Reviewer's report

Title: Reproductive factors and oesophageal cancer in Chinese women: a case-control study

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Reviewer: Martin Rutegård

Reviewer's report:

Chen and colleagues have conducted a hospital-based case-control study in Guangzhou, China from Jun 2006 to May 2009 with 73 cases and 157 controls. The exposure was defined as various reproductive factors in women whereas the outcome was newly diagnosed oesophageal cancer. In general, the study is coherent and mainly well-written (although the English might need some refinement) but is definitely lacking in details concerning the methodology. The topic is interesting, but substantial novelty is unfortunately lacking as this series too is small and also potentially influenced by selection bias as it can hardly be called population-based.

# Major Compulsory Revisions

1) In the background, it needs to be emphasised that the risk factors for squamous cell cancer and adenocarcinoma are different and that the sex difference is mainly observed for the latter type. The growing incidence of adenocarcinoma but not squamous cell carcinoma also needs to be mentioned.

2) It also needs to be mentioned that the sex difference is age-related, as suggested by Derakhshan et al 2009 Gut and Rutegard et al 2010 European Journal of Cancer. Furthermore, there is ample evidence that risk factors do not seem to be distributed in a skewed fashion between the sexes, as suggested by Lindblad et al 2006 Cancer Causes and Control.

3) Furthermore, there is a pertinent recent meta-analysis on reproductive factors that needs to be included and commented in the introduction and the discussion: Cronin-Fenton et al 2010 European Journal of Cancer.

4) In the methods, it needs to stated what if every type of cancer warranted exclusion from the study; specifically, various types of skin cancers such as basal cell carcinoma and squamous cell cancers might not be a reason to exclude those patients, as these more benign tumours might not influence selection. It might be helpful also to make clear whether controls were included if they ever had suffered from cancer. There is also a need to state why only 2 controls were picked, as opposed to the standard 4-5 per case.

5) I would certainly like to see data on breastfeeding as well, as this previously has been showed to be the only determinant influencing oesophageal adenocarcinoma risk. If this information is not available, this might turn out be a
major disadvantage to this study.

6) In the methods, it should also be clearly stated whether the performed tests were predefined, what reasons prompted the chosen cut-offs in exposure categories. There is a certain risk of multiple testing and one gets the impression that the authors are out on a "fishing expedition".

7) In results, the distribution of adenocarcinoma and squamous cell carcinoma needs to be added.

8) The stratified analysis in the discussion must be mentioned in the methods section; for now, it seems to have appeared magically.

# Minor Essential Revisions

1) In table 1, it would be much preferable to include a column with p values (instead of just stating "p < 0.05" or not).

2) In the discussion, I would like to see a more refined discussion about the consequences of choosing controls from a cohort not randomly selected. There is a certain risk that people seeking routine health examination may be more afflicted by risk factors than the general population, and any bias this may pose must be at least commented upon.

3) It must be an understatement to claim that "...the two histological types... may differ in etiology to some degree". There are substantive differences, e.g. shown by Lagergren et al 1998 NEJM and Lindblad et al 2005 Cancer Causes and Control. This needs to be revised accordingly.

4) Linguistic check is needed.

# Discretionary Revisions

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

Quality of written English: Needs some language corrections before being published

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.