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Original Research

Assessment of 300 cases of fatality by thoraco-abdominal injuries in cases of accidental deaths in road traffic accidents

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ABSTRACT:
Background: To assess300 cases of fatality by thoraco-abdominal injuries in cases of accidental deaths in road traffic accidents. **Materials & methods:** 300 post-mortems autopsies of road traffic accident subjected to medico-legal autopsy were analysed. A road traffic accident is defined as a collision involving two or more objects, at least one of which must be a moving vehicle of any type. The results were all entered into a Microsoft Excel sheet and statistical analysis was performed on them. **Results:** There was a male preponderance seen in the present study. 225 subjects (75 percent) of the subjects were males. Lacerating of liver was seen in 133 subjects (44.33 percent). Spleen laceration occurred in 57 subjects (19 percent). Renal laceration was present in 50 subjects (16.67 percent). Abdominal puncture and vertebral injuries were present in 42 subjects (14 percent) and 71 subjects (23.67 percent) respectively. **Conclusion:** Significant proportion of road traffic accidents affect young males. Road users are not a homogeneous population, thus the risks they face vary depending on the local environmental factors.
Key words: Abdominal, Injuries, Accidental deaths

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INTRODUCTION

Road traffic injuries (RTIs) are the leading cause of unintentional injuries, accounting for the greatest proportion of deaths from unintentional injuries. They are the leading cause of injury-related disability-adjusted life years (DALYs), and they pose a significant economic and societal burden. Despite this burden, RTIs remain a largely neglected public health problem, especially in low- and middle-income countries (LMICs), where urbanization and motorization are rapidly increasing. Unfortunately, reliable data on the burden of RTIs and cost-effective interventions in LMICs are sorely lacking.[1-3]

World Health Day is celebrated by the World Health Organization each year on 7th April and the theme of this year was 'Road Safety'. Road Safety is no accident - and coincides with the release of a World Bank and WHO report (World report on Road Traffic Injury Prevention). Road traffic injuries kill 1.2 million people each year and injure or disable as many as 50 million, which represents a 60% increase in the last five years. Road crashes are the second leading cause of death globally among young people and affect the most economically active members of the population. It has been reported that 86% of deaths from road traffic injuries occur in low- and middle-income countries even though these account for only 40% of all motor vehicles. In these countries, reasons cited for the high burden include the growth in motor vehicles, higher number of people killed per crash, poor public health structure and poor enforcement of traffic regulations.[4-6]Hence; the present study was conducted for assessing 300 cases of fatality by thoraco-abdominal injuries in cases of accidental deaths in road traffic accidents

MATERIALS & METHODS

300 post-mortems autopsies of road traffic accident subjected to medico-legal autopsy were analysed. A road traffic accident is defined as a collision involving two or more objects, at least one of which must be a moving vehicle of any type. The analysis of injuries in the thoraco-abdominal region was the primary focus of the data collection, with special attention paid to the types of wounds and organs most frequently harmed in traffic accidents, as well as epidemiological factors related to the victims, the vehicles, the sites of impacts, etc. The results were all entered into a Microsoft Excel sheet and statistical analysis was performed on them.

RESULTS

There was a male preponderance seen in the present study. 225 subjects (75 percent) of the subjects were males. Majority of the subjects belonged to the age group of 30 to 50 years. Mean age of the subjects was 42.8 years. Most of the accidents took place during morning 6 am to 12 pm. Significant proportion of the accidents occurred in the city roads. Lacerating of liver was seen in 133 subjects (44.33 percent). Spleen laceration occurred in 57 subjects (19 percent). Renal laceration was present in 50 subjects (16.67 percent). Abdominal puncture and vertebral injuries were present in 42 subjects (14 percent) and 71 subjects (23.67 percent) respectively.

