

ORIGINAL ARTICLE

Profile of medicolegal autopsies in Pekanbaru, Indonesia 2007-2011

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Abstract

Medicolegal autopsy should be carried out for all unnatural deaths to ascertain facts pertaining to death. A retrospective 5-year study was carried out by the Forensic Medicine and Medicolegal Department, Faculty of Medicine, University of Riau to describe the profile of medicolegal autopsies in Pekanbaru, Indonesia. There were 613 unnatural deaths and 73 (11.9 %) medicolegal autopsies recorded between 2007 and 2011. The number of unnatural deaths showed a decreasing trend whereas the number of medicolegal autopsies increased over the years. The percentage of unnatural deaths subjected to medicolegal autopsy varied between 2.2 % and 23.1 % per year.

Of the 73 medicolegal autopsy subjects, 68.5% ($n = 50$) were male and 31.5% ($n = 23$) females. The ages of victims ranged from newborn babies to 72 years, with a median of 28 years. 61.6 % of cases were in the 20-39 years age-group. Sixty (82.2 %) had unnatural deaths. The leading cause of death was blunt force (30.1%) and sharp force (20.5 %). Homicide was the predominant manner of death. Our study highlights that the main interest of the police in requesting a medicolegal autopsy is for investigation of homicide. Recognizing that autopsy has an important role in the investigation of unnatural deaths, further studies should be carried out to understand the factors that impact on the low percentage of medicolegal autopsies in unnatural deaths, so that solutions may be found for the future.

Keywords: medicolegal autopsy, cause of death, manner of death

INTRODUCTION

All cases of unnatural death are subjected to an inquest. A medicolegal autopsy should be carried out to determine cause of death and manner of death, to establish the identity of the deceased, to determine time since death, and to collect trace evidence and reconstruction of the crime scene.¹ By Indonesian law, a medicolegal autopsy can only be performed by request from a police investigator.² A medicolegal autopsy will be required in criminal offence cases, when the death poses aspects of interest to the police, if the manner of death is unknown and if it is necessary to prevent later suspicion.³

Autopsy is the scientific examination of bodies after death, where the whole surface of the body as well as all body cavities and organs are explored and findings recorded. While doing so, all the possible findings are collected to help in establishing the circumstances leading to

the death and also may help the law enforcing agencies.⁴ The objective of this study was to describe the profile of medicolegal autopsy as well as the distribution of autopsies by basic data such as age, sex, cause of death and manner of death in Pekanbaru, Indonesia. Pekanbaru is the capital city of the Riau Province. It is a typical inland city. It is the third most populous city in Sumatra Island with a population of about 900,000 based on the 2010 census. Similar to other big cities in Indonesia, Pekanbaru is highly urbanized. The population is composed mainly of Riau Malays natives, with Minangkabau, Javanese, Batak and Chinese Indonesian as other ethnic groups.

MATERIALS AND METHODS

This retrospective 5-year study was carried out at the Forensic Medicine and Medicolegal Department, Faculty of Medicine, University of

Riau. The medicolegal autopsies were performed at the Arifin Achmad Hospital and Bhayangkara Hospital, Pekanbaru. Both hospitals are teaching hospitals of the Faculty of Medicine, University of Riau and central hospitals for medicolegal autopsies in Pekanbaru. All relevant data from 1st January 2007 to 31st December 2011 were obtained from the medicolegal autopsy reports, police inquest papers, chemistry analysis results, histopathological finding and hospital registration forms with emphasis on determining cause and manner of death. During this five-year-period, a total of 73 medicolegal autopsies were performed. Information regarding number of unnatural deaths and number of medicolegal autopsies was obtained from the hospital register. Medicolegal reports were studied for information about age, sex and cause of death. The manner of death, whether homicidal, accidental or suicidal, was determined with the help of accompanying police documents.

RESULTS

There were 613 unnatural deaths and 73 (11.9 %) medicolegal autopsies recorded between 2007 and 2011. The number of unnatural deaths showed a decreasing trend whereas the number of medicolegal autopsies increased over the years. The medicolegal autopsy rate, or percentage of unnatural deaths subjected to medicolegal autopsy varied between 2.2 % and 23.1 % per year (Figure 1).

Of the 73 medicolegal autopsy subjects, 68.5 % (n = 50) were male and 31.5 % (n =

23) females. The ages of victims ranged from newborn babies to 72 years, with a median of 28 years. The largest age-groups were between 20-29 years and 30-39 years. The age-group of 20-39 years comprised 61.6 % of cases (Table 1).

Sixty victims (82.2 %) subjected to medicolegal autopsies had unnatural deaths. The leading cause of death was blunt force (30.1%) and sharp force (20.5 %) (Table 2). Homicide was the predominant manner of death. Four from 9 cases (44.4%) in the 0-9 years age-group were accidental due to carbon monoxide poisoning. One child, together with his parents was the victim of a house fire. Three children, with both parents were found in their car. They were classified as accidental deaths from police investigations.

DISCUSSION

In our study, the percentage in unnatural deaths subjected to medicolegal autopsy varied between 2.2 % and 23.1 %. This rate is much lower than in the United States (50 %),⁵ Sweden (85 %)⁶ and Cape town (74.4%).⁷ These differences may be affected by local culture and religion of the victim’s family pertaining to understanding of the importance of autopsy⁸, and may also be ascribed to differences in legislation and aspects of interest among police investigators.^{3,8}

In this study, the subjects of medicolegal autopsies were predominantly male, which was similar to other studies.^{3,7,9,10} Almost all age-groups were represented with the majority being middle-aged adult persons (20-39 years).

