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Frequency of Acute Poisoning Cases Presented to Allied Hospital Emergency during March, 2017 to February, 2018

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ABSTRACT

Objective: To determine the trend of acute poisoning in terms of age group, gender, types of poisons and month wise distribution. **Study Design:** The retrospective study. **Settings:** Allied Hospital, Faisalabad Pakistan. **Duration:** During March, 2017 to February, 2018. **Methodology:** It comprised data of all patients who presented to the Medical Emergency Department with acute poisoning. The patients' data was collected from Medical records and was documented on pre structured proforma. **Results:** A total of 964 cases of acute poisoning were studied of which 500 (51.86%) were female. Most of the patients aged 21-30 years (42.11%). Majority of poisoning cases (39%) were due to consumption of organophosphate, followed by household items (25%). Maximum cases presented in the months of September and October, 2017 and its rate was about 30.7%. **Conclusion:** Youngsters (21-30 years) were inflicted more than any other age group and organophosphate was the most frequently used poison. Immediate steps should be taken to ban over the counter sale of such drugs that are used by public either intentionally or unintentionally resulting in poisoning.

Keywords: Acute poisoning, Deliberate Self-Harm (DSH), Organophosphates, Benzodiazepine.

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INTRODUCTION

Globally, poisoning and excessive dosage of drugs encompassing both intentionally and unintentionally, are accounted as a major dilemma of high mortality rate due to rapid industrialization and simultaneous escalation in the production of various chemicals.[1] Considering the survey conducted by Chemical Abstracts Service (CAS) registry, nowadays over 83,000,000 chemical products are accessible and daily 4000 new chemicals are being introduced across the planet.[2] According to World Health Organization (WHO), about 3 million poison toxicity cases with 2.5 lac death rate have been recorded per annum, of which about 99% cases were observed in agricultural communities of third world nations. Due to an intense consumption of agrochemicals in Pakistan, they profoundly contribute in intentional and unintentional poisoning in countryside while over dosage of pharmaceutical products promote deliberate and accidental poisoning in cities.[3] Several analyses disclosed that domestic conflicts, marital issues, relationship problems, psychiatric diseases and joblessness prompt Deliberate Self-Harm (DSH) among people of Pakistan.[4] According to National Institute of Health (NIH), DSH is befalling more in adolescent and its ratio is 8 times more in young females than that of males.

There is correspondingly high mortality rate observed in Low-and-Middle Income Countries (LMICs) as compared to High Income Countries (HICs) because of over the counter availability of such poisoning drugs and dearth of immediate medical facilities. The severity of this enigma can be revealed by epidemiological studies. The rapidly growing prevalence of poison intoxication caused by drug abuse, household items and agrochemicals can be signified through public health surveys and hospital records.[5-7]

Different poisoning patterns among countries are accounted due to diverse social, economic, geographical, racial and spiritual impacts and also rely on the availability and approachability of toxins. Most frequently consumed toxins in Asian countries including Pakistan are wheat pills, pesticides, tranquilizers, acids and rat pills. Various studies described organophosphates as a major causative agent followed by benzodiazepines for self-poisoning cases.[8] Such kind of surveys will assist in suggesting valuable planning tools that will help in shrinking poisoning associated mortalities, providing better medical services.

The objective of the study was to evaluate poisoning cases reported in Allied Hospital, Faisalabad from March, 2017 to February, 2018, regarding gender, age and type of poison used.

METHODOLOGY

Study Design: It was retrospective cross-sectional study

Settings: Allied Hospital, Faisalabad Medical University, Faisalabad Pakistan.

Duration: One year from 01-03-2017 to 28-02-2018.

Sample Size: 964 patients.

Participants: The participants of the study were the cases of poisoning which were brought to the emergency of Allied Hospital either directly or referred from various hospitals. These patients mainly belonged to the six tehsils that come under the Faisalabad District. Poisoning patients admitted to the hospital during the duration of March 1, 2017 to February 28, 2018 were included in the study. A total of 964 cases related to poison

ingestion were recorded and from them unknown cases were categorized in separate class.

Data Collection: The data related to these cases was collected from the official hospital records of Medical Emergency Department, Allied Hospital. Later on, it was classified on the basis of gender, age, type of poison used and gender wise monthly distribution of the patients.

RESULTS

In this research, data was collected from March, 2017 to February, 2018. According to data, total 964 cases of poisoning were reported in the above-mentioned duration in Allied Hospital, Faisalabad. Out of 964 patients 464 (48.13%) were males and 500 (51.86%) were females. The rate of poisoning is slightly higher in females than in males.

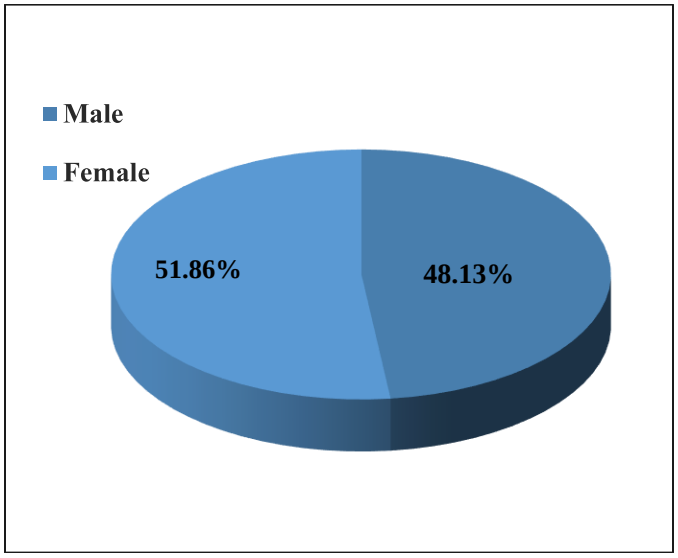

Figure 1:Gender based distribution of poisoning cases

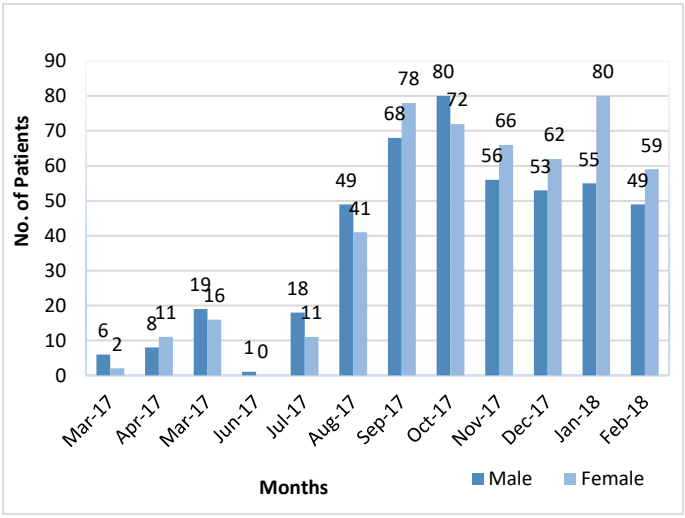

Figure 2: Gender based monthly distribution of poisoning cases

According to data collected, most cases were presented between the months of September, 2017 to February, 2018. Highest number of cases was presented in October, 2017 (15.76%) and minimum number of cases was in June, 2017 (0.1%). So, poisoning cases admitted to the hospital were higher in the months of September, October, November, December, January and February as shown in Figure 2.

The age of patients with poisoning cases admitted to the hospital was between 10 years to 80 years and above. According to data analysis, most of the patients fell between the ages of 10-40 years. Huge number of youngsters (42.11%) with the age ranging 21-30 years was presented in the given period. Only two patients (0.2%) were above 80 years of age. Only a few patients (1.5%) belonged to the category of 61-80 years. The data below suggests that the rate of poisoning declined with age.

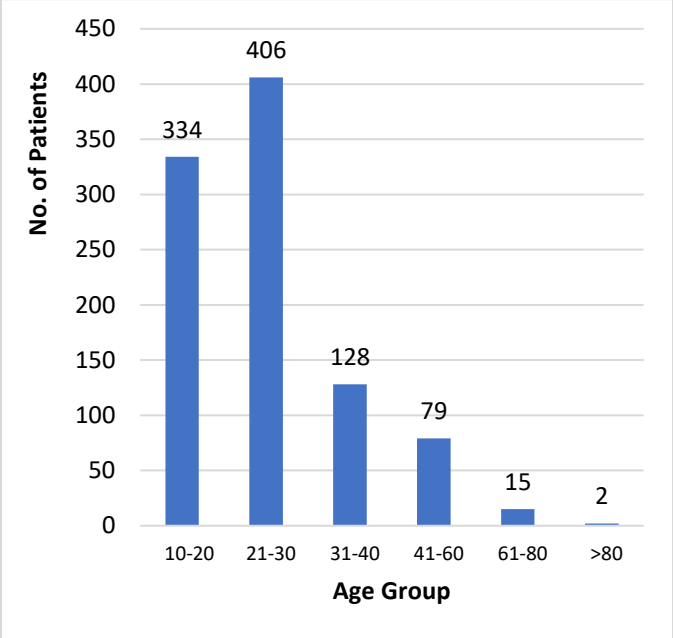

Figure 3: Age group distribution of poisoning cases

Data showed that patients used various types of poisons. Total cases of organophosphorus poisoning were 376 (39%). These included wheat pills 21.99% followed by rat pills, insecticides and corn pills with number of victims 12.24%, 4.66% and 0.1% respectively.

Household items used for poisoning included acid (15.66%), phenyl (2.90%), kalapather (1.14%), mospel (0.51%), oils (2.28%), chemicals (1.03%), lotions (0.1%), washroom cleaners (0.3%), antiseptics (0.4%), shampoo (0.1%), anti-lice (0.3%) and silica (0.2%).

Total number of cases with household poisoning was 241 (25%). Sleeping pills (3.008%), drug abuse (6.74%) and alcohol (1.03%) were included among the pharmaceutical poisoning. Miscellaneous types of poisons included food poisoning (1.03%), CO gas poisoning (0.1%), neelathotha/CuSO4 (0.3%) and snake bite (0.20%) making 1.65% total cases of this category.

In 227 (23.54%) cases the type of poison was not known to the victims. From the table below, it was estimated that most prevalent agents used for poisoning were organophosphate compounds.

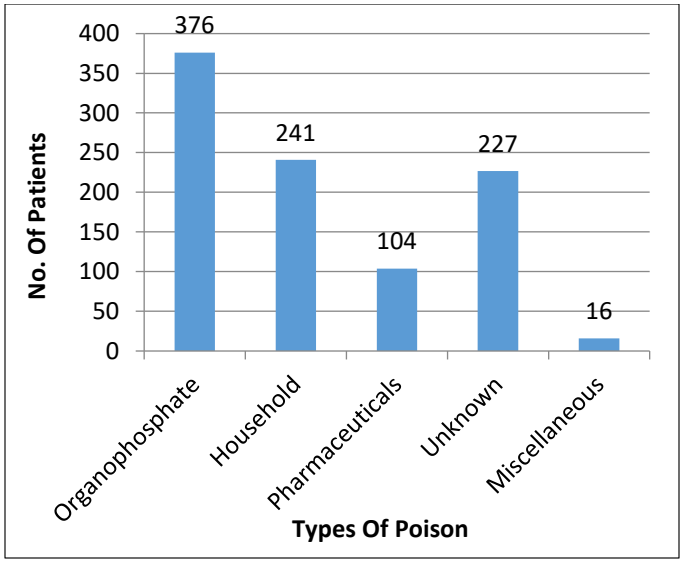

Figure 4: Distribution according to type of poisons

DISCUSSION

Poisoning has become more prevalent in the developed as well as developing countries with advancement in the agricultural and industrial sector. In our study on frequency of acute poisoning cases in Allied Hospital, Faisalabad, total number of cases reported during the period of March, 2017 to February, 2018 was 964. Apart from this, many cases are not reported because of the fear of FIR by police and social stigma. Out of these 964 cases, 464 (48.13%) were males and 500 (51.86%) were females. The rate of poisoning was slightly higher in females than in males. According to a prospective study in India, poisoning was more common in males with male to female ratio of 1.3:1.[9] Stress and depression due to marital issues can be the reason of high poisoning rate.[10] This indicates a contrast between study in Bangalore (India) and Faisalabad (Pakistan).

