

Epidemiological Trends of Trauma in Tertiary Care Centre in Dakshina Kannada District of Karnataka, India

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ABSTRACT

Aims and Objectives: To study the pattern and burden of trauma cases which presented to a tertiary care centre in an upcoming Dakshina Kannada District of Karnataka, India.

Methods: This was an epidemiological study. Data was collected by purposive sampling technique. Study period lasted from Jan 2013 to Aug 2013. Collected data was analyzed.

Results: The annual incidence of trauma at our centre was 15.96% (1140 cases). Most of the injuries were reported in 21-30 years age group. The male to female ratio was approximately

2.3:1. Limb injury (66.92%) constituted the commonest form of injury. Among the various injuries, fall was the commonest cause of injury (60.78%), followed by RTA (16.75%) and assault (11.6%). A majority of the cases were admitted during night time (61.24%).

Conclusion: There has been an alarming increase in the number of trauma cases in the past decade. The target age group being the most productive one; it affects the economy directly. There is a need of urgent protective measures which are required for the benefit of the community.

Keywords: Trauma, Road traffic accidents, Assault, Epidemiology, Fall from height

INTRODUCTION

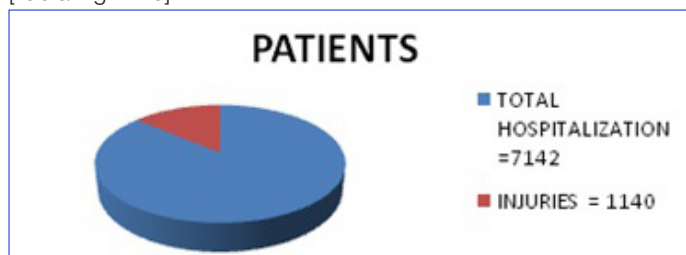
Injury is a major, preventable public health problem in terms of morbidity, premature mortality or disability. Worldwide, the projections for 2020 show that 8.4 million deaths are expected annually. Trauma has its own natural history and it follows the same epidemic pattern as any other disease, that is, agent, host and environment interacting together to produce injury or damage. The mortality and economic losses imposed by morbidity which results from injuries are largely preventable. However, the development of effective injury prevention efforts depends on reliable and detailed information on the incidence and pattern of injury. Injury, as a research problem, has also been largely ignored in developing countries. An examination of 'years of potential life lost' indicated that injuries were the second most common cause of death after 5 years of age in India. Injury is thus, a long-overlooked health problem that deserves study. This study was conducted to understand and describe the incidence and pattern, cause and mode of injuries in Dakshina Kannada District, Karnataka, India.

MATERIALS AND METHODS

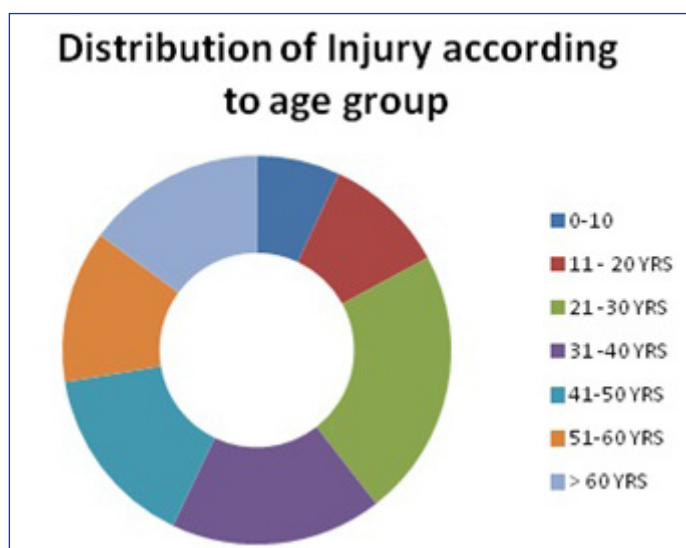
Study conducted in emergency department of a tertiary care center in Mangalore (India), during the period from January 2013 to August 2013. The data was collected by purposive sampling technique. The study group-consisted of 1,140 trauma victims who were admitted to the hospital in this period. Inclusion criteria were injured patients of any ages, who presented to the casualty department. A pretested trauma registry form was completed for all trauma patients, which included informed consent. Basic demographic characteristics, time and date, nature and cause of injury, vital signs and outcome data were recorded. In case of road traffic injuries, types of vehicles and modes of collisions were recorded. A thorough clinical examination and necessary investigations were done. The collected data was entered in Microsoft Excel and analyzed.

RESULTS

[Table/Fig-1-10].



[Table/Fig-1]: Distribution of cases related to trauma



[Table/Fig-2]: Age distribution of cases

DISCUSSION

The main challenge for public health in the coming century is to decrease the burden of injuries. Accelerated urbanization and

Sl No	Injury Area	Male	%	Female	%	Total	%
		1	Head & Neck injury	200	25.12	85	24.7
2	Abdominal Injury	45	5.65	29	8.43	74	6.49
3	Thoracic Injury	13	1.63	5	1.45	18	1.57
4	Limb	538	67.58	225	65.40	763	66.92
	Total	796	100	344	100	1140	100

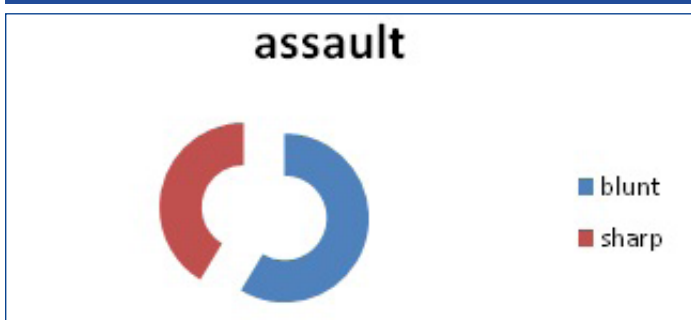
[Table/Fig-3]: Distribution of commonly affected body parts

