

Template of Medico-Legal Deaths in Tertiary Care Hospital of Karachi - Two Years Autopsy Based Study

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ABSTRACT

Objective: To determine the frequency, gender and causes of medico-legal deaths autopsied at Abbasi Shaheed Hospital in Karachi.

Study Design: Retrospective study.

Place and Duration of Study: This study was conducted at the Abbasi Shaheed Hospital from January 2018 till December 2019.

Materials and Methods: This is a case study, involving the medico-legal deaths autopsied at Abbasi Shaheed Hospital. A detailed and complete autopsy was conducted in each case including both an external and an internal examination. The results were collected from the concerned authority on a structured Performa and analyzed statistically using SPSS version 15.

Results: A total 956 autopsies were conducted during the two years period at Abbasi Shaheed Hospital. Among all the causes, road traffic accidents were the most common cause of death followed by firearms, hanging, fall, electric current, other asphyxia causes and assault. Majority of the victims were male with male to female ratio of 8:1.

Conclusion: Road traffic accidents were the most common cause of death accounting for 42.25% of the total, followed by firearms which accounted for 24.5%, hanging accounted for 3.5% while fall accounted for 3.03%, electric current accounted for 2.71%, asphyxia was responsible for 2.19% of the total and assault accounted for 2.09%. The male to female ratio was 8:1 with 88.9% of victims being males. Victims belonged to the age group 21-30 years displaying the highest number (29.39%) of affection.

Key Words: Autopsy, Road traffic accident, Medico-legal deaths, Abbasi Shaheed Hospital, Karachi

Citation of article: Ehsan R, Ahmed W, Faiz-uddin M, Ahmed I. Template of Medico- Legal Deaths in Tertiary Care Hospital of Karachi - Two Years Autopsy Based Study. Med Forum 2020;31(11): 175-178.

INTRODUCTION

A medico-legal autopsy or forensic autopsy is a scientific examination of a dead body carried out under the laws of state to protect their citizens and to assist in the identification and prosecution of the guilty in cases of un-natural deaths.¹ It is an examination conducted post-mortem to address medico-legal objectives. Medico-legal autopsy acts as one of the investigative tool that helps the investigators in many ways.² Identification, determination of cause of death, time since death, manner of death, time between injury and death and to discover and recover any clue from the

body, can possibly are few of the beneficial outcomes of a medico-legal autopsy as they can connect evidence to the criminal.³

Autopsy has to be conducted by a well trained and experienced doctor in the field of Forensic Medicine/ Forensic Pathology. The investigators require some vital queries to be answered by a medical personnel like cause, manner, fatal period and time since death. The answer to these questions will be possible with a detailed and meticulous autopsy.⁴ As per the legal procedure of our country, all medico-legal deaths require an investigation by the police or magistrate and then the final resolution by the courts.⁵ It is a procedure whereby a variety of observations can be made of internal organs and systems and the material is then submitted for myriad of modern laboratory investigations and tests.⁶⁻⁷ Autopsy findings can be used as strong basis for clinical audit.⁸ There are certain conditions where no findings are found at autopsy. In our study we have mentioned 'reserved' as a cause of death in about 7.9% cases. If no cause of death is detected during an autopsy and gross and if microscopic examination, toxicological analysis and laboratory investigations all fail to reveal a cause of death, the autopsy is considered to be negative which is happens about 2-10% of the times worldwide.⁹ A poorly performed autopsy may be considerably worse than no

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Received: April, 2020

Accepted: August, 2020

Printed: November, 2020

autopsy at all. It is certainly worse than an autopsy delayed for a short while to await the arrival of a specialist.¹⁰

Previous studies in Pakistan showed that firearms have become the weapon of choice. A study from Dera Ismail Khan reported 341 medico-legal autopsies conducted over a two years period where firearms caused 59% of deaths.¹¹ Ehsan et al proclaimed 58.83% firearms medico-legal deaths in 6 years study.¹² One year case study involving the medico-legal deaths autopsied at three major mortuaries in Karachi city also revealed firearms as the most common cause of death accounting for 44.6% of the total.¹³

In the present two years study period, however, road traffic accidents (42.25%) are seen to outnumber firearms (24.5%) and other causes of medico-legal deaths autopsied. The main purpose of this study is to determine the frequency and causes of medico-legal deaths autopsied in both male and female at one of the tertiary care hospital of Karachi.

