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Original Article

Epidemiological characteristics of patients presenting with poisoning at Imam Khomeini Hospital of Sari in 2018

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Millions of people are poisoned by various materials every year. Paying attention to the causes of poisoning, as well as preventing it, will reduce costs and mortality by reducing the risk of unintended poisoning by identifying the epidemiologic characteristics of those who are more exposed to poisoning agents. This was a cross-sectional study conducted on 191 patients who were admitted with a poisoning complaint at Imam Khomeini Hospital of Sari during the year 2018. Demographic data and information related to poisoning were recorded. Dada data were analyzed using SPSS 16 software Out of 191 patients, 54.4% (104) were male and 45.6% (87) were female. 50.3% were in the age group of 25 to 45 years old. Drug poisoning was the most common type of poisoning among patients (44.5%). The most common reasons for poisoning were suicide (33%), drug abuse (27.2%) and accidental poisoning (25.1%). 72.2% of patients had a history of previous poisoning. The most common symptoms were dizziness (36.35%) and nausea (4.31%). 92.1% of patients were discharged in the first 24 hours. Result showed that the highest rate of poisoning is intentionally suicidal due to the availability of drugs and the next reason is accidental poisoning. A large number of people with this disorder are discharged within the first 72 hours, and many with personal satisfaction leave the hospital, most of them with a low level of education and an average monthly income and have history of poisoning.

Keywords: Poisoning, Epidemiology, Mazandaran

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Introduction

Poisoning is known to give rise to harmful effects of contact with chemicals. Approximately 70% of poisoning occurs in children and more than 90% occur accidentally. Poisoning has often been with a type of substance and oral route is most common type [1, 2]. Mortality due to accidental poisoning is not common in young children. In adolescent, it is more likely to be intentional and more suicidal. Accidental poisoning is often seen in children and individuals over the age of 50. Self-poisoning and suicide cases are more common in young people [3, 4]. In a study, the highest mortality rate was due to narcotic drug poisoning and the age of mortality was reported to be 24-35 years old [5]. In another study, the incidence of acute and fatal narcotics was 3.2% of all deaths. The highest mortality rate was in the age group of 21-30 years [6]. Paying attention to the causes of poisoning and preventing it by identifying the epidemiological factors and characteristics of those who are more exposed to poisoning will reduce costs, the risk of unintentional poisoning and also mortality rates. Therefore, the aim of this study was to evaluate the epidemiologic

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characteristics of poisoning patients in Imam Khomeini Hospital of Sari.

Materials and Methods

This was cross-sectional study conducted on 191 patients who had been admitted to Imam Khomeini Hospital in Sari during the year 2018. Characteristic data and related informations including age, gender, education level, financial status, reason of poisoning, treatment outcome, hospitalization time, place of occurrence of poisoning, previous history of poisoning was recorded. Data were analyzed using SPSS version 16 software. Frequency and percentage were used to represent qualitative variables, mean and standard deviation were used to express quantitative variables. P-value less than 0.05 considered as significant level.

Results

Out of 191 patients, 104 (54.6%) were male and 87 (45.4%) were female. Most of the patients (50.3%) were in the age group of 25 to 45 years old. 72.2% of these patients had a history of previous poisoning. 47 (6.24%) were employed, 44 (23%) were housewives, 38 (19.9%) were students and 37 (19.4%) were unemployed. 42.9% of patients had a poor financial status. Poisoning with drug substances had the highest prevalence (44.5%), followed by opium poisoning (17.3%) and pesticide poisoning (13.9%) (Figure 1). Suicide was the most common reason of poisoning among patients, followed by substance abuse (27.2%) and accidental poisoning (25.1%) (Figure 2). The most common symptoms were vertigo (35.6%) and nausea (314%). 92.9% of patients were discharged during the first 24 hours. The reason for discharging in 44.5% was discharge due to personal satisfaction and 38.2% patients were discharged due to recovery.

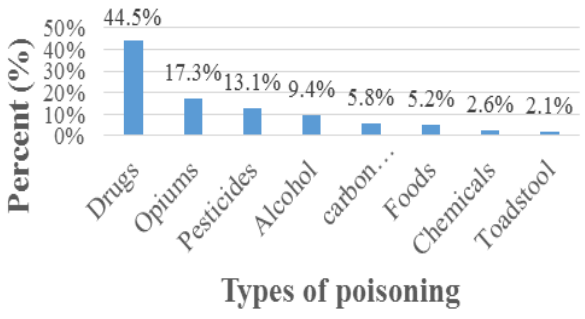


Figure 1: The prevalence of poisoning types

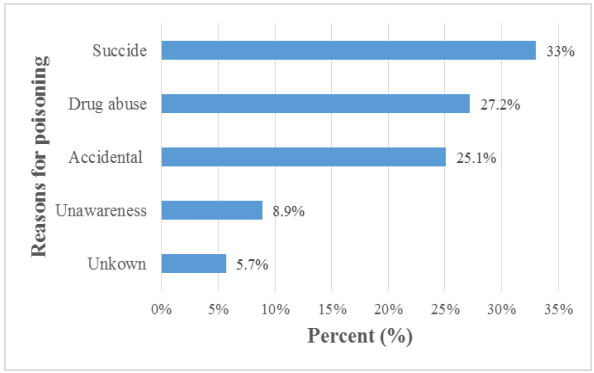


Figure 2: Reasons for poisoning

Discussion

Poisoning is a collection of body disorders that occurs as a result of the absorption of foreign matters, which are said to be poisonous [7, 8]. Exposure to poison is one of the most important causes of acute medical illness in developing countries [9]. Depending on the availability of hazardous and toxic compounds and various types of drugs, those who attempt suicide prefer to have a relatively calm death by oral administration of drugs, and this method is more commonly used for suicidal attempt. In Iran, about 30,000 people in Tehran annually get poisoned drugs and chemicals, 12,000 of whom are hospitalized, 1,200 of them are admitted in the ICU and at least 120 people will die. The statistics of Iran's forensic medicine showed that the most common suicidal attempts are caused due to drug poisonings [10, 11]. The reason of poisoning is varied in different parts of Iran. In Tehran, Mashhad and Babol, drug poisoning with sedative drugs were common, on the other hand, in Northern Iran for instance Guilan, poisoning with pesticides and chemical fertilizers were common. Poisoning can be the result of accidental use of drugs and chemicals or intentional use of them for suicide. Poisoning in children due to curiosity is considered as an accidental poisoning and include 7% of mortalities. Poisoning occurs most often in children aged 1-5 years. However, in the elderly and in people aged 12 to 30 years, most commonly occurs with suicidal thoughts or inappropriate use of drugs and chemicals [10, 12-15]. Age, gender, race, psychological factors, socioeconomic conditions, family status, access to counseling services, mental health, disappointment or inappropriate mental and psychological conditions, addiction and substance abuse, financial and family problems, cultural issues can play an important role in the formation of suicidal attempt. Generally, it is necessary to pay attention to cases of suicide caused by

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poisoning, including drug poisoning, which are more prevalent than other methods of suicidal attempt [16, 17]. On the other hand, the pattern of drug poisoning is different in the world. In many cases, acetaminophen, along with sedative-hypnotic drugs including benzodiazepines and barbiturates, as well as antidepressants, are among the most important drug combinations used in suicidal attempts [18]. In Iran, drug poisoning is considered as one of the most important causes of suicide. Among these, benzodiazepine and antidepressants have been widely used in suicidal attempts and have a high percentage of suicides due to drug poisoning. One of the most important causes of people's tendency to use drugs in the category of suicidal attempt are their availability, familiarity with various drugs, and painlessness of use. Carbon monoxide (CO) poisoning is the most common cause of death from inhaled corrosive substances. In physiological quantities, CO play role as a neurotransmitter and at low CO levels, can modulate inflammation, apoptosis, and cell proliferation, and leads to poisoning at higher levels [19]. In Iran, due to increasing population and the widespread use of vehicles and other sources of fossil fuels, we are faced with a significant mortality rate due to CO poisoning. In a study in Northwestern of Iran, the prevalence of CO poisoning was 11.6% [20]. In a study in Tabriz, poisoning with CO was 17.6% and 90 people died due to CO toxicity [21]. In a study on the deaths of carbon monoxide gas in 23 provinces, 156 people died due to CO poisoning [22]. The emergence of symptoms is a dynamic combination of the balance between muscarinic, nicotine and CNS symptoms. Some patients may initially show nicotine symptoms (Fasciculation, muscle cramps, decreased or eliminated reflexes, or paralysis), with progression of intoxication, symptoms of muscarinic (sweating, myosis, bronchospasm, fecal incontinence, increased salivation, hypotension, and diarrhea). In severe poisoning, muscarinic symptoms appears from the beginning. Children often show nicotine or CNS symptoms (headache, tremor, speech impairment, imbalance, general weakness, lacrimation and decreased sense of smell). In some patients, cholinergic sympathetic (tachycardia, hypertension, midriasis) may be seen and this is due to increased stimulation of nicotinic receptors in sympathetic gonads or adrenal glands which does not have good prognosis [23, 24]. Opioid substance abuse is another drug poisoning that consumed through oral, inhalation, intravenous and or subcutaneous. The most common symptom of poisoning with opium substances is the low respiratory rate with normal volume to increased, hypercarbia and rarely apnea. The symptoms of the CNS vary from disorientation to unconsciousness. Pulmonary edema is more common in patients with heroin poisoning. Gastric atony is predictably detectable in acute poisoning with opioids [25, 26]. Rhabdomyolysis can be induced after poisoning, which is often not diagnosed. Symptomatic treatment by the administration of naloxone is up to eliminating respiratory depression and respiratory suppression. Drugs are responsible for many deaths. After 10 to 20 years of drug use, nearly 25% of heroin addicts died due to accidents, infections or suicides [27, 28]. Alcohol abuse is recognized as one of the major preventable causes of death, illness and injury in many societies [29]. World Health Organization reports showed that an average of 7.5% of the general population are abusing alcohol [30]. Most alcohol users in Iran are teenagers and young people aged 18 to 20 who are turning to it for curiosity or experience [31]. But there is still no accurate information on the status, epidemiology and management of alcohol poisons. The collection of alcohol-related information makes awareness of the extent of the problems, compares the situation with other societies and is aware of the process of changing a phenomenon over time.

Conclusion

According to the results of the study, patients with more intentional poisoning have suicidal ideation and drug poisoning due to the availability of the most common type of poisoning. Most of patients with a low level of education and an average monthly income, have a history of previous poisoning. A large number of people are discharged within the first 72 hours, and many go out of the hospital with a personal satisfaction.

Conflicts of interest

None.

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