

Pattern of Poisoning Cases Reported To The Toxicology Laboratory of Bacha Khan Medical College, Mardan, Pakistan: A Retrospective Descriptive Study

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Abstract:

Background: Poison is any substance which is taken in any form by any route produce harmful effects on the body. In our society, trends of poisons intake increasing day by day, so their analysis may help to take preventive measures.

Objective:

The objectives of this study were to determine frequency of poisoning cases presented to Toxicology Laboratory of Bacha Khan Medical College, Mardan Khyber Pakhtunkhwa Pakistan

Methods & Materials:

This cross-sectional descriptive study was conducted on 170 cases in Toxicology Laboratory of Bacha Khan Medical College, Mardan from 20 October 2019 to 19 December 2020.

All poisoning cases presented to forensic laboratory Bacha Khan Medical College, Mardan were included in our study. While those cases whose toxicology findings were inconclusive and those who were referred from other districts were excluded from study.

Results:

In our study most of poisoning cases occurred in male (58.8%), in age group 26-45 years range (70.6%), in rural areas (76.5%) and the most common manner was suicidal (77.1%). The results also showed that the oral route was used in most of cases 72.9% for taking the poison. The most common poisons used were household poisons (42.9%).

Conclusion:

From our study we concluded that most of the poisoning cases presented in middle aged males of rural areas. In addition, the most common used poison was household poisons and the manner was suicidal.

Keywords: Poisoning; Toxicology; Self-poisoning; Suicidal poisoning; Forensic medicine; Pesticide poisoning; Household poisoning; Pakistan.

INTRODUCTION

Poison is a substance which can damage the body if it is inhaled in, ingested, injected into the body or absorbed to body through the skin. All poisoning cases are sent to the emergency room, where they are resuscitated and then admitted to the wards. Since the identities of these patients are kept hidden, therefore there is very little information available about poisoning in Pakistan, even in the national poisoning control Centre in Karachi(1)

Poisoning rate are also shifting high as a result of new drug growth, shifting socioeconomic dynamics, agricultural modernization, and the widespread availability of over-the-counter medicines. In a national health report, deaths due to poisons were rated as second most common after falls(2).

Poisoning from insecticides, household chemicals, medicines, and kerosene oil is frequent in children less than age of five years. Poisoning in children is caused by unsafe medicine storage, poor parent's education status, low income status, more family members, and a previous history of taking poisons(3).

Self-poisoning with pesticides is common in South Asia, China and South East Asia. China the world most populated country was having relatively high suicides rate. Pesticide poisoning was 62% in all suicides deaths cases. After studies and publications this suicide rate has fallen by over one third in China(4)

According to a recent study conducted in Pakistan, benzodiazepine was mostly used in para suicides cases(5)

According to a prospective study in India, poisoning was more common in female in the ratio of 1.3: 1.9 between men and women(6).

Academic failure, unemployment, professional dissatisfaction, romance failure, family pressure, financial crisis, and marriage problems can all contribute to anxiety and depression leading to the use of suicide poisoning. Reasons for this high intentional adolescent addiction include academic pressure, family conflict, impulsive behavior, family collapse, and romantic failure. The rate of addiction decreases with age. Results are similar to studies conducted in Karachi(7).

The main objective of the study was to determine the frequency of different poisons used in our society. Poisoning is a medico-legal emerging issue in our society and limited research had done, therefore we conduct this study so that government makes necessary measures in future for the prevention and treatment of poisoning cases.

MATERIALS AND TECHNIQUES:

The descriptive cross sectional retrospective study was conducted in Toxicology Laboratory-----

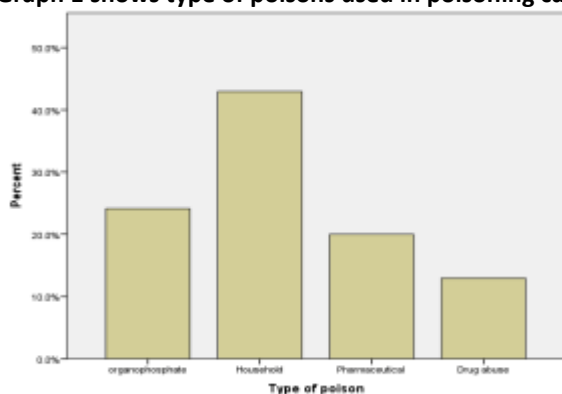
All poisoning cases presented to forensic laboratory Bacha Khan Medical College, Mardan were included in our study. While those cases whose toxicology findings were inconclusive and those who were referred from other districts were excluded from study.

Total of 170 poisoning cases were extracted from the record registers of the toxicology laboratory from 20th October 2019 to 19th December 2020 keeping the strict inclusion and exclusion criteria. Data was collected after ethical approval from the institute with diary no.(No.GU/2021) on 25-5-2021. Categorical variables were measured in the form of frequency, percentages and graphs while numerical variables were measured in the form of mean and standard deviation. Data was analyzed by SPSS version 20.

