Original Article

Poisoning

# Trend of Poisoning in Muzaffarabad (AJK)

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## ABSTRACT

**Objective:** The objective of this study is to determine the trend of poisoning in Muzaffarabad AJK.
**Study Design:** Retrospective study.
**Place and Duration of Study:** This study was conducted at combined Military Hospital (CMH) Muzaffarabad (AJK) during the period of 1st January 2009 to 31st December 2010.
**Material& Methods:** One hundred & forty cases of poisoning was brought in hospital. Information regarding Age, Gender, demography, manner, time of occurrence, and patient outcome was confirmed from hospital records and collected data was analyzed.
**Results:** There were 98 female and 42 mate victims involved in this study and maximum cases belong to second and third decade of life (23.57% and 48.57% respectively. Most common manner of poisoning was suicidal / attempts. Most incidences of poisoning occur in month of June and an organophosphorous compounds was leading cause of poisoning followed by Benzodiazepines.
**Conclusion:** Organophosphorous compounds are the major chemical agents which pose a health threat particularly to young people.
**Key Words:** Suicide, organophosphorous, Benzodiazepines, poisoning, Trends.

## INTRODUCTION

Poison is a silent weapon capable of destroying life mysteriously secretly and without violence. A poison is a substance which when administered, inhaled or ingested is capable of acting deleteriously on the human body. Thus there are no limits between a medicine and a poison. For a medicine in a toxic dose is a poison and a poison in small doses may be a medicine. The real difference between a medicine and a poison is the intent with which it is given, if the substance is given with the intention to save life it is a medicine, but if it is given with the intention to cause body harm it is a poison[1] .Throughout human history intentional application of poison has been used as a method of assassination, murder, suicide and execution.[2] Formerly all savage tribes used poisoned arrows and historical case like snake bite death of Cleopatra is also on the record.

Poisoning is usually accidental or non-accidental. The non-accidental is ether suicidal or homicidal. Suicidal is either deliberate suicidal attempt or an attempt to gain sympathy or manipulate the environment called Parasuicide[3]. Different poisons in different era, remained a challenge for medical profession. Pakistan is developing country of south Asia, rural population of the country is mostly dependent on agriculture for living.

Now a day's insecticides and pesticides are routinely used for modern cultivation methods and are readily available at all places easily without any check on their sale and also incidence of poisoning with them is also increasing day by day. Previously the cause of poisoning was mostly accidental but presently poisons are the commonest mode of committing suicide. Environmental and cultural factors are known to influence the rate of self-poisoning[4]. Nowadays, self-poisoning has been indicated as major health problems in many developing countries[5]. Killing about 3, 00,000 people each year[6]. However reported incidence of deliberate self-poisoning in Pakistan is about 8 per 1, 00,000 in men and women[7].

## MATERIALS AND METHODS

This retrospective study was conducted from 1st January 2009 to 31st December 2010 of all poisoning cases admitted in the emergency of CMH Muzaffarabad. Information regarding Age, gender, demography, manner, time of occurrence, stay in hospital and patient outcome was confirmed from the hospital records to know the current trend of poisoning. The collected data was analyzed, observations were discussed and compared with other studies and final conclusion was drawn.

## RESULTS

During the period of study 140 cases of poisoning was reported. The observation and results of 140 cases studied are tabulated.

Table 1 depicts more poisoning in the month of June whereas minimum number of cases seen in the month of October.

Table 2 depicts poisoning more common among females (70%) than males (30%) and maximums

number of cases were from the age group of 21-30 years (48.5%) followed by 11-20 years (23.5%).

**Table No.1: Month Wise Distribution**.

| Months | 2009 | 2010 |
|---|---|---|
| January | 4 | 2 |
| February | 5 | 3 |
| March | 8 | 6 |
| April | 4 | 4 |
| May | 6 | 8 |
| June | 20 | 18 |
| July | 10 | 10 |
| August | 7 | 6 |
| September | 3 | 2 |
| October | 2 | 1 |
| November | 4 | 3 |
| December | 4 | 1 |
| **Total** | **77** | **63** |

**Table No.2: Gender & Age Wise Distribution**.

| Age Group (in years) | Male | Female | Total | %age |
|---|---|---|---|---|
| 0-10 | 02 | 01 | 03 | (2.14%) |
| 11-20 | 10 | 23 | 33 | (23.57%) |
| 21-30 | 15 | 53 | 68 | (48.57%) |
| 31-40 | 04 | 16 | 20 | (14.28%) |
| 41-50 | 05 | 05 | 10 | (7.14%) |
| 51-60 | 03 | 00 | 03 | (2.14%) |
| >60 | 03 | 00 | 03 | (2.14%) |
| **Total** | **42 (30%)** | **98 (70%)** | **140** | **100** |

**Table No.3: Type And Manner of Poisoning**.

| Poison | Acci-dental | Suicidal / Attempts | Homicidal | Total |
|---|---|---|---|---|
| Organo-phosphorous compounds | 25 | 45 | 00 | 70(50%) |
| Benzodia-zepines | 02 | 30 | 08 | 40 (28.5%) |
| Paracetamol | 04 | 06 | 00 | 10 (7.14%) |
| Aluminum phosphide | 00 | 07 | 00 | 07 (5%) |
| Alcohol | 05 | 00 | 00 | 05 (3.5%) |
| Kerosene oil | 05 | 00 | 00 | 05 (3.57%) |
| CUSO4 | 00 | 03 | 00 | 03 (2.14%) |
| **Total** | **41** | **91** | **08** | **140** |

Table 3 depicts maximum suicidal attempts/suicide with Organophosphorous compounds followed by Benzodiazepines and accidental poisoning with Alcohol followed by kerosene oil.

Table 4 depicts Organophosphorous compounds are responsible for (50%) of cases followed by Benzodiazepines (28.5%). The most common cause of poisoning among males was insecticides followed by Benzodiazepines and among females was insecticides followed by Benzodiazepines.

**Table No.4: Gender And Type of Poison**.

| Poison | Male | Female | Total % |
|---|---|---|---|
| Organophosphorous compounds | 20 | 50 | 70 (50%) |
| Benzodiazepines | 10 | 30 | 40 (28.5%) |
| Paracetamol | 03 | 07 | 10 (7.14%) |
| Aluminum phosphide | 02 | 05 | 07 (5%) |
| Alcohol | 05 | 00 | 05 (3.5%) |
| Kerosene oil | 02 | 03 | 05 (3.5%) |
| CUSO4 | 00 | 03 | 03 (2.14%) |
| **Total** | **42** | **98** | **140** |

# DISCUSSION

Total 140 patients of acute poisoning were admitted in CMH Muzaffarabad during the period from January 2009 to December 2010. According to WHO three million acute poisoning cases with 2, 20,000 deaths occur annually and of these 90% of fatal poisoning in developing countries.

Muzaffarabad having a population of 5, 45,817 during the study period, the rate of poisoning comes out to 12.824 per / 100000 population per year. Maximum number of poisoning cases occurred in the month of June whereas minimum number of poisoning was seen in the month of October. Increased cases in June were due to increased farming activity like spraying of pesticides in the season.

The poisoning was common in 21-30 years (48.5%) followed by 11-20 years (23.5%) as found by others (8, 9, 10, 11). The higher incidence can be explained by the fact that persons of this age group are suffering from stress of the modern life style, failure of less percentage in the exams, scolding from parents or teachers, failure to love, family problems etc. change over from the concept of joint family to nuclear family has forced modern youth to face the problem of day to day living both at home and outside, on their own, without the much needed advice from the elders. When their problems and tensions become unbearable ending one's life seems to be the only solution for them.

The number of females was more (70%) as compared to males (30%). Almost similar pattern of predominance by females was shown in study by Dr. Afzal Memon (11) where females outnumbered (55.08%) males (44.91%). However the previous studies (12,13) shows male predominance and when compared with current

study it shows shift of trend towards females. Females being alone at home were more prone to suffer from loneliness and depression from various psychological problems. Family problems are also on increase.

The most common poison abused was organophosphorus compounds (50%) followed by Benzodiazepines (28.5%), paracetamol and other drugs (7.14%). Aluminumphosphide (5%). Studies available from other parts of country also denote Agrochemicals are the most commonly abused and of the Agrochemicals organophosphonus compounds are more commonly encountered agents (11) similar reports were seen in the study from Asian countries such as Sri Lanka, Bangladesh(14,15)However some studies from Pakistan and from Malaysia and Oman shows 11 therapeutic agents mostly responsible for poisoning (16,17)

Muzaffarabad is hilly area but for common people main source of bread and butter is farming. These Agrochemicals are easily available, leading to increased incidence of poisoning. In Muzaffarabad most drugs including benzodiazepines are easily available. There are almost 50 different brands available in the market, 10 of which are of diazepam alone. They are particularly popular as sleeping pills and tension relievers. It is extremely easy for someone to walk into a medical store and ask for a packet of diazepam.

The most common manner of poisoning was suicidal followed by accidental this may be because of reasons like economic crises, examination failure, love failure, quarrels, un employment and chronic illness. Similar are the findings of various authors. The results of study showed that trend from accidental poisoning have shifted in favor of suicidal poisoning. The major cause of morbidity and motility in United States is self-poisoning (18). About a million people die by suicide each year worldwide. Organophosphorous compounds are the commonest agent not only for accidental purposes but also for self-poisoning.

We found increase in the use of Organophosphorous compounds poisoning (50 %) as compared to Benzodiazepines (28.5 %). This study is opposite to study by khurramat al(19)that showed that poisoning with Benzodiazepines is more common than Organophosphorous compounds. However the studies done in Karachi Pakistan support our current study (11, 20).

# CONCLUSION

Organophosphorous compounds' are the major chemical agents which pose a health threat particularly to young people, our study shows that self-poisoning was common in females and there is a marked decline in the use of benzodiazepines and other agents as compared to Organophosphorous compounds which shows increase in their usage resulting in changing trends of poisonous agents.

Effective measures should be adapted by the concerned authorities to decrease the risk of poisoning and to improve the outcome which many be as follows.

- Continuous Medical Education should be mandatory for doctors to keep them updated regarding diagnoses and management of poisoning.
- Antidotes should be made available in hospitals.
- Storage and sale of insecticides and other drugs should be controlled and there should be strict enforcement of law.
- Government should take necessary steps to improve the condition of farmers and for better employment facilities.
- Basic health education during schooling.
- Educating the teen age population regarding handling of stressful situations.
- Religious scholars must all assist in preventing self-poisoning.
- We must follow the injunctions of Islam which clearly condemn suicide

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