Reviewer's report

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

Version: 1 Date: 16 February 2011

Reviewer: Neal D Freedman

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The authors examine the association of childbearing and menarche history with esophageal cancer in a small hospital based case-control study in Guangzhou China.

Possible associations between menstrual and reproductive factors with esophageal cancer are an intriguing hypothesis. However, few studies have been performed to date. Thus, the current analysis targets an intriguing and potentially important research question. However, the study is limited by a small sample size and also by a cross sectional study design which could potentially be affected by recall and selection bias.

- Major Compulsory Revisions

1. It is very important for the authors to distinguish esophageal cancers by histological type. In China, nearly all esophageal cancers have a squamous histology. In Western countries, however, esophageal adenocarcinoma is more common. The authors should acknowledge that risk factors for these two cancers are very different. For example, alcohol is a strong cause of esophageal squamous cell carcinoma, but not esophageal adenocarcinoma. Obesity, on the other hand, substantially increases adenocarcinoma risk but has little to no association with squamous cancer risk.

The authors should specify the histology of cancers in their study.

More importantly, the authors should restrict their discussion of previous studies to those of esophageal squamous cell carcinoma.

2. The sex-ratio varies substantially by geographic region and histologic type. The highest sex ratio has been seen for esophageal adenocarcinoma in Western countries. Incidence rates for esophageal squamous cell carcinoma are more similar in both sexes, though higher in men than women in many populations. But, in several parts of China with extremely high rates of esophageal cancer, the sex ratio is nearly 1:1. What is the sex ratio in Guangzhou, China? The authors should provide specific data about incidence rates in the region of the current study. Are a similar proportion of male and female patients diagnosed at the hospital and treated? In some parts of the world, men with esophageal cancer are more likely to receive a hospital diagnosis and treatment than women with esophageal cancer.
3. How were the categories for analysis, in Table 2, chosen? For example, there are very few cases and controls in the oldest category of age at first birth. The first and third categories of age at menarche and age at menopause are also very small. Since the first category of age at menarche and age at menopause serves as the referent group, small numbers in this group leads to instability in the risk estimates. The authors should create tertiles or quartiles based on the controls for these variables. Categorizing the exposures in this way will increase the precision of the risk estimates. It is especially important due to the small sample size of the current study.

Also, could the authors analyze years of menstruation? (age at menopause – age at menarche)

4. Where the authors able to collect additional information on other related exposures such as types and duration of contraceptive use (i.e oral contraceptives, IUD), hysterectomy and oophorectomy, breast feeding, or menopausal hormone therapy?

"Minor issues not for publication"

1. Conclusions, first paragraph, replace "firs" with "first"
2. Abstract, Background, "is still lacked" should be "is still lacking"

**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.