S.No	Gender	Frequency	Percentage
1	Female	344	30.2
2	Male	796	69.8
	Total	1140	100

[Table/Fig-4]: Distribution of population/ samples according to sex

S.No	Cause	Male	Female	Number	Percentage
1	R.T.A*	147	44	191	16.75%
2	Fall	559	134	693	60.78%
3	Assault	93	40	133	11.6%
4	Miscellaneous	30	23	53	4.64%
5	Alcohol	49	21	70	6.14%
	Total	878	262	1140	100

[Table/Fig-5]: Cause of injuries patterns as seen in different types of injuries
*RTA : Road traffic accident



[Table/Fig-6]: Type of assault

Fall from tree	223	32.8%
Fall from roof	169	24.3%
Fall from bed	36	5.19%
Fall on ground	256	36.94%
Fall from stairs	9	1.29%

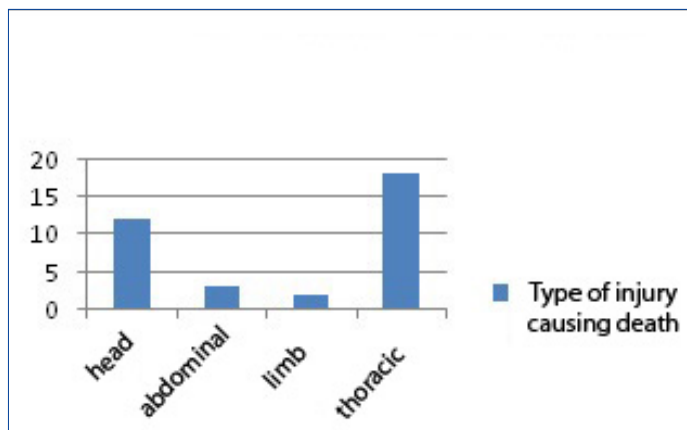
[Table/Fig-7]: Pattern of fall



[Table/Fig-8]: Type of RTA
RTA: Road traffic accident

Timing	Frequency	Percentage
Morning/Day time	436	37.93
Evening/Night time	704	61.24
Total	1140	100

[Table/Fig-9]: Timing of accident



[Table/Fig-10]: Mortality associated with various injuries

industrialization, over the past three decades, has led to an alarming increase in the rates of accidental injuries, crime and violence in India.

In the present study, we found that annual incidence of trauma admissions in our hospital was 15.96%. Most of the injuries were seen in 21-40 years age group (39.67 %). Similar findings were noted in a study which was done by Swarnkar M and co associates in a hospital in central India [1]. This age group is the most productive age group, and trauma and its morbidity result in a huge economic setback for the country. Males far outnumbered females, with a ratio of 2.3:1. Similarly, a male predominance was seen in other studies which were done in India [1-3], which could have occurred due to the fact that in India, males are still the main working community and are hence more exposed to work related stress and workplace injuries.

In our study, the incidence of limb injuries was more (66.92%), which was in contrast to head injuries, they being the most common injuries seen in other parts of the country [1,4]. A majority of cases were admitted during evening to midnight (61.24%), which is also observed by other authors [1] Twilight condition, with increased fatigue and decreased alertness, leads to increased trauma.

An unprecedented increase in the number of vehicles has outpaced the development of adequate roads and highways. India has 1% of the motor vehicles in the world, but it bears the burden of 6% of the global vehicular accidents [5]. According to the World Health Organization (WHO), road traffic injuries are the sixth leading cause of death in India, with a greater share of hospitalization, deaths, disabilities and socio-economic losses in the young and middle-aged populations [2]. We had 191 cases of road traffic accidents, out of which 76 cases were pedestrian injuries. In data from Delhi, India, pedestrian injuries accounted for 41% of the injuries [4]. RTAs accounted for the second common mode of trauma seen following fall in our study, which was in contrast to those seen in other studies, where RTAs were the most common mode of injury [1,3].

Fall from height was the commonest mode of injury (60.78%). Similar results were found in other studies as well [1]. Assault with blunt objects (58.6%) was most common than assault with sharp objects. Alcohol intoxication was seen in 6.14 % of the patients.

Highest numbers of deaths were seen following head injuries (66.7%), which was similar to that seen in other studies [1,2,5].

In a developing country like India, which is already wriggling under the enormous burden of infectious and tropical diseases and the regular outbreaks of epidemics, we should make all efforts to reduce this burden and not add to it. The industrial growth and might of our country was never so envied as it is today and with this, lot of social and structural changes are evident around us. All of this have led to lifestyle modifications and social ethics, as a result of which there has been this surge in trauma related hospital admissions across the country. We have made an effort to collect

this data, analyze and present it to highlight trauma related issues and their trends. This is a brief study which throws some light on this preventable cause of morbidity and the need to bring about some changes in effective governance, to check this menace [Table/Fig-2-10].

CONCLUSION

Trauma in India is a significant social and financial burden, which requires prioritized attention. An effort has been made to highlight the morbidity and mortality which are associated with fall and RTAs in this region and the data analysis shows patterns of injuries which were sustained, which involved limb, head and neck. Also, the presence of alcohol intoxication underlies the urgent need for necessary protective and preventive measures to be taken, for the benefit of the community.

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