, Pulmonary embolism and renal infection are among the other causes of death.⁴

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Developing countries bear the burden of fatalities and disabilities from road traffic crashes, accounting for more than 85% of the world's road fatalities and about 90% of the total disability adjusted life years (DALYs). The problem is increasing in these countries at a fast rate, while it is declining in all industrialized nations.⁵ About 10 percent of global road deaths in 1999 took place in Sub-Saharan Africa where only 4 percent of global vehicles are registered. Conversely, in the entire developed world, with 60 percent of all globally registered vehicles, only 14 percent of road deaths occurred.⁶ The annual cost of road crashes is more than 500 billion US dollars and in the developing world the estimated cost is about US\$ 65 billion. A considerable waste of scarce financial (and other) resources costing one and four per cent of a country's GNP.⁷ Motor vehicle accidents represent 45 percent of the causes of head injuries and occurs more frequently in young adults.⁸

Methods

This study was conducted among the autopsy victims in the morgue of Sylhet MAG Osmani Medical College to evaluate the head injuries in road traffic accidents from January 2009 to December 2009. The incidence of head injuries, age, sex, and type of victims were evaluated. Causes of death were also determined.

Results

In this study 100 cases were analyzed of whom 41.88% were in age group of 20-30 years followed by 22.2% in the 10-20 years age group. 18.52% belonged to 30-40 years and the least affected age group were >60 (4.9%) and <10 (2.5%) (Fig.1). Male female ratio was 6:1 (Fig.2) and most of the victims were pedestrians.

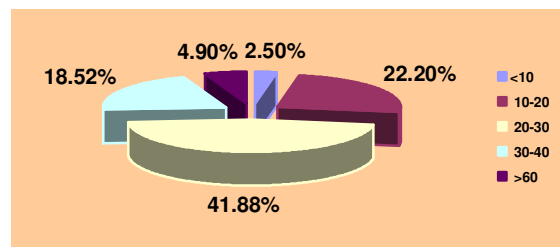


Figure 1. Victims of head injuries due to road traffic accidents as per age.

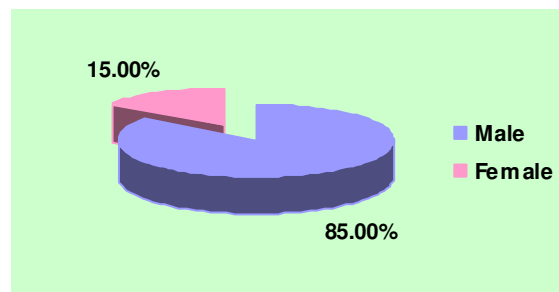


Figure 2 Victims of head injuries due to road traffic accidents as per sex.

In this study head injuries due to road traffic accidents represented 61%. Of the 61 head injury victims only 15 were pure head injuries, 11 of them had lacerated wounds in the scalp. The remaining had skull fracture, brain contusion, haematoma and diffuse brain injury (Fig.3).

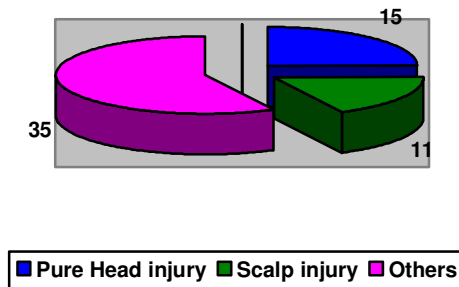


Figure 3 Pattern of head injuries.

Others had associated severe trauma or major bone fracture in other body regions. The Cause of death was found to be circulatory failure, brain death, multiple organ failure etc.

Discussion

As measured in dollar costs, physician contacts, deaths or loss of productive years of life, road traffic accidents has been the most serious problem facing this century. This study reveals that among the road traffic accidents head injuries constitutes 60.9% of cases which is more than that recorded by Marcus⁹ who found that road traffic accidents account for 40 to 50% of all head injuries. In spite of this, the incidence of head injuries and the road accidents as a main cause are considered low when we know that many patients with mild head injuries may not attend the hospitals and those of severe head injuries associated with death at the scene of accident or during transportation to the hospital were not accounted in data collection for epidemiological studies of head injuries. Male to female ratio was 6:1, which is high in comparison with other studies where men have about twice as many head injuries as women in the study⁸. This can be explained by the fact that males are exposed more to trauma during driving or travelling (the most common cause of head injuries).

The peak percentage of head injuries among patients of road traffic accidents is found in patients aged from 20 to 30 years (35.8%), which is the vulnerable group of road traffic accidents followed by those ages from 10 to 20 years (22.22%), while the lowest percentage is recorded among patients less than 10 years and those above 60, which can be explained by the good observation and supervision of children and elderly by their relatives. The same was reported by Smith¹⁰ who stated that head injury is most likely to occur in males between age of 15 and 25 years and Marcus⁹ who found it much less common in older persons.

Majority (52.6%) of victims of road traffic accidents were pedestrians. This has been reported by Downing¹¹ but Kraus, Black and Hessol¹² found in San Deigo that 62% of head

injuries were to occupants of vehicles. The higher percentage of pedestrians in this study may be attributed to failure of controlling and directing traffic on roads and also due to the large number of pedestrians and over crowding.

Conclusion

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. The world Health Organization 1996 published research¹³ projected 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. So steps by the authorities of the countries should be to reduce the road traffic accidents which in turn will save the valuable lives of their citizens.

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