MATERIALS AND METHODS

The study includes all the cases of medico-legal deaths autopsied at Abbasi Shaheed Hospital from January 2018 to December 2019. Medico-legal injury cases and medico-legal deaths which were not reported and not autopsied were excluded.

Bodies were examined both externally and internally. Meticulous autopsy was conducted in every case in order to determine the cause of death. When 'Reserved' is the cause of death through conclusion on gross examination, specimens are sent for histopathological examination and chemical analysis wherever and whenever required, for the ascertainment of cause of death. The results were collected from the concerned department and were analyzed statistically using SPSS version 15. The frequency and percentages were calculated for all categorical variables including frequency, gender and causes of medico-legal deaths autopsied.

RESULTS

A total of 956 medico-legal deaths were autopsied during the period of January 2018 to December 2019, at Abbasi Shaheed Hospital, Karachi. Frequency of medico-legal deaths in relation to months during the study period showed that June accounts for the leading month followed by July, August, October, May, March, September, April, December, February, January and November respectively. (Table 1, Graph 1)

Males formed a significant portion of victims (88.91%) while females accounted for 11.08%. (Table 2, Graph 2)

Frequency in relation to cause of death revealed that road traffic accidents (42.25%) were the leading cause of death followed by firearms (24.5%), hanging (3.5%), fall (3.03%), electric current (2.71%), asphyxia (2.19%), assault (2.09%), cut throat (1.35%), drowning

(1.35%), poisoning (1.35%) and stab wound (1.35%) respectively. (Table 3)

Table No.1: Frequency of Medico-Legal Deaths in relation to Months

Month	Male	Female	Total (M+F) Frequency	Total (M+F) Percentage
January	57	11	68	7.11
February	59	10	69	7.21
March	69	8	77	8.05
April	67	6	73	7.63
May	74	10	84	8.78
June	93	11	104	10.87
July	83	8	91	9.51
August	87	11	98	10.25
September	68	9	77	8.05
October	79	6	85	8.89
November	52	8	60	6.27
December	62	8	70	7.32
TOTAL	788	106	956	100

Table No.2: Frequency of Medico-Legal Deaths in relation to Gender

Gender	2018	2019	2018 & 2019 (n & %)	Male: female
Male	402	448	850 (88.9%)	8:1
Female	59	47	106 (11.08%)	
Total	461	495	956 (100%)	

Table No.3: Frequency of Medico-legal deaths autopsied in relation to cause of death

Cause of death	2018	2019	2018 & 2019	age %
Road traffic accident	196	208	404	42.25
Firearm	129	106	235	24.5
Reserved	15	61	76	7.9
Hanging	21	13	34	3.5
Fall	12	17	29	3.03
Electric current	6	20	26	2.71
Asphyxia	10	11	21	2.19
Assault	11	9	20	2.09
Brought dead	12	7	19	1.98
Cut throat	6	7	13	1.35
Drowning	4	9	13	1.35
Poisoning	8	5	13	1.35
Stab wound	10	3	13	1.35
Head injury	8	2	10	1.04
Burns	2	4	6	0.62
Murder	3	3	6	0.62
Decomposed body	1	2	3	0.31
Machine injury	1	2	3	0.31
Custodial death	0	2	2	0.20
Kite thread cut	1	1	2	0.20
Sexual assault	2	0	2	0.20
Blast injury	1	0	1	0.10
Marble stone injury	1	0	1	0.10
Sharp edged injury	1	0	1	0.10
Skeletal remains	0	1	1	0.10
Still birth	0	1	1	0.10
Trauma	0	1	1	0.10
Total	461	495	956	100

Frequency of medico-legal deaths in relation to age group showed that age group who was mainly affected was 21-30 years (29.39%) of age, followed by individuals from 31-40 years (20.29%) of age and then people from 41-50 years (17.05%) of age respectively. (Table 4).

Table No.4: Frequency in relation to Age Group

Age group	2018	2019	2018 & 2019 (n & %)
1-10	28	19	47(4.91%)
11-20	69	58	127(13.28%)
21-30	146	135	281(29.39%)
31-40	82	112	194(20.29%)
41-50	73	90	163(17.05%)
51-60	32	34	66(6.90%)
61-70	15	29	44(4.60%)
71-80	4	2	6(0.62%)
81-90	1	0	1(0.10%)
91-100	0	1	1(0.10%)
Unknown	11	15	26(2.71%)
Total	461	495	956(100%)

