Reviewer's report

Title: Association of traffic-related hazardous air pollutants and cervical dysplasia in an urban multiethnic population: a cross-sectional study

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Reviewer: Kirsten Jensen

Reviewer's report:

Review comments to the manuscript
Association of traffic-related hazardous air pollutants and cervical dysplasia in an urban multiethnic population: a cross-sectional study
Michael E Scheurer, Heather E Danysh, Michele Follen and Philip J Lupo

Major Compulsory Revisions
1): In the introduction please make it clear whether the authors are searching for cofactors that in addition to HPV increase the risk of cervical dysplasia/cervical cancer (even though the study design is not sufficient for this kind of analysis given the cross sectional design) or merely is studying associations between some factors and cervical dysplasia/cervical cancer. The associations could very easily be explained by an increased risk of being HPV positive, which is known to be a necessary cause for cervical cancer. E.g., when mentioning sexual behavior it is rather obvious that this is found associated with cervical cancer due to the risk of HPV (and assumable not anything else). This is crucial for the entire paper – I recommend to revise the paper with this in mind – including the abstract. The aspect of HPV cofactor is only mentioned in the last sentence in the conclusion, which is a petty, as the data material allow to restrict the study population to high-risk HPV positive women only (which will be the most appropriate definition of the study population).

2): In the method section information about how the study participants are selected is needed. Information is needed about HPV testing. Definition of cervical dysplasia (and lack of cervical dysplasia for the controls) is needed.

3): It the mother study is focusing on cervical cancer it is surprising that there is no questionnaire data about sexual behavior and cervical cancer screening history/history of Pap smears. Especially the latter is relevant for a comparison between cases and controls (table 1)

4): The distribution of HPV types between cases and controls (especially the unknown category) is important for the reader (could be added to table 1).

5): Please also discuss the influence of cervical cancer screening and HPV infection on the results (equally distribution between cases and controls)

Minor Essential Revisions
1): Please be very precise when reporting results from table 2 (it is unclear why
table 2 has 3 decimals and the results are only presented with 2 decimals – please be consistent

2): The SD in the sentence “The mean (SD) completed years of education was 13.3. (3.1) years” seems high compared to table 1. Could this be a typing mistake?

3): It seems conflicting when writing “All subjects were infected with HPV” and the authors continue with “information on HPV status was not available for 69 subjects”. Please clarify these sentences.

4): Please be more precise in the wording when reporting continuous results.

5): Table 3: Please add the continuous… per...

6): There might be a typing mistake in table 3/the results section for the 95% CI for benzene aOR high exposure

7): Reference 31 and 32 seem old for referencing “epidemiological evidence”.

Discretionary Revisions

1): Instead of using the expression level of education “years of education” could be used, which will be more precise.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests