ORIGINAL RESEARCH PAPER

Forensic Medicine

PATTERNS OF HEAD INJURIES IN ROAD TRAFFIC ACCIDENTS IN KAMRUP DISTICT-AN AUTOPSY STUDY

KEY WORDS: Craniocerebral Heamorrhage; Road Traffic Accident; Scalp Injuries; Skull fractures.

Dr. Partha pratim Das Assistant Professor, Forensic medicine, FAAMCH, Barpeta(Assam)

Dr Renuka Rongpharpi* Associate Professor, Forensic medicine, FAAMCH, Barpeta(Assam) *Corresponding Author

Dr Bidyut Dutta Assistant Professor, Pathology, FAAMCH, Barpeta(Assam)

ABSTRACT

Head injuries leads to serious morbidity and often mortality. The objective of this study is to find out age, sex, treated and untreated and time interval of accidents. This study was conducted in Gauhati Medical College and Hospital department of Forensic Medicine,l mortuary, for a period of 1 year from 1st January to 31 December 2016. A total number of 328 cases were studied. Vehicular accidents were more common in the younger age groups and in male sex. Head injury was the major cause of death in majority cases of road accidents. Linear fracture was the commonest fracture encountered in our study, 89 (27.13%) cases. Maximum number 202 (61.59%) cases presented with no skull injury. We observed only subdural haemorrhage (SDH) in 75 (22.87%) cases, the commonest type. 72.56% cases show no injury other than head injury. So to sum up we need to wear helmets, wear seat belts and follow traffic rules, government should strengthen the roads and the laws and companies should make safer vehicles.

INTRODUCTION:

Traffic accidents are the biggest reason for fatalities among accidental deaths. Injury and deaths due to road traffic accidents (RTA) are a major public 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. With an increasing use of vehicles, injuries due to them are so common nowadays that it is necessary for a medical officer to be able to assess the injuries, the mechanisms by which they are caused, the cause of death, and if intoxication by alcohol or drugs played any part. As per report by the ministry of road transport, Govt. of India (2007) 1.4 lakhs road accidents happened in 2007 with 40,612 people killed and 1.5 lakhs people injured. Hence, India is leading the world fatalities due to road accidents. It also associated with significant socio-economic losses in India as well as in other developing countries.

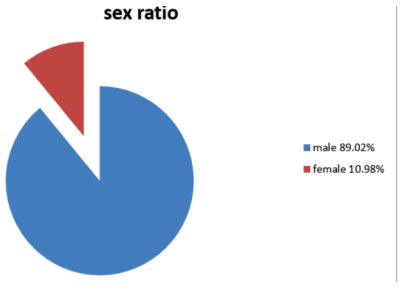
Road traffic injuries is an increasing health problem globally and especially in South-east Asia. As per the data in the National Crime Records Bureau (NCRB), there were 7,633 traffic accidents cases in Assam in 2015. A total of 3,058 persons died due to traffic accidents including road accidents. Assam's share in the total accidents deaths nationwide in 2015 was 1%. Across India, there were 4.13 lakhs accidents deaths that year. The total number of accidents deaths fell by 26.4% in 2015 to 4,095 compared to 5,562 in 2014.

AIM OF THE STUDY:

This study was conducted to find out the patterns of head injuries following road traffic accidents and also to suggest measures to control the increasing incidence of mortality and morbidity from road traffic accidents.

MATERIAL AND METHODS:

A total of 328 cases of deaths due to road traffic accidents brought only by traffic branch police for autopsy have been studied. All cases of deaths due to head injuries in road traffic accidents of both the sexes of all age groups, treated and untreated, irrespective of duration of survival was included. Cases of head injury where the skull and brain were completely destroyed were excluded for the present study. A detailed postmortem examination was carried on every case. A brief history on sustaining head injury was obtained from the police, relative and friends of the deceased. Then with all these findings, postmortem conclusion as to the cause of death in each case was drawn and recorded in proforma and analyzed.



OBSERVATION AND RESULT:

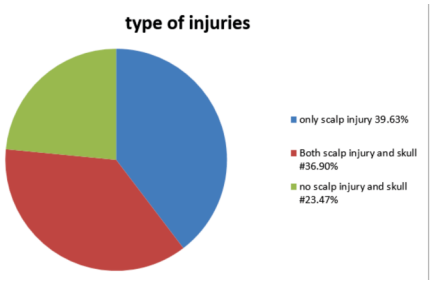
All cases of deaths following road traffic accidents (RTA) brought by only traffic branch police for autopsies in the department of Forensic Medicine, Gauhati Medical College and Hospital mortuary, Guwahati, Assam were taken for present study irrespective of age, sex, treated and untreated and time interval of accidents for a period of 1 year from 1st January to 31 December 2016.

A total number of 328 cases of all types of wheeler riders/pillion riders in road traffic accidents were recorded. The cases are seen more in male (89.02%) as compared to female (10.98%). Our study showed that RTA are more in the age grouped of 21-30 years(29.88%) followed by 41-50 years constituting 22.56% and least number of cases are found among the age grouped of 0-10 years with 2.13%. The youngest victim was 3 years and oldest was 91 years encountered in our study.

