

Pattern of Medico-Legal Deaths at Abbasi Shaheed Hospital Autopsy Based 6 Years Study

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ABSTRACT

Objective: To determine the frequency, sex, and cause of death in medico-legal autopsies conducted at Abbasi Shaheed Hospital.

Study Design: Determination / analytic study.

Place and Duration of Study: This study was conducted at the Abbasi Shaheed Hospital from January 2012 till December 2017.

Materials and Methods: A 6 years case study involving the medico-legal deaths autopsied at Abbasi Shaheed Hospital. Bodies were first examined externally and then internally by dissection of body cavities. The results were collected on a structured proforma from the respective institution and were statistically analyzed using SPSS version 15.

Results: Out of a total of 5131 autopsies conducted during the period of study in Abbasi Shaheed Hospital, firearm injuries were the most common cause of death followed by road traffic accident, asphyxia, assault, burn, police encounter, explosion, poisoning, fall, electrocution and others. Majority of victims being male with male to female ratio of 10:1.

Conclusion: Frequency in relation to cause of death & autopsied revealed firearms injury accounting for 58.83% deaths followed by road traffic accident at 19.78%, asphyxia at 4.78% and assault at 3.73%.

Key Words: Medico-legal, Autopsy, Abbasi Shaheed Hospital, Karachi, Firearm Injury

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INTRODUCTION

The word Autopsy, Necropsy and Postmortem examination are synonymous. The term "Autopsy" originates from ancient "Autopsia" which is derived from "Autos", i.e. Self and "Opis" i.e. to see for oneself. "Autopsia" means "seeing with one's own eyes".¹

Autopsy entails examination of the dead body with a glimpse of penetrating primarily for the cause of death. Autopsy has to be chaperon by a well trained and experienced doctor in the terrain of Forensic Medicine/ Forensic Pathology in all cases of sudden, suspicious and unexpected deaths particularly those resulting due to violence.² The Cause of death for legal purpose can only be inclined by the autopsy surgeon who is licit to perform the medico-legal autopsies under his perquisite as a registered medical practitioner and can give affirmation at any inquest.³

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This study focused on medico-legal autopsy as hospital autopsy is not common in our country. It is more than 700 years, since the first medico-legal autopsy was toted out in Bologna.⁴ The number and array of medico-legal deaths has inflated tremendously in recent years in relation to an increase in crime.⁵ However our six years study shows an initial rise in the first three years and then a decline in the number of medico-legal autopsies in the later three years. As per legal procedure of our country, all medico-legal deaths have a need to be investigated by the police/ magistrate and a final resolution by the courts.⁶ The investigators require some cardinal dubiety to be answered by a medical man like cause, manner, fatal period and time since death. The answer of this particular catechism is only achievable with an unfolded and meticulous autopsy.⁷ Such autopsies as per rule are conducted at mortuaries christen by the Provincial government and by a Prosecutor, nominated by the Health Department, known as an Authorized medical officer.⁸ Sometimes deceased are buried as per routine liturgy without any umbrage of suspicion, but cause of death at later stage becomes controversial, requiring resolution and becomes a cause of concern for police. The investigators request for disinterment of the grave and conduction of autopsy on exhumed bodies.⁹

The WHO recommended a verbal autopsy tool currently being utilized in resource-constrained settings for the cause of death surveillance.¹⁰ Verbal autopsy connote conducts a standardized interview with the family of deceased and interprets the data amassed in

order to construe a possible cause of death.¹¹ Musing in Pakistan show that among all medico-legal deaths autopsied, firearms have become the weapon of choice. A cramming from Dera Ismail Khan District reported 341 medico legal autopsies conducted over the years 2007 and 2008, where firearms caused 59% of the homicidal death.¹² Hussain et al proclaimed 633 medico-legal autopsies escorted in Peshawar during 2004.¹³ The preeminent purpose of this study is to persuade the frequency and causes of medico legal autopsies at Abbasi Shaheed Hospital, Karachi.

