The Professional Medical Journal
www.theprofesional.com

DOI: 10.29309/TPMJ/18.4490

ORIGINAL PROF-4490

HUMAN POISONING;

PREVALENCE OF HUMAN POISONING IN SARGODHA, PAKISTAN.

1. MBBS, DMJ (UHS)
Assistant Professor
Department of Forensic Medicine,
Sargodha Medical College,
Sargodha.
2. MBBS (Pb), DMJ (Pb)
FCPS (Forensic Medicine)
M.Sc (Med. Admin)
Associate Professor/Head,
Department of Forensic Medicine,
Sahiwal Medical College, Sahiwal.
3. MBBS, DMJ (UHS)
Associate Professor/Head,
Department of Forensic Medicine,
Independent Medical College,
Faisalabad.
4. Student of MBBS
Aziz Fatima Medical College,
Faisalabad.

Correspondence Address:
Dr. Summyia Sadia
Assistant Professor
Department of Forensic Medicine,
Sargodha Medical College, Sargodha.
summyiasadia@hotmail.com

Article received on:
07/11/2017
Accepted for publication:
15/01/2018
Received after proof reading:
31/01/2018

Summyia Sadia[1], Altaf Pervez Qasim[2], Bashir Ahmad Siddiqui[3], Junaid Altaf Qasim[4]

ABSTRACT… Objectives: To determine the prevalence of poisoning in local population of District Sargodha. **Study Design:** A retrospective study. **Setting & Duration:** The study was conducted in District Head Quarter (DHQ) Teaching Hospital, Sargodha for the period of one calendar year from 1st January, 2016 to 31st December, 2016. **Methodology:** One hundred indoor patients of poisoning were studied for the role of age, gender, residential background, marital status, type of poison / drug taken, method of intake, time of the intake of poison, duration of stay in the hospital, treatment and the outcome. **Results:** Males had a preponderance over females (3:2), rural to urban (3.5:1), married over unmarried (1.63:1), the most affected age group was 21-30 years involving (45%) victims, thirty five cases of wheat pill poisoning outnumbered all other. The poisoning cases commonly reported in the months of February, March, April and July. Suicide was the commonest manner of death, the usual route of poisoning was oral (83%), patients hospital stay was one day in majority (75%) cases, whereas combined treatment was given in (56%) cases which lead to a recovery rate in 73% victims. **Conclusion:** Effective legislation & strict control for sale of dangerous drugs and poisons, awareness amongst the society and vigorous efforts by the trained medical staff can save precious lives from poisoning.

Key words: Prevalence, Poisoning, Self-harm, Wheat Pills, Organophosphates.

Article Citation: Sadia S, Qasim AP, Siddiqui BA, Qasim JA. Human Poisoning; Prevalence of human poisoning in Sargodha, Pakistan. Professional Med J 2018; 25(2):316-320. **DOI:**10.29309/TPMJ/18.4490

INTRODUCTION

"All things are poison and nothing is without poison; only the dose makes that thing not poison"

Paracelsus

Poisoning is a major cause of death in this modern era. In year 2008, the number of deaths due to poisoning exceeded the vehicular accident deaths and was the leading cause of injury & death for the first time since 1980. During the past three decades, the death rates due to poisoning increased nearly three folds.[1] The global burden of disease study reported that 593,000 people killed themselves during 1990 and 75% of total world-wide deaths occurred due to self-harm.[2] According to WHO, about two million people attempted suicide and one million accidental poisoning cases are reported every year world-wide.[3]

Hanging, self-immolation and jumping from high buildings are common methods of self-harm in many Asian Countries and associated with high mortality. However, the toxicity of available poisons and the paucity of medical services in the developing world ensure that the mortality rate for deliberate self-poisoning is higher at 10-20% even in industrialized countries.[4] Organophosphate compounds are used globally for the pest control over 100 years. Those are common agents for suicide and accidental poisoning due to its easy availability. In Sri Lanka, self-poisoning with pesticides is the most common method of self-harm in many rural districts,[5] highly lethal,[6] associated with impulsivity,[7–9] and the fifth leading cause of death.[10] In Pakistan, most of the drugs including benzodiazepine are available over the counter. In a recent study benzodiazepine ingestion was found to be the most common method in Para suicide case.[11]

Amongst the factors responsible for self-poisoning, interpersonal conflict with the opposite

sex was the most common. In the culture of Indo-Pak, marital life appears to be a significant source of stress for women. The reports based on official police records do not reflect the true picture of the problem in our set up.[12] This study is conducted to provide an insight to the factors including gender, age group, mode, method of poisoning, seasonal variations, type of poisoning, the residential background of the victims, duration of hospital stay, type of treatment given and the outcome of poisoning in the admitted patients in District Headquarter (DHQ) Teaching Hospital, Sargodha. It will not only help out in taking the preventive measures to decrees this major health issue but also helpful to find out the better / effective strategies thereby reducing the economic burden on the health budget in combating this preventable issue according to the recommendations of World Health Organization.