Table 1: Demographic data

Variable	Number
Age-group (years)	42.8
Males (n)	225
Females (n)	75

Table 2: Distribution of patients according to time of day

Time of day	Number	Percentage
12 am to 6 am	44	14.67
6 am to 12 pm	142	47.33
12 pm to 6 pm	58	19.33
6 pm to 12 am	56	18.67
Total	200	100

Table 3: Distribution of patients according to place of accident

Place of accident	Number	Percentage
National highway	70	23.33
State highway	88	29.33
City roads	142	47.33
Total	300	100

Table 4: Distribution of patients according to injuries

Injured organ	Number	Percentage
Liver laceration	133	44.33
Spleen laceration	57	19
Kidney laceration	50	16.67
Abdominal puncture	42	14
Vertebra injury	71	23.67

DISCUSSION

Motorization has enhanced the lives of many individuals and societies, but the benefits have come with a price. Although the number of lives lost in road accidents in high-income countries indicate a downward trend in recent decades, for most of the world's population, the burden of road-traffic injury—in terms of societal and economic costs—is rising substantially. 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.[4- 6]As a developing country, India is no exception. Not a day passes without RTA happening in the roads in India in which countless number of people are killed or disabled. Often members of the whole family are wiped out. Those who are affected or killed are mostly people in their prime productive age. The highest burden of injuries and fatalities is borne disproportionately by poor people, as they are mostly pedestrians, cyclists, and passengers of buses and minibuses.[7- 9]Hence; the present study was conducted for evaluating the fatality by thoraco-abdominal injuries in cases of accidental deaths in two-wheeler riders.

There was a male preponderance seen in the present study. 225 subjects (75 percent) of the subjects were males. Majority of the subjects belonged to the age group of 30 to 50 years. Mean age of the subjects was 42.8 years. Bayan, P et al, in a previous study, assessed a series of cases of non-fatal road traffic accidents in two tertiary care hospitals in Pimpri, Pune, India. A total of 212 non-fatal road traffic accidents admitted over a period of one year in these two hospitals constituted the study sample. Male : female ratio was almost 5 : 1, which was statistically significant (Chi-Square for goodness of fit = 95.11, df = 1, P < 0.0001). The maximum accidents occurred on Sundays and Mondays and the least around midweek (Wednesday). This pattern was also statistically significant (Chi-square for goodness of fit = 30.09, df = 6, P < 0.001). Pedestrians were the most vulnerable group, followed by drivers and pillions of two wheelers. These categories of road users contributed to almost 80% of the cases of Road Traffic Injuries (RTIs). Accidents were more likely in the time zone of 8 pm to midnight, followed by 4 pm to 8 pm (Chi-square for goodness of fit = 89.58, df = 5, P < 0.0001). A majority of the patients sustained multiple injuries followed by injuries to the lower limbs. A majority reported impaired visibility and fatigue as the cause of accident. Almost half (46.22%) of the injured admitted to drinking alcohol on a regular basis.[8]

Most of the accidents took place during morning 6 am to 12 pm. Significant proportion of the accidents

occurred in the city roads. Lacerating of liver was seen in 133 subjects (44.33 percent). Spleen laceration occurred in 57 subjects (19 percent). Renal laceration was present in 50 subjects (16.67 percent). Abdominal puncture and vertebral injuries were present in 42 subjects (14 percent) and 71 subjects (23.67 percent) respectively. In another study conducted by Reddy et al, authors analyzed the epidemiology and pattern of fatal thoraco-abdominal injuries in road traffic accidents. An autopsy-based cross-sectional study conducted. A purposive sampling technique was applied to select the study sample of 100 post-mortems of road traffic accident subjected to medico-legal autopsy at the department of Forensic Medicine. The majority of the victims were aged 21 to 40 years, 50 (50.0%), most of the victims were male 92 (92.0%); and male/female ratio was 11.5:1. Commonest offending agents in heavy motor vehicles were 54 (54.0%). Bony cage sustained injuries were observed in 71; out of this, fractures of ribs were observed in 45 (63.3%) victims, clavicle in 14 (19.7%), sternum was 6 (8.4%), and vertebrae 6 (8.4%) of fatal road traffic accidents. Internal thoracic injuries were observed in 26 cases. Among internal thoracic injuries, lungs were the most commonly involved organ 24 (92.3%) followed by the heart 2 (7.6%). Lung sustained more lacerations 19 (79.1%) than contusions 5 (20.8%). Internal abdominal injuries were observed in 49 cases. In road traffic accidents, the most commonly injured abdominal organs were solid organs such as liver 16 (32.6%) followed by spleen 9 (18.3%).[9]

CONCLUSION

Significant proportion of road traffic accidents affect young males. Road users are not a homogeneous population, thus the risks they face vary depending on the local environmental factors.

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