Reviewer’s report

Title: Postoperative chemoradiotherapy is superior to postoperative chemotherapy alone in squamous cell lung cancer patients with limited N2 lymph node metastasis

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Reviewer: Lijun Xue

Reviewer's report:

The present study aims to retrospectively compare the roles of adjuvant chemoradiotherapy (CRT) and chemotherapy (CT) in patients with non-small-cell lung cancer (NSCLC) after resective surgery, which is an interesting and valuable issue in clinical oncology. However, there are some points listed as follows possibly needed to be further discussed or improved.

1. As for the assessment of roles of postoperative adjuvant therapy in NSCLC patients, disease-free survival (DFS) is usually used as one of the most pivotal research endpoints because many factors after the stage of adjuvant therapy (especially after recurrence) will significantly influence overall survival (OS), such as genotypes and EGFR TKIs and checkpoint inhibitors and so on. But in this study, OS has been chosen as the only one standard to analyze effects of adjuvant CRT and CT in NSCLC.

2. As for the N2 issue, which is repeatedly mentioned as one of key factors indicating superior survival benefit from CRT than from CT not only in the title but in the whole text including the part of discussion. In addition, researchers have used a propensity score matching (PSM) analysis to "compensate for differences in baseline characteristics" to improve the accuracy of present study. However, according to the related results shown in Fig.2 G and H, "...the survival differences between POCRT and pCT in the various subgroups were not statistically significant..." (Page 9, line 37-40) after PSM analysis, although with significance before matching. And, the only one significant factor indicated in the study may be the histology of squamous cell type.

3. Page 8, line 9-15, "...with the exception of surgical modality and total number of chemotherapy cycles (Table 1), which did not affect patient survival..."

However, according to the related results shown in Tables 1 and 3, operation modality and CT cycle numbers did affect...before matching but did not after matching, and did affect...by univariate analysis but did not by multivariate analysis.

4. Page 8, line 51-54,

".. >7 MLNs had a significantly... with ≤7 MLNs (P=0.001)."
However, there are no related data about \( P=0.001 \) can be found in the essay (Tables or figures). As Fig2 E & F shown, both p values before or after matching are not 0.001.

5. Page 9, line 9-12, "...POCRT benefited patients with squamous cell histology, without lymphovascular invasion, \( \leq 7 \) MLNs or N2a (Figure 2A, 2C, 2E and 2G)."

Page 10, line 37, "...POCRT achieved a significant survival benefit in N2-NSCLC..."; line 46-48, "...indicating that POCRT should be considered for patients with N2-NSCLC..."

Page 11, line 12-15, ".. patients with N2a (whether N2a1 or N2a2) treated with POCRT achieved a significantly better survival..."; line 26-29, "...>7 MLNs, gained a significant survival benefit from POCRT ..."; line 51-54, "...the conclusion that POCRT may improve the survival of N2-NSCLC patients ...

Page 13, line 1, "...POCRT may be specifically recommended to N2 patients..."; line 23, "...particularly those with limited N involvement and T4 disease...

However, as figures shown, these p values (vascular invasion, MLN7, N2a) are of significance only before matching but not after matching. So, how to explain the role of PSM analysis in this study, which can influence the conclusion mentioned above or not?

6. Page 12, line 18-20, ".. our results strongly suggest that POCRT should be recommended for T4N2 patients.."

However, for this subgroup of T4N2, what are the related data in this study to support it?

7. Some points such as follows associated with the language may need to be improved.

(1) page 2, line 8-11,
"..of postoperative chemoradiotherapy (POCRT) following surgery in non-small-cell lung cancer patients.."

(2) page 2, line 25,
Kaplan-Maier...; but on page 7, line 17, Kaplan-Meier...

(3) page 4, line 40,
..local tumor failure rate..

(4) page 6, line 17,
.... dl-3, or non-squamous cell carcinoma, 21-28d/cycle

(5) ....
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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