MATERIALS AND METHODS

This study covers the period from January 2012 to December 2017 which includes all the cases of medico-legal deaths autopsied at Abbasi Shaheed Hospital. A detailed study was conducted to determine the cause of death. The external examination followed by internal examination in accordance with the adopted Robert Virchow's technique. Findings were noted as per study design and cause of death given by gross examination, chemical examination and histo-pathological examination. Conventional X-rays and CT Scans were done whenever and wherever required. Results were collected from the institution records and were statistically analyzed using SPSS Version 15. The frequency and percentages were calculated for all categorical variables including frequency, gender and cause of medico-legal deaths.

RESULTS

A total of 5131 medico-legal autopsies were reported and autopsied during the study period at Abbasi Shaheed Hospital, Karachi. Medico-legal deaths autopsied were 1131, 1140, 1142, 700, 494 and 524 in the year 2012, 2013, 2014, 2015, 2016 and 2017 respectively. (Table 1)

Frequency in relation to cause of death revealed firearm injuries to account for leading number of deaths (58.83%) followed by road traffic accidents (19.78%), asphyxia (4.78%), assault (3.73%), thermal injuries (3.7%), police encounter (2.16%), explosives (1.71%), fall (1.18%), poison (1.16%) electrocution (1.09%) and others (1.8%) respectively (Table 2) representing frequency and percentage in relation to cause of death respectively).

The frequency of cause of medico-legal deaths in relation to years during the study period of 2012 – 2017 shows that in the first three years the total number of cases are higher which then reduced in number in the next three years of the study (Table 3).

Frequency of medico-legal deaths in relation to months during the study period shows that September accounts for the leading month followed by May, January, July, February, April, March, August, June, November, December and October (Table 4).

Gender distribution shows that males formed a significant fraction of the 4671 victims but females account for only 460 of the cases. This shows male dominance (Table 5).

Table No.1: Total number of medico-legal deaths autopsied (2012 – 2017)

Year	Number of medico-legal death autopsied
2012	1131
2013	1140
2014	1142
2015	700
2016	494
2017	524

Table No.2: Total frequency and percentage of cause of medico-legal deaths

Cause of Death	Frequency	Percentage %
Firearm injury	3019	58.83
Road traffic Accident	1015	19.78
Asphyxia	247	4.81
Assault	194	3.78
Burn/Thermal	190	3.7
Police encounter	111	2.16
Explosives/Blast	88	1.71
Fall	61	1.18
Poison	60	1.16
Electrocution	56	1.09
Others	90	1.8
Total	5131	100

Table No.3: Frequency of cause of medico-legal deaths in relation to year during the study period

	2012	2013	2014	2015	2016	2017
Firearm injury	690 (61%)	798 (70%)	797 (69.7%)	371 (53%)	173 (35%)	190 (36.2%)
Road traffic accident	188(1 6.2%)	143(1 2.5%)	162(1 4.1%)	165(2 3.5%)	180(3 6.4%)	177(3 3.7%)
Asphyxia	50(4. 4%)	68(5. 96%)	31(2. 7%)	26(3. 7%)	26(5. 26%)	46(8. 7%)
Assault	30(2. 6%)	29(2. 5%)	45(3. 9%)	21(3 %)	41(8. 2%)	28(5. 3%)
Burn	124(1 0.9%)	5(0.4 3%)	24(2. 1%)	5(0.7 1%)	5(1.0 1%)	27(5. 1%)
Police encounter	–	–	6(0.5 2%)	63(9 %)	30(6. 07%)	12(2. 2%)
Explosives/Blast	11(0. 97%)	48(4. 2%)	13(1. 1%)	10(1. 42%)	3(0.6 0%)	3(0.5 7%)
Fall	14(1. 23%)	16(1. 4%)	7(0.6 1%)	9(1.2 8%)	7(1.4 %)	8(1.5 %)
Poison	9(0.7 9%)	17(1. 49%)	19(1. 66%)	11(1. 57%)	3(0.6 0%)	3(0.5 7%)
Electrocution	6(0.5 3%)	11(0. 96%)	12(1. 05%)	8(1.1 4%)	6(1.2 1%)	13(2. 4%)
Others	9(0.7 9%)	5(0.4 1%)	26(2. 25%)	11(1. 56%)	20(4. 02%)	17(3. 24%)
Total	1131	1140	1142	700	494	524

Table No. 4: No. of medico-legal deaths in relation to months during the study period

Months	No. of Male cases	No. of Female cases	Total
January	437	70	507
February	423	36	459
March	383	33	416
April	405	24	429
May	447	34	481
June	364	35	399
July	424	27	451
August	373	52	425
September	519	36	555
October	280	31	311
November	318	36	354
December	298	45	343

Table No.5: Medico-legal deaths in relation to gender during the study period (2012-2017)

Gender	Total no. of cases	Male to Female Ratio
Male	4671	10:1
Female	460	

DISCUSSION

In this study 5131 medico-legal deaths were autopsied at one of the tertiary care hospital of Karachi City "Abbasi Shaheed Hospital" during the period of January 2012 to December 2017. A study from Rawalpindi reported a total of 215 medico legal deaths followed by autopsy during the year 1997.¹² Marri et al reported 662 medico- legal autopsies in Khyber Medical College, Peshawar during 2002.¹⁴ In other cities of Pakistan nearly 600 cases are autopsied per year.¹⁵ Yousfani et al reported 697 medico legal autopsies conducted during the period of January 2006 to December 2008.¹⁶

From this 6 years study we have observed that the cases autopsied were 1131, 1140, 1142, 700, 494 and 524 in the year 2012, 2013, 2014, 2015, 2016 and 2017 respectively.(Table 1). A study from Kuala Lumpur, Malaysia reported a total of 2,762 medico-legal autopsies conducted over a period of five years.¹⁷ Our study shows that the number of autopsies in the initial 3 years of study was higher and in the next 3 years there was a general decline in the number of cases but an increase in the police encounter cases seen in the years 2015, 2016 and 2017. However a decline of firearm cases is seen in these 3 years which favors the efficient measures taken to decrease the rapidly growing crime within the city and better develop the law and order situation of the Karachi City.

This study reported firearms to account for majority of the causes of deaths i.e. 58.83%. Death by firearms whether homicidal, suicidal, or accidental is above all other causes at international, national as well as at local

level. A study from England and Wales reported firearms to account for less than 10% of homicide and less than 5% of suicides in man and is most unusual in woman.¹⁸ In Australia, firearm deaths comprise of 7.3% of all Injury deaths.¹⁹ In Nigeria, four years study, 1999-2002 at Kano Teaching Hospital shows 12.5% fatality by firearm injuries.²⁰ Within Pakistan majorly deaths occur due to firearms. A two year study in Bahawalpur from January 01, 1997 to December 31, 1999 showed death by firearms as 44.1%.²¹

Road Traffic deaths autopsied (19.78%) second to firearms in our study. In Assam, India from January 01, 1999 to December 31, 2003, out of a total of 7,852 medico-legal autopsies, 1872 (23.84%) were of road traffic accident victims.²² Generally causes of road traffic deaths include cell phone use by drivers, eating while driving, driving under influence of alcohol, over speeding, recklessness, rough roads, under age drivers and failure to follow the traffic laws.

Most of the bodies autopsied were of male. In most of the studies, including our study the male to female ratio appears higher 10:1. This might be due to violence, aggressiveness, involvement in different conflicts that develop a male towards becoming a victim or a murderer.

CONCLUSION

In relation to cause of death in medico-legal deaths autopsied in the study, it was revealed that firearm injuries outnumber the other causes followed in descending order as road traffic accidents, asphyxia, assault, burns and other cases respectively. We also observed the male dominancy in the study. Due to the betterment of law and order in the city frequency of medico-legal deaths autopsied has decreased in later years of the study.

Author's Contribution:

Concept & Design of Study: Roohi Ehsan
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REFERENCES

1. Rothenberg K. The Autopsy through History. In: Embar-seddon A, Pass AD, editors. Forensic Science. Ipswich MA: Salem Press;2008.p.100.
2. Qasim AP, Awan ZA, Ansari AJ. Critical Appraisal of Autopsy Work. APMC 2016;10(4): 194-202.