The time intervals of RTA are mostly occurred during 6PM-12Midnight with 134 cases (40.85%) and least during 6AM-12Noon with 28 (8.54%) cases. The current study showed that the place of occurrence of RTA was more in the urban areas (60.98%) as compared to rural areas (39.02%).

In this present study out of 328 cases, 130 cases (39.63%) showed scalp injury only, both scalp injury and skull fracture with 121(36.90%) cases and 77(23.47%) cases presented with no scalp injury and skull fracture. Linear fracture was the commonest fracture encountered in our study 89 (27.13%) cases followed by depressed comminuted fracture with 26 (7.93%) cases and least found in sutured fracture with 5 (1.52%) cases. Maximum number 202 (61.59%) cases

presented with no skull injury. We observed subdural haemorrhage (SDH) only in 75 (22.87%) cases followed by subarachnoid haemorrhage (SAH) in 11(3.35%) cases and only 1 (0.30%) case of extradural haemorrhage (EDH). Combination of SDH and SAH constituting 141 (43%) cases and 88 (26.83%) cases presented with no intracranial haemorrhage. Commonest brain injury found during our present study is intracerebral haemorrhage (ICH) with 14.63% followed by intraventricular haemorrhage (IVH) 6.40% and 72.26% presented with no brain injury.



In this study , we showed visceral lacerations were the most common injury seen other than the head injury is 22.56% followed by body injuries in 3.66% and only 2 cases each encountered with combination of visceral laceration, rib fracture, body injury and crush injury of legs respectively. 72.56% cases show no injury other than head injury.

DISCUSSION:

In this current study, road traffic accidents are seen more in the male (89.02%) as compared to female cases (10.98%). Our study found consistent to the findings conducted by Kumar[7] et al, Singh YN[16] et al, Reddy[13] n et al, daunipaia S[4] et al and P shruti[10] et al. The reason behind probably as male being the head of the family usually goes out to earn and while female stays back at home.

Commonest age grouped in road traffic accidents is 21-30 years (29.88%), followed by 41-50years (22.56%). The youngest age was 3yrs and oldest being 91yrs. The present study found similar with the study of Das H, Kumar et al , Daunipaia S[4] et al, Jha S[6] et al, Reddy N[13] et al, P Shruti[10] et al, R Ravikumar[12] and while Raja R[11] et al found variance with our study. Increase incident among the younger age group being due to energetic and unaware of the traffic rules.

The time interval of RTA mostly occurred during 6PM-12Midnight with 134(40.85%) cases which is probably due to heavy vehicles run during this hours and most of the riders being exhausted from day's work. our study found agreement with the study conducted by R. Ravikumar[12], Sirathanout J[17] et al, Ding[8] et al and while P. Shruti[10] found variance with our study. It is observed that incident were more in the urban areas as most of the work place situated at urban area and people from rural areas comes to the city for their daily wages. The findings of R.Ravikumar[12], Singh YN16 et al, and P. Shruti[10] et al found similar with our present study.

It is observed that most of the cases of RTA constituted with the head injuries, 130 cases (39.63%) showed only scalp injury, 121(36.90%) cases presented with both scalp injury and skull fracture. Biragi KK[2] et al the most of the head injuries are associated with skull fractures which increase the fatality of victims. The findings of Kumar[7] et al and Singh YN[16] et al found more skull fractures with 69.63%. The commonest type of skull fractures found was linear fracture with 27.13%, followed by depressed comminuted fractures (7.93%) and maximum 61.59% presented with no skull fractures. Fissured fracture was the most commonly observed fracture (57%) in the study of Menon A[8] et al and Shivakumar BC[15] et al and Daunipaia S[4] et al (54.72%)

The dominant type of intracranial haemorrhage found was subdural haemorrhage (22.87%), followed by subarachnoid haemorrhage with 3.35% and combination of both SDH and SAH constituted 43%. Our findings similar with the findings of R. Ravikumar[12], Das H[3] and Daunipaia S et al (43.42%).Brain injury encountered during our study is Intracerebral haemorrhage (14.63%), followed by intraventricular haemorrhage (6.40%) and 72.26% consisted with no brain injury. Apart from the head injuries, other system injuries were also noted. Visceral lacerations were the commonest injuries seen other than head injuries with 22.56%, followed by body injuries (3.66%) and 72.56% presented with injuries other than head injuries. Our finding found variance with the finding conducted by R.Ravikumar[12], Sauter C[14] et al and Kumar[7] et al. Maximum number of cases died due to head injuries following road traffic accidents, followed by haemorrhagic shock from multiple visceral lacerations.

CONCLUSION:

As suggested by Modi to reduce the incidence of head injury in pillion riders they should wear crash helmet. Moreover it is recommended that roads should be made safe by the government by removing potholes, better lighting at night, illuminating side barriers and maintenance of traffic signals. On the part of the general public there should be greater awareness regarding not to drive in drunken condition, follow speed limits, use seat belt and follow traffic rules. The Motor Vehicle Act 2019 Amendment gives more stringent punishment and tries to achieve greater environmental safety and is a good step in that direction. It is also need of the hour for the companies to make safer vehicles.

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