Profile of Medico-legal Cases at JSS Hospital, Mysuru – a Two Year Prospective Study

S.Prasanth Kumaran[1], H.V.Chandrakanth[2], Arun.M[3], Smitha Rani[4]

[1]Assistant Professor, Dept of Forensic Medicine and Toxicology , Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry, [2]Professor,[3]Professor and Head, [4] Assistant Professor, Dept of Forensic Medicine and Toxicology, JSS Medical College, JSS Academy of Higher Education and Research, Mysore.

Abstract

This Prospective study was conducted to do profiling and analysis of Medico-legal cases attending the JSS Medical College and Hospital, Mysuru for a period of two years. Total 2033 Medical-legal cases which were registered during the time period were analysed. Analysing the pattern of such unnatural events, would provide a vital data for healthcare professionals, civil administrators, investigating agencies of state and judiciary to devise and implement appropriate and adequate strategies so as to reduce such incidences from happening. Majority of the cases were RTA, followed by poisoning. Among all the admitted cases, majority of the cases recovered and discharged. The mortality rate is low among the admitted cases, only 9.9% of cases were hospital deaths.

Most of the cases occurred during the time period of 12.01pm to 6pm followed by 6.01pm to 12am.

The age group of 21-30 years are the most frequently affected. Majority of the victims were males.

Suicide by hanging is more frequent among females compared to males, despite of predominant male population among the MLCs.

Key Words: *Medico-legal case, Medicolegal expert, pattern*

Introduction

Medico-legal cases constitute a substantial proportion of workload in the casualty and such patients not only merit treatment, but their exhaustive documentation is mandatory.[1]

Cases of Road Traffic Accidents (RTA), suicide by poisoning, burns, hanging, drowning, alleged history of assault, criminal abortions, industrial accidents, sexual offences, animal attacks, unnatural suspected deaths, custodial deaths, dowry deaths are considered as medico-legal cases. Among them RTA, suicide by poisoning constitute the majority of medico-legal cases. Injuries from RTA is the third most common cause of universal disability. The risk factors for RTA include speeding, alcohol impaired driving and violation of traffic rules. The spectrum of medico-legal cases presenting to the emergency medicine department would highlight the social, economic, educational aspects of the society and in broader sense highlights the value system, ethics and morality prevailing in that particular geographical habitat.

A medico-legal case is a case of injury or illness where attending doctor after eliciting, listing and examining patient is of opinion that some investigation by law enforce agencies is essential to establish and fix responsibility for the cases in accordance with the law of the land[2].

Injury is defined under section 44 IPC (Indian Penal Code) as any harm whatever illegally caused to

Corresponding Author:
Dr.Chandrakanth H.V,
Professor , Dept of Forensic Medicine and Toxicology, JSS Medical College, JSS Academy of Higher Education and Research, Mysore.
E-mail: drprashanth20@gmail.com

any person in body, mind, reputation or property.[3]

Medico-legal case is a medical case with legal implications or a legal case requiring medical expertise.[4]

In recent days, medico legal cases are on the rise. This may be attributed to the following factors like: increased vehicular traffic density, un-employment, high income disparities, substance abuse, insurance compensations etc.[5]

Inspite of recent advancement of technology in the field of medical sciences, death and deformities due to all causes, are yet to be controlled successfully, rather incidences of road traffic accidents has been increasing at an alarming rate throughout the world.[6]

Aims and Objectives

1. To determine the socio-demographic profile of medico-legal cases reported to JSS Medical College and Hospital during the study period.

2. To determine the mortality rate

3. To study the profile of different medico-legal cases in the hospital.

4. To recommend this study as a standard for Medico-Legal work in casualty.

Materials and Method

This is a prospective study which is conducted in the casualty of Jagadguru Sri Shivarathreeshwara hospital from October 2016 to September 2018.

The medico-legal register of casualty department is the main source of this study which comprises of information regarding various parameters. The data was analysed and results were derived with the help of SPSS version22, Microsoft Excel and R software.

Inclusion criteria: all cases brought to the JSS Hospital casualty with known history of medico legal implications.

Exclusion criteria:

1.The cases with inadequate details or missing data- all the cases for which any of the details regarding age, sex, date and time of incident, was not mentioned, or unavailable in the records.

2. The cases referred from other hospitals or clinics.

3. The cases which have received treatment or first aid in other centres.

Observations and Results

A total of 2033 Medico-legal cases were registered during the time period according to the inclusion criteria. Only the medico-legal cases which reported first to Jagadguru Sri Shivarathreeshwara Medical college & Hospital, Mysore were included in the study. Referred cases and other cases which reported or received first aid in any other hospital or clinic were excluded. The analysis of the various parameters of the cases, revealed the following observations:

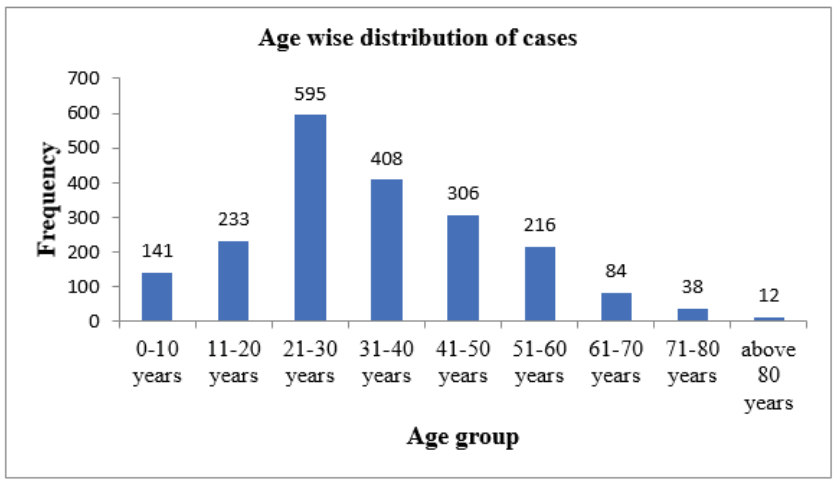

Figure 1: Distribution of the cases with respect to age group:

With regards to age, the cases are categorized into nine different age groups of ten years range. Majority of the cases (595 cases) belonged to the age group of 21-30 years which accounts to 29.3%.

Sex wise distribution of cases:

With regards to sex, male preponderance is observed: 1480(72.8%) cases were males and 553(27.2%) cases were females.

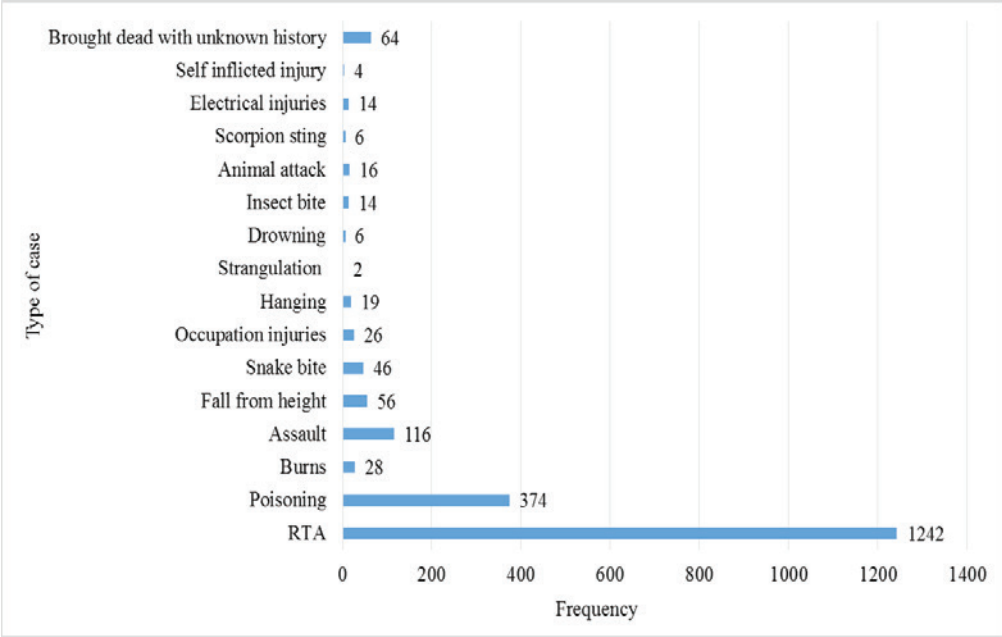

Fig 2: Distribution of cases with respect to type of case

Profiling with respect to type of case revealed that: RTA constituted majority of the cases(1242 cases, 61.1%) followed by poisoning(374, 18.4%), assault(116, 5.7%), brought dead with unknown history(64, 3.1%) respectively.

Manner wise distribution of cases:

The manner of injury for majority of the cases is accidental (1533 cases, 75.4%), followed by suicidal (316 cases, 15.5%) and homicidal (120 cases, 5.9%). The manner is unknown for 64 cases(3.1%), which were brought dead cases with unknown history.

