

Spectrum of Medico-legal Deaths in Metropolis of Karachi: An Autopsy Based Study

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ABSTRACT

Background: The number and variety of medico-legal deaths has inflated tremendously in the recent years in relation to acts of terrorism using explosive material and street crimes which often result in tragic death.

Objectives: To determine the frequency, causes and manners of medico-legal autopsies at three major mortuaries in Karachi.

Methods: A case study, involving the medico legal deaths autopsied at three major mortuaries in Abbasi Shaheed Hospital, Jinnah Postgraduate medical center and Civil Hospital, from March 01, 2008 to February 28, 2009. A detailed autopsy was conducted in each case to determine the cause of death. The bodies were first examined externally followed by dissection of body cavities in accordance with Robert Virchow's technique. The results were collected from the respective institutions on a structured performa and were statistically analyzed using SPSS version 15. The Mean \pm SD was calculated for age.

Results: Out of total 2,090 autopsies conducted during the period of study, 98.7% of the deaths were found to be due to unnatural causes. Homicides accounted for 54% of the deaths where as 39.3% were accidental deaths. Firearms were the most common cause of deaths (44.6%), followed by road traffic accidents (27.7%). Male to female ratio was 9:1 with 88.8% of the victims being males. Majority of the victims belonged to age group 19-32 years (47.3%).

Conclusion: Homicides were the most common manner of death (54%), followed by accidents (39.3%). Frequency in relation to cause of death revealed firearm injuries accounting for 44.6% deaths followed by road traffic accidents (27.8%).

KEY WORDS: *Autopsies, Medico legal Deaths, Karachi, Homicides, Firearm Injury.*

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INTRODUCTION

A medico-legal autopsy or postmortem examination is a special type of scientific examination of a dead body carried out under the laws of the State mainly for the protection of its citizens and to assist the identification and prosecution of the guilty in cases of unnatural deaths.¹

The spectrum of medico legal deaths include all unnatural deaths whether homicidal, suicidal or accidental and suspicious deaths. Further, deaths in state custody, mental asylums and natural deaths occurring under such circumstances, require investigation under the law of the land.

The number and variety of medico legal deaths has inflated tremendously in the recent years in relation to increase in crime. Added to this list are the deaths as a result of acts of terrorism using explosive material, where more fatalities occur in a single event. Street crimes such as snatching often result in tragic death, if resisted.

The factors leading to increased frequency of medico legal deaths are day-to-day worries of domestic and financial nature, unemployment, poverty, overall intolerance in the society, disparity of availability of basic human needs of food and shelter, injudicious distribution of wealth, over ambitious nature of a person, drug addiction and terrorism having political or religious agenda. Emotional factors like revenge, rage, jealousy and honour still prevail.

Sudden, unexpected and violent deaths are uniquely important as they also require bi-faceted approach by medical as well as legal authorities. Medical interest lies in accurate establishment of the nature of fatal disease or injury and correlation of this information with the circumstances surrounding death.

As per legal procedure of our country, all medico legal deaths require investigation by the police/magistrate and final resolution by the courts.² The investigators require some vital queries to be answered by a medical man like cause, manner, fatal period and time since death. The answer of these questions is only possible with a detailed and meticulous autopsy.³

Such autopsies as per rule are conducted at mortuaries designated by the provincial government and by a prosecutor, nominated by the Health department, known as Authorized medical officer.⁴

Sometimes the deceased are buried as per routine ritual without any shadow of suspicion, but cause of death at a later stage become 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 bodies⁵ that is conducted by a board of specialists in which the writer also acts as one of the members. This specialized procedure is under the orders and supervision of Judiciary.

Unnatural deaths are further subdivided in to homicidal, suicidal and accidental. In our country, the highest ratio is of homicidal deaths. Homicide designates killing of one human being by another, while suicide means ending one's own life, accident include deaths due to negligence by a person himself or by others without any criminal intention.

Studies in Pakistan show that firearms have become the weapon of choice. A study from Dera Ismail Khan District reported 341 medico legal autopsies conducted over two years 2007 and 2008, where firearms caused 59% of the homicidal deaths.⁶ Hussain et al reported 633 medico legal autopsies conducted in Peshawar during 2004.⁷ This study will help the law enforcement agencies to understand the exigency of their responsibility, along with emphasizing the counteractive measures required to lessen the frequency of such abhorrent manners of deaths.

The main aim of this study is to determine the frequency, causes and manners of medico legal autopsies at three major mortuaries in Karachi

METHODOLOGY

This was a case study covering the period of one year from March 01, 2008 to February 28, 2009. Study includes all the cases of medico-legal deaths submitted for autopsy during the study period at Civil Hospital, Jinnah Postgraduate Medical Center and Abbasi Shaheed Hospitals. Sampling technique administered was Non probability convenient sampling. All medico-legal autopsies conducted

during the study period were included. All the medico-legal deaths which were not autopsied were excluded. Also, the dead bodies submitted by police with a requisition for partial / external post mortem examination were excluded from this study.

A detailed autopsy was conducted in each case to determine the cause of death, under the supervision of the first author. The bodies were first examined externally followed by dissection of body cavities in accordance with Robert Virchow's technique. In case of firearm fatalities, track followed by the projectile was traced. Findings were noted as per study design.

In cases where no cause of death was concluded on gross examination, representative tissues were taken for histopathology to Department of Pathology, Dow Medical College, Karachi. Toxicological analysis of viscera was done at the laboratory of Chemical Examiner to the Government of Sindh. Conventional X-Rays and CT Scans were done in the Department of Radiology of the respective center, whenever required, for the ascertainment of cause of death. The results were collected from the respective institutions and were statistically analyzed using SPSS version 15. The mean \pm SD was calculated for age. The frequency and percentages were calculated for all categorical variables including gender, causes and manner of medico-legal deaths along with causative agent.

RESULTS

A total of 2090 medico-legal deaths were reported and autopsied during the study period. Majority of the cases were reported from Jinnah Postgraduate Medical Center (n=831, 39.8%), while 768(36.7%) reported from Abbasi Shaheed Hospital and 491(23.5%) from Civil Hospital. Identification was made in majority of the cases (n=1593, 76.2%) while 497 (23.8%) cases were unknown.

Homicides were the most common manner of death comprising 54% of the cases, followed by accidents (n=822, 39.3%) as shown in Table 1.

Frequency in relation to cause of death revealed firm arm injuries to account for leading number of deaths (n=933, 44.6%) followed by road traffic accidents (n=581, 27.8%) Table 2.

Gender wise distribution shows that males formed a significant fraction of the victims (n=1856, 88.8%) while females account for 11.2% of the cases (n=234). Age group mostly involved was 19-32 years (47.3%) as shown in Table 3.

Month wise distribution showed that majority of the deaths occurred in month of March 2008 i.e. 208 (10%) Table 4.

Table 1: Frequency of Medico-legal Deaths in Relation to Manner of Death

Manner	Frequency	Percentage
Homicide	1129	54.02%
Accident	822	39.33%
Suicide	111	5.31%
Natural	28	1.34%
Total	2,090	100.00%

Table 2: Frequency of Medico-legal Deaths in Relation to Cause of Death

Cause	Frequency	Percentage
Firearm injuries	933	44.641%
Road Traffic Accidents	581	27.799%
Stab wounds	67	3.206%
Assault with Hard and Blunt object	60	2.870%
Fire Burns	61	2.919%
Railway tract accidents	56	2.679%
Hanging	54	2.584%
Drowning	48	2.297%
Fall from height	45	2.153%
Electrocution	33	1.579%
Strangulation	24	1.148%
Coronary artery disease	23	1.100%
Organophosphate poisoning	19	0.909%
Cut Throat	19	0.909%
Infanticide	17	0.813%
Heroin poisoning	12	0.574%
Throttling	12	0.574%
Building collapse	07	0.335%
Smothering	03	0.144%
Decapitation	05	0.239%
Alcohol intoxication	02	0.096%
Barbiturate poisoning	02	0.096%
Bomb blast	01	0.048%
Hepatic Encephalopathy	01	0.048%
Post partum sepsis	01	0.048%
Peptic ulcer disease	01	0.048%
Tuberculosis	01	0.048%
Ulcerative Colitis	01	0.048%
Machinery accident	01	0.048%
Total	2090	100.000%

Table 3: Frequency of Medico-legal Death in Relation to Age Group

Age group	Frequency	Percentage
18 years and below	228	11%
19-32 years	990	47.3%
33-50 years	650	31.1%
51 years and above	222	10.6%
Total	2,090	100.0%

Table 4: Frequency of Medico-legal Death in Relation to Months

Month	Frequency	Percentage
March 2008	208	10.0%
April 2008	161	7.7%
May 2008	194	9.3%
June 2008	176	8.4%
July 2008	169	8.1%
August 2008	172	8.2%
September 2008	144	6.9%
October 2008	196	9.4%
November 2008	198	9.5%
December 2008	155	7.4%
January 2009	171	8.2%
February 2009	146	6.9%
Total	2,090	100.0%

DISCUSSION

Our study reported 2,090 medico-legal deaths in Karachi during the study period. Yearly record as declared by the Police Surgeon, Karachi, pertaining to various medico legal centers of the city reported 1,864 medico legal deaths brought for autopsy during 2006 while in 2007, 1,979 cases were referred. Thus the frequency of medico legal deaths is gradually increasing. This can be attributed to the deteriorating law and order situation with the passage of years, being a prime factor.

