

Original article**PATTERN OF INJURIES IN ROAD TRAFFIC ACCIDENTS AT AHMEDABAD, GUJARAT: AN AUTOPSY BASED STUDY**

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Abstract

Total 4391 cases brought for the post-mortem examination (autopsies). Out of these 600 cases were of accidental death and out of 600 cases, 500 cases were of head injury, which is the cause of their death.

The most common effects of injuries to the head are hematoma (83%), fissure fracture (70%), brain edema (86%), brain congestion (89%), sub Dural hemorrhage (61%), sub arachnoids hemorrhage (95%), and Dura usually seen intact (88%) and it may tear in impact of heavy blunt force directly to the head. And last base of the skull usually is seen normal in 399 (79%) cases. Out total 600 vehicular accident death 432 cases were attributed to male. First among the list of fatalities due to vehicular accident is driver followed by passenger and at last pedestrian.

Out of 205 drivers died of vehicular accidents 83 were from the age group of 21-29yrs. Majority of the road victims are were young and maximum drivers were in there five years. Reason is more rash deriving behavior of that group. Comparatively higher death rate is found during the month of May and October. Heat fatigue resulting in deterioration in the performance with a feeling of inefficiency might have accounted for this higher death rate. And as well as during these both two months are in vacation period in city area. This is the one of the reason of higher accidents rate due to heavy road traffic during these two months.

In our study the highest numbers of cases were registered in V.S. police station, 154 (30%) cases, as patients injured by vehicular accident on highway are brought to V.S. hospital and cases were registered there. Second highest no. of cases was registered from Ellisbridge, 125 (25%) cases.

KeyWords: Fatal RTA, Pattern of injuries, Highway, Heavy motor vehicle

Introduction: First automobile accident was occurred in 1896, when a bicycle rider was hit by a car and first fatal accident occurred in London in the year 1899, in same year when a pedestrian was killed by a car in New York City. The important factors are human errors, driver fatigue, poor traffic sense, mechanical fault of vehicle, speeding and overtaking violation of traffic rules, poor road conditions, traffic congestion, road encroachment and drunken driving etc. Every man has been with lifeline in his hand. His death is sure it may be natural or unnatural, Among unnatural death, the death is due to an accident is commonest cause. Head injury is an important cause of mortality worldwide as the head is the most vulnerable part of the body involved in fatal road traffic accidents.

In fact, death from road accident have assumed pandemic proportion and more people die on road or as sequels of road accident than any other single cause taken alone in many countries of the world. India

appears to be not lagging behind in this respect. The present study was undertaken on 500 victims of road traffic accidents who died due to injuries sustained to the head, brought for autopsy at Sheth V.S. General Hospital, Ahmedabad, over a period of 5 years between January 1995 and December 1999 and 50 victim of RTAs period between jan-2009 to feb-2009, is aimed at an analysis of causes, study of injury, and suggestive means of reduction of accidental death in the of Ahmedabad and vicinity.

Road traffic accidents are the only public health problem for which society and decision makers still accept death and disability among young people on a large scale. The Global death rate from Road Traffic Accident was 19.0 per lakh population in the year 2002. It was more common in males those who were between 15-44 years age group and more than 1.8 lakh children under 15yrs of age die in Road Traffic Accidents.

The study attempted with and aim to find out the changing pattern of accidents due to expansion of the limit of Ahmedabad city in the last decade, development and introduction of fast speed vehicle and safety measures and traffic rules and regulation to be used. The nature of vehicle used on the roads, the widening of narrow roads and the observance and non-observance of traffic rules, seat belt, helmet, signs and signals have been kept in mind while trying to suggest the remedial measures for the reduction rate. We never can stop the road accident but study has preventive approach of road accident and as well as prevent deaths due to road accident and reducing the rate of road accidents

Material and Methods:

Total 4391 cases brought for the post-mortem examination (autopsies). Out of these 600 cases were of accidental death and out of 600 cases, 500 cases were of head injury, which is the cause of their death. The present study was undertaken on 500 victims of road traffic accidents who died due to injuries sustained to the head, brought for autopsy at Sheth V.S. General Hospital, Ahmedabad, over a period of 5 years between January 1995 and December 1999 and 50 victim of RTAs period between jan-2009 to feb-2009, is aimed at an analysis of causes, study of injury, and suggestive means of reduction of accidental death in the of Ahmedabad and vicinity.

Results and Discussion:

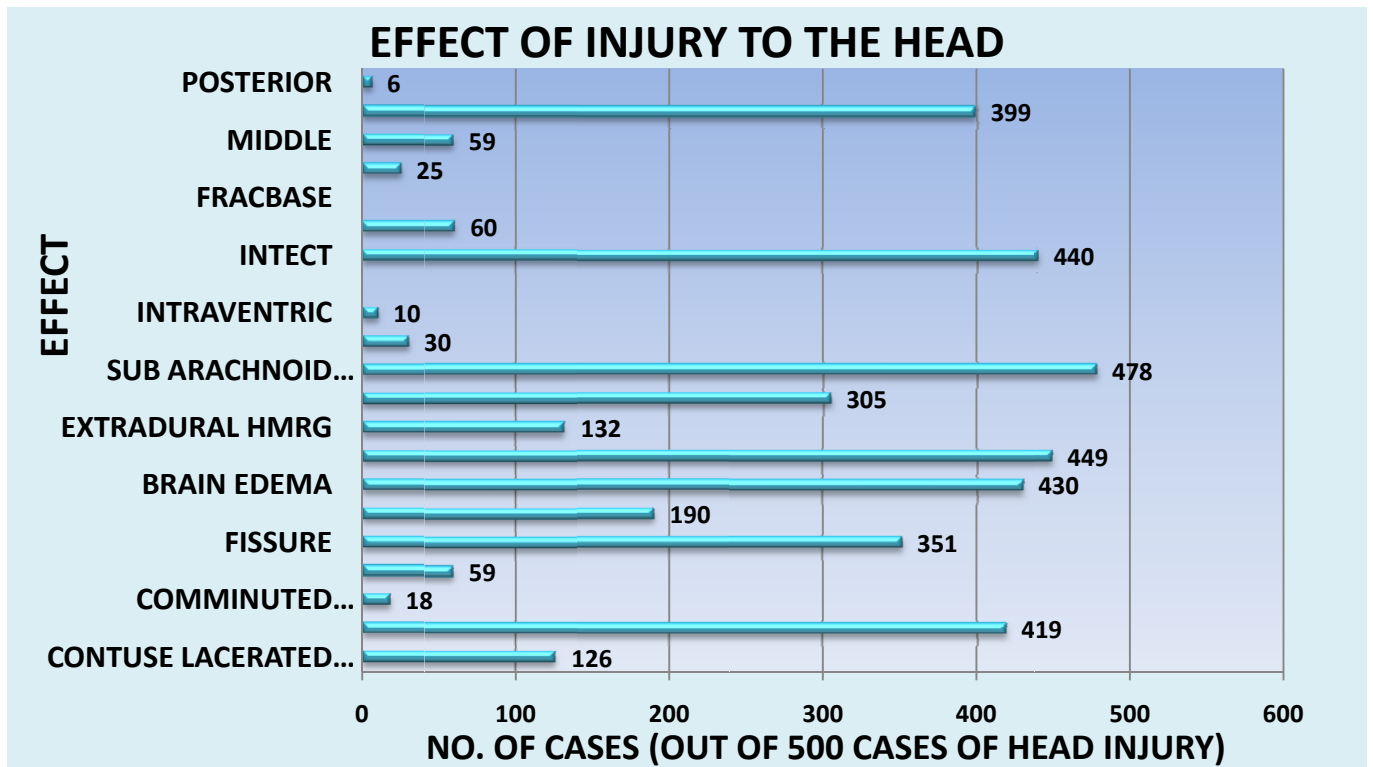
The detailed analysis of these cases was based on the inquest report, medical records and evaluation of autopsy reports. The analysis of the cases has been carried out, taking into consideration various factor as follows...Pedestrian, driver or passenger as a victim, Type of vehicle driven in a case of driver and vehicle hit from which vehicle, age, sex, of person who head injuries received etc., The analysis also carried out in relation with Time of incident, and date of incident with month and season, Place, residents and police station, Time of death, date of death, Survival time in hours and day, Direction of hit, Treatment given or not, Hospitalized or not, Cause of death.

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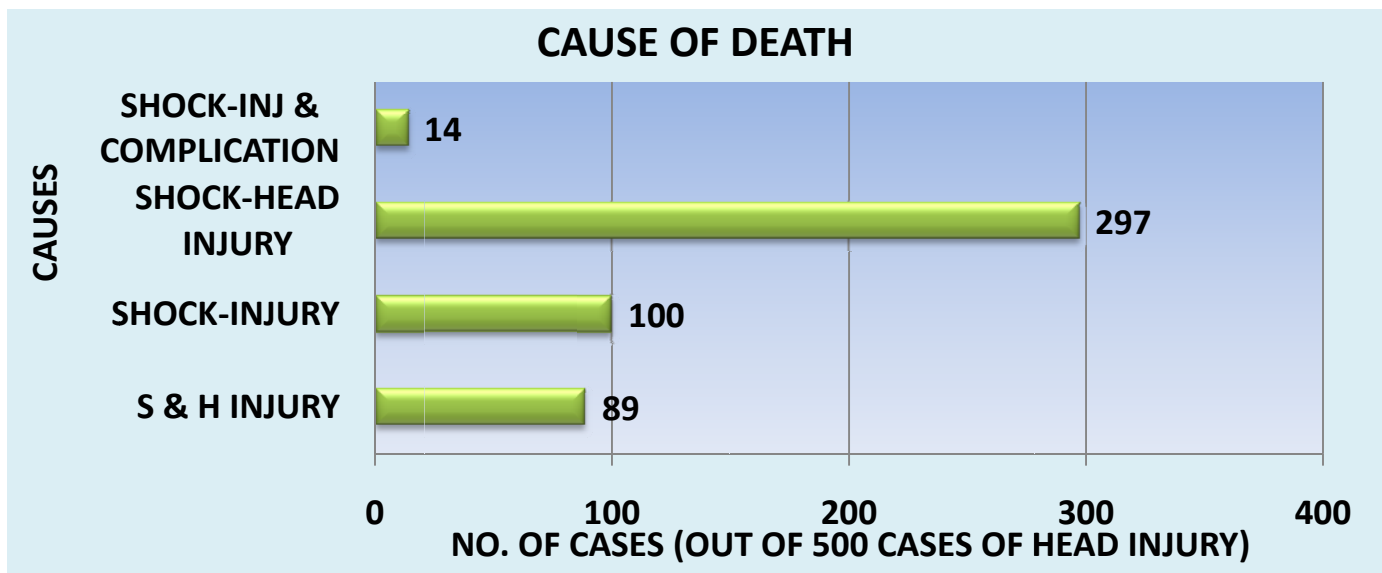
The most common effects of injuries to the head are hematoma (83%), fissure fracture (70%), brain edema (86%), brain congestion (89%), sub Dural hemorrhage (61%), sub arachnoids hemorrhage (95%), and Dura usually seen intact (88%) and it may tear in impact of heavy blunt force directly to the head. And last base of the skull usually is seen normal in 399 (79%) cases.

In our study the highest no. of cases were registered in V.S. police station, 154 (30%) cases, as patients injured by vehicular accident on highway are brought to V.S. hospital and cases were registered there. Second highest no. of cases were registered from Ellisbridge, 125 (25%) cases.

