Research Article

Pattern of head injuries in fatal RTA's in tertiary care hospital, Assam

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Abstract

The present retrospective study was carried out from all the cases of fatal road traffic accidents brought to Silchar Medical College and Hospital, Assam from 1st January 2011 to 31st December 2012 to study the pattern of head injuries, types of skull fractures and intracranial haemorrhages received during fatal road traffic accidents and prevalence of head injuries in relation to different epidemiological factors. During this study period, 1326 numbers of post mortem examinations were conducted in total. 321 cases (24.2%) were fatal RTAs, out of which 267 cases (83.17%) received head injuries. 158 cases (59%) recorded hospital death, 78 cases (29%) were brought dead to the Hospital and 31 cases (12%) died on the spot. 228 cases (85.4%) were male and 39 cases (14.6%) were female, with male female ratio being 6:1.

Keywords: Road traffic accidents, head injury, hospital death.

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INTRODUCTION

Death due to road traffic accidents are increasing at an alarming rate and currently are the eighth leading cause of death globally, and the leading cause of death for young people aged 15 – 29. About 1.24 million people die each year on the world's roads, and the cost of dealing with the consequences of these road traffic accidents runs to billions of dollars. Current trends suggest that by 2030 road traffic deaths will become the fifth leading cause of death unless urgent action is taken. Half of the world's road traffic deaths occur among motorcyclists (23%), pedestrians (22%) and cyclists (5%) – i.e. "vulnerable road users" – with 31% of deaths among car occupants and the remaining 19% among unspecified road users and middle – income countries like India are hardest hit. In 2009, 4.22 lakhs RTAs and 1.27 lakhs road traffic fatalities were reported in India, resulting in one RTA every minute and one death every 4 minute which is very alarming. Head injuries are responsible for nearly two thirds of road traffic accident deaths. The present study was therefore conducted to ascertain the incidence of fatal road traffic accidents, pattern of head injuries, types of skull fractures and intracranial haemorrhages, during fatal road traffic accidents along with the prevalence of head injuries in relation to different epidemiological factors, causes and factors responsible.

MATERIAL AND METHODS

The present retrospective study was carried out from all the cases of fatal road traffic accidents brought to Silchar Medical College and Hospital, Assam during the period of 1st January 2011 to 31st December 2012. The study consisted of 321 cases of fatal road traffic accidents. The data were collected from the police inquest, dead body challan and the post mortem reports. On the basis of analysis and observation, results were drawn and discussed.

RESULTS AND DISCUSSION

Economic growth led to rapid motorisation of middle economic countries in the recent years. With increasing motorised vehicles the numbers of road traffic accidents are increasing. In our present study during the years 2011 and 2012, out of 1326 cases, 321 cases were of fatal RTAs i.e. 24.2% cases and out of these 267 (83%) cases were death due to head injuries. The percentage of road

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traffic accident fatalities has remained constant in both the years. We have seen that sex ratio of occurrence of RTAs is 6:1 for male and female; majority of the victims (85%) were males. It is due to greater exposure of males on the streets, which is consistent with studies of many other researchers globally. Road traffic accidents are the leading cause of death among the young age groups between 15-44 years. In this study the age of occurrence varies from 5 years to 85 years. The peak incidence was observed in the age group 20-30 years 70 (26.21%) cases followed by 30-40 years 65(24.34%) cases. 50% cases involved persons age group between 20-40 years, the most productive years of life leading to serious economic loss to the families. Tendency for frequent violations of traffic rules and not using proper safety measures are the main causes of such high fatality. The increasing number of motorized vehicles makes roads more dangerous for those road users who use alternative modes of transport – notably those who walk, cycle and use motorcycles. 77.7% cases in this study were pedestrians 127(47.56%) cases, motorcyclists 54 (20.22%) cases and bicyclists 26(9.7%) cases, which implies poor road conditions and overcrowding. 4 wheeler light motor vehicles and bus were involved in 151 (56%) cases followed by truck and motorcycles. Studies from developed countries have reported lesser involvement of pedestrians probably due to the fact that in developed countries pedestrians are scarce on the roads and there is a lesser preponderance of people jaywalking. Out of 267 cases time of accident of 265 were identified, the maximum number of accidents occurred during 6pm to midnight 82(32%), followed by the period between 6am to 12 noon 66(25%). This can be explained by a lack of street lights, tendency to fall asleep and drunk driving which is quite common in our parts. Winter season recorded maximum cases 85(32%) followed by autumn 74(28%). In this period fog and increasing dust and smoke hampers vision, often resulting in accidents. Out of 321 cases of fatal RTAs, 267 (83%) cases had head injuries. Skull fractures were seen in 139 (52%) cases. Although in many researches temporal bone, the thinnest of all the skull bones fracture the most, in this study parietal bone was the commonest (42%) followed by frontal bone (20%). Common type of fracture was fissured fracture 42 (30%) cases followed by comminuted 34 (24.46%) cases, which is consistent with most of the researches. Subdural 123 (45.5%) cases was the commonest type of intracranial haemorrhage followed by extradural 89(32.6%) cases. Subdural haemorrhage is the commonest 94 (73%) cases in head injuries without skull fracture and with fracture of skull extradural haemorrhage top the list with 76 (59%) cases. Scalp contusion were present in 132 (49.4%) cases, lacerations in 61(22.8%) cases and no obvious lesion seen over the scalp in 7 (2.9%) cases. In this study we have seen that 31 (12%) cases died on spot. This is consistent with results of other researchers. 88cases (62.4%) were admitted to hospital whereas 32 (22.6%) cases died on the way to hospital. Commonest cause of death was coma 222 (83%) followed by instantaneous death 32(12%), and 13 cases where fatal injuries of other body parts present along with head injuries died due to haemorrhage and shock. There are many contributing factors like alcohol, mobile phones, road types, drivers fatigue or sleepiness, pedestrian or driver suicides etc which were not explored.