METHODOLOGY

The study was conducted at DHQ Teaching Hospital, Sargodha in Medical units 1&2, Intensive Care Unit (ICU) and Emergency ward. A random sample of 100 patients was taken from patients admitted during the period of 1st January, 2016 to 31st December, 2016. The patients admitted in Pediatric ward were not included. Patient's information regarding age, sex, marital status, address, date and time of admission / discharge were noted on a predesigned proforma. The type, mode and method of poisoning, treatment provided and their outcome were given special considerations. The data tabulated and analyzed using descriptive analysis.

RESULTS

Amongst the 100 indoor patients, 60% were male sufferers belonging to different age groups e.g. (45%) at ages 21-30 years, (13%) involving the age group of 31-40 years, the victims of ages 41-50 years (5%), 51-60 years (4%), more than 60 years (5%) and the victims of less than 20 years were (26%). Majority (78%) patients were from rural background; out of the total one hundred victims, 62 were married. The commonest poison used was Aluminum Phosphide (wheat pills) in (35%) cases, while organophosphates were used in 19%, rat pills 11%, addictive drugs 6%, Copper Sulphate and acids 4% each, benzodiazepine & alcohol 5% each & phenyl was used in two cases only whereas type of poison could not appreciated in nine cases.

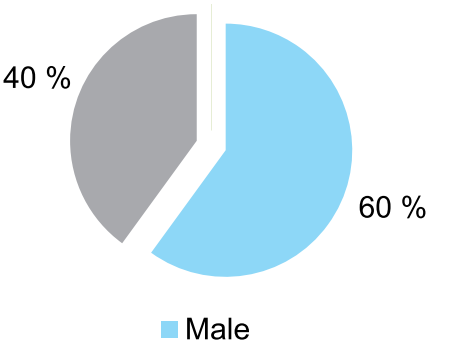

Figure-1. Gender ratio among victims of poisoning

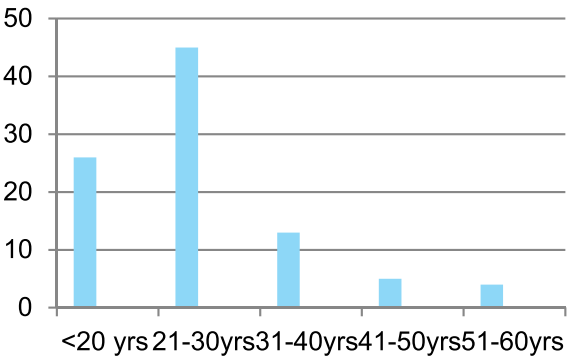

Figure-2. Involvement of different age groups

Type of Poison / Diagnosis	No. of Patients
Wheat Pill Poisoning	35
Rat pill Poisoning	11
Addictive drug Poisoning	6
Acid intake	4
Alcohol Poisoning	5
Organophosphorus Poisoning	19
Phenyl Poisoning	2
Unknown Poisoning	9
CuSo4 Poisoning	4
Benzodiazepine Poisoning	5

Table-I. Showing type of poisons used & No. of victims

Duration of Stay	No. of Cases
1 day	75
2-3 days	15
>3 days	10

Table-II. Showing the victims stay in hospital

The usual stay in hospital was One day in (75%) cases though some (15%) patients stayed for 2-3 days and (10%) patients remained under treatment even more than 3 days. Majority (72%) of the cases were suicidal while some of them (17%) were accidental and (5%) were homicidal. occupational exposure also caused poisoning in six cases.

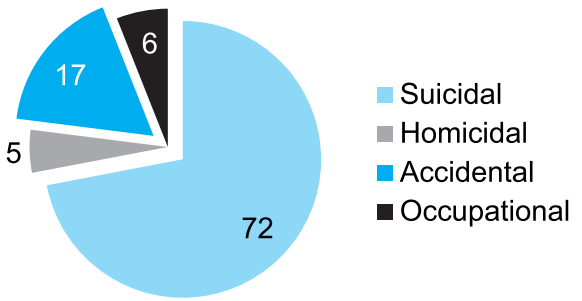

Figure-3. Showing manner of poisoning among victims

Combined treatment was given to majority (56%) victims while only gastric lavage was done in (13%) cases, antidotes provided to seven patients and symptomatic treatment alone were also given to the number of cases.

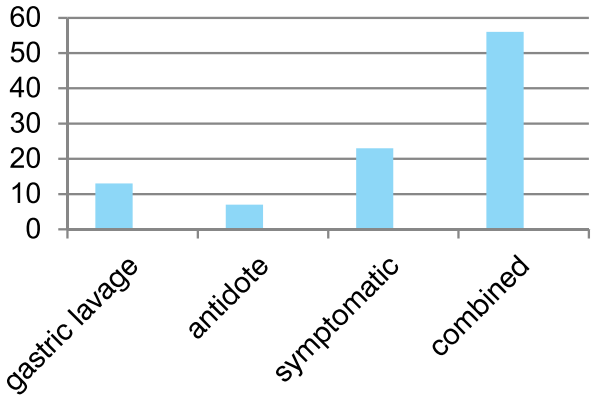

Figure-4. Showing the methods of treatment of victims

Outcome of poisoning was full recovery in 73 cases while 27 patients could not survive inspite of all resuscitative measures. The prevalence of poisoning was higher in the months of Feb-May (spring) and then July (extremely hot).

DISCUSSION

Poisoning is a common public health problem all over the world since a long time occurring in all regions and countries and affecting people of all ages and income groups. It is reported that almost 700 people die from poisoning everyday all over the world thus influencing several families.[13,14] The incidence of poisoning in developing countries is reported to be 13-fold higher as compared to the developed countries.[15]

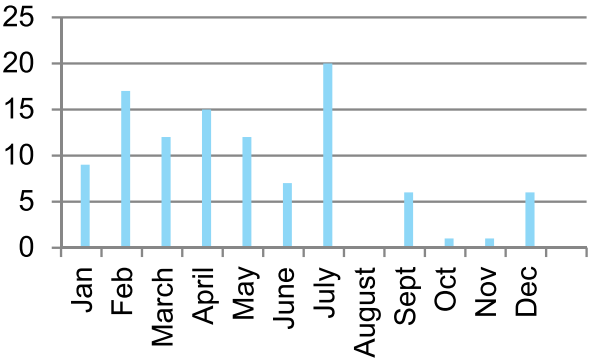

Figure-5. Showing the seasonal variation of poisoning cases

This study included 100 indoor patients of poisoning with male-female ratio (3:2). Reason for male predominance among suicidal cases could be due to economical burden on them as compassed to the female in our religion[16] whereas the studies conducted at China, [17] Japan[18] and Austria[19] have opposite trends. Majority (45%) patients comprised of younger age groups 21—30 years which are in accordance with the study in six cities of Pakistan.[20] Loss and conflict were the most commonly identified negative life events precipitating suicidal behavior involving 35 cases of wheat pill poisoning and 19 victims of organophosphate poisoning. These finding are in line with those of Pyar A et al.[4]

Negligible legislation for undue propagation of media with virtually minimal implementation has caused the emotionally immature minds to find out a negative remedy to their problems & the result is obvious. The prevalence of many cases of poisoning in spring and hot summer seasons are quite in accordance with a similar study conducted in Faisalabad, a major agricultural city of Pakistan.[7] The use of vigorous efforts by the hospital staff, availability of antidotes and use of combined treatment has made it possible to get the recovery: death ratio (3:1). These type of results are quite parallel to other studies of the developing countries.[21,22]

CONCLUSION AND RECOMMENDATIONS

Our study shows that by the proper enforcement of law in sale and distribution of dangerous drugs and addictive medicines, setting the boundaries of electronic media in exposure of critical facts and creating awareness amongst the society for education are a few goals to be set now on a serious note. Need of the hour is to generate resources on a national level to eradicate poverty and use the young blood in employment to make them useful and responsible member of the society. It will not only save the precious lives but also reduce the expenditure of the health budget in combating the diseases according to set goals of WHO in the developing countries.

