

# Comparison of spectrum of medico-legal cases and outcomes in the emergency department of tertiary care centre: A retrospective study

Running Title: Medico-legal cases in Emergency Department

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## Abstract

**AIMS:** Emergency Medicine is a new discipline that started with the aim of effective and early resuscitation of critically ill patients. Medico-legal cases (MLC) are surged globally due to the population rise. Resource allocation for different MLC in terms of humans, infrastructure, and equipment is complicated. The present study aimed to find a pattern of Medico-legal cases with outcomes in the Emergency Department.

**METHODS :** This is a retrospective study done in a tertiary care teaching hospital over one year from January 2021 to December 2021. A total of 955 cases were registered, out of which 918 were selected. Patients data was recorded in proforma regarding the demographic profile, the pattern of MLC, and hospital outcome. Descriptive analysis expressed in frequencies and percentages using SPSS for Windows, Version 26.0.

**RESULTS :** In 918 cases, males were 69.80 %, and females were 30.20%. The majority of patients were aged 21 to 40 years, accounting for 56.10%. The pattern of MLC cases is Road traffic accidents 34.50%, poisoning 23.10%, Assault 19.80%, Bites 13.6%, and burns 2.20%. Outcomes showed the discharges 55.10%, deaths 3.8%, Against Medical Advice 29.30%, and OPD Basis 11.80%. Mortality was highest in road traffic accidents, accounting for 1.5%.

**CONCLUSION :** Present study concludes MLC cases were common in males of younger age groups. The majority of MLC cases are Road traffic accidents and poisoning. Mortality was more in Road traffic accidents. This study will guide the preparedness of the Emergency department in terms of resource allocation, training of staff, and formulation of hospital plans and policies by government /law agencies.

**KEYWORDS :** Casualty, Emergency Medicine, Medicolegal Case, Poisoning, Trauma.

## **Introduction**

Road traffic accidents, myocardial infarctions, and stroke are the most common causes of death and disability in India. (1) A total of 1.3 million deaths have been reported worldwide in the age of 15 to 29 years as a result of road traffic crashes. (2) Emergency Department (ED) is a new discipline that functions as a crucial entry point for seriously injured or sick patients. Overcrowding is common due to increased visits by patients with different complaints. (3) It's a challenging task for the Emergency Physician efficiently deliver the limited resources to the neediest first. There is an increasing need for a well-organized healthcare system that keeps up with the changing needs. Triage plays a vital role in sorting out patients based on the severity of the injury. The diagnostic investigation and treatment vary from case to case. (4,5) Human resources and equipment allocation differs in various zones in emergency medicine. The critically ill patient should be first resuscitated and stabilized. (6) The common errors while working in ED is failure to recognize Medico-legal issues and proper documentation. The decision to label a case as a Medico-legal case (MLC) should be based on sound professional judgment, after a detailed history taking and thorough clinical examination. (7,8) Medical Negligence may give rise to criminal and financial liabilities on hospitals and healthcare institutions. (9)

MLC case is defined as “after a detailed history and physical examination of the patient, thinking that some investigation or procedure by law enforcement agencies is required to establish the responsibility for the case as per the law”. (10) MLC cases include assaults, road traffic accidents, sexual abuse, electrical injuries, poisoning, snake bites, burns, attempted suicide, hanging, etc. At present in India, casualty medical officers (CMO) are trained in proper documentation, police intimation, and managing medico-legal records.

This study aims to determine the frequency and pattern of medico-legal cases with their outcome reported at the emergency department of a tertiary care hospital.

## **Methods**

**Study design and setting:** A retrospective study was done in the ED of a tertiary care unit in south India.

**Study participants:** Medico-legal cases registered for one year were included from 1 January 2021 to 31 December 2021. A total of 955 cases were registered, out of which 918 were selected, and 47 cases were removed from the study due to incomplete documentation in records.

**Data collection:** Data was recorded in proforma regarding the demographic profile, the pattern of MLC, and hospital outcome.

