



Audit of the Wheat Pill Cases at Medicolegal Clinic Mayo Hospital Lahore

**Kanwal Zahra¹, Maryam Shahid^{1*}, Waqas Aslam², Usman Shahid Butt³
and Nida Zahra¹**

¹Forensic Medicine and Toxicology, Department of King Edward Medical University, Lahore, Pakistan.

²M. Islam Medical and Dental college Gujranwala, Pakistan.

³Forensic Medicine and Toxicology, Department of Govt. Khawaja Muhammad Safdar Medical College, Sialkot, Pakistan.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i43B32528

Editor(s):

(1) Dr. Carlos M. Contreras, Unidad Periférica Xalapa, Instituto de Investigaciones Biomédicas, UNAM, Instituto de Neurootología, Universidad Veracruzana, Mexico.

Reviewers:

(1) Samaila Musa Chiroma, University of Maiduguri, Nigeria.

(2) Marcella Mauro, University of Udine, Italy.

(3) Jun Kobayashi, University of Kochi, Japan.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/72778>

Original Research Article

Received 20 June 2021
Accepted 26 August 2021
Published 09 September 2021

ABSTRACT

Objective: To determine the audit of wheat pill cases at medicolegal clinic of Mayo Hospital Lahore.

Materials and Methods: This descriptive study was conducted at Department of Forensic Medicine and Toxicology (medicolegal clinic), King Edward Medical University Lahore. This audit was of 9 months from September 2020 to May 2021. Patients presented at emergency department with attempt of wheat pills poisoning of all age groups and both genders were included. Cases were diagnosis via history of wheat pills consumption by the relatives. All the cases were given primary recovery and were shifted to the Intensive Care Unit (ICU). Data was collected on monthly basis form September 2020 to May 2021. All the data was collected via study proforma.

Results: Total 49 wheat pill cases were observed during 9 months, their mean age was 29.26±12.68 years. Out of all 51.0% were males and 49.0% were females. Labourer males and housewives were most common 34.7% and 40.8% respectively. Frequency of wheat pill cases were high in months of September, October and May. At the time of admission 59.2% cases were

seen conscious, 36.7% were semiconscious and 4.1% were unconscious. Out of all 59.2% were died.

Conclusion: This study observed that the wheat pills are highly toxic with the quick and high mortality rate. Strict legislations are recommended to the sale control of these pills all over the country.

Keywords: Wheat pill; poisoning; gender; season.

1. INTRODUCTION

Suicide attempt is the significant medical condition throughout the world with in excess of 800,000 occurrences overall yearly and seventy-five percent of the worldwide suicides happen in the middle and low-income nations [1]. Though pesticide ingestion, hanging and guns are among the most well-known strategies for self-destruction around the world, trends vary between nations regarding the age groups, access and availability of the means [2-4]. Mirroring global studies, the three most common methods for suicides in Pakistan are poisoning, firearms and hanging [2,5]. Pakistan is a wheat growing country and the wheat pills are used to preserve wheat grains [6]. Wheat pill and its dynamic fixing aluminum phosphide is one of the arising reasons of the poisoning and the regions predominantly hit are the ones where agriculture is the main business [7]. It is protoplasmic poison which inhibits protein and enzyme synthesis. Phosphine interrupts stages of mitochondrial electron transport by inhibiting cytochrome C oxidase and oxidative phosphorylation, which eventually results in ALP depletion and cell death. Rapidly absorbed from GIT, lungs, and some AIP metabolized in liver and a lowly release phosphine, and cause damage to internal organs [7]. Aluminum phosphide is accounted for to be profoundly poisonous when devoured from a newly opened compartment and the deadly portion for a normal measured individual is accepted to be 150-500 grams [6]. It comes in contact with moisture, phosphine gas is released which is rapidly absorbed from mucosal surfaces. Phosphine leads to cellular hypoxia and circulatory failure by inhibiting oxidative phosphorylation [8-9]. It affects cardiovascular, gastrointestinal, respiratory and nervous system. Death results in ALP poisoning due to arrhythmia, refractory hypotension, hepatic and or renal failure [8]. Updating knowledge of health care professionals may help reduce the risk of deleterious consequences of poisoning [6]. This study has been conducted to determine the audit of wheat pill cases at medicolegal clinic of Mayo Hospital Lahore.

2. MATERIALS AND METHODS

This descriptive study was conducted at Department of Forensic Medicine and Toxicology (medicolegal clinic), King Edward Medical University Lahore. Patients presented at emergency department with attempt of wheat pills poisoning of all age groups and either of gender were included. This audit was of 9 months from September 2020 to May 2021. All the patients presented with any other poisoning agents, patients with pre-existing medical illness, doubtful history of poisoning and those who did want to participate in the study were excluded. The diagnosis was based on basis of history of consumption of wheat pills. After taking initial resuscitation like gastric lavage with vegetable oil patients were shifted to intensive care unit. Data was collected on monthly basis from September 2020 to May 2021. All the data was collected via study proforma. Data was entered and analyzed through SPSS version 20. Quantitative variables like age, were computed in the form of mean and standard deviation. Qualitative variable like gender, were computed in the form of frequency and percentage.

3. RESULTS

Total 49 wheat pill cases were observed during 9 months, their mean age was 29.26 ± 12.68 years. Male to female ratio was almost equal, 51.0% were males and 49.0% were females. On admission 59.2% cases were seen conscious, 36.7% were semiconscious and 4.1% were unconscious. As per occupational status labourer and housewives were most common 34.7% and 40.8% respectively. At the time of admission 59.2% cases were seen conscious, 36.7% were semiconscious and 4.1% were unconscious as showed in Table.1

According to monthly based audit the frequency of wheat pill cases were high in months of September, October and May as showed in Fig. 1.

As per survival rate majority of cases 59.2% these survival cases some were still admit in the were died and 40.8% were survived and out of Hospital Table 2.

Table 1. Descriptive Statistics of demographic characteristics (n=49)

Variables		Statistics
Age (years)	Mean ± SD	29.26 ± 12.68
	Minimum	12 years
	Maximum	75 years
Gender	Male	25(51.0%)
	Female	24(49.0%)
	Total	49(100.0%)
Occupational status	Laborer	17(34.7%)
	House wife	20(40.8%)
	Businessmen	5(10.2%)
	Govt JOB	1(02.0%)
	Raksha driver	1(02.0%)
	Student	5(10.3%)
	Total	49(100.0%)
Consciousness	Conscious	29(59.2%)
	Semiconscious	18(36.7%)
	Un-conscious	2(04.1%)
	Total	49(100.0%)

Table 2. Overall survival rate (n=49)

Survival	Frequency	Percent
Yes	20	40.8
No	29	59.2
Total	49	100.0

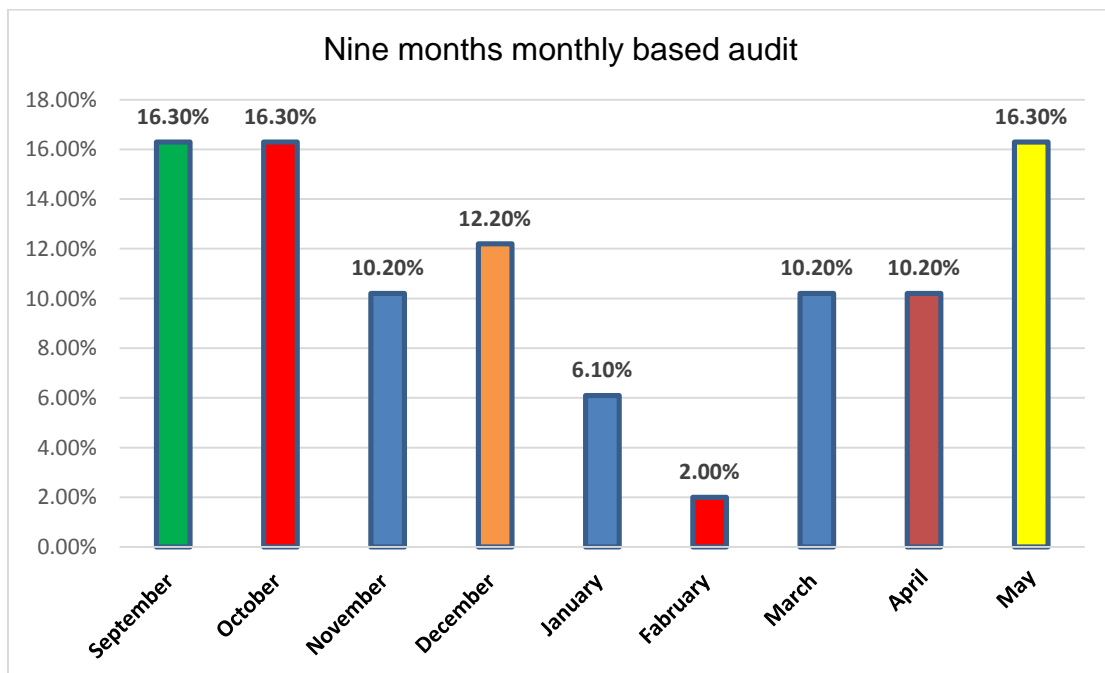


Fig. 1. Monthly based frequency of wheat pill cases n=49

4. DISCUSSION

Poisoning is a major health problem due to high morbidity and mortality throughout the world. In this study the mean age of the cases was 29.26 ± 12.68 years and male to female ratio was almost equal, 51.0% were males and 49.0% were females. However, in the study of Qureshi MA et al. [10] reported that there were 40.9% males and 59.1% females, while consistently they reported that the most of the cases were in the age group of 21-30 years. On other hand Safdar M et al. [11] reported that the suicidal behaviors were more common among individuals younger than 30 years. Females comprised 60% of those who attempted suicide. Although in the study of Durrani A et al [12] demonstrated that the out of 285 cases 150 were males and 135 were females and young population (11 to 20 years old) was the most affected (38.6%). Consistent findings were seen in the study of Munema Khan MK et al. [13] as out of 180 cases 54.4% were male and 45.5% were female and the average age of the cases was 29.11 ± 12.8 years. This difference in gender ratio and age may be because of high variation in sample sizes of the studies and cultural behaviors. As per our observations the young persons are more unstable with their emotions, due to more impact of certain hormones. Durrani A et al [12] reported that the high ratio of females because of mental torture due to their staying at home and lack of education, along with the tradition of forced young age marriages in rural populations. However, in this study labourer and housewives were most common 34.7% and 40.8% respectively.

In this study 59.2% cases were seen conscious, 36.7% were semiconscious and 4.1% were unconscious and according to monthly based audit the frequency of wheat pill cases was high in months of September, October and May. In this study as per survival rate majority of cases 59.2% were died and 40.8% were survived and out of these survival cases some were still admit in the Hospital. While Hassan A et al. [14] reported that the overall mortality came out to be 33%. On other hand it is demonstrated that it carries a very high mortality rate which approaches 98 - 100% in some severe cases [15-16]. Mortality varied place to place, time arrival to hospital, availability of intensive care units, likely related to the severity of the patient's condition. Mortality was also dependent on the level of care available in the Centre where the patient was under treatment [11]. The literacy

rate in large urban centers such as Karachi and Lahore, the two largest cities in the country, is close to 75%, whereas the average literacy rate in rural areas is <50%. Along with other factors, terrorism has negatively affected sustained economic growth in Pakistan over the past two decades, leading to a high unemployment rate. The persons who survive, are advised and send to psychiatric for evaluation and counselling and if needed, for treatment as well.

In this study according to monthly based audit the frequency of wheat pill cases was high in months of September, October and May, this may be because of in Pakistan especially in Punjab harvesting of wheat occur in April and May, so more chances of easy availability of pills in this month, after harvesting, public store it, in summers wheat pill poisoning has more incidence.

In this study the average time of arrival different, depends upon the distance of patient's location and Hospital distance and when patients tell the relatives about poison or they know by themselves, but it usually more than 1 hour. The health indicators of the country continue to remain poor. Unlike other countries including India, here is not any control on sale of this poison. Recommendations of the policies for the services support after suicide bereavement heavily rely on the voluntary sector with little input from psychiatric services to address described risks. Strategy suggestions for help administrations after suicide deprivation intensely depend on the voluntary sector with little contribution from mental administrations to address portrayed risks. Policymakers ought to think about how to fortify wellbeing and social consideration assets for individuals who have been deprived by suicide to prevent the morbidity and mortality.

5. CONCLUSION

This study observed that the wheat pills are highly toxic with the quick and high mortality rate. Both genders almost equally effected. September, October and May months found with high frequency. Average time of arrival different, depends upon the distance of patient's location and Hospital distance and relative knowledge. Strict legislations are recommended to the sale control of these pills all over the country. The survival cases should be referred to the psychiatrics for evaluation and counselling and if

needed, for treatment as well. Further large-scale studies are recommended on this subject.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Shekhani SS, Perveen S, Akbar K, Bachani S, Khan MM. Suicide and deliberate self-harm in Pakistan: a scoping review. *BMC psychiatry*. 2018;18(1):1-5.
2. Safdar M, Afzal KI, Smith Z, Ali F, Zarif P, Baig ZF. Suicide by poisoning in Pakistan: review of regional trends, toxicity and management of commonly used agents in the past three decades. *BJPsych open*. 2021;7(4).
3. Snowdon J. Differences between patterns of suicide in East Asia and the West. The importance of sociocultural factors. *Asian J Psychiatr*. 2018;37:106–11.
4. Cha ES, Chang SS, Choi Y, Lee WJ. Trends in pesticide suicide in South Korea, 1983–2014. *Epidemiol Psychiatr Sci*. 2019;29:e25.
5. Abdullah M, Khalily MT, Ahmad I, Hallahan B. Psychological autopsy review on mental health crises and suicide among youth in Pakistan. *Asia Pac Psychiatry*. 2018;10(4): e12338.
6. Hassan A. Wheat pill poisoning: clinical manifestation and its outcome. *Journal of Rawalpindi Medical College*. 2014 Jun 30;18(1):49-51.
7. Anjum Z, Habib MN, Tariq Z, Ali S. Inhalational wheat-pill poisoning: a household chemical warfare agent. *Cureus*. 2019;11(9).
8. Nadeem M, Shafiq M. Mortality Indicators of Aluminium Phosphide Poisoning: Experience at DHQ Hospital Rawalpindi. *Ann. Pak. Inst. Med. Sci*. 2015;11(2):64-66.
9. Agrawal VK, Bansal A, Singh RK, et al. Aluminum phosphide poisoning: Possible role of supportive measures in the absence of specific antidote. *Indian J Crit Care Med*. 2015;19:109–112.
10. Qureshi MA, Nadeem S, Ahmed T, Tariq F, Rehman H, Qasim AP. Aluminium Phosphide Poisoning: Clinical Profile and Outcome of Patients Admitted in a Tertiary Care Hospital. *APMC*. 2018;12(3):191-194.
11. Safdar M, Afzal KI, Smith Z, Ali F, Zarif P, Baig ZF. Suicide by poisoning in Pakistan: review of regional trends, toxicity and management of commonly used agents in the past three decades. *BJPsych open*. 2021;7(4).
12. Durrani A, Shahid O, Sabir A, Faisal M. Types of Poisoning Agents Used in Patients Admitted to Medical Department of Holy Family Hospital, Rawalpindi (Pakistan) from 2011 to 2015. *Asia Pac J Maed Toxicol*. 2017;6:50-4.
13. Munema Khan MK, Raza S. Gender based differences in patients of poisoning managed at a Medical Unit. *JPMA*. 2019;69:71025-28.
14. Hassan A. Wheat pill poisoning: clinical manifestation and its outcome. *Journal of Rawalpindi Medical College*. 2014;18(1): 49-51.
15. Humayun M, Haider I, Badshah A, Subhan F. Protective role of G6PD deficiency in aluminium phosphide poisoning. *J Coll Physicians Surg Pak*. 2015;25(Suppl 1):S66-8.
16. Chugh SN. Incidence and outcome of aluminium phosphide poisoning in a hospital study. *Indian J Med Res*. 1991;94:232-5.

© 2021 Zahra et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/72778>