Table no.1: DISTRIBUTION OF RTA DEATH DUE TO EFFECTS OF INJURIES TO THE HEAD (DURING THE PERIOD FROM 1995 TO 1999)

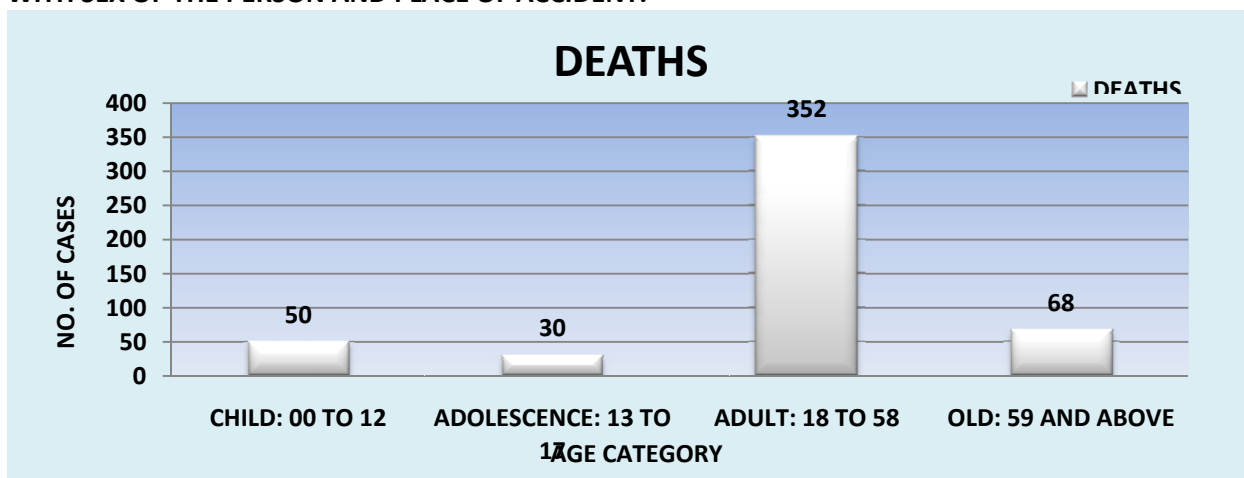


Graph no. 2: DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY WITH RESPECT TO CAUSE OF DEATH



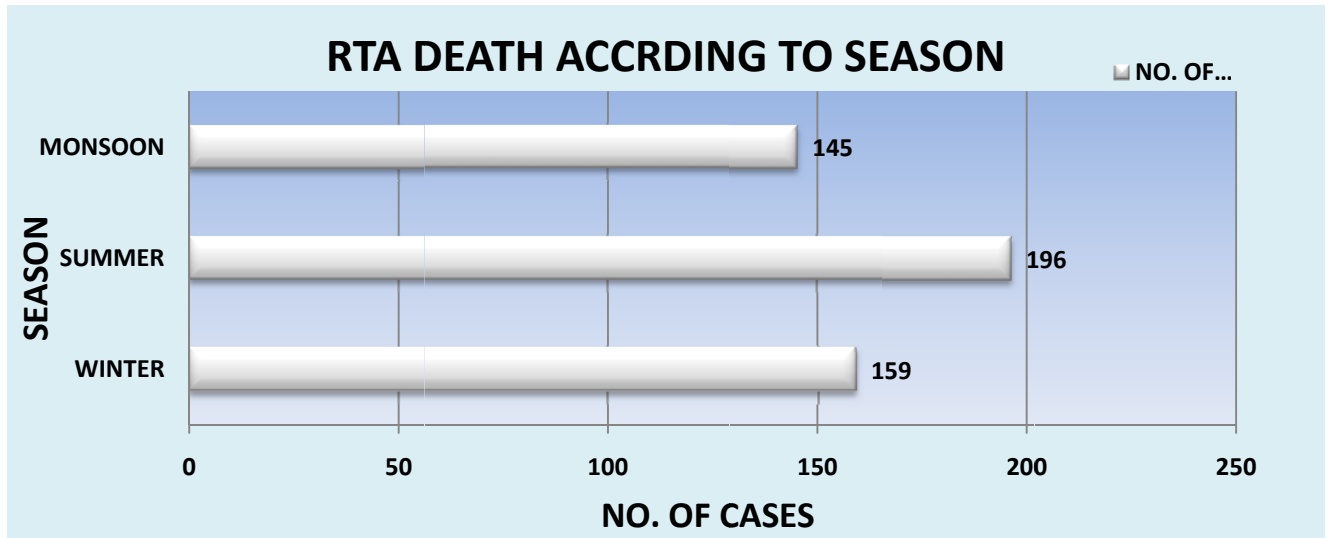
From our study, shock-head injury was the common cause of death. Out of 500 cases of head injury, 297 (59%) cases was registered only shock-head injury which is the most common and truly head injury.