3. Parikh CK. Parikh's Text Book of Medical Jurisprudence & Toxicology; 5th ed. 1990.p114, 385, 551, 582-3.
4. Vij K. Textbook of Forensic Medicine and Toxicology, Principles and Practice. 5th ed. 2011.p.17
5. Mirza FH, Hassan Q, Naz R, Khan M. Spectrum of Medico-legal Deaths in Metropolis of Karachi: An Autopsy Based Study. Pak J Med Dentist 2013;2(4): 4-9.
6. Asgher A. Information to the police and their powers to investigate. The Code of Criminal Procedures 1898. 4 ed. Karachi: Pioneer Book House; 2004.p.84-7.
7. Joseph HD. Medicolegal death investigation. In: Dolinak D, Matshes E, Lew E's Forensic pathology; principles and practice. Oxford: Elsevier Academic Press; 2005.p.1-64
8. Memon MU, Khalil ZH, Aziz K, Kaheri GQ, Khalil IR. Audit of cases autopsied in the mortuary of Khyber Medical College Peshawar during the year 1999. Ann King Edward Med Coll 2001; 7(3): 190-193.
9. Awan NR. Autopsy and exhumation, In: Awan NR's principles and practice of forensic medicine. Lahore: M Istiaq Printers;2009.p.130.
10. World Health Organization. Verbal Autopsy Standards: Ascertaining and attributing causes of death [http://www.who.int/healthinfo/statistics/verbalautopsystandards/en%5D.
11. Burton JL, Underwood J. Clinical, educational, and epidemiological value of autopsy. Lancet 2007;369(9571):1471-80.
12. Mian AR, Majid A, Malik MM, Zaheer M, Gorava SU. Analysis of unnatural death in Rawalpindi during 1997. Pak Armed Forces Med J 1999; 49(1):68-70.
13. Hussain Z, Shah MM, Afridi HK, Arif M. Homocidal deaths by firearms in Peshawar: an autopsy study. J Ayub Med Coll Abbottabad 2006;18(1):44-47.
14. Marri MZ, Bashir Z, Munawar AZ, Khalil ZH, Khalil IU. Analysis of homicidal deaths in Peshawar, Pakistan. J Ayub Med Coll Abbottabad 2006; 18(4):30-33.
15. Memon MU, Khalil ZH, Aziz K, Kaheri GQ, Khalil IR. Audit of cases Autopsied in the Mortuary of Khyber Medical College Peshawar during the year 1999. Ann King Edward Med Uni 2001;9:190-3.
16. Yousfani GM, Memon MU. Spectrum of Unnatural Deaths in Hyderabad: An Autopsy Based Study. J Dow Univ Health Sci 2010;4(2):54-57.
17. Kumar V, Li AK, Zaniat AZ, Lee DA, Salleh SA. A study of homicidal deaths in medico-legal autopsies at UMMC, Kuala Lumpur. J Clin Forensic Med 2005;12(5):254-257.
18. Chapman J, Milroy CM. Firearm deaths in Yorkshire and Humberside. Forensic Sci Int 1992;57(2):181-191
19. Harrison J, Moller J, Bordeaux S. Injury by firearms Australia 1994. [Online] 1996 [cited 2009 Mar 11] Available from- <http://www.nisu.flinders.edu.au/data/phonebook/queries/guninjuries94.php>.
20. Ochicha O, Muhammad AZ, Nwokedi EE, Umar AB. A review of medico-legal deaths in Kano. Niger Postgrad Med J 2003;10(1):16-18.
21. Ali SMA, Rizvi SI, Ali MA, Chaudry TH. Weaponry patterns in the homicidal deaths in Bahawalpur. The Professional 2000;7(4):514-516.
22. Singh YN, Bairagi KK, Das KC. An epidemiological study of road traffic accident victims in medicolegal autopsies. JIAFM 2005; 27(3).ISSN 971-973.