Most of the cases in our study included the individuals between the ages of 10-40 years. Highest number of cases 406 (42.11%) were between the age group 21-30 years. The results of our research are comparable to the study held in Rawalpindi and Navi Mumbai where the rate of poison consumption was most common between the age group 20-29 years.[11,12] Academic failures, unemployment, professional dissatisfaction, failure in love, family pressure, financial crises, and marital issues can be the reason of anxiety and depression leading to the suicidal poison consumption. The second highest age group with poisoning cases 334 (34.64%) is teenage (10-20 years age group). Academic pressure, family conflicts, impulsive behavior, broken families and failure in love can be the reasons of this high rate of intentional poisoning in teenage. The rate of poisoning declines with increasing age. The results are analogous to the study conducted in Karachi[13]. 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).

Different poisons used among countries are accounted due to diverse social, cultural, economic, geographical, racial and spiritual impacts and also rely on the availability and approachability of toxins. Regarding our study, organophosphates being on broad spectrum were among the most used products for poisoning. This class of poison included wheat pills, rat pills, insecticides and corn pills. About 376 (39%) cases were reported related to organophosphates intake. The main reason for this high rate may be due to the fact that Pakistan is an agricultural country and a large population is associated with this profession. Moreover, these organophosphates are easily available at cheap cost and are at hand to the public. In the study on acute poisoning cases in Western Part of India, pesticides were the most frequently used poisoning agents.[14]

Household items such as lotions, shampoos, kalapather, washroom cleaners, mospels, sanitizers, antiseptics, silica and anti-lice which are used in daily life were among the third most frequently used poisons. Out of total 964 cases, 241 (25%) cases presented with household poisons.

Drug overdose, another culprit of poisoning, is becoming common nowadays. During the given period, about 104 (10.78%) cases were presented with drug overdose or drug abuse. These pharmaceuticals included sleeping pills, alcohols and other such drugs. According to a study in India drug abuse or drug overdose was the most common poisoning agent accounting for 38.6% of total cases presented to emergency care unit.[15]

SHORT COMINGS

There are several reasons as to why the research is limited. Most of the data was collected based on history given by the patients' attendants and their clinical examination. There was no laboratory investigation for confirmation. Moreover, only one big hospital of the district was included in our study which restricted the results to a small number of the total population.

CONCLUSION

Our study concluded that poisoning has become a dilemma and it is safe to say that most of the poisoning cases were due to the absolute fact of easy availability and over the counter sale of poisons like wheat pills, pesticides and other drugs without any updated precautionary measures.

RECOMMENDATIONS

Even though, now government has banned the sale of such poisons to early teens and even adults without identity cards, the rate of poisoning is still high. Another factor that contributes to the high rates of poisoning is carelessness about the storage of such products which most often leads to accidental poisoning of children and infants.

For the sake of safety of the public, it is need of the hour to create awareness among the masses regarding the safe use of pesticides, wheat pills, pharmaceuticals and all other types of poisons. In order to achieve this, social media can be used for campaigning as well as health workers in rural areas should be trained formally so that they will be able to provide adequate first aid care to the poisoning cases that are brought to them before referring them to a hospital.

Moreover, counseling sessions should also be organized in educational institutes to educate the young generation.
Poison control centers should be established across the country in both rural and urban areas to tackle these kinds of problems efficiently and quickly.

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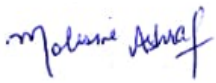
Dr. Mohsina Ashraf WCMO, Casualty Department Faisalabad Medical University, Faisalabad Pakistan	Supervision, Data Analysis, Review	
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