Graph no.3: DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY ACCORDING TO AGE CATEGORY WITH SEX OF THE PERSON AND PLACE OF ACCIDENT.



Above table shows that in our study, highest mortality is found in age category of adult, i.e. 352 (70%) cases in RTA deaths due to head injury.

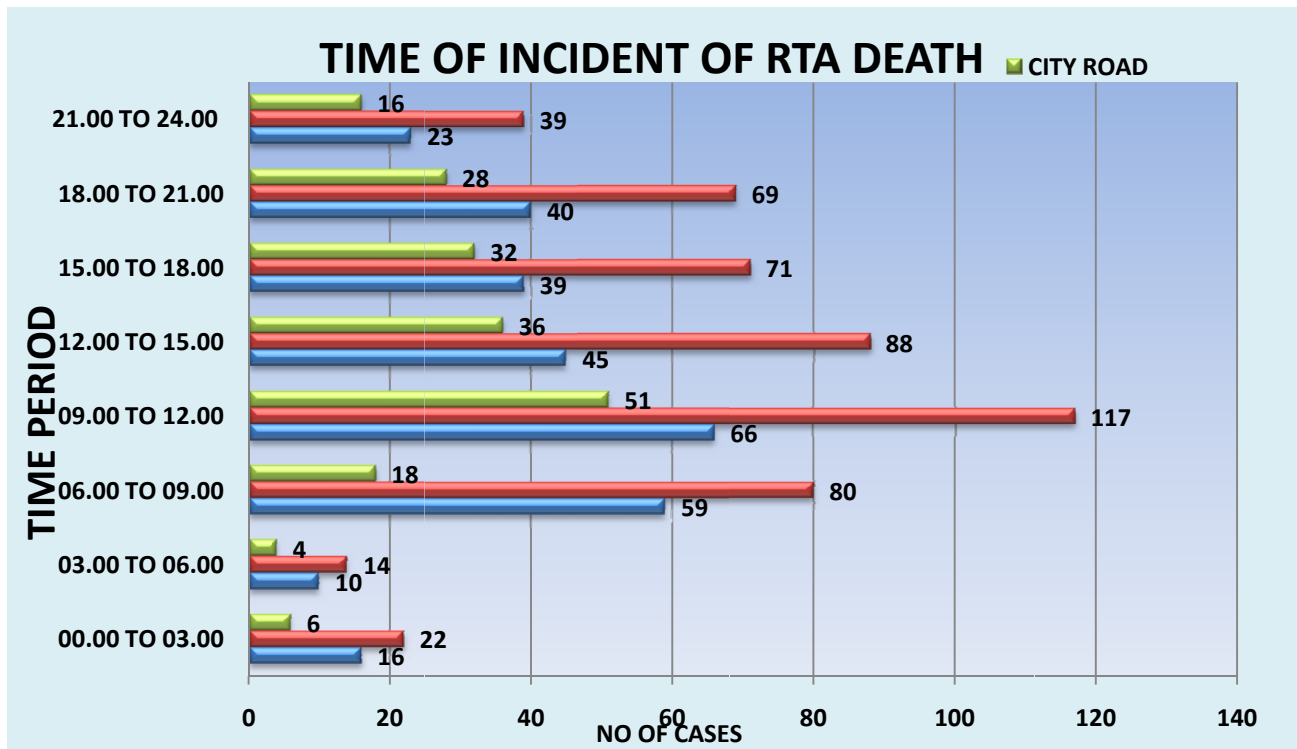
Graph no.4: DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY WITH RESPECT TO SEASON



In our study shows that the comparatively large no. of people die during the summer period.