REFERENCES

1. Warner M, Chen LH, Makuc DM, Anderson RN, Minino AM. **Drug poisoning deaths in the United States, 1980-2008.** NCHS data brief 2011; 81:1-8.
2. Thomas SH, Bewan L, Bhattacharyya S, Bramble MG, Horner JE, Rodgers A et al. **Factors affecting hospital admissions and length of stay of poisoned patients in the north east of England.** Hum Exp Toxicol 1996; 15(11):915-9.
3. Aardema H, Meertens JH, Ligtenberg JJ, Peters-Polman OM, Tulleken JE et al. **Organophosphorus pesticide poisoning: Case and developments.** Neth J Med 2008; 66 (4):149-53.
4. Pyar A, Anwer A, Bashir B, Jabeen R, Haroon H, Makki K. **Clinical pattern and outcome of organophosphorus poisoning.** JLUHMS. 2012; 11(1):15–8.
5. Knipe DW, Metcalfe C, Fernando R, et al. **Suicide in Sri Lanka 1975-2012: age, period and cohort analysis of police and hospital data.** BMC Public Health 2014; 14**:** 839.
6. Dawson AH, Eddleston M, Senarathna L, et al. **Acute human lethal toxicity of agricultural pesticides: a prospective cohort study.** PLoS Med 2010; 7:1-10.
7. Eddleston M, Karunaratne A, Weerakoon M, et al. **Choice of poison for intentional self-poisoning in rural Sri Lanka.** Clin Toxicol (Phila) 2006; 44**:** 283–6.
8. Gunnell D, Eddleston M. **Suicide by intentional ingestion of pesticides: a continuing tragedy in developing countries.** Int J Epidemiol 2003; 32**:** 902–9.
9. Mohamed F, Manuweera G, Gunnell D, et al. **Pattern of pesticide storage before pesticide self-poisoning in rural Sri Lanka.** BMC Public Health 2009; 9**:** 405.
10. WHO. **Country health profile: WHO Sri Lanka. Geneva: world health organization, 2015.** http://www.who.int/gho/countries/lka. (Accessed on October 20, 2017).
11. Khan MM, Reza H. **Methods used in deliberate self-harm in Pakistan.** Psychiatric Bulletin 1996; 20:367–8.
12. Khan MM, Rza H. **Benzodiazepine self-poisoning in Pakistan: implication for prevention and harm reduction;** J Pak Med Assoc 1998; 48:293-5.
13. Marvin C, Master M. **A Practical user's guide.** 2nd ed. New Jersey: Wiley interscience; 2008.
14. Zine KU, Mohanty AC. **Pattern of acute poisoning at Indira Gandhi medical college 33 and hospital, Nagpur.** J Ind Aca for Med 1998; 20: 37-9.
15. World Health Organization. **Guidelines for poison control.** Bulletin 1999; Geneva, World Health Org.
16. Masud U, Saeed A, Siddiqi BA. **Pattern of suicidal death in Faisalabad:** APMC 2013; (7):35-40.
17. **Epidemiology of suicide (from Wikipedia) the free encyclopedia.** (Accessed on October 22, 2017) available at: https://en.wikipedia.org/wiki/Epidemiology_of_suicide.
18. Inoue K, Fukunaga T, Okazaki Y, Ono Y. **Reports on suicidal trends in persons aged 60 or over in Japan: the need for effective prevention measures.** Med Sci Law. 2011; 51: 32-5.
19. Antretter E, Dunkel D, Haring C. **Cause specific-excess mortality in suicidal patents: gender differences in mortality pattern.** Gen Hosp Psychiat 2009; (31):67-74.
20. Khan MM, Naqvi H, Thaver D, Prince M. **Epidemiology of suicide in Pakistan; determining rates in six cities.** Arch suicide Res 2008; 12(2):155-60.
21. Pajoumand A, Shadina A, Rezaie A, Abdi M, Abdollahi M. **Benefits of magnesium sulphate in the management of acute human poisoning by organophosphorus insecticides.** Hum Exp Toxicol 2004; (23):565-9.
22. Eddleston M. **Patterns and problems of deliberate self-poisoning in the developing world.** Q J Med 2000; (93):715-31.

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Summyia Sadia	Study planning, Collection of data, Preparation of resutls.	
2	Altaf Pervez Qasim	Manuscript writing, Review of literature, Authentication of references, Proof Reading.	
3	Bashir Ahmad Siddiqui	Statistical Analysis / Tabulation of the results, Manuscript setting / editing.	
4	Junaid Altaf Qasim	Helped in typing the manuscript and Proof reading.