Peer Review File

Article information:

**Reviewer A**

This is interesting study looking at prognosis of No. 7 lymph node station and whether it is perigastric D1 or extragastric D2. The article is well written including both descriptions of the research design and reporting as well as the clinical reasoning. The approach is sound, but I have several concerns about the specific methods that I would like the authors to consider. I think these suggestions will enhance the interpretation and rigor of the analysis.

1) Most importantly, the authors excluded 6) loss of follow up and 7) death due to other disease or accidents. This is inherently wrong in most cohort or case-controlled studies. I think it's somewhat okay to exclude if the records are incomplete due to significant missing data, but advantages of survival analysis are that it censors people if they are lost to follow-up. Additionally, if you remove other death etiologies, the survival endpoint is no longer overall survival but is gastric-cancer specific survival. I recommend authors to add back people that were excluded, or conduct a sensitivity analysis and add to limitation paragraph in Discussion. All the terms of overall survival should also be changed to gastric cancer specific survival.

**Reply1**: Thanks for your suggestion and it helps us a lot. I'm sorry to misunderstand the concept of the overall survival, which measure all patients with death due to all kinds of disease and accidents. Actually, in this study, we neither classified the causes of death nor excluded the patient with death due to other disease or accidents. We have deleted this exclusion criteria in the text. In addition, plenty of patients our center treated were not local and came from the other provinces, such as Shandong, Shanxi and Liaoning province in China. Besides, the study had a large time span. Thus, some patients changed their phone number and we couldn't communicate with them. The number of patients lost to follow up is 179, lesser than 10% of entire cohort.
Excluding these patients would not cause the selection bias and make enormous difference on the results of this study. What' more, we adopted the PSM method to reduce the selection bias as much as possible.
**Changes in text**: we have deleted the exclusion criteria 7) in the text (page 6 line 3-4), modified the patients section (page 5 line 16-18) and added the further description for follow up in the limitation section (page14 line 22 to page 15 line 2).

2) For results section, you should include a consort diagram that showed how 1744 patients were excluded to 1586 based on the exclusion criteria.

**Reply2:** Thanks for your suggestion. We have made the consort diagram to show the exclusion criteria.

**Changes in text**: We have made the consort diagram, added cite marker in the text (page 6 line 5) and uploaded in the Supplementary Figure 1.

3) For results section, for all the log rank test comparison between 2 Kaplan meier curves, I would recommend reporting the odds ratio or hazard ratio, 95% confidence interval, and p value Please remove the chi square. Figures 1 and 2 would be enhanced if you report hazard ratio with 95% confidence interval rather than p value as well. For figure 1a, you might want to report median gastric cancer specific survival for each curve as well. Additionally, for every curve, you should include the number of people at risk at 30, 60, 90, 120 months below the x axis.

**Reply3**: Thanks for your suggestion. We have replaced the chi quare with the hazard ratio, 95% confidence interval, and p value and have modified in the all figures and in text. In addition, we have also added the number of people at risk for all Kaplan meier curves.
**Changes in text**: we have modified our figures (Figure 1,2 ,3) and some data in the results section (see page 8 line 18-19 and line 22, page 9 line 2-3, and line 21-22 and page 10 line 1-5) and in the discussion section (see page13, line 7)

4) Please remove figure 3a. Pie graphs are misleading in scientific research, and that information is better presented as line graph with both N (%) or just in table 1 + table 2

**Reply4**: Thanks for your suggestion. We have replaced the figure 3a with the line graph with N(%).
**Changes in text**: We have modified the figure 3a.

5) How come use of adjuvant chemotherapy was not in the propensity score matching? Isn't it indicated for lymph node positive patients? Did everyone get adjuvant chemotherapy? That would definitely affect prognosis.

**Reply5**: Thanks for your suggestion. We have added the adjuvant chemotherapy into the factors which were selected for calculation of propensity score and re-calculated some data in the table 1 and table 2.
**Changes in text**: We have modified some data in the table 1 and table 2. All changes in the table1 and table 2 were using the red color to show the differences. Besides, we also have modified our text in the methods-PSM section (see page 8 line 2) and Results section (see page 9 line 8-14).

6) Finally, I have some general questions that could be addressed in the discussion. In your dataset, are there GC patients that only have No.7 positivity without any perigastric or extra-gastric lymph node? Would that count as skip lesion? Would you advocate for No.7 and D2 dissection for T1 patients? What results might you expect

someone else included R1 resection and those who received neoadjuvant chemotherapy? Would No. 7 node still be prognostic?

**Reply6:** Thanks for your suggestion. we have added some further description in the discussion. Of all 1744 GC patients, we observed 65 patients with skip LN metastases and the better survival rate. Considering the specific clinical characteristic of skip LN metastases, we excluded this subgroup. Our study demonstrated the NO.7 might be on the important lymphatic routine and its prognostic effect, while patients without NO.7 LN metastases couldn't show the superior survival outcomes. This means NO.7 LN metastases might not be essential for extra-gastric LN metastases and there might will another main LN routine remaining unclear.

**Changes in text**: we added a paragraph in the discussion section (page 11 line 19 to page 12 line 10) and the related references and a supplementary figure.