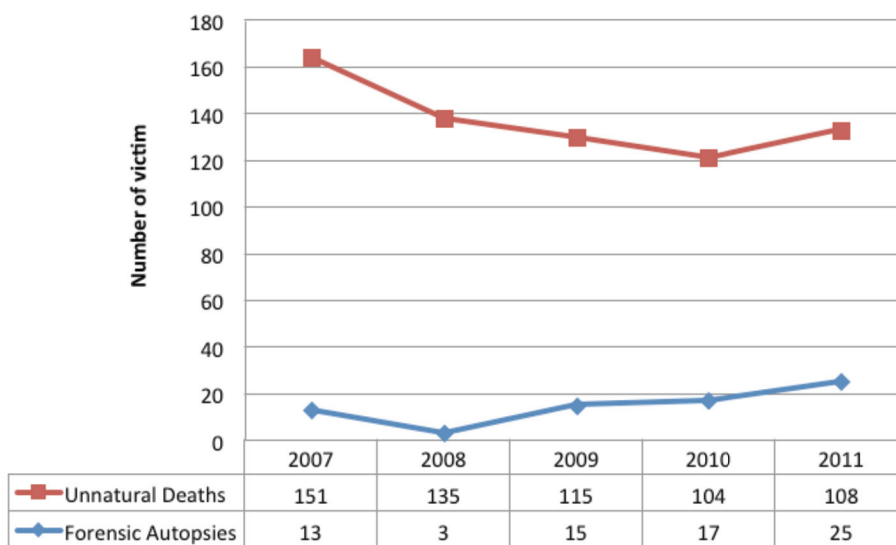


FIG 1. The number of unnatural deaths and number forensic autopsies by year

TABLE 1: Medicolegal autopsies: distribution by cause of death, sex and age group (n = 73)

Cause	Sex	Age							Total
		0-9	10-19	20-29	30-39	40-49	50-59	≥ 60	
Blunt force	Male	3	2	5	2	3	1	0	16
	Female	1	0	3	0	0	1	1	6
	Total	4	2	8	2	3	2	1	22
Sharp force	Male	0	1	3	4	0	0	0	8
	Female	1	0	3	1	1	0	1	7
	Total	1	1	6	5	1	0	1	15
Poisoning	Male	4	0	2	2	0	0	0	8
	Female	0	0	1	1	0	0	0	2
	Total	4	0	3	3	0	0	0	10
Occupational injury	Male	0	0	3	2	0	0	0	5
	Female	0	0	0	0	0	0	0	0
	Total	0	0	3	2	0	0	0	5
Firearm	Male	0	0	0	2	0	0	0	2
	Female	0	1	0	0	0	0	0	1
	Total	0	1	0	2	0	0	0	3
Drowning	Male	0	0	0	3	0	0	0	3
	Female	0	0	0	0	0	0	0	0
	Total	0	0	0	3	0	0	0	3
Hanging	Male	0	0	0	0	0	0	0	0
	Female	0	0	1	0	1	0	0	2
	Total	0	0	1	0	1	0	0	2
Natural	Male	0	1	2	2	3	0	0	8
	Female	0	1	0	1	0	1	0	3
	Total	0	2	2	3	3	1	0	11
Undetermined	Male	0	0	0	0	0	0	0	0
	Female	0	0	1	1	0	0	0	2
	Total	0	0	1	1	0	0	0	2
Total		9	6	24	21	8	3	2	73

TABLE 2: Cause of death by manner of death (n = 60)

Cause of death	Manner of death		
	Homicidal <i>n (%)</i>	Accidental <i>n (%)</i>	Suicidal <i>n (%)</i>
Blunt injury	22 (36.7)	0 (0.0)	0 (0.0)
Sharp injury	15 (25.00)	0 (0.0)	0 (0.0)
Poisoning	0 (0.0)	8 (13.3)	2 (3.3)
Occupational injury	0 (0.0)	5 (8.3)	0 (0.0)
Firearm	2 (3.3)	1 (1.7)	0 (0.0)
Drowning	0 (0.0)	3 (5.0)	0 (0.0)
Hanging	0 (0.0)	0 (0.0)	2 (3.3)
Total	39 (65.0)	17 (28.3)	4 (6.7)

Studies from Nigeria⁹, Dhaka¹⁰ and India¹¹ similarly reported the most common victims of unnatural deaths were middle-aged adults.

An interesting finding from our study was that blunt force and sharp force are the leading causes of death. This finding differed from other studies which showed that Road Traffic Accident (RTA) was the leading cause of death.⁹⁻¹² RTA was a leading cause of death in our community, but these victims were not subjected to autopsy. Most police investigators and victim's family in Indonesia assume that RTA cases do not require a medicolegal autopsy because the cause of death is clear and acceptable.⁸

The other principal finding from our study is that homicide is the predominant manner of death rather than accident and suicide. Other studies showed accidents as the predominant manner of death in unnatural deaths. This dissimilarity is due to differences in requests for autopsies by police investigators and refusal from the victim's family to have medicolegal autopsies in accidental deaths.⁸ Our study highlights that the main interest of the police in requesting a medicolegal autopsy is for investigation of homicide. Another reason may be objection to medicolegal autopsy by the victim's family because of cost issues. In Indonesia, it was unclear who will cover the cost for a medicolegal autopsy.

Recognizing that the autopsy has a very important role in the investigation of unnatural deaths, further studies should be carried out to understand the factors that impact on the low percentage of medicolegal autopsies in unnatural deaths, so that solutions may be found for the future.

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