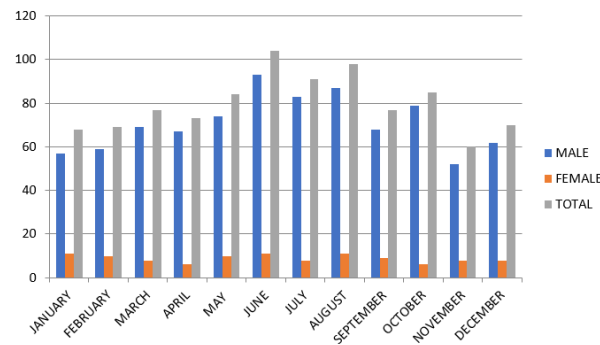


Figure No.1: Graphical representation of Frequency of Medico-Legal Deaths in relation to Months

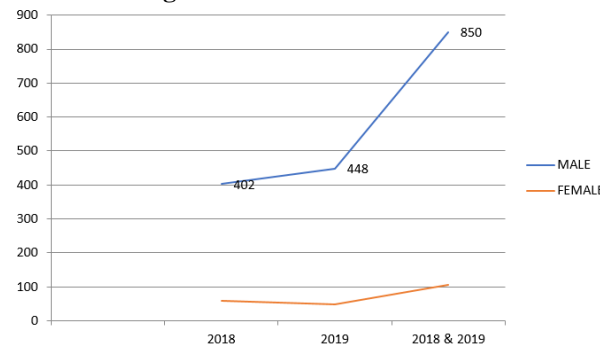


Figure No.2: Graphical representation of Frequency of Medico-Legal Deaths in relation to Gender

DISCUSSION

In the present study 956 medico-legal deaths were autopsied at Abbasi Shaheed Hospital, Karachi, during January 2018 to December 2019. In the year 1997, total of 215 medico-legal deaths were reported from Rawalpindi.¹¹ A Similar study of medico-legal

autopsies during the year 2002 in Peshawar reported the number of 662.¹⁴ Generally other cities of Pakistan reported nearly 600 cases autopsied per year.¹⁵ Autopsy based 6 years study of medico-legal deaths at Abbasi Shaheed Hospital showed that the cases autopsied were 1131, 1140, 1142, 700, 494 and 524 in the year 2012, 2013, 2014, 2015, 2016 and 2017 respectively.¹² Our present study shows that the rate of medico-legal deaths autopsied declined in the year 2018 and 2019 reflecting efficient measures took in the implementation of law and order in these years which resulted in a decrease in crime within Karachi city. Internationally, over a period of five years, Malaysia reported 2,762 medico-legal autopsies.¹⁶

Previous similar studies conducted within Pakistan showed a major fraction of deaths due to firearms. A two years study from Bhawalpur showed that firearms accounted for 44.1%, of the total cause of death.¹⁷ A Study from Larkana reported firearms to account for 46% of the total causes during 1998.¹⁸ In Nigeria at Kano Teaching Hospital, 12.5% fatality was reported as a result of firearm injuries.¹⁹ Contradictory to previous studies in Pakistan, in our study road traffic accidents outnumber all other causes of medico-legal deaths autopsied. This finding favours the improvement in the law and order of the Karachi city. Nearly 1.2 million road traffic accidents death occur globally each year as reported by WHO.²⁰ In Assam, India from January 1999 to December 2003, 23.84% medico-legal autopsies were of road traffic accident victims.²¹ Causes of increasing road traffic accidents are multiple which include cell phone use while driving, driving under influence of drug of addiction, over speeding, rough uneven roads and not obeying the traffic rules.

Majority of the medico-legal deaths in this study belonged to a young age group that falls between 21-30 years (29.39%) followed by 31-40 years (20.29%) of age. Mirza et al in a study of medico-legal deaths declared 47.3% of the deaths from the age group of 19 to 32 years. Mostly 88.8% bodies were of male with male to female ratio was 9:1.¹³ However, in our study 88.9% bodies autopsied were of male with male to female ratio of 8:1.

CONCLUSION

A Road traffic accident surpasses/outnumber the other causes of medico-legal deaths autopsied. Measures should be taken to improve the infrastructure of the city and conditions of the roads. There was a male dominancy pattern seen in the study. Majority of the victims belonged to a young age group. Due to the improvement in the law and order of the city, we have seen that firearm deaths have declined and the overall frequency of medico-legal deaths autopsied has decreased.

Author's Contribution:

Concept & Design of Study: Roohi Ehsan
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 Revisiting Critically: Roohi Ehsan, M. Faiz
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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