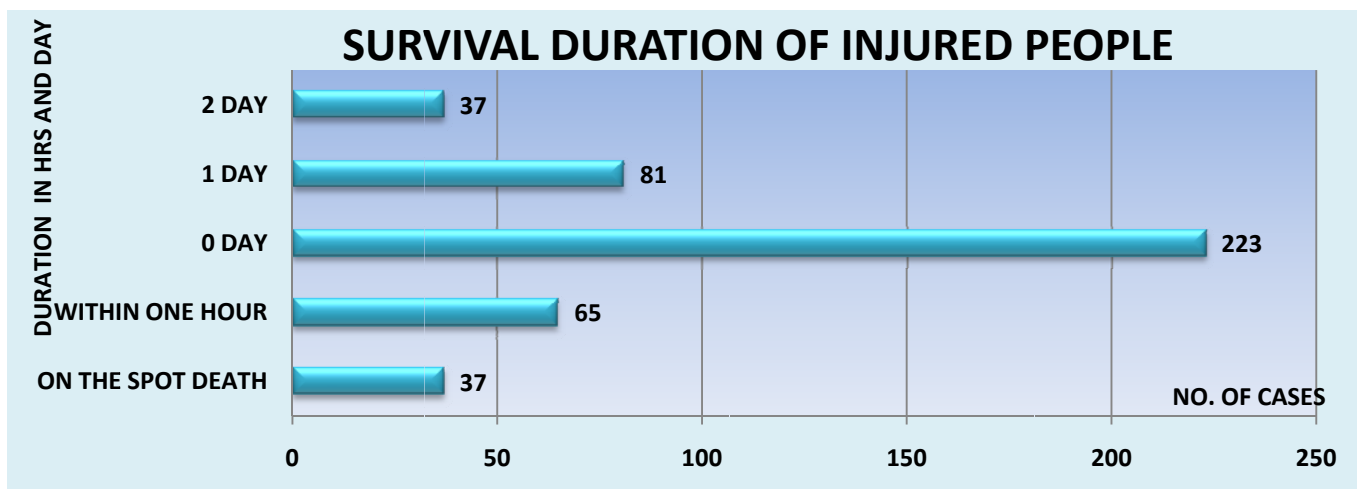
Graph no.5:

DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY ACCORDING TO TIME OF INCIDENT.



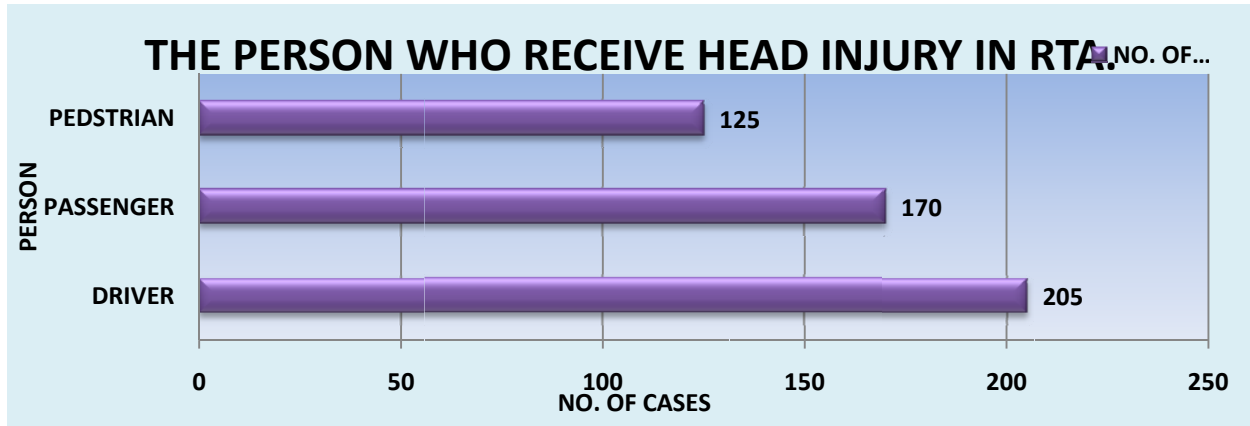
Above table shows that during the peak hrs in morning, time period of 9.00 to 12.00 highest deaths occurred at highway and as well as city road, 117 (23%) cases of head injury in RTA deaths were registered.

