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OPEN PEER REVIEW

Death Related to Aluminum Phosphide Poisoning from 2013 to 2018 in Alborz-Iran and Preventive Measures

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

0 comments

No public comments in this round.

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Why the study period is 2013-2018? Please update the information up to the 2023 year .1

Sorry, we have not availability to further data. In other words, it is difficult to access the death data, and the ethical code of research has been issued for the mentioned time period, i.e. 2013-2018.

I didn't find any information about the main aim (trend of deaths due to aluminum phosphide poisoning) in the abstract .2

.The highest and lowest mortality rate was 12.53 per million in 2014 and 5.42 per million in 2015, respectively

?Did you report the crude rates or the age and sex adjusted rates .3

.I reported crude rate

."Revise "Man-witty .4

"I did it. "Mann-Whitney

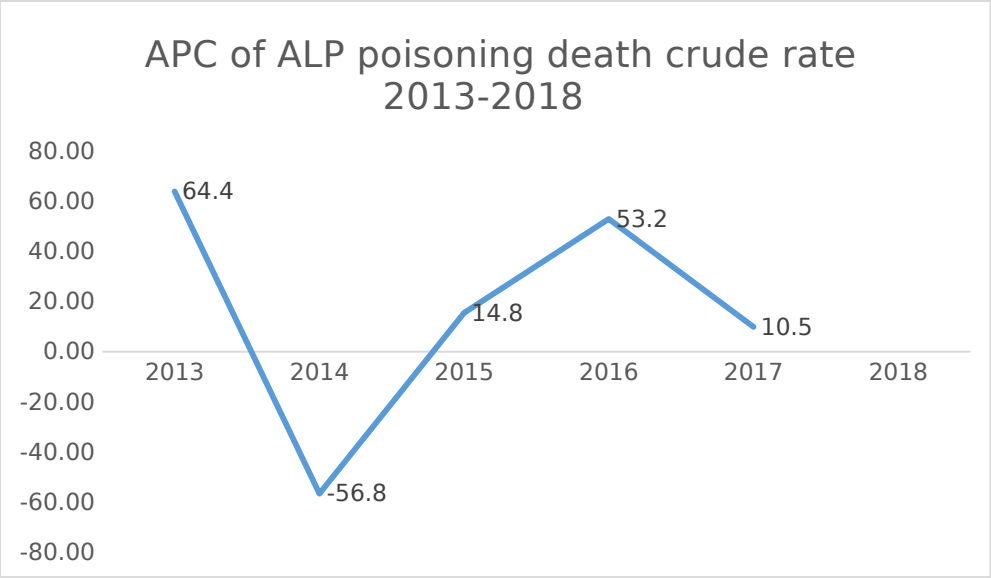
"Revise "sub diploma .5

I did it. Sub-diploma

The sum of reported frequencies in Table 1 are not equal to 140. For example, 74+45+19=138 or 18+118=136 .6

.I corrected it

.How about the APC and AAPC? I didn't find any information .7



AAPC: 17.14

P<0.000 is not true. Report as <0.001 .8

.I corrected it

.P>0.05 is not acceptable. Please report the exact P-values .9

I wrote the exact P-values

."Revise "3.4 SE .10

.I corrected it

11.The study focuses on a single province in Iran (Alborz) over a specific time period. While providing valuable insights for that region, the findings may not be generalizable to other regions of Iran or other countries with similar pesticide use patterns. The authors should discuss the limitations of generalizing these findings to broader populations

Alborz province has a unique demographic situation in Iran because it has a sample of diverse population in it. In other words, it is the second province in Iran which people emigrate to it. Since Alborz attracts people from various regions of Iran with a wide range of cultural, socioeconomic, and agricultural practices and it provides a more representative sample of the Iranian population. The study also showed that many subjects 63.6% were born outside the province and lived in Alborz province.

12.The abstract mentions sociodemographic characteristics like education and occupation, but it lacks detail on how these factors specifically relate to ALP poisoning. A more in-depth analysis of the association between these variables and suicide risk could strengthen the study's contribution.

Education was not related to gender in cross tab test, P value was 0.2. Education was not related to the toxicology test. Fisher's p value was 0.2. Education was not related to Birth place; P value was 0.3. Education was not related to age; P value was 0.8. Occupation was not related to toxicology test; P value was 0.6. After reclassification of occupation to employed and unemployed, it was related to gender with P value <0.001 and education P value=0.01.

13.While the conclusion suggests preventive measures like stricter regulations and public education, the discussion lacks specific details on how these measures can be implemented effectively. The authors should elaborate on the feasibility and potential challenges associated with each proposed measure.

Challenges: Lack of public awareness about how to deal with a poisoned person

Solution: Educational campaign

In Iran, the last week of October is named as the poisoning prevention week, the purpose of which is to make the public aware of the types of poisoning, symptoms, and how to prevent it. Drug and poison information centers in all provinces of the country under the supervision of the Ministry of Health's Food and Drug Deputy provide educational and advisory services regarding poisoning. Follow up

Challenge: The treatment of poisonings has become complicated in recent decades, and poison control centers are not available everywhere.

Solution: Compilation, application and updating of treatment and training guidelines for physicians by toxicologists

Replacing aluminum phosphide with less dangerous substances such as garlic.

14.The study relies on forensic records, which may introduce potential biases in data collection. For example, the accuracy of reporting suicide as the cause of death might be influenced by cultural or social factors. The authors should acknowledge and discuss these potential biases.

We acknowledge the importance of accurate data collection in forensic studies, especially regarding sensitive topics like suicide. Biases can significantly affect the validity of the findings. In some cultures, suicide may be stigmatized, leading to underreporting of the cause of death.

We cross-checked all data with the death registry and forensic medicine organization regarding cause of death. All the poisonings were due to suicide except for one.

To address any sources of bias in determining the actual cause of death, systematic toxicological analyses were performed on liver, bile, stomach content, blood, and vitreous humor collected at autopsy examination

in Forensic Toxicology Laboratory, Legal Medicine Organization, Karaj, Iran. Diagnosis of phosphine poisoning was based on the history given by relatives, autopsy examination hospital reports, and finally toxicology analyses.

Several studies with the same topic have described the cause of death as suicide, including Shokarzadeh's study,

.out of 105 cases of poisoning, 104 cases were suicide attempts and one was suicide, and more were in men

Concomitant toxins are not well identified because they are looking for the main cause of death in forensic medicine, and by identifying them, tests are not mandatory to identify others.

Relatives of the deceased may have underreported the history of addiction, mental illness and suicide due to cultural and social issues and lack of information.

15. The study focuses solely on ALP poisoning deaths. A comparative analysis of ALP poisoning deaths with other causes of death (e.g., other poisoning incidents, accidents, natural causes) within the same region and timeframe would provide a more comprehensive understanding of the public health burden.

In 2017 in Alborz province, the crude rate of death due to traffic accidents was 10.7 per hundred thousand people, suicide was 4.45 per hundred thousand, and poisoning was 1.74 per hundred thousand also in 2018, the crude rate of death due to traffic accidents was 10.5 per hundred thousand, suicide was 6.43 per hundred thousand, and poisoning was 2.34 per hundred thousand.

The data analysis of death does not exist from 2013 to 2016 in the province.

2 Revision 1

1 comment · 3 Mar 2025

Associate Editor

MAJOR REVISION 3 Mar 2025

Dear Authors,

Thank you for submitting your manuscript, “Death related to aluminum phosphide poisoning from 2013 to 2018 in Alborz-Iran and preventive measures,” to Shiraz E-Medical Journal. We have now completed the review process, and I would like to inform you of the decision based on the feedback provided by the reviewers.

The reviewers have carefully evaluated your work and provided constructive comments to help improve the manuscript. While your study addresses an interesting topic, there are several concerns that need to be addressed to strengthen the manuscript.

Based on the reviewers’ recommendations, the manuscript is recommended for major revision. If you choose to revise the manuscript, please ensure that you address all the reviewers’ comments in detail and provide a point-by-point response to each suggestion.

We appreciate your interest in Shiraz E-Medical Journal and look forward to receiving your revised manuscript. Should you have any questions, please do not hesitate to contact me.

Sincerely,
Associate Editor, Shiraz E-Medical Journal

Reviewer's Comments:
1. Why is the study period 2013-2018? Please update the information through 2023. This manuscript will be published in 2025 or 2026.
2. Reporting the adjusted rates for age and sex is necessary.
3. Revise “sub-diploma”.
4. P>0.05 is not acceptable. Please report the exact P-values.

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

2. Reporting the adjusted rates for age and sex is necessary.

Regarding the standardization of age and gender, given that the data is related to a province, on what basis should standardization be done? In cases where we have data from different provinces with different age distributions, the issue of standardization is raised, but here the information is from a city and there is no basis for standardization.

For cells in the table where the sample size was small, estimates were made for cells where there was a sufficient sample size.

3 Revision 2

1 comment · 4 Aug 2025

Editor-in-Chief

MAJOR REVISION 4 Aug 2025

Major Revision

4

Revision 3

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

1. **Update information up to 2023**

We do not have access to data from 2019 to 2021 due to archiving of files in legal medicine organization.

2. **Reporting the adjusted rates for age and sex is necessary.**

Regarding the standardization of age and gender, given that the data is related to a province, on what basis should standardization be done? In cases where we have data from different provinces with different age distributions, the issue of standardization is raised, but here the information is from a city and there is no basis for standardization.For cells in the table where the sample size was small, estimates were made for cells where there was a sufficient sample size.

4 Revision 3

2 comments · 31 Aug 2025 – 31 Aug 2025

Associate Editor

ACCEPT 31 Aug 2025

Accept.

Editor-in-Chief

ACCEPT 31 Aug 2025

Accept