Reviewer's report

Title: Risk of cancer among HIV-infected patients from a population-based retrospective cohort study: implications for cancer prevention

Version: 5  Date: 30 October 2014

Reviewer: Suzanne Marie Ingle

Reviewer's report:

Major Compulsory Revisions

1. I am still confused by how the matching of cases and controls was done according to year of enrolment. The authors have clarified that ‘year of enrolment’ was in fact year of HIV diagnosis. How then was ‘year of enrolment’ defined for the control, HIV-negative, population?

2. In response to the comment from reviewer 2 about the timing of HIV infection and cancer diagnosis, the authors have said that the date of cancer diagnosis might have been before the date of HIV diagnosis. Therefore, it seems like a person could be diagnosed with cancer in the year 2000 and get infected with HIV in the year 2008, and they would be included in the group as HIV-positive instead of as a control. Is this the case, or I have I misunderstood? If this is true, then I think there are some major issues with the design of the study. Can you please clarify the temporality of events?

3. In response to my first comment about lack of information on follow-up time, the authors have provided some explanation. This explanation is critical and should certainly be included in the text of the manuscript and not just in the response to reviewers. In this explanation it sounds like only people diagnosed with HIV in the year 2000 were included, and it then seems like the mean follow-up time of 2.5 years is very short. Were people in fact diagnosed with HIV throughout the years 2000 to 2011? This seems more likely, but is unclear. I think that Table 1 should include information on year of enrolment.

4. I would be interested to know how many patients died (and therefore were censored in the analysis) before a cancer diagnosis. Is there a problem of competing risks? This is probably not a problem, but having some numbers would help to assess this.

5. You have answered my query on “Is it possible to assess whether duration of HIV infection had an impact of incidence of different types of cancer?”. You could look at the time from HIV diagnosis to cancer occurrence (or censoring) and acknowledge it is an underestimate of duration of infection. This could give some valuable insight to the reader about how many patients had HIV and cancer diagnoses at similar times (This would also speak to the comment from reviewer 2 about whether people had a cancer which revealed HIV infection).
Minor Essential Revisions

1. The author’s note the increased risk of AIDS-defining cancers (i.e. cervical cancer) among the HIV positive population. This is not surprising, but could the author’s comment in the Discussion whether these are more likely to be diagnosed in HIV+ compared to HIV-, simply because they are AIDS-defining? i.e. if a clinician knows a patient is HIV+, are they more likely to look for these cancers?

2. The author’s response to my original comment on site-specific cancers [When looking at site-specific cancers, how were patients categorised if they had more than one cancer? Did they get counted under each type of cancer when calculating the SIRS? What happened if they had 2 occurrences of the same type of cancer in the follow-up period?] should be included in the manuscript text. Also please include information on how many patients had multiple cancers.

3. In Table 1, mean follow-up time has been included. Please also include the standard deviation, or median and interquartile range if that is more appropriate.

4. Methods 2nd paragraph: Please include the definition of ‘filed claims’ into the text of the manuscript.

5. After the introduction of the nationwide screening protocol in 2010, did incidence of cancer increase in the population? This study has data up to 2011, so the effect of the screening programme may start to be evident here.

Minor issues not for publication

1. Abstract: Background. The first sentence now says the same thing twice in mentioning effective ART. Could simply be rephrased as “The burden of cancer is likely to increase among the HIV-positive population as it ages due to successful ART.”

2. Table 1 contains percentages in the style “01.97%”. Please remove the leading 0 in these numbers. You have done this. Please also change the other numbers of this style in the table. 01.75%, 03.14%, 02.83%, 03.68%, 02.77%.

3. Figure 1, the English reads strangely. I suggest changing the text in the bottom 4 boxes. For example, change “Occur cancer” to “Developed cancer” and change “Not occur cancer” to “Did not develop cancer”.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests.