Reviewer’s report

Title: Burden of Paraquat Poisoning in the Department of Antioquia, Colombia

Version: 0 Date: 02 Nov 2018

Reviewer: Omid Mehrpour

Reviewer's report:

This is a retrospective study conducted to estimate the disease burden of PQ poisoning in the Department of Antioquia (Colombia) in 2010-2016. Below are some suggestions and questions which may help guide the authors with this effort. I hope the comments prove helpful in improving your work and allowing acknowledgement of limitations while getting the most out of what you have done. The manuscript can be much improved if the following issues are briefly discussed:

1. In the current study, authors estimated the burden of PQ poisoning using different and in some cases irrelevant sources of information. For example it has been noted "The values of duration of the disease and rate of remission for acute poisoning and paraquat-induced pulmonary fibrosis were obtained from the literature (13-15)" these references belong to other countries (Korea and Japan). It seems that the information from different sources were enrolled. Please explain about these variabilities and unconformities in target group (PQ poisoning in in the Department of Antioquia, Colombia) and source of information (literature related to other countries). These cannot be representative of your target population and can cause the bias.

2. Perhaps the most important limitation is that the authors retrospectively analyzed admissions due to acute paraquat poisonings reported to the national epidemiological surveillance system (SIVIGILA) in the 2010-2016 period

3. The methodology of study is ambiguous and the studied population should be defined more clearly with sufficient details to allow replication

4. In this study I did not see clear details about calculation of two main variable of years of life lost (YLL) and years of life lived with disability (YLD). It need to report a very precise details.

5. Statistical analysis section should be improved. In other words, this data would prove more useful if you provide distribution of variables used for sensitivity analysis in this data set

6. One general concern I have is with the identification of patients who are paraquat poisoned. My concern is how can the reader be sure that we are looking at PQ poisoning in all recorded cases? Please clarify the methodology.
7. In the material and methods section, some essential questions remain unanswered. Please explain your inclusion and exclusion criteria more clearly.

8. Did you include data related to patients with the history of co-ingestion of poisons or unknown agents? How did you considered the cases with co-ingestion of drugs/poisons in your statistical analysis?

9. Please clarify and elaborate were some variables such as patient's visits and days of hospital stay, severity of PQ poisoning and etc. included in your statistical analysis?

10. It is recommended to report additional information about the demographic characteristic of participants at the beginning of results section.

11. The Discussion would be improved by detailing more specific implications for future studies.

12. Please explain more about the implication of this study results. How the study results can help clinically?

13. In your introduction Please indicate the prevalence rate of PQ poisoning and its cause specific mortality in the world and Colombia.

14. The ethical considerations must be addressed more clearly in the material and methods section.

15. More references are needed to support author's statements in the introduction.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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