CONCLUSION

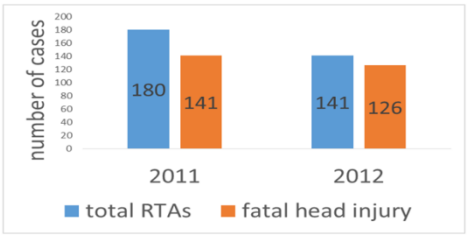
An organized team work by people in many disciplines like law enforcement, medical, engineering, education is required to achieve effective prevention of road traffic accidents. Governments urgently need to pass and implement comprehensive legislation that meets best practice on all key risk factors to address this preventable cause of death, injury and disability. Concerted effort is needed to make road infrastructure safer for pedestrians and cyclists. In particular, governments need to consider how non-motorized forms of transport can be integrated into more sustainable and safer transport systems.

Table 1: Age wise distribution

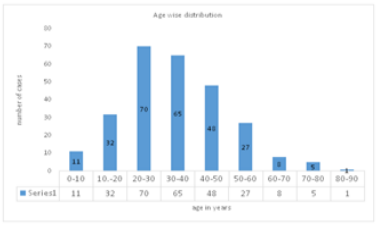
Age group (yrs)	No. of Cases (%)
0-10	11(4.11%)
10.-20	32(11.98%)
20-30	70(26.21%)
30-40	65(24.34%)
40-50	48(17.97%)
50-60	27(10.11%)
60-70	8(2.99%)
70-80	5(1.87%)
80-90	1(.01%)
Total	**267(99.59%)**

Table 2: Time of occurrence

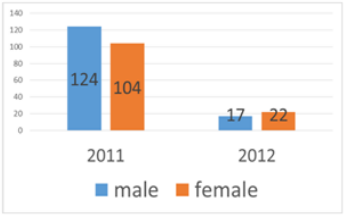
Time	No. of Cases
6AM-12MD	66(24.71%)
12MD-6PM	64(23.97%)
6PM-12MN	82(30.71%)
12MN-6AM	53(19.85%)
UNKNOWN	2(0.74%)



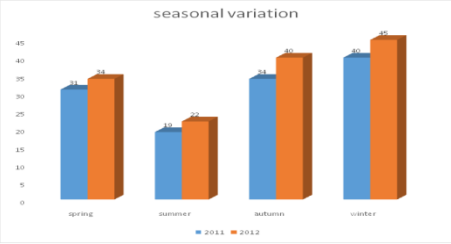
Graph 1: Incidence of RTA in year 2011 and 2012



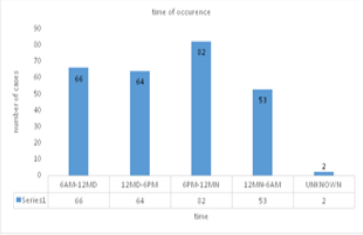
Graph 2: Age wise distribution



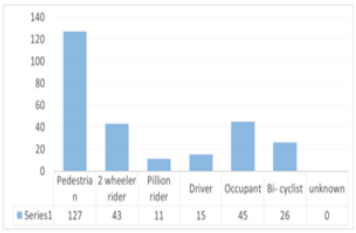
Graph 3: Sex wise distribution



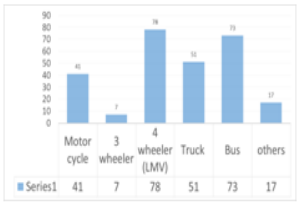
Graph 4: Seasonal variation



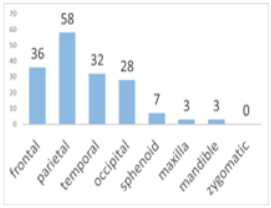
Graph 5: Time of occurrence



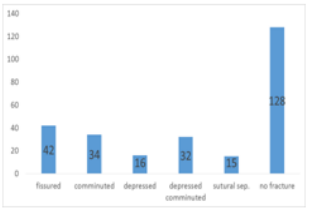
Graph 6: Type of victim



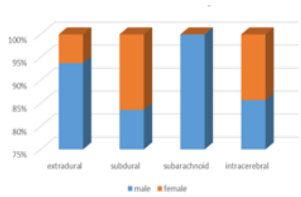
Graph 7: Vehicle involved



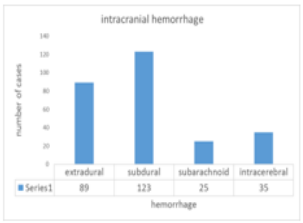
Graph 8: Fracture of skull bones



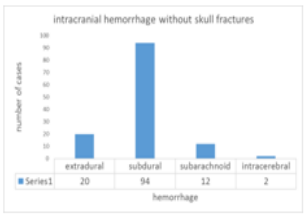
Graph 9: Type of fracture



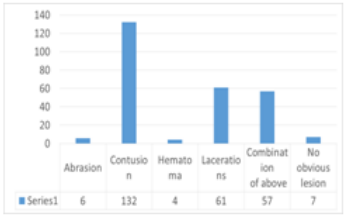
Graph 10: Intracranial haemorrhage



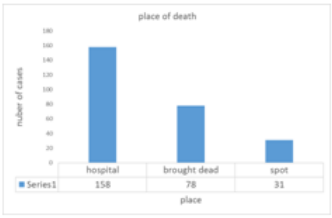
Graph 11



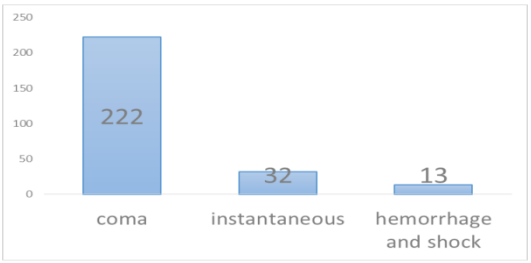
Graph 12



Graph 13: Scalp injuries



Graph 14: Place of death



Graph 15: Cause of Death

REFERENCES

1. WHO: Global status report on road safety. Geneva. WHO. 2013.
2. Reddy KSN. The Essentials of forensic medicine and toxicology. 32nd edition, New Delhi. 2013, p 231
3. Kyada Hetal C., Mangal Harimohan, Momin Sadikhusen G., Bijaypura M.T. Profile of fatal road traffic accidents in Rajkot City. J Indian Acad Forensic Medicine. April-June 2012,34-2, 135-138
4. Hussain Munawwar, haroon Afzal, Abbas Mazhar. A study in minutes of road traffic accidents and associated mortality within 72 hours of hospitalisation. J. Indian Acad Forensic Med, 31(3),189-195
5. DR Rajesh, Kaur Balbir, Singh Abhishek, M Venkteshan, Agarwal OP, Singh Harpreet. Pattern of injuries due to fatal road traffic accidents in rural Haryana: an epidemiological survey. J. Indian Acad Forensic Med, July-september 2012,34(3),229-232
6. Rastogi AK, Agarwal Ajay, Srivastava AK, Kumar Amit, Shandil Anil. Demographic profile of head injuries in Agra region. J Indian Acad Forensic Medicine. April-June 2012,34-2, 117-9
7. Pathak A. profile of road traffic accidents and head injury in Jaipur (Rajasthan), JIAFM.2007. 30(1), 6-9
8. Kual Archana, Sinha U.S., Pathak YK, Singh Aparajita, Kapoor AK, Sharma Susheel, Singh Sanju. Fatal road traffic accidents, study of distribution, nature and type of injury. JIAFM 2005: 27(2), 71-6
9. Kiran E Ravi, Saralya K. Muralidhar. Road safety at cross roads. JIAFM 2004, 26(4),147-152
10. Salgado MSL, Colombage SM. Analysis of fatalities in road accidents. Forensic Sci Int 1998,36,91-6
11. Singh Harnam and Dhattarwal SK. Pattern and distribution of injuries in fatal road traffic accidents in Rothak (Haryana)2004;26:20-23
12. Singh Y.N., Bairagi K.K. and Das K.C. An Epidemiological study of Road Traffic Accident victims in Medicolegal Autopsies 2005,JIAFM 27(3) ISSN 0971 -0973

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