Graph no.6: DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY ACCORDING TO SURVIVAL DURATION OF INJURED PEOPLE



Here our study shows that all our survival duration of injured people is too less. On the spot death were seen in 37 (7%) cases and within one hour 65 (13%) cases. The injured people who are not alive even for one day also have remarkable count. We can try to save by providing proper hospitalization and emergency management of them injured people of RTA to treat proper in time.

Graph no.7: DISTRIBUTION OF RTA DEATHS DUE TO HEAD INJURY ACCORDING TO PERSON WHO RECEIVED INJURY



From above table our study shows that the driver was the most common victim (205 cases, 41%) of the RTA DEATHS DUE TO HEAD INJURY and passenger were 170 (34%), and then pedestrian were 125 (25%) cases

Present study suggested most common site of the accident is city road, 26(52%) cases were registered. City road means the road have capacity to drive more than 30kmph also have remarkable count of accidental death and other city road with heavy road traffic do not have capacity to drive more than 30kmph. Because the person on vehicle less than 30kmph speed may or may not get head injury in RTA or too less people suffered with head injury in RTA at that speed.

Conclusion: The present study highlighted the demography and pattern of injuries in RTA. More people have been killed in RTAs than the world wars. It is found that incident rate of death due to accident per year from 1995 to 1999 was about same. Out total 600 vehicular accident death 432 cases were attributed to male. First among the list of fatalities due to vehicular accident is driver followed by passenger and at last pedestrian. Out of 205 drivers died of vehicular accidents 83 were from the age group of 21-29yrs. Majority of the road victims are were young and maximum drivers were in there five years. Reason is more rash deriving behavior of that group. Comparatively higher death rate is found during the month of May and October. Heat fatigue resulting in deterioration in the performance with a feeling of inefficiency might have accounted for this higher death rate. And as well as during these both two months are in vacation period in city area. This is the one of the reason of higher accidents rate due to heavy road traffic during these two months. Vehicle speeds on many of the main arterials can be more than 50 km/h (for example at night) which can result in serious injuries to vulnerable road users. Bicycle crashes occur during peak hours when volumes are significantly higher but speeds are lower (20 to 30 km/h). During this period there is serious conflict between the movements of non-motorized users with motorized vehicles sharing the same curbside lane. Accident involving bicycle rider are frequently a matter of carelessness and inexperienced. And majority of child riders can be protected by supervision of parents or guardians. Injuries to motor-cyclists were comparatively more extensive and severe. Injuries produced on the body might be due to impact against the road or impacts against vehicle or vehicle falling on the driver. Again most of pillion rider showed head injury causing death mostly.

Wearing of helmet to protect the head should be made compulsory under law and law should strictly follow. Create the awareness among the people specifically two-wheeler rider protect themselves by helmet. The pillion rider should also be covered under the law.

Road traffic injuries can be effectively reduced by several interventions such as.....

- Reducing individual exposure by investing in and improving public transportation in all places;
- Separation of slow- and fast-moving traffic on all possible roads;
- Promoting traffic-calming measures by scientific methods;
- Reducing speeds on roads, especially on highways and in all residential areas;
- Mandatory helmet laws, seat-belt laws and their strict implementation in all States;
- Implementing strict programmes on drinking and driving by the police;
- Improving the visibility of vehicles (brighter, reflective colours) and roads in all places (at vehicle design and road formation levels and thereafter);
- Applying international safety standards for all vehicles and roads;
- Improving safety on existing roads, and incorporating road safety audits, on all newly built roads; and

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