A study from Rawalpindi reported a total of 215 medico legal deaths followed by autopsy during the year 1997.⁸ Marri et al reported 662 medico legal autopsies in Khyber Medical College, Peshawar during 2002.⁹

A study from Kuala Lumpur, Malaysia reported a total of 2,762 medico-legal autopsies conducted over a period of five years¹⁰, while our study reported 2,090 medico-legal deaths within a period of just one year. Thus this shows that the current trend in the major metropolis of Karachi is remarkably higher and efficient measures are required to decrease the rapidly growing crime within the city.

Homicides form the major fraction of manner of deaths in our study (54%) indicative of extreme violence. The increasing frequency of such violent deaths leads our attention towards the developing sense of frustration and lack of tolerance, indicative of mental disturbances in individuals.¹¹ In Pakistan, various studies have been conducted to analyze the homicidal deaths. A study from Dera Ismail Khan District reported homicides to account for 75% of all the medico legal autopsies during 2007 and 2008.⁶

A study from Faisalabad reported a total of 188 cases of homicidal deaths brought for autopsy during July 2001 to June 2002.¹² Ahmad et al carried out a 5-year study in Karachi from 1996-2001 and reported rise in homicidal deaths in each district of Karachi.¹³ A study from Delhi, India reported that homicidal deaths constituted only 5% of all the medico-legal deaths autopsied.¹⁴ Thus, the ratio of the medico-legal deaths is continually shifting towards homicides in our population. The law enforcement agencies are required to undertake strict measures to lessen and terminate the loss of innocent lives.

This study also reported firearms to account for majority of the causes of deaths (n=933, 44.6%). The frequency of homicides by firearms is increasing at alarming levels at the international, national as well as local level. However, it is much more developing in Pakistan than in the international scenario. A study from England and Wales reported fire arms to account for less than 10% of the homicide and less than 5% of suicides in man and is most unusual in woman.¹⁵ In Australia firearm deaths comprise 7.3% of all injury deaths.¹⁶ In Nigeria a study conducted over a period of four years (January 1999 to December 2002) at Kano Teaching hospital show 12.5% fatality by firearm injuries.¹⁷

The studies conducted within Pakistan show a major fraction of deaths due to firearms. A two year study in Bahawalpur from January 1, 1997 to December 31, 1999 showed incidence of homicidal deaths by firearm injuries as 44.1%.¹⁸ A study from Larkana reported firearms to account for 46% of the total homicides during 1998.¹⁹

Road traffic accidents overshadow all other causes of death due to blunt trauma and are second only to deaths due to firearms in this study of medico-legal deaths (n=581, 27.8%).

In Assam, India from January 1, 1999 to December 31, 2003, out of total 7,852 medico legal autopsies, 1,872 were road traffic accident victims (23.84%)²⁰, which is almost similar to our study.

The causes of road traffic accidents vary from region to region as in western countries the accidents are attributed to various factors such as Cell phone use, changing CD/Radio, eating while driving, rubbernecking, under influence of alcohol, driver's distraction, speeding, recklessness and shoddy road maintenance. In Karachi one of the leading causes is increase in number of vehicles due to easy availability through various bank schemes beside over speeding, overtaking, poor condition of roads, motorbike misadventures by the youth, under age drivers, racing and competition in public transport vehicles, and above all failure to implement road safety laws strictly.

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Majority of the medico-legal deaths in our study belonged to the young age group of 19 to 32 years (47.3%). Also, 88.8% of the 2090 deaths were males. The tremendous amount of violence and aggression present within young males is the reason for such a high ratio of deaths falling in this particular age group and gender. Thus, proper counseling is required of all those individuals that might involve themselves in conflicts and might lead to becoming a victim or a murderer.

CONCLUSION

Homicides were the most common manner of death comprising 54% of the cases, followed by accidents 39.3%. Frequency in relation to cause of death revealed fire arm injuries accounting for 44.6% deaths followed by road traffic accidents in 27.8%.

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