Reviewer’s report

Title: Prediction of lymph node status in completely resected IIIa/N2 small cell lung cancer: Importance of subcarinal station metastases

Version: 0 Date: 15 Dec 2018

Reviewer: Peter Kneuertz

Reviewer’s report:

This study by Qiao and colleagues is a single center retrospective analysis of 163 small cell lung cancer patients with N2 disease who underwent lobectomy of pneumonectomy. The study aims to define the prognostic role the extent of N2 disease, including multistation and subcarinal and skip-N2 without N1 disease. Their results show that both multilevel N2 and subcarinal lymph node metastases are associated with a worse prognosis. The study is unusual by its large number of patients who underwent resection small cell lung cancer with nodal disease. As expected, the prognosis of these patients is overall poor, but the data provides information on prognostic differences within stage IIIaN2 patients. My comments are meant to be used to improve the manuscript.

Major Comments:

- As eluded to in the introduction, the presented patients are were discovered to have small cell lung cancer or nodal disease based on the surgical pathology report. Essentially, the majority these patients therefore reflect failures in workup given the omission of a preoperative PET scan and invasive mediastinal staging (>2/3 of tumors >3cm). Please acknowledge this clearly in the manuscript and describe in detail how patients were selected for an operation and how were patients staged preoperatively.

- The interpretation in discussion and conclusion is problematic. Please expand on how the additional prognostic information should be used to guide adjuvant treatment. My interpretation of the findings is the poor outcomes of small cell lung patients with nodal disease, which points to the need for accurate staging to direct patients to the most effective treatments. Per consensus guidelines, these patients should have been treated with chemoradiation and not surgery. It is important to discuss the findings in the correct context to help the reader understand the significance of the findings.

- In the discussion, please discuss outcomes as they compare to established outcomes of Stage IIIaN2 patients treated with chemoradiation.

- In the discussion, "accurate pre-operative diagnosis is difficult" Please explain how this statement. The crux of this study is that preoperative diagnosis is essential given the prognostic implication of nodal disease in small cell and importance to establish the correct diagnosis and stage preoperatively.
- In results, please report differences in survival times in addition to hazard ratios.

- The multivariate analysis of factors associated with subcarinal nodal disease does not include all associated factors from Table 1. Please explain why you chose to leave tumor size out or explain how variables were selected.

- The multivariate survival analysis includes 17 factors, which is a lot for the small number of patients and may result in larger confidence intervals and some factors not reaching statistical significance. Please consider a systematic approach for inclusion of variables.

- Please provide additional details on adjuvant therapy. Did all patients receive adjuvant chemotherapy? What was the time to additional therapy?

Minor Comments:

- Title page- There should be only one corresponding author

- Title page- Please add word count

- Abstract: median OS does not match the reported OS for entire group in manuscript.

- Abstract: typo-"Systemic" lymphadenectomies

**Level of interest**

Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**

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Needs some language corrections before being published

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