Author’s response to reviews

Title: Risk factors and short-term outcomes of postoperative pulmonary complications after VATS lobectomy.

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Author’s response to reviews:

Dear Prof Vipin Zamvar

Editor-in-chief,

"Postoperative pulmonary complications following video-assisted thoracoscopic lobectomy; Risk factors and effect on short term-outcomes in lung cancer patients." (JCTS-D-17-00212).

Please find our reply to the reviewer’s comments for our manuscript, which has been considered for publication in Journal of Cardiothoracic Surgery following revision and response to reviewer comments. We very much thank the reviewers for their time taken, and have addressed each
point in turn with reference to amended manuscript. We have also submitted a marked copy with track changes as well as the amended manuscript.

Reviewer reports:

Reviewer #1: Dear Dr. Agostini,

I read with great interest the paper. I would like to congratulate the authors on the manuscript produced. The work has been well designed and the statistical part is correct.

Comment 1: Personally I do not agree with the conclusion of the non-necessity of routine respiratory physiotherapy, because, although a few percent of the complications described, I believe that a routine physiotherapy program could further reduce the percentage of complications and consequently reduce the early postoperative mortality and morbidity.

Response 1: Paragraph 3 of the discussion has been changed in its entirety to reflect the above comment and improve clarity, Paragraph 3 is now as follows in the manuscript and is highlighted as below;

Amended in Discussion: The majority of patients were found to have issues potentially amenable to physiotherapy, mainly mobility issues; only around a quarter received physiotherapy to ameliorate specific pulmonary problems, such as atelectasis or increased/retained secretions. Additionally, patients who developed a PPC as recognised by the MGS required significantly more physiotherapy input in the postoperative period (up to three times that of other patients requiring therapy). The amount of patients requiring physiotherapy is less in VATS than thoracotomy (12), but with the frequency of mobility issues, pulmonary problems and PPC observed in this study we would recommend ‘routine’ physiotherapy assessment following VATS lobectomy, so that issues amenable to physiotherapy can be identified early.

The conclusion has also been clarified as highlighted: Physiotherapy was applied in most patients to ameliorate mobility or pulmonary issues, however, those developing a recognised PPC required significantly more treatment.
Comment 2: Tables are well constructed. I would improve the quality of the figures produced, in particular Fig. 1, which in my opinion can also be omitted.

Response 2: Figure 1 is important in demonstrating the timing of not only early but late onset PPC patients, as this spans many days a figure is necessary to demonstrate the timings.

Reviewer #2: Postoperative pulmonary complications following video-assisted thoracoscopic lobectomy; risk factors and effect on short term-outcomes in lung cancer patients. This is an interesting paper focusing postoperative pulmonary complication after VATS lobectomy for cancer patients. Current smoking was a significant independent risk factor on multivariate analysis.

Comment 1: FEV1 and DLCO were known as prognostic factors for complications after thoracic surgery. Why DLCO was excluded from factors for analysis. Please clarify the reason.

Response 1: DLCO was not recorded in all patients and therefore was not included in the analysis. In response to this, we have included this in the discussion section.

Amended in Discussion: In our study carbon monoxide lung diffusion capacity (DLCO) was performed only in patients with reduced exercise tolerance or lung volumes so data are limited, however DLCO was also found not to be a risk factor for PPC in VATS lobectomy patients (15).

Comment 2: In this paper, percentage of current smoker was 20%. Please show the definition of current smoker.

Response 2: Current smoker are those who continue to smoke prior to the day of surgery, data captured as self-reported status.

Amended in Methods: Smoking data was collected by patients self-reporting to the specialist thoracic research team (including nurses and physicians) at the pre-operative assessment and the hospital admission using a paper based case report form, which was subsequently uploaded onto
the electronic database. Current smokers were defined as those who continued smoking up to the date of surgery.

Comment 3: Have your department or institution established smoking cessation program for preoperative patients? This paper showed that current smoking is the only significant prognostic factor. Please show a plan to improve the issue.

Response 3: This paper demonstrates that there is still a high incidence of preoperative smoking behavior in those undergoing minimal invasive lung resection, and is a significant risk factor for PPC development. We are planning to undertake a feasibility study to investigate a personalized intensive smoking cessation service integrated into the thoracic surgical pathway and have amended the discussion accordingly.

Amended in Discussion: Currently in the UK there is no integrated preoperative smoking cessation service in thoracic surgery, as only community based cessation services exist. However, these community services are designed to promote long-term quitting, which many smokers due to undergo lung cancer surgery may not be willing to commit to and most report difficulty in attending given their immediate clinical appointments; patient preference therefore is for an integrated approach (27). We are planning to undertake a feasibility study to investigate if personalised intense smoking cessation intervention integrated into the thoracic surgical pathway improves smoking cessation rates when compared to usual care of standard community based NHS smoking cessation.


Comment 4: Please clarify the criteria for ITU admission.

Response 4: ITU admission criteria were those needing invasive ventilation (level 3).
Amended in methods: unless the presence of complications required admission to the ITU (level 3) for invasive ventilation.

Comment 5: The study from far-east countries might show extremely high population of never smoker, because EGFR mutation is major cause of lung cancer. Is the conclusion of this paper useful in such countries?

Response 5: The prevalence of tobacco smoking in those adults aged 15+ in the Far East remains high (>40%; http://www.who.int/gho/tobacco/use/en/). We have found despite prevalence of smoking in adults overall is reducing (in 2016 15.5% of adults aged 18+ currently smoke; http://digital.nhs.uk/pubs/smoking17). However, those patients undergoing lung cancer resection have a higher prevalence of smoking (>20%). Therefore, we would anticipate that this paper would be useful for those countries with a high smoking prevalence and burden of lung cancer, of which surgical resection (including VATS) is the most effective strategy, with risk of PPC.

Final comments from authors: We hope following these major amendments that this journal will be suitable for publication in Journal of Cardiothoracic Surgery.

Yours sincerely,

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