

## Peer Review File

Article information: <http://dx.doi.org/10.21037/gs-20-574>.

### Review Comments

Some major modifications are necessary:

1. The authors compare patients aged  $\leq 34$  years with patients aged 35-49 years. Studies referenced by the authors that include some guidelines, do not present these cut-off ages. It is important that the authors discuss why they decided on these cut-off ages and if there is a reference for this age groups. Even if there is no reference, it does not rule out the age groups as designed. However, the cut-off ages should be discussed. According to the literature controversy exists about the definition of very young and young breast cancer and different cut-off have been proposed, it has been shown that younger age is associated with a less favorable prognosis. Finally, I would recommend using very young term instead of young.

- **Reply:** Thank you for pointing this out. According to several previous studies and our clinical experience, we defined age of less than 35 as the definition of very young patients. We revised the paragraph accordingly.  
We also have corrected the category of  $\leq 34$  years old as “very young” throughout the manuscript.
- **Changes in the text:** Page 5, lines 2-4.

2. The introduction should be shortened. It should concentrate on why the authors chose to study this issue - of the differences between young and older breast cancer patients. High risk population and BRCA mutation should be mentioned as well.

- **Reply:** Thank you for this helpful comment. We revised the Introduction section accordingly.
- **Changes in the text:** The first and last paragraphs of the Introduction section.

3. In the results section, the authors repeat their result within the manuscript and within the table and figures. This should be avoided. Too many figures and tables without any additional information are presented.

- **Reply:** Thank you for your helpful recommendation. We have condensed the four tables into two tables. The Results section was revised accordingly.
- **Changes in the text:** The Result section.

4 Were the patients tested for BRCA mutation?

- **Reply:** During the study period (1999-2008), the BRCA mutation test was not the routine test in China. We mentioned the limitation in the Limitation portion of the Discussion Section.
- **Changes in the text:** Page 15, lines 1-4.

5 In the discussion, the authors need to show what new things we learned from the study that were not known before. If nothing is new, it does not rule out this study. However, it should be shown that existing data is slim as is hinted in the introduction.

- **Reply:** Thank you for your useful comments. The present study focused on very young patients with breast cancer in China. Our novel findings primarily focus on treatment, as there is an increasing trend in breast-conserving surgery. We revised the paragraphs accordingly.
- **Changes in the text:** Page 14, lines 4-7.

6 Authors concluded that the study group presented more aggressive tumour feature, but there was no difference in the percentage of chemotherapy. It could be caused by sampling bias. Such as ER + and ER – or HER2 + and HER2 negative breast cancer.

- **Reply:** This is a retrospective cohort study that included patients from ten different hospitals in China from 1999 to 2008. We should accept the fact that the treatment for patients with breast cancer during that period was not consistent across different hospitals. We concluded that the study group presented more aggressive tumor features, but there was no difference in the percentage of chemotherapy across groups. This finding is not sampling bias, but rather a reflection of standard of care in China during the treatment period. If the present study focused on the prognosis of very young patients, this treatment deficiency would be discussed in greater detail. We have revised the Discussion and mentioned the above point of view.
- **Changes in the text:** Page 13, lines 1-6.

The tumour grade was not presented.

- **Reply:** This is a nationwide retrospective study in China from 1999 to 2008. At that time, most hospitals involved in the study had no tumor grade for breast cancer, while a few hospitals had incomplete records with respect to grade. We added this as a limitation in the Discussion section.
- **Changes in the text:** Page 15, line 4-5.

7 Discussion start with "While breast cancer diagnosis under the age of 50 is relatively uncommon..." sentence. The authors collected 4211 patients from this there were 2119+295 who was younger than 50 years. It doesn't make sense.

- **Reply:** We apologize for the mistake - it should be <35 years old. There were 295 patients in the study that were <35 years old, 7% (295/4211). This is consistent with our statement regarding the incidence of young patients with breast cancer (6%-25%). Incidence <10% can be referred to as "uncommon."
- **Changes in the text:** Page 10, line 9.

8 The low rate of young breast cancer patients was explained by the oestrogen exposition without any citation or explanation. It should be discussed or deleted.

- **Reply:** We agree with the reviewer and deleted the sentence accordingly.
- **Changes in the text:** Page 10, line 20.

Minor comments

1 Instead of Invasive Ductal Carcinoma better to use NOS not otherwise specified.

- **Reply:** Thank you for this professional suggestion. We replaced the term "Invasive Ductal Carcinoma" with "breast cancer not otherwise specified (NOS)" all through the manuscript.
- **Changes in the text:** Page 3, line 17 & Table 1.

2 AJCC TNM stage should be cited

- **Reply:** We agree with you and added the citation accordingly.
- **Changes in the text:** Page 9, lines 15.

3 Number of study group and control group is not comparable, but it does not rule out the study.

- **Reply:** We agree with the reviewer. The number of patients within the two groups is not the same. We applied an unpaired analysis during the comparison.
- **Changes in the text:** Not applicable.

4 Differences in breast feeding and number of births are listed but not discussed. Are they relevant?

- **Reply:** Differences in breastfeeding and the number of births is relevant to the risk of breast cancer. We added the content accordingly in the Discussion section.
- **Changes in the text:** Page 11, lines 14-22.