Author’s response to reviews

Title: Carbon monoxide and risk of outpatient visits due to cause-specific diseases: a time-series study in Yichang, China

Authors:

Yu Wang (wangdayuanesthe@163.com)
Chengye Yao (yaochengye@hust.edu.cn)
Chengzhong Xu (150516150@qq.com)
Xinying Zeng (zengxinying1987@126.com)
Maigeng Zhou (maigengzhou@126.com)
Yun Lin (frank0130@126.com)
Pei Zhang (zhangpeicdc@163.com)
Peng Yin (yinpengcdc@163.com)

Version: 1 Date: 03 Apr 2019

Author’s response to reviews:

Response to Reviewers:

Dear Dr. Hoek,

Thank you for inviting us to submit a revised manuscript. We really appreciate the reviewers’ comments and we have revised our manuscript according to their comments. Revised sections are in tracked changes format in the manuscript. Please see our point to point responses as below:
Reviewer #1: Thank you for inviting me to review this article. Wang et al conducted a time-series study to evaluate the association between ambient carbon monoxide and cause-specific outpatient clinic attendance in Yichang, China. The study reported an association between 1 mg/m3 increments of ambient CO at lag 6 days and increased daily outpatient clinic visits across respiratory, cardiovascular, genitourinary, gastrointestinal and neuropsychiatric diseases. They reported that the association was stronger during the warmer seasons compared to the cool seasons.

This is a large city-wide study with a good description of the methodology and adjustment for potential confounders. I have a few comments you may wish to consider:

Major comments:

1) The article could benefit from some description of the structure of the local health service. The article states that the most significant increase in outpatient visits is at lag06. Could this be because it takes a few days to arrange an outpatient appointment rather than the time it took for CO to exert its health effects? It is therefore difficult to ascertain whether the individual lag estimates for outpatient clinic attendances accurately describe the time course of the acute effects of CO compared to acute hospitalisations for instance.

Response: Thank you for this comment. We agree with the reviewer that the structure of the local health service is important when interpreting the lag effect. It is not unusual to take a few days to arrange an outpatient appointment in big cities such as Beijing and Shanghai, especially in the big general and specialized hospitals. Yichang, however, is a typical middle sized Chinese city, where the residents normally don’t need to make appointment for the outpatient visits. It is less likely to bias the time course of the acute effects of CO in our study. We have added some descriptions to address this issue in the revised discussion section.
2) Whilst the authors noted that the associations appeared more notable in older patients, a statistical comparison between different age groups should be performed. The same could be done for gender and season as well to strengthen the argument.

Response: Thank you for the comment. We have added the statistical comparisons between different age groups, gender and season, as suggested. We have added corresponding descriptions in the method and result section.

3) I struggled to understand figure 1. As I understand it, the x-axis before the green vertical line indicates individual lags and those after are for moving averages. I would suggest splitting them into two separate graphs to make it clearer. Also, for the moving averages, the x-axis labels only states lag 03.

Response: Thank you for this comment. We understand the reviewer’s concern and have already split the current Figure 1 into two separate graphs as suggested. The revised figure 1A is the individual lags and the figure 1B is moving averages. We also corrected all the labels for both figures in the revision.

Minor comments:

1) Overall, the article could benefit from language corrections to improve readability. Particularly the abstract.

Response: We have carefully checked the manuscript and made necessary language corrections. Native English speakers have helped with the polish of the paper.

2) Table 3 and 4 contains a lot of information. You may wish to consider presenting this as a forest plot to provide a clearer message.

Response: We understand the reviewer’s concern and have changed table 4 to a forest plot (new Figure 2) as suggested. We keep the original table 3 as a table to reflect the reviewer’s comment No. 2 to present the results for statistical comparisons.
Once again, we thank you for your valuable comments and suggestions and we look forward to hearing from you.

Sincerely

Peng Yin MD, PhD
Associate Professor of Epidemiology
National Center for Chronic and Noncommunicable Disease Control and Prevention
Chinese Center for Disease Control and Prevention