Murder by Poisons: Cases in Taiwan, 1999–2008

K.-P. Shaw*, H.-T. Chen
Department of Pathology
Institute of Forensic Medicine
Ministry of Justice
New Taipei City
Taiwan

TABLE OF CONTENTS

* Corresponding author: Dr. Kai-Ping Shaw, Department of Forensic Pathology, Institute of Forensic Medicine, Ministry of Justice, No. 123, Min-An Street, Zhonghe District, New Taipei City 23552 Taiwan; +886 2 2223 8355 (voice); kpshaw596@gmail.com.

1042-7201/26-2/July 2014/121–130/$15.0 •

Murder by Poisons: Cases in Taiwan, 1999–2008

REFERENCE: Shaw K-P, Chen H-T: Murder by poisons: Cases in Taiwan, 1999–2008; *Forensic Sci Rev* 26:121; 2014.

ABSTRACT: This review summarizes the findings from a retrospective study of 17,390 forensic autopsy cases of medicolegal investigations in Taiwan during the 1999–2008 period. Among this total, 1,874 cases involved illicit drugs and 750 involved household toxic chemicals. Rarely seen toxic substances, such as cyanide, corrosive poisons, ether, etc., were found in 6.4% of homicide poisoning cases. Profiling the suspects' backgrounds may play a key role in correlating unique chemicals with the suspects' homicidal behavior.

KEY WORDS: Homicide, illicit drugs, murder by poison, profile of murderer, toxic chemicals.

INTRODUCTION

Poisoning is a common form of harming others, but it is a difficult crime to prove from a medicolegal standpoint unless good collaboration between forensic investigators and forensic toxicology facilities is achieved. While patterns and trends of poisoning attributable to intentional and unintentional ingestion, as well as suicide attempts, are well described in the literature [4–7,11–13], data on homicidal poisoning is less readily available. The US Department of Justice estimates that homicides have occurred at a rate of around 5.5 deaths per 100,000 population annually since 1999 [3]. Poisoning is commonly thought of as a highly personal, surreptitious, and premeditated method of causing harm [10,14,15]. Identification and assessment of poisoning homicide cases by toxicological means is more complex than in the case of other forms of homicide with obvious violent trauma. Homicidal poisoning is frequently depicted in fiction, often with a female offender in the role of the murderer [10].

A retrospective epidemiological study of 17,390 forensic autopsy cases in medicolegal investigations from 1999 to 2008 revealed a total of 1,874 illicit drug-related fatalities and 750 cases of household toxic chemical-related fatalities.

The purpose of this study is to better understand the patterns and modes of homicidal poisoning, as well as possible pharmacokinetic data. Classification of chemical substance and mode of poisoning are guidelines for defining the manner of death and profiling the offender.

I. METHODS

Data regarding homicide by poisoning was derived from the database of the Institute of Forensic Medicine, Ministry of Justice, Taiwan, during the 1999–2008 period. Victims of poisoning and possible tracing of offenders are included in this analysis. Demographic factors analyzed for each victim and offender include age, gender, education, occupation, economic status, scenario, and emotional relationship of victim to offender, category of toxic chemical, and classification of the mode of crime. Demographic factors connected with homicidal poisoning can assist forensic scientists and law enforcement personnel in criminal investigations, and can also guide strategies for profiling poisoners in homicide investigations.

A. Case Collection, Profiling, and Definition

The reports used in this study included the demographic characteristics of the decedents and the cause and manner of death, which were assigned codes based on data recorded on death certificates using the International Classification of Diseases, Tenth Revision (ICD-10). The time period covered in this study coincided with use of ICD-10 codes in national mortality statistics (ICD-9 codes were used prior to 1999). Cases of poisoning were obtained from the database by choosing "homicide" as injury intent and "poisoning" as the mechanism of injury. These parameters correspond to ICD-10 codes X 85–90, which are specific for poisoning.

B. Case Identification

Autopsy reports and prosecutor's office summaries of all completed cases of homicidal death in which an autopsy was completed at the Institute of Forensic Medicine, Ministry of Justice, in Taiwan between January 1, 1999, and December 31, 2008, were retrieved. Ages ranging from 2 months to 75 years were included in order to obtain a range encompassing almost all illicit drug use [1]. All cases of death due to murder or manslaughter with the presence of meaningful toxicological levels of toxic substances, including hypnotics and alcohol, etc., were assigned to the homicide group. In order to provide a context, the homicide rate in Taiwan has been approximately 1.28 per thousand, with blunt force injury (33.6%), stabbing (26.5%), and gunshot (10.3%) being the leading causes of

Med 19:337; 2001.
8. Shepherd G, Ferslew BC: Homicidal poisoning deaths in the United States, 1999-2005; *Clin Toxicol* 47:342; 2009.
9. SPSS Inc: *SPSS for Windows*, 14.0; SPSS Inc.: Chicago, IL; 2005.
10. Trestrail JH (Ed): *Poisoners*, 2nd ed; Humana Press: Totowa, NJ; 2007.
11. Watson WA, Litovitz TL, Klein-Schwartz W, Rodgers GC, Jr, Youniss J, Reid N, Rouse WG, Rembert RS, Borys D: 2003 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System; *Am J Emerg Med* 21:335; 2004.
12. Watson WA, Litovitz TL, Rodgers GC, Jr, Klein-Schwartz W, Reid N, Youniss J, Flanagan A, Wruk KM: 2004 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System; *Am J Emerg Med* 23:589; 2005.
13. Watson WA, Litovitz TL, Rodgers GC, Jr, Klein-Schwartz W, Youniss J, Rose SR, Borys D, May ME: 2002 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System; *Am J Emerg Med* 21:353; 2003.
14. Westveer AE, Jarvis JP, Jensen CJ: Homicidal poisoning: The silent offence; *FBI Law Enforcement Bulletin* 73:1; 2004.
15. Westveer AE, Trestrail JH 3rd, Pinizzotto AJ: Homicidal poisoning in the United States: An analysis of Uniform Crime Reports from 1980 through 1989; *Am J Forensic Med Pathol* 17:282; 1996.

ABOUT THE AUTHORS

K.-P. Shaw; H.-T. Chen

Kai-Ping Shaw was educated at the National Defense Medical Center (Taiwan; M.D. and M.S.), and the University of Maryland (Baltimore, Maryland; Ph.D.). He is currently the director of the Department of Forensic Pathology, Institute of Forensic Medicine, Ministry of Justice, Taiwan.

Dr. Shaw was a visiting scholar at the Dade County Medical Examiner Department (Miami, FL) for a year, and has also been a faculty member at several medical universities in Taiwan. He has accumulated 23 years of experience as a medical examiner at the medical examiner's office, Taiwan High Prosecutor's Office, Investigation Bureau, and Institute of Forensic Medicine, Ministry of Justice, and performed over 7,200 forensic autopsy cases, including a number of major cases. Dr. Shaw is the author or co-author of 67 articles published in professional journals. His research interests include forensic pathology, forensic toxicology, neuroscience, and forensic anthropology.

Dr. Shaw is the director of the Taiwan Society of Pathology; the vice president of the Taiwan Academy Forensic Science; a member of the American Association of Forensic Science since 1993; and a member of the Pharmacological Society and Toxicology Society in Taiwan.

Hsiao-Ting Chen graduated in 2012 from National Tsing Hua University (Hsinchu, Taiwan) with a B.S. degree in physics. She is currently a research assistant at the Department of Forensic Pathology, Institute of Forensic Medicine, Ministry of Justice (Taiwan).

Ms. Chen has assisted with several projects, primarily concerning development of methods for analyzing sharp-force injury marks on bone.