Table 1: Distribution of cases with respect to time of incidence:

Time of incidence of unnatural event	Frequency	Percent
12.01am to 6.00am	120	5.9
6.01am to 12.00pm	470	23.1
12.01pm to 6.00pm	746	36.7
6.01pm to 12.00am	697	34.3
Total	2033	100.0

According to the time at which the unnatural event had occurred, the 24 hour time period in a day is divided into four different groups of 6 hour time intervals. Most of the cases occurred during the time period of 12.01pm to 6pm(746 cases,36.7%) followed by 6.01pm to 12am(697 cases, 34.3%).

Table 2: Distribution of the cases with respect to conscious condition when reporting to the hospital

Consciousness/ condition	Frequency	Percent
Conscious	1820	89.5
Unconscious	105	5.2
Brought dead	108	5.3
Total	2033	100.0

Majority of the cases(1820 cases, 89.5%) were conscious when reporting to the casualty. Only 105 cases (5.2%) were unconscious. 108 cases(5.3%) were brought dead to the casualty.

Distribution of cases on outpatient/ inpatient (admission) basis:

Profiling of cases on inpatient, outpatient basis revealed that: majority of the cases (1451 cases, 71.4 %) were treated and managed on outpatient basis compared to only 582 cases (28.6%) which were treated on inpatient basis (admitted).

Table 3: Distribution of the cases on the basis of final outcome:

Final outcome	Frequency	Percent
Recovered and discharged	385	66.1512
Complications(morbid)	137	23.53952
Hospital death	58	9.965636
Referred out	2	0.343643
Total	582	100

The above table shows that, among all the admitted 582 cases, majority of the cases(385 cases, 66.1%) recovered and discharged, the second most frequency of cases (137 cases, 23.5%) developed complications, 58 cases(9.9%) were hospital deaths.

Distribution of the admitted cases with respect to DAMA:

Out of the total 582 admitted cases, 67 cases(11.6%) were DAMA.

Table 4: Type of case in relation to gender:

Type of case Count	Male		Female		Total	
	%	Count	%	Count	%	
RTA	948	46.60%	294	14.50%	1242	61.10%
Poisoning	215	10.60%	159	7.80%	374	18.40%
Burns	20	1.00%	8	0.40%	28	1.40%
Assault	98	4.80%	18	0.90%	116	5.70%
Fall from height	50	2.50%	6	0.30%	56	2.80%
Snake bite	36	1.80%	10	0.50%	46	2.30%
Occupation injuries	20	1.00%	6	0.30%	26	1.30%
Hanging	7	0.30%	12	0.60%	19	0.90%
Strangulation	0	0.00%	2	0.10%	2	0.10%
Drowning	6	0.30%	0	0.00%	6	0.30%
Insect bite	10	0.50%	4	0.20%	14	0.70%
Animal attack	12	0.60%	4	0.20%	16	0.80%
Scorpion sting	4	0.20%	2	0.10%	6	0.30%
Electrical injuries	10	0.50%	4	0.20%	14	0.70%
Self inflicted	2	0.10%	2	0.10%	4	0.20%
Brought dead with unknown history	42	2.10%	22	1.10%	64	3.10%
Total	1480	72.80%	553	27.20%	2033	100.00%

The above table shows that, RTA and poisoning are 1st and 2nd most frequent cases among both males and females. The one peculiar finding in this study is that the number of hanging cases is significantly more among females when compared to males, despite of male predominance among the total cases.

Distribution of the cases with respect to locality:

With regards to locality, majority of the cases were from urban background (1458 cases, 71.7%) compared to rural background (575 cases,28.3%).

Discussion

The results of our study were analysed and compared

with other studies conducted at various places.

In the present study, male preponderance was observed: 1480(72.8%) cases were males and 553(27.2%) cases were females. This finding is consistent with most of the other studies done by Atul Saxena et al[7],Yatoo GH et al[8] ,SN Hussaini et al[9]. This could be due to greater involvement of males in outdoor activities like travelling on roads, working in construction areas, industries etc making them more prone to accidents and injuries.

Profiling with respect to type of case revealed that: RTA constituted majority of the cases which is consistent with other studies done by Atul Saxena et al[7], Mahesh M Trangadia et al[10] and Garg Vishal et al [11], The predominant incidence and reporting of RTA cases could be attributed to rapid urbanization and increase in the number of vehicles, poor road conditions, ignoring the traffic rules and absence of safety policies. The one contrary finding in our study is that the number of hanging cases is significantly more among females when compared to males, despite of male predominance among the total cases. This is in contrast to studies done by Mathew J Martin et al[12], Derya Azmak et al[13] where males were the predominant victims of hanging.

The second most frequent cases in this study were poisoning cases(18.4%).Only two cases of strangulation were recorded during this study period and both were accidental in manner, both were females. The third most common among the MLCs were assault cases accounting to 5.7% of the total cases.

It was observed in the present study that most of the cases belonged to the age group of 21 to 30 years of age. This could be due to the fact that individuals of this age group are more active, violent and are predominantly involved in activities.

In the present study most of the cases occurred during the time period of 12.01pm to 6pm (746 cases,36.7%) which is consistent with studies done by Mahesh M Trangadia et al[10] and Vishal Garg et al[11]. Because this is the peak time period during which most of the people are active in addition the other factors like peak transportation traffic density in the evening hours. This is closely followed by 6.01pm to 12.00am time period during which 34.3% of cases occurred.

The incidence of MLCs were least during the time period of 12.01 am to 6 am. This could be attributed to the profound inactivity as most of the people prefer to sleep during this time period.

Among the admitted cases, majority of the cases (385 cases, 66.1%) recovered and discharged. This is consistent with other previous studies done by Mahesh M et al [10] and Garg Vishal et al[11]. This can be attributed to the timely admission, effective treatment and management in the hospital. The second most frequency of cases (137 cases, 23.5%) developed complications like motor or sensory impairments or organ dysfunctions, 58 cases (9.9%) were hospital deaths and only 2 cases were referred out to other hospitals. Out of the total 582 admitted cases only 67cases (11.6%) were DAMA.

Majority of the cases were brought to the hospital by relatives or friends (1793 cases, 88.3%). This could be due to the presence of relatives or friends nearby the victim at the time of occurrence of unnatural event and due to the communication of information to the family members, relatives or friends about the injured victim. Self reporting was done by 134(6.6%) cases. This could be due to sustaining minor injuries which were not severe, that made the victims to report to the hospital on their own without any company from others. Very few cases(106 cases, 5.2%) were brought by strangers to the hospital. This could be due to sustaining serious or life threatening injuries by these victims rendering them unconscious or unable to seek first aid on their own, such that strangers had to help them by accompanying them or transporting those victims to hospital.

Conclusion

Majority of the cases belonged to the age group of 21-30 years. Male preponderance is observed.

With regards to demographic locality, majority of the cases were from urban background.

Profiling with respect to type of case revealed that: RTA constituted majority of the cases followed by poisoning.

Most of the cases occurred during the time period of 12.01pm to 6pm followed by 6.01pm to 12am.

Among all the admitted cases, majority of the

cases recovered and discharged. The mortality rate is low among the admitted cases, only 9.9% of cases were hospital deaths.

Majority of the cases were brought to the hospital or accompanied by relatives or friends.

Suicide by hanging is more frequent among females compared to males, despite of predominant male population among the MLCs.

The present study shows that the predominant cause of injuries are road traffic accidents and are accidental in nature. Public health officials should develop and implement preventive strategies with a comprehensive approach to reduce the incidence and deal with day to day morbidity and mortality. The basic principles to be followed to prevent injury are education, engineering, uniform enforcement of law & order, pre-hospital care and the evaluation. Proper education, training must be delivered for safety standards. Rules and regulations are to be strictly implemented in the community to prevent all kind of injuries. Further large number of prospective studies should be carried out that would facilitate various organizations to set various causative risk factors, circumstances, chain of events; and the preventive measures accordingly.

To prevent or reduce the incidence of suicides, regular awareness programs, counselling should be delivered to all the individuals who are prone to stress (especially students, medical professionals and individuals involved in professional jobs) from time to time. Proper counselling to manage and cope with stress and failures and for developing positive attitude should be facilitated and promoted especially among youths.

Due to the higher incidence of RTAs, poisoning and assault cases, hospitals should have availability of such medico-legal experts in sufficient number throughout day and night, 24/7 to deal effectively with such cases.

Medico-legal cases must be handled with proper attention. Timely intimation to police, proper documentation, thorough investigations and management are essential on the part of medical professionals, especially Casualty medical officers.

For the better handling and dealing of medico-legal cases, awareness programs, and adequate proper training regarding MLCs should be given to the undergraduate students, interns and medical officers. Also during internship, a brief period of posting in Forensic Medicine Department is essential for imparting better knowledge about MLCs and their management.

Ethical Clearance: Obtained from Institutional Ethical committee.

Source of Funding: Self

Conflict of Interest: nil

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