

**CAUSE OF DEATH IN TRAFFIC ACCIDENTS AND ITS ASSOCIATION WITH ALCOHOLISM**Tomy Mappalakayil<sup>1</sup><sup>1</sup>Professor and HOD, Department of Forensic Medicine, Government Medical College, Kottayam.**ABSTRACT****BACKGROUND**

Deaths due to road traffic accidents are alarmingly increasing. For example, at Government Medical College, Kottayam, during 1992, 259 cases of motor occurrences were autopsied. But, in year 2008, 433 cases were examined, i.e. a 67% of increase during the above period.

**MATERIALS AND METHODS**

The study was a retrospective data searching study and doesn't require clearance from the institutional ethical review committee and consents are not essential. The materials include dead bodies brought by Kerala police for medicolegal autopsies at Department of Forensic Medicine, Government Medical College, Kottayam, and respective postmortem examinations conducted by author itself and the data was utilised for above study.

**RESULTS**

The type of victims mostly included was drivers and pedestrians, especially the drivers of two-wheelers (29/32) are involved (vide Table 1.1) in the group of drivers. The most common victims were pedestrians (40/100), especially involved 4/6 wheeler striking (31/40). The pedestrians strike by two-wheeler were less as compared to other group (9/40).

**CONCLUSION**

On Christmas day, 17 patients admitted to a general hospital of Los Angeles. All were either drivers who had been drinking and were in motor car accidents or pedestrians who had been run down by drunken drivers. After a motor accident, the driver of a motor vehicle maybe arrested upon a charge of being under the influence of alcohol. It is important for the district surgeon to recognise the symptoms of a head injury or the signs of traumatic shock (caused by visceral injuries) may simulate acute alcoholic intoxication.

**KEYWORDS**

Yellowish Fatty Change, Alcoholism, Motor Occurrences.

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**BACKGROUND**

About 1.25 million people die each year because of road traffic crashes. Road traffic injuries are the leading cause of death among young people aged between 15 and 29 years. 90% of the world's fatalities on roads occur in low and middle income countries. Even though, these countries have approximately half of the world's vehicles. Road traffic accidents are any vehicular accident occurring on roadway, i.e. originating on terminating on or involving a vehicle partially on the roadway.<sup>1</sup> Road traffic injuries are one of the leading cause of death in the world. This includes collision of an automobile with a ride pillion rider/driver/passenger/pedestrian or another automobile or with a non-automobile on the roadway. The mounting toll of road accidents now with 8000 fatalities and nearly 4,00,000 injured per year in Britain demand continuing studies of

injury. Better understanding of mechanisms may lead to further measures of prevention and improved knowledge of body reaction to a reduction in morbidity and mortality.<sup>2</sup> The study being conducted to light a view to exact cause of death in road traffic accidents whether it is due to negligence of the driver, occupant or the pedestrian are not taking care of faster vehicles or whether the law relaxes negligent criminals easily, etc., maybe studied.

**MATERIALS AND METHODS**

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The preliminary data like name, age, sex, weight, religion were studied. The essential data like postmortem number, crime number, nature of victims, nature of stomach contents, stomach mucosal status, whether helmet or seatbelt worn, general description of injuries and the cause of death/the most fatal injury were studied from a hundred motor occurrence cases during the period of one year from 1-1-2011 to 31-12-2011.

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### Statistical Analysis

Significance of the study with various points correlated by with the help of Dr. K. K. Jose Kanachikkat, Professor and Head of Statistics Department and Principal, St. Thomas College, Palai, by utilising classical tests.

### RESULTS

The type of victims mostly included was drivers and pedestrians, especially the drivers of two-wheelers (29/32) are involved (vide Table 1.1) in the group of drivers. The most common victims were pedestrians (40/100), especially

involved 4/6 wheeler striking (31/40). The pedestrians strike by two-wheeler were less as compared to other group (9/40).

The backseat passengers of two-wheelers (7/28) and other vehicle occupants (21/28) were victimised. The above observation notes that backseat passengers are safe than drivers of two-wheelers. The occupants are more significantly involved in 4/6 wheeler group, especially without seatbelt (22/23). This observation necessitates use of seatbelt by occupants of the vehicles including drivers (Table 1.1 and Table 1.4).

Sl. No.	Type of Death	Year	Number of Cases	% of Cases	Total Cases
1	Motor occurrence	2011	439	25.3	1734
2	Motor occurrence	2010	350	21.0	1663
3	Motor occurrence	2009	352	21.9	1603
4	Motor occurrence	2008	433	27.8	1560
5	Motor occurrence	2007	343	22.7	1509
<b>Statistics of Motor Occurrence Deaths of Government Medical College, Kottayam</b>					

So, the above study is useful for detecting the aetiological factors of motor occurrences and fatality associated with lack of use of safety measures like helmet, seatbelt, air bags, etc.

