Author’s response to reviews

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

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Version: 2 Date: 05 Jan 2019

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Dear Natália Brucker

BMC Pharmacology and Toxicology

PHAT-D-18-00237R1

Burden of Paraquat Poisoning in the Department of Antioquia, Colombia

We send a point-by-point response letter with revised manuscript:

Thanks for the revision of the manuscript. From my first review, a few small issues remain regarding comment N.1. It has been noted" sensitivity analysis was performed for each of these parameters taking a range of possible values and assuming a distribution. As it was evidenced, the final result of DALYs was not sensitive to the change in the values of said probabilities guaranteeing the robustness of the mode" first it needed to provide results of the sensitivity analysis performed on this data set.
Response: We accept the recommendation. The variables whose change modified the final estimate of DALYs in greater magnitude are found in figure 1. In addition, a table 3 was added and an explanation in the methodology section so that the reader can interpret said table.

Second, as you included the results of studies that belong to other countries other than Colombia for computing years of life lived with disability, how do you correlate and generalize these results as the burden of PQ poisoning in your country?

Response: We accept the recommendation. In the discussion in the paragraph of limitations we wrote the following in this respect:

“To minimize the possible information bias due to the use of probability values extracted from the literature, which come from populations other than the Colombian population; sensitivity analysis was performed for each of these parameters taking a range of possible values and their distribution. As it was evidenced the final result of DALYs was not sensitive to the change in the values of said probabilities guaranteeing the robustness of the model. Second, there are no specific "disability weights" for PQ intoxication or for PQ-induced pulmonary fibrosis. In our study, we used those reported for intoxications in general and for moderate COPD based on the fact that the disability generated by pulmonary fibrosis, at least in terms of spirometry and in survival is not very different from that presented by patients with moderate COPD, as evidenced in previous studies both local(30) and international (20). In the sensitivity analysis, the percentage of change in the total estimate of DALYS did not exceed 25% with the variables analyzed, achieving the greatest change with the mortality rates of men and women between 15-44 years. Mortality in this study was extrapolated from the literature given because there are still serious limitations in the death records in our country regarding the death cause. It is not uncommon for PQ intoxication or any chemical substance to be placed as a cause of death, with which mortality rates may undervalue a true estimate. Also we do not consider the exclusion of patients with other concomitant poisonings since it was not a variable that could be validated in the registries.”

In conclusion we think that given the main inputs (mortality, incidence) were obtained from local data, and that the values extracted from the literature did not significantly change the value of DALY, the results enjoy an adequate external validity in our country.
I mean the management and patient care can change dynamically across the countries. Presented analyses lead to this conclusion that PQ poisoning is a serious problem, with a tremendous social impact in Colombia. So you cannot clearly provide your results for Colombia.

Response: We accept the recommendation. We add the following paragraph to detail that aspect in the discussion

“It is clear that the reduction in the DALYs depends in our country of the reduction of the mortality rate in young people and adults. This rate depends not only on effective prevention and promotion policies, but also improvements in the quality of medical care. Our results show this problematic unknown until now, and are supported with local data which constitutes an added value with respect to other studies”

Please provide ethical code for approval in the University of Antioquia in the parenthesis

Response: We accept the recommendation, “ethical code for approval in the University of Antioquia (2015-4690)"

The authors.