Reviewer's report

Title: Cell type specificity of lung cancer associated with low dosage soil heavy metals contamination in Taiwan: An ecological study

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Reviewer: Hong Zhang

Reviewer's report:

With my father's recent ER visit and still in hospital, I couldn't get more time to examine the article in detail, but here are some inputs from my first impression:

1. I feel that authors raised an interesting question and well defined it. I just have a minor question for the topic chosen: Adenocarcinoma and squamous are both belong to non-small cell ca; Lung ca is clinically commonly categorized into small cell and non-small cell ca. It would be more expected to study small cell vs. non-small cell ca than comparing two cell types in the same category.

2. The method session: what are the selection criteria for townships if not all township selected? The numbers of township didn’t add up. Were the 354 townships obtained from National Cancer Registry Program all townships in the areas if study? Soil Heavy metal collected from 283 townships were stated in line 88 but the table 1 showed N= 285. In the limitation session, author stated “the date from only 40 townships were (was) left”.

3. In line 67 and 68 “In epidemiology disease map is commonly used to explore the disease variation and then to generate the hypothesis of a causal relationship between disease and environmental factors”. “Disease map” maybe a direct translation from Chinese but I’m not sure is a common term in epidemiology, and consider the term “association” rather than a “causal relationship” since a spot map can not generate causal relationship.

4. Was the date used “incidence” or “prevalence”? It was mentioned as incidence as well as “occurrence” (Result session in Abstract).

5. Similar as my own draft publications, there are many Chinese-English expression such as in Abstract line 5 and 6, “… especial(ly) for low dose heavy medical contamination exposure from soil”- consider the sequence of words like “from exposure to soil heavy metal contamination”… There are also many “is” should be past tense “was”. I would suggest an English editing before publication.

6. The statistic method used it proper for this kind of study but I wasn’t able to get more time to study in detail.

7. Overall, the article appeared to be high in internal validity, as well as external validity.

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests