

Peer Review File

Article information: <https://dx.doi.org/10.21037/shc-22-34>

Reviewer A

The authors reports herein a review of risk and management of pneumothorax following endoscopic lung volume reduction with endobronchial valves (EBV). As explained by the authors, post EBV's pneumothorax remains an important concern and a few deaths directly related to this complication have been reported. First the different mechanisms potentially leading to this complication (mainly bronchopleural fistula consecutive to a sudden shifting in lung volumes) are all and well explained. Then the authors review all the risk factors and clearly transcribe the only work focused on pneumothorax' risks factors published Gompelmann and al. in 2016. Finally, following expert recommendations published in 2014, updated in 2020, management of post EBV's pneumothorax is very well explained. Nevertheless, I have minor concerns with that manuscript:

1. The authors highlight that post EBV's pneumothorax occur in up to 34% of the patients. In a recent meta-analysis published in 2019 by Labarca and al., Zephyr® reports a significantly increased risk of pneumothorax with a RR of 6.32 (CI, 3.74–10.67, I² = 0%) while 79 pneumothoraces were reported for 293 treated patients (incidence 26%). This should be added in the manuscript.

Reply: Thank you for this comment.

Changes in text: We have added this to the manuscript (lines 116-118).

2. In the same meta-analysis, the subgroup analysis according to emphysema distribution did not find any intergroup difference for pneumothorax's risk after endoscopic lung volume reduction after EBV. This information could be added in the manuscript.

Reply: Thank you for this comment.

Changes in text: We have added this to the manuscript (lines 116-118).

3. The authors cite the publication of Egenod and al. showing that a 2-step implantation can lead to a progressive lung volume reduction and could lead to a significant decrease of post EBV's pneumothorax. This very low rate of pneumothorax needs to be faced with the results in terms of efficacy. Hence, I think that it should be mentioned that even if there is no direct comparison, results in terms of efficacy seem to be consistent with those found in previous publication. These results are therefore not related to a lower target lobe volume reduction

Reply: Thank you for this comment.

Changes in text: We have added to the manuscript to reflect the low (31%) number of patients who developed total atelectasis after 2-step valve implantation (lines 186-187).

Reviewer B

The authors' review about BLVR addresses preprocedural evaluation, risk assessment and peri-interventional (risk) management.

Line 37: suggest adding: patients with low FEV1/DLCO <20% have been excluded

Reply: Thank you for this comment.

Changes in text: We have added in lines 75-76 as well as in Table 1.

Line 40: please correct the sentence: add references and explain. LVRS is still worldwide used."has not gained widespread use" is not correct. otherwise please add references. Additionally, as far as I know no