Reviewer's report

Title: Cancer incidence in registered nurses potentially exposed to antineoplastic drugs and adverse pregnancy outcome incidence in their offspring

Version: 5 Date: 10 February 2010

Reviewer: Wouter Fransman

Reviewer's report:

I still think that this is a well written and clearly understandable manuscript which describes the results of a survey to study the cancer incidence and adverse pregnancy outcomes of registered nurses potentially exposed to antineoplastic drugs. I do, however, still think that there are major flaws in the exposure assessment procedures. Although these are now clearly addressed in the discussion section of the manuscript, these make the exposure assessment very imprecise, which together with the lack of adjustment for potential confounding factors makes your results very hard to believe. I consider the conclusion that these oncology nurses have an elevated risk of rectal and breast cancer very far fetched when taking into account the exposure assessment procedures. In comparison with the previous version of the manuscript, I still have (mostly) the same comments (described below):

Major compulsory revisions

- Methods, page 4: It was assumed that antineoplastic drugs are mainly used in oncology departments. It is well known that antineoplastic drugs are used in many other departments outside the oncology department. Were these other departments excluded from the reference group of RNs?
- Methods, page 5: I really doubt the level of accuracy of the classification of exposure in unlikely, possible or probable. Who performed this classification? Was this the interviewed senior departmental representative or the investigator? How can one accurately retrospectively estimate the average number of patients per week, the type of ppe used and the use of any special handling procedures upto 30 years back in time? I think this exposure classification is very arbitrary and will distort the results of your research.
- Methods, page 6: How were the exponential weightings derived (0, 0.04, 0.16, and 0.64)? Were they based on exposure measurement results?
- The results were not adjusted for possible confounding factors, which probably would have great impact on the results. The reported elevated risks of breast and rectal cancer could well have been caused by many other risk factors or exposures (like radiation, chemical exposures, etc.) which occur in or outside a hospital.

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