Reviewer's report

Title: A hybrid expert approach for retrospective assessment of occupational exposures in a population-based case-control study of cancer

Version: 0 Date: 05 Sep 2018

Reviewer: Pamela Dopart

Reviewer's report:

This is a nice paper that contributes an approach for assessing retrospective exposures in population-based studies. The hybrid approach aims to make the job-by-job expert review process more efficient and transparent, while maintaining the ability to provide job-specific estimates.

Comments

1. It would be nice to have a little more information on when and how the multi-site study data were used. In the Methods sub-section "Job-exposure profiles", it is noted that the core of the JEPs are tables summarizing exposures for 1,571 7-digit occupations in the Lung study; how many occupations (at the 4-digit code level) were included from the multi-site study? In Table S1, would it perhaps be possible to stratify the number of exposed jobs for each agent by study, when applicable?

2. In the Methods sub-section 'Data selection' it is noted that 203 agents were retained that were evaluated in both studies and that had at least 5% of jobs exposed in one of the 90 occupations. Does that mean at least 5% of jobs had to be exposed in EACH study?

3. It may be useful to provide some examples of jobs/occupations for which there were no JEP available, as well as examples of the related occupations which were used to evaluate these jobs. If data for a related occupation were completely unavailable, how was the job assessed?

4. Are these additional agents, outside of the predefined 300, that you might expect the PROtEus population to have been exposed to?

5. Were any of the assignments of confidence, concentration, and frequency defined by time periods? Is this (i.e. time trends) something the JEP approach could incorporate in the future?
6. It may be helpful to include a few lines in the discussion section about whether (and how) this approach may be adapted for other study populations, within and outside of Canada. What additional considerations would have to be taken into account?

Minor Comments:

1. Table 1 - Footnote #1 next to the 1,661 subjects in the Lung Cancer study notes that these are male subjects. A similar footnote is not included next to the 4,263 subjects in the Multi-site study; does this mean that both male and female subjects were included?

2. Table S1 - in the 'Comments' column, there is occasionally values noted such as C = 2, R = 1, etc. What do these letters and numbers mean?

3. Table S3 - the description of the table notes that there were n=209 agents retained in the comparison. However, the main text reports 203 agents. Is this reflective of a typo in the table or are those 6 agents accounted for some other way?

4. Table S3 - Is it possible (or useful) to reorganize the agents within each group by global prevalence (or even by alphabetic order)? Currently, the agents seem not to be listed in any particular order (or are they?), making it harder to location information.

5. Possible typos:

   a. Page 6, Line 29 - remove the 's' from chemicals in "or other chemicals products"

   b. Page 10, Line 41 - addition of 'a' before combination in "some jobs summarized by combination of"

   c. Page 19, Line 9 - add 's' to concentration in "the impact was stronger for concentration where"
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