

Frequency of Stencil of Medico-legal Cases in Tertiary Hospital of Karachi

Roohi Ehsan¹, Wasiq Ahmed¹ and M. Faiz-uddin²

Frequency and Causes of Medico-Legal Cases

ABSTRACT

Objective: To determine the frequency and causes of medico-legal cases reported at three major hospitals of Karachi City.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the three major tertiary care hospitals of Karachi, Abbasi Shaheed Hospital, Jinnah Postgraduate Medical Centre and Civil Hospital, from January 2007 to December 2018.

Materials and Methods: Total of 306,406 medico-legal cases in twelve years retrospective study period received at three major hospitals of Karachi were overseen. The data was collected with the permission of concerned authorities. Assault, Intoxication, Accident and Sexual Assault medico-legal cases were included in the study. A detailed examination was conducted in each case to determine the different causes of injury. Medico-legal deaths were excluded in the present study. The results were collected from the respective hospitals on a prepared structured Performa and were statistically analyzed using SPSS version 15.

Results: Out of all, in our study, among medico-legal cases reported (306,406), assault cases were the predominant 190,029 (62.01%), followed by Intoxication 60,233 (19.65%), accident 47,543 (15.51%) and sexual assault cases, 8,601 (2.8%) respectively. Among the outnumber assault medico-legal cases, the commonest one caused by hard and blunt object 135,086 and amongst accident cases were of road traffic accident 30,896. In sexual assault cases, rape cases were about 5,505 and in Intoxication cases, 54,270 Poisoning were at highest.

Conclusion: Hard and blunt injuries remained most common type of injury. Rape and poisoning cases are also recognized as most differentiating part of study. Enactment of the laws is the need of present period which can curtail accident cases and other medico-legal cases.

Key Words: Medic-legal, Assault, Injury, Karachi.

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INTRODUCTION

WHO defines Injury as those caused by acute exposure to physical agents such as mechanical injury, heat, electricity, chemical or ionizing radiation interacting with the body in amount and rate that exceed the threshold of human tolerance.¹ It is important to clarify injuries for proper disbursement of justice in any system. The detailed and distinct record of injuries and other pointful particulars of the injured noted during the medico-legal examination form the footing of medico-legal diagnosis and epidemiological observations in the criminal justice system.²

¹. Department of Forensic Medicine / Pathology², Karachi Medical & Dental College, Karachi.

Correspondence: Dr. Roohi Ehsan, Associate Professor / Head, Department of Forensic Medicine, Karachi Medical & Dental College, Karachi.

Contact No: 0333-2528545

Email: roohimurtaza@yahoo.com

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In all government hospital a medico-legal officer or a casualty medical officer may be asked to examine an injured person. The details of examination must be entered in an accident register, which would be confidential record and if required by a court of law should be produced in the court.³ A case in general is said to be labelled "medico-legal" when the attending doctor by takes history and doing examination of the patient comes to know that it is required by law enforcing agencies to make inquiry and affix the responsibility for the case.⁴ Medical officers or medico-legal officers are to be trained for how to write a "certificate" or "report", so that all the competent facts to consummate the opinion are mentioned properly and with possible scientific deviation and limitation without giving undue weight age to the observed facts. The role of forensic expert is to help in the administering of justness. The qualities needed in forensic expert are qualification, training and experience to identify the problem with professional knowledge, detect accurately and decode the results properly to form a scientific conclusion and to furnish speculation on his findings. Results of study of frequency and types of medico-legal injuries showed that males are more likely to be involved in such cases compared to females.⁵ This could be due to the reasoning that males are more

involved in outdoor work therefore they are involved in such mishaps or violation. Manner of injury is detected mainly on circumstantial evidence but to some extent the question can be solved by the medico-legal officer by examination of an injured person.⁶ One of the comportment of injury is assault which is due to any gesture or application of force causing harm to another person. In assault cases, apart from detail of injuries sometimes portrayal of pattern of tears in apparel is a valuable tool to determine the weapon of an offence, an examination of apparel is very valuable clue to ascertain the weapon of an offence.⁷⁻⁸ Accidents as the manner of injury account for in majority of cases, these injuries occur due to unplanned, uncontrolled event which has led to or could have led to injury to people. Attempted suicide, which is failing act of person to tail the life and self-inflicted injuries for the purpose of falsely stigmatize the other persons are also other manners of injury.⁹⁻¹⁰

Trauma is one of the most frequently encountered medical emergencies and second leading cause of death and disability.¹¹⁻¹² In Karachi, violence shares significantly to trauma cases, but RTA still contributes to most of the cases reported.¹³ Burn injuries, a unique form of trauma which is sometimes available, is categorized among the most severe injuries an individual can experience.

MATERIALS AND METHODS

The 12 years study was conducted from January 2007 to December 2018. Total of 306,406 medico-legal cases in this retrospective study period at three major hospitals of Karachi were overseen. The data was collected with the permission of authorities. Assault, Intoxication, Accident and Sexual Assault medico-legal cases were included in the study. A detailed examination was conducted in each case to determine the different causes of injury. Medico-legal deaths were

excluded in the present study. The results were collected from the respective hospitals on a prepared structured Performa and were statistically analyzed using SPSS version 15.

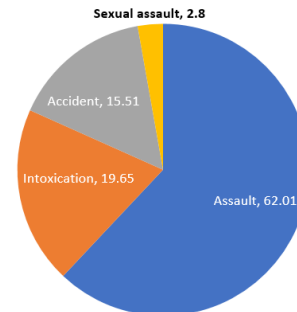
RESULTS

Out of all medico-legal cases, assault (62.01%) was the predominant followed by intoxication (19.65%), accident (15.51%) and sexual assault (2.80%) cases. (Table 1, Graph 1)

Total of assault 190,029 cases, 135,086 by hard and blunt object followed by firearm 33,641, sharp object 9,414, explosive 3,795, maltreatment 926 and human bite 321 respectively. Number of brought dead cases recorded was 6,846. (Table 2, Graph 2)

Table No. 1: Total No. Of Medico-Legal cases (2007-2018)

Medico-Legal cases	Frequency	Percentage
Assault	190,029	62.01
Intoxication	60,233	19.65
Accident	47,543	15.51
Sexual assault	8,601	2.80
Total cases	306,406	100



Graph No.1: Percentage of Medico-Legal cases (2007-2018)

Table No. 2: Year wise Pattern of Assault cases in the study period (2007-2018)

Year	Hard & Blunt	Firearm	Sharp Edge	Explosive	Maltreatment	Human bite	Brought dead	Total
2007	12,241	2,891	890	344	142	60	542	17,110
2008	11,855	3,330	1,106	147	139	63	458	17,098
2009	11,770	3,388	1,075	266	164	44	541	17,248
2010	11,900	3,103	1,029	420	142	58	502	17,154
2011	11,394	3,719	729	342	105	9	722	17,020
2012	9,911	4,070	694	349	85	41	885	16,035
2013	10,355	4,367	583	952	41	21	1,304	17,623
2014	10,895	3,133	766	578	38	4	874	16,288
2015	12,253	2,398	735	204	20	3	486	16,099
2016	3,170	411	191	101	7	2	113	3,995
2017	13,620	1,566	769	27	29	7	219	16,237
2018	15,722	1,265	847	65	14	9	200	18,122
Total	135,086	33,641	9,414	3,795	926	321	6,846	190,029

Among the accident cases, most frequent was Road traffic accident cases 30,896, followed by 7,713 burn cases, 1,837 fall cases, 234 train accident cases, 206 factory cases and brought dead cases were 6,657. (Table 3, Graph 3). Total number of sexual assault cases 8,601, out of which 5,505 rape, sodomy 1,318 and

under this heading 1,778 age estimation cases reported. (Table 4, Graph 4)

Amidst the 60,233 intoxication cases, 54,270 are of general poisoning followed by 4,724 of alcohol poisoning and 1,239 of drug poisoning. (Table/Graph 5)

Table No.3: Year wise Pattern of Accident cases in the study period (2007-2018)

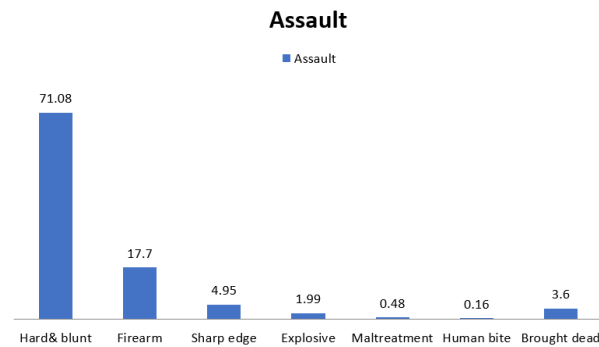
Accident							
Year	Road traffic	Burns	Fall	Railway	Factory	Brought Dead	Total
2007	2,981	582	252	21	25	469	4,330
2008	3,052	702	208	23	22	469	4,476
2009	3,052	807	136	26	34	550	4,605
2010	3,095	789	140	25	23	427	4,499
2011	2,360	720	149	10	13	352	3,604
2012	2,649	794	228	23	18	558	4,270
2013	2401	667	102	22	5	649	3,846
2014	2,282	631	97	27	2	625	3,664
2015	2,709	604	153	13	8	824	4,311
2016	793	483	0	4	39	271	1,590
2017	2,694	506	189	18	5	651	4,063
2018	2828	428	183	22	12	812	4,285
Total	30,896	7,713	1,837	234	206	6,657	47,543

Table No.4: Year wise Pattern of Sexual Assault cases in the study period (2007-2018)

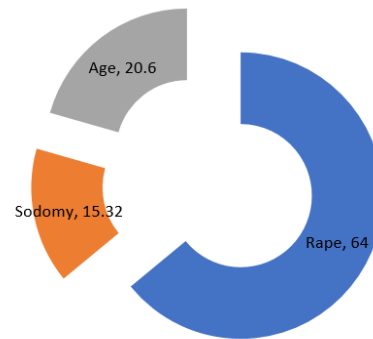
SEXUAL ASSAULT						
Year	Rape		Sodomy		Age determination	
	Active	Passive	Active	Passive	Male	Female
2007	122	222	45	57	70	83
2008	157	267	54	70	124	82
2009	90	239	33	54	55	70
2010	121	266	33	51	52	75
2011	145	278	43	57	72	69
2012	149	294	53	44	64	65
2013	177	325	34	45	61	81
2014	201	324	30	59	117	63
2015	204	342	85	61	122	70
2016	89	190	16	24	73	69
2017	254	331	37	72	39	77
2018	307	411	115	146	60	65
Total	5,505		1,318		1,778	

Table No. 5: Year wise Pattern of Intoxication cases in the study period (2007-2018)

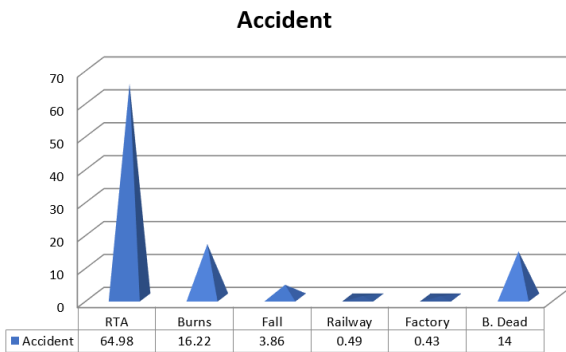
INTOXICATION				
Year	Poison	Alcohol	Drugs	Total
2007	2,607	515	223	3,345
2008	2,844	575	179	3,598
2009	2,917	512	21	3,450
2010	3,119	609	214	3,942
2011	3,161	462	222	3,845
2012	6,618	342	110	7,070
2013	6779	289	53	7,121
2014	6247	405	62	6,714
2015	6350	290	74	6,714
2016	382	97	16	495
2017	6102	282	38	6,422
2018	7144	346	27	7,517
Total	54,270	4,724	1,239	60,233



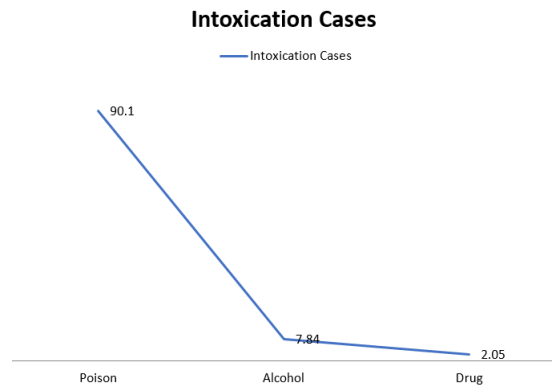
Graph No.2: Frequency percentage of Assault cases in the study period



Graph No.4: Frequency percentage Sexual Assault cases in the study period



Graph No. 3: Frequency percentage of Accident cases in the study period



Graph 5: Frequency Percentage of Intoxication cases in the study period

DISCUSSION

In the present study, total numbers of 306,406 cases were studied, reported to the emergency department of Abbasi Shaheed Hospital, civil hospital and Jinnah postgraduate medical centre from January 2007 to December 2018. Predominant cases of assault were noted, following to assault were of intoxication. Poisoning outnumber among the intoxication cases. This might be due to the easy availability of the desired substance, low cost and also awareness of the effect of the substance. There is a gradual increase in the intoxication cases with the passage of years since 2007 till 2013. The number of intoxication was also eminent in year 2014 & 2015 but there was remarkable decline in the year 2016. Repeatedly the number of intoxication cases ascent in the year 2017 and 2018. After the intoxication cases we have accident cases, RTA being the highest. As Conditions of city roads are not perfect, untrained drivers and condition of the vehicle are also the factors that contribute the number of 30,896 RTA cases among accident cases.

In the first national injury survey in Pakistan, the yearly overall incidence of injury was found to be 41 injuries for every 1,000 persons converse to the low incidence in the western world.¹⁴ RTIs have a yearly incident of 15 injuries for every 1000 individuals and take lives of

500 and hurt 12,000 people in Pakistan every year.¹⁵ This is contrary to the low incidence in England and Wales where injury rate is 6.4/100,000 residents.¹⁶ Road traffic accidents may be associated to non-existence of safety rules, horrific road infrastructure, avoidance of helmets and seat belts use, lack of implementation of traffic laws and legislations, careless, rash and negligent driving and availability of limited trauma care facilities in Pakistan.¹⁷⁻¹⁸

According to 2011 and 2010 local public health data, the annual count of firearm deaths and injuries in New York City exceeded 2000; there were 366 firearm fatalities, 999 firearm hospitalizations and 691 firearm injury emergency department visits.¹⁹ Multiple factors leading into preeminent number of assault cases could be situation of the city, increase terrorism, suicidal bomb attacks, snatching, unemployment and above all are stress factors. Due to any of these we are in exasperating life and people are ready to beat, injured or even kill someone on minute quarrels. Easy availability of object of assault contributes a lot.

Study conducted by Romana et al on 3105 medico-legal cases revealed RTA (38%) followed by physical assault (32%) and sharp weapon injury (19%).²⁰ These findings were homogenous with the study conducted at Nepal.²¹ On the contrary study conducted in UK, where

prevalence of penetrating trauma was on highest with 86.8% and firearm injuries with 13.3%.¹⁶

Talha et al recognized that amongst the medico-legal cases at Bahawalpur, blunt weapon contributed 55% while firearm cases added only 2% to the total.²² Malik et al reporting 33% blunt injuries and 4% firearm injuries in medico-legal cases at Rawalpindi.²³

Among the sexual assault medico-legal cases, we have rape and sodomy cases. Also constituted the age determination cases in both male and female. In the 12 year study period we have 5,505 rape cases and 1,318 sodomy cases. Saeed et al²⁴ revealed that maximum number of medico-legal cases had the injuries due to physical assault 717(85.66%) followed by sexual assault in 54 (6.45%) cases in one-year study period of 2012. In Pakistan, the rape rate is 16.8 per 100,000 women with 10% being gang rapes according to 2013 National Crime Data Report. Worldwide the incidence is 225 rapes per 100,000 women in South Africa, 58 rapes per 100,000 women in United States and 22,000 rapes per year in India.²⁵ In USA, 683,000 women are raped per year. This is in spite of the fact that sexual assault is the least reported of the violent crimes with only 16-39% being reported to the police.

CONCLUSION

Injuries can be prevented by proper education, awareness and training of safety standards which are required to be implemented strictly. Teaching and training facilities should be more improved for the staff which will be a benefaction for our population. Doctors who are involved in handling medico-legal cases need to be more trained.

Due to increase in violence and accidents the requisite for round the clock availability of medical experts in casualty and emergency departments to deal with the medico-legal cases is required. Emergency should be well equipped with the required equipments, antidotes, drugs and other remedies which are used for the treatment of victim especially in cases of poisoning and assault.

Providing facts about sexual abuse is one of the ways to raise awareness. Attentiveness of the facts is one of the several preventive measures that can be taken to assist you in making better decisions to keep you and someone you know safe.

Author's Contribution:

Concept & Design of Study:	Roohi Ehsan
Drafting:	M. Faiz-uddin
Data Analysis:	Wasiq Ahmed
Revisiting Critically:	Roohi Ehsan, Wasiq Ahmed
Final Approval of version:	Roohi Ehsan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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