RESULTS:

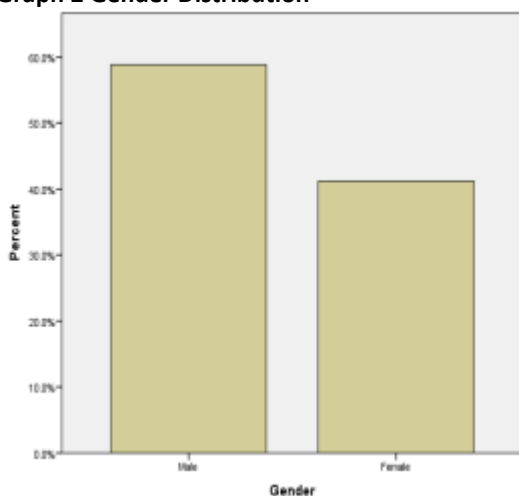
In our study a total of 170 poisoned cases were studied in which most common poison was household 73(42.9%) followed by organophosphate 41(24.1%) and least common was drug abuse 22(12.9%) as shown in graph 1.

Graph 1 shows type of poisons used in poisoning cases



Similarly our study found most cases of male 100(58.8%) were male and 70 (41.2%) were female as shown in graph 2.

Graph 2 Gender Distribution



Regarding age wise frequency of poisons cases, most common poisoned cases were found in the age group of 26-35 and 36-45 years 60(35.3%) and least common were in the age group of 46-55 years with frequency of 2(1.2%) as shown in the table 1. In our study most common manner was suicidal 131(77.1%) followed by accidental and homicidal 35(20.6%) and 4(2.4%) respectively. In addition, our study found that most common route of administration were oral 125(73.5%) followed by inhalational route 36(21.2%). similarly our study showed most cases were reported from rural area 130(76.5%) than urban 40(23.5%).

Table 1 shows age, manner, route and area wise frequency of poison cases

Variables		frequency	Percentages
Age	>55	7	4.1
	15 to 25	41	24.1
	26 to 35	60	35.3
	36 to 45	60	35.3
	46 to 55	2	1.2
Manner	Suicidal	131	77.1
	Accidental	35	20.6
	Homicidal	4	2.4
Route	Oral	125	73.5
	Inhalation	36	21.2
	Intravenous	9	5.3
Area	Urban	40	23.5
	Rural	130	76.5

DISCUSSION:

The two age groups with highest number of cases were from teenagers and young adults. These findings correspond to the data provided by World Health Organization (WHO). The different toxins used between countries are described for different social, cultural, economic, geographical, racial and spiritual consequences, as well as the availability and accessibility of toxins.

In our study, the oral route was the most common for toxic ingestion, with 124 (72.9%) cases in our study, followed by inhalation in 36 (21.2%) cases. Studies conducted in India show similar results: 69.5% of the oral route. The findings from other studies have supported a higher incidence of suicidal cases (8-10).

Our study has reported 77.1% cases of suicidal and 20.6% of accidental which is similar to a study which reported 72.02% of suicidal and 25.88% accidental(11).

Poisoning is a serious medical issue that kills and infects people in many parts of the world. Many people suffer from a variety of difficulties as a result of poisoning, ranging from minor illnesses to intensive care unit admissions and death, all of which place a significant economic, physical, and psychological burden on the individual, family, and society(12).

In this regard, current researches show that the process of aluminum phosphide poisoning in Iran is on the rise. Furthermore, tramadol and opioid intoxication is the most common cause of poisoning in hospitals and poison control centers(13).

The utilization of intensive care units and its facilities has increased patient survival against major and dangerous disorders and diseases, including poisoning, for decades. Many patients poisoned with crucial and problematic disorders survive thanks to the use of these facilities, and they play a significant role in controlling severe poisoning(14).

CONCLUSION:

From our study we concluded that most of the poisoning cases reported were of middle aged males from rural areas. In addition, the most common used poisons were household poisons and the manner was suicidal.

RECOMMENDATIONS

1. For security reasons, public awareness needs to be raised about the safe use of pesticides, wheat pills, medicines and all other types of toxins.
2. Drug authorities need to ban sales of all medications without proper prescription of registered medical practitioner.

3. Psychiatric medications and drugs of addiction should be provided to those peoples only who have a consultant prescription of relevant field.
4. Sale of the insecticides and herbicides should be banned for children and adolescents.
5. To achieve this, social media can be used in campaigns to aware the peoples about the adverse effects and safety measures about common poisons.
6. Rural health care workers need to be formally trained to provide appropriate first aid for toxic incidents coming to hospitals.
7. Residents' awareness and education about the safety of hazardous chemicals at the home and occupation level is a powerful indicator to prevent accidental poisoning

Conflict of interest

There was no conflict of interest.

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