The above project work mainly intends to find out the exact cause of death in motorcyclist accidents, pedestrians, drivers, occupation in the vehicle in front and backseats. The victims were under the influence of alcohol or not by noting the stomach contents, its smell, the mucosal status and the liver status like the alcoholic cirrhosis/yellow fatty change present or not.

No chemical analysis of blood and viscera done as most of the cases were died after a few days of hospital stay and alcohol intolerance varies from one individual to another.

Sl. No.	Type of Victim	Actual No./100 Case
1	Pedestrian-motorbike hitting	9
2	Pedestrian (three, four and six wheelers)	31
3	Driver of motorcycles	30
4	Driver (three, four and six wheelers)	2
5	Occupant of motorbike	7
6	Occupant/(three, four and six wheelers)	Front seat- 2, Backseat- 19
	<b>Total</b>	<b>100</b>
<b>Table 1.1. Type of Victims</b>		

	Liver Fatty Change/Cirrhosis	Fruity Smell of Alcohol in Stomach	Stomach Mucosa Status Congested
Pedestrian	13	9	10
Drivers	9	6	6
Occupants	7	3	3
<b>Total</b>	<b>29</b>	<b>18</b>	<b>19</b>
<b>Table 1.2. Relation with Alcoholism</b>			

	Head Injury	Chest Injury	Abdominal	Combined	Other Causes Like Drowning
Pedestrian	25	2	1	11	0
Drivers	29	2	0	4	1
Occupants	13	2	0	6	4
<b>Total</b>	<b>67</b>	<b>6</b>	<b>1</b>	<b>21</b>	<b>5</b>
<b>Grand Total</b>	<b>100</b>				
<i>Table 1.3. Cause of Death</i>					

	Driver	Backseat Passenger	Pedestrian
Head injury	21	6	6
Head injury + other causes	4	0	0
Other causes	3	2	0
<b>Total</b>	<b>28</b>	<b>8</b>	<b>6</b>
<b>Grand Total</b>	<b>45</b>		
<b>Table 1.4. Head Injury Cause of Death in Bike Accidents</b>			

Most of the victims of above study showed signs of either chronic or acute intake of alcohol (66/100) of which 29/66 showed fatty and cirrhotic alcoholic liver diseases by macroscopic examination itself. 18/66 showed intense alcoholic smell/fruity smell for their stomach contents and 19/66 showed intense mucosal congestion of stomach (Table 1.2).

All the above findings necessitate to ban drink and drive (this corrects the telling that the alcohol thrills, but kills). The study also suggests the requirement of toxicological analysis of blood level of alcohol in every case of suspected drunk and driving cases. The study lacks chemical analysis reports as this may improve the 66% of alcoholic victims to more than that if proper preservation of blood and rapid analysis methods adopted.<sup>3</sup>

## DISCUSSION

Road traffic leads to 1.27 million deaths and 24.3 million injuries each year making road traffic injuries one of the top ten cases of death worldwide (WHO, global status report on road safety) people living in developing countries (low and middle income countries) bear the burden of road traffic injury.<sup>4</sup>

When someone is crossing the street, as they are hit, their body will move forward or backward depending on the way their leg is positioned. If the driver applies the brake, the person typically ends up on the ground in front of the vehicle, but if the driver does not apply brake, the person may hit the exterior mirror and land on the driver or passenger side of the vehicle. The strongest significant correlates of the risk of collision occurrence where the presence of crosswalks with or without traffic signals. The importance of recognising the typical patterns of injury associated with motor vehicle accidents. This coupled with a logical sequence for initial assessment and management of trauma patients has been shown to contribute to improved outcomes. This indicates that engineering approach to safety should likely be complimented by education and enforcement-based measures.

The following preventive methods are adopted:<sup>5,6</sup>

- Area wide traffic calming.
- Red light cameras.
- Speed cameras.
- Intervention for increasing pedestrians and cyclist visibility.
- Intervention for promoting booster seat use for children.
- Safety education for pedestrians.
- Street lighting.
- Vision screening for older drivers.

- Addressing the issue of drunken drivers.
- Intervention in the alcohol server setting for preventing injuries.

These types of injuries are significant public health burdens and alcohol intoxication is recognised as a risk factor for injuries. There is increasing attention on supply side interventions, which aim to modify the environment and context within, which the alcohol is supplied and consumed.

- School-based driver education.
- Graduated driver licensing.
- Motorcycle driver training.
- Alcohol and drug screening for drivers.
- Increased police patrols.
- Bicycle helmet legislation.
- Post license driver education.

Protecting pedestrians by changing vehicle design. It would be difficult to over emphasise the influence of alcohol on traffic accidents on one.

## CONCLUSION

On Christmas day, 17 patients admitted to a General Hospital of Los Angeles. All were either drivers who had been drinking and were in motor car accidents or pedestrians who had been run down by drunken drivers. After a motor accident, the driver of a motor vehicle maybe arrested upon a charge of being under the influence of alcohol. It is important to district surgeon to recognise the symptoms of a head injury or the signs of traumatic shock (caused by visceral injuries) may simulate acute alcoholic intoxication.

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