The pattern of Medico-legal cases (MLC) is categorized into six groups

1. Road traffic accidents
2. Poisoning
3. Assaults
4. Bites
5. Burns
6. Others (falls from height, hanging, electric injuries, occupational injuries, etc.).

The outcomes are categorized into four groups

1. Discharge- Patients completely recovered after treatment.
2. Death- Patients died in the hospital before or after admission.
3. Against Medical Advice (AMA) -Patients not willing for admission.
4. Outpatient (OPD) Basis- Patients are evaluated and treated in ED.

**Statistical analysis:** The collected data were analyzed for descriptive statistics by Statistical Package for Social Sciences [SPSS] for Windows, Version 26.0. The results were recorded in frequencies and percentages.

## Results

### Demographic profile:

Among the 918 medico-legal cases, there were 641 (69.80 %) males and 277 (30.20%) females (Table 1).

The frequency of age distribution in less than 20 years of age group was 19.4%, 21 to 40 years age group 56.10%, 41 to 60 years age group 19.7%, and more than 61 years age group 4.8%. The mean age group was 33.12 years. (Table 1)

### The pattern of MLC cases:

The frequency of pattern of MLC cases as follows, Road Traffic accidents 34.50% (317), Poisoning 23.10% (212), Assault 19.80% (182), Bite 13,60% (125), Others 6,80% (62) and Burns 2.20 % (20). (Figure 2)

### The outcome of MLC cases:

Among 918 cases registered, 55.10% were discharged, 3.80% died, 29.30% went AMA, and 11.80% were managed on an OPD basis. (Figure 3)

The comparison of different patterns of MLC cases with outcomes shows that in the RTA group discharges were 16.4% and AMA 11%, in the Poisoning group discharges were 17.6% and

AMA 4.2%, in the Assaults group discharges were 4.8%. and AMA was 10.2%, among Bite group discharges were 10.6% and AMA 2%, and patients with Burns discharge were 1.6%. (Table 2)

## Discussion

The present analysis revealed that MLC cases were more in males (69.80%) compared to females (30.20 %). Our results are similar to the study conducted by Patekar et al<sup>10</sup> males (79.4%) and females (20.6%), and in Jude et al.'s study males were 57.2% and females 42.8%.<sup>11</sup> The predominance of males over females may be due to behavior patterns and more outdoor activities, including working outside to earn their daily bread. In contrast, females usually stay at home and look after the household work.

In the present study, the highest number of MLC cases were in the age group of 21 to 40 years (56.10%), similar results were found in other studies done by Siddappa et al<sup>12</sup> 60.37%, and in Patekar et al<sup>10</sup> study 57.66%. Results may be due to most active age involving outdoor activities prone to Road traffic accidents, assaults, bites, and increased poisoning due to mental health issues.

In the present study frequency of the pattern of MLC in descending order is as follows: Road Traffic accidents 34.50%, poisoning 23.10%, assault 19.80%, bite 13,60%, Others 6,80%, and burns 2.20 %. Compared with other studies conducted by Patekar et al (10) RTA was 47.10%, poisoning 15.06%, assault at 6.73%, and Bharti et al (13) studies found road traffic accidents at 39.7%, poisoning at 8.85%, and assault at 18.4%, burns 2.7% and bite 0.44%. Road traffic accidents followed by poisoning were found to be the most common pattern of MLC cases in a majority of studies. RTA is the leading global cause, which may be due to an increase in population, poor road conditions, lack of road safety measures, and drinking and driving. Poisoning was second highest in India, due to the maximum rural population dependent on agriculture. This information clarifies that the ED should have separate rooms for trauma and poison patients.

In the present study, the most common outcome was discharge (55.10%) followed by AMA (29.30%), OPD basis 11.80%, and death was 3.80%. Compared with other studies by Patekar et al (10) discharge was 78.40%, LAMA (Leave against medical advice) 6.32%, and death was 9.59%. D.Kharath's (14) analysis showed discharges 80.69% and death 9.68%. we found against medical advice cases are more in our study this is attributed to the ED operating protocols and hospital policies. Emergency physicians and resident staff should be adequate in number to manage cases. Another reason may be the poor socioeconomic status of patients in India. Issues related to communication can be minimized by having a multipurpose social worker, for counseling and early registration. Separate trained staff (in India casualty medical officers) to deal with medicolegal issues including documentation and police intimation.

## Limitation

The present study is single-centric and retrospective.

## Conclusion

In the present study, medico-legal cases are common in the male population. The majority of the cases are in the age group of 21 to 40 years. The most common pattern was Road Traffic accidents and also the leading cause of death. A significant number of cases refused hospital care went against medical advice.

ED is designed to receive cases from different backgrounds presenting as emergencies. Overcrowding is common and interferes with triage and resuscitation to the neediest first. In India, the emergency specialty is in a growing phase. This study found trends in medicolegal cases and lacunae in managing at ED, which can be overcome by the below-listed strategies.

- Every ED should have a standard operating protocol for managing medico-legal cases.
- Should have casualty medical officers for documentation and manage records of medicolegal cases.
- Counseling room with Multipurpose social worker for Early registration and counseling to patients.
- Emergency physicians and Residents staff should have Periodic training to identify and manage MLC cases.
- The resource allocation should be considered depending on the frequency and pattern of MLC cases.
- Separate rooms for trauma and poison patient management. optionally to have a dead body holding room.

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Table 1. Age and Gender distribution (n=918)				
	GENDER		TOTAL	PERCENT
	Male	Female		
less than 20 years	104	74	178	19.4
21 to 40 years	378	137	515	56.1
41 to 60 years	131	50	181	19.7
more than 61 years	28	16	44	4.8
Total(n=918)	641	277	918	100.0

Table 2. Comparison of Spectrum of MLC with the outcome (n=918)					
NAME	DISCHARGE	DEATH	AMA	OPD BASIS	TOTAL
RTA	151(16.4%)	14(1.5%)	101(11%)	51(5.6%)	317(34.5%)
POISON	162(17.6%)	9(1%)	39(4.2%)	2(0.2%)	212 (23.1%)
ASSAULT	44(4.8%)	1(0.1%)	94(10.2%)	43(4.7%)	182 (19.8%)
BITE	97(10.6%)	4(0.4%)	18(2%)	6(0.7%)	125(13.6%)
BURNS	15(1.6%)	2(0.2%)	2(0.2%)	1(0.1%)	20 (2.2%)
OTHERS	37(4%)	6(0.7%)	15(1.6%)	4(0.4%)	62(6.8%)
TOTAL	506(55.1%)	36(3.9%)	269(29.3%)	107(11.7%)	918(100%)

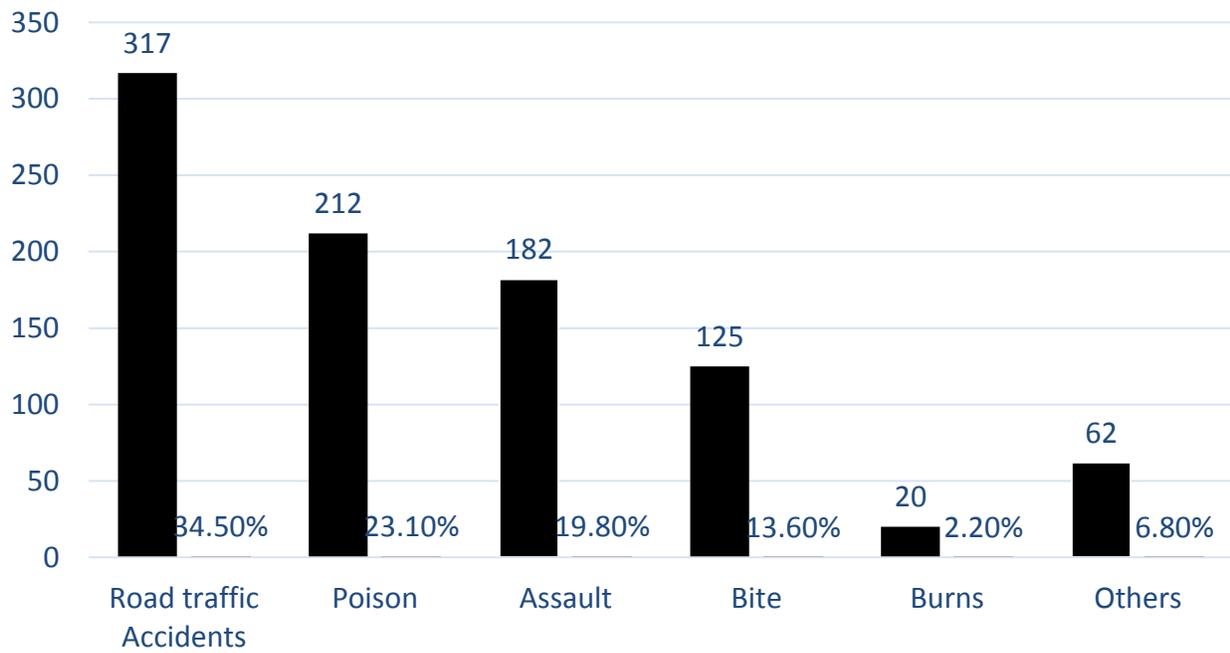


Figure 1: Spectrum of MLC cases In ED

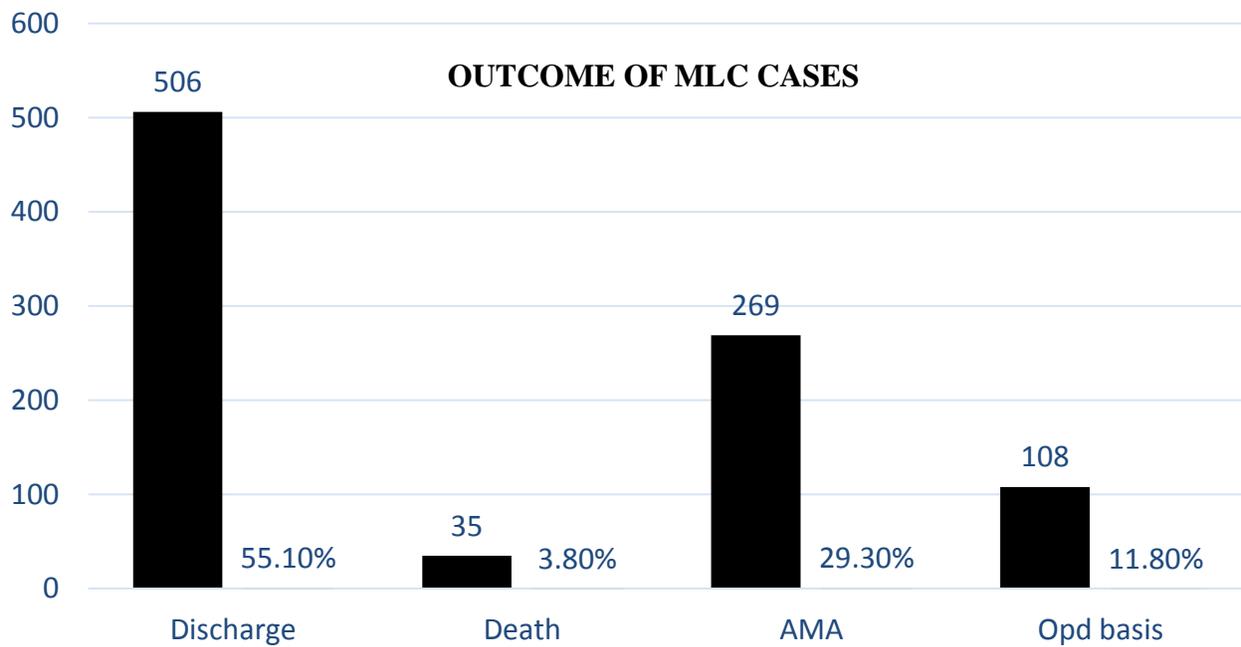


Figure 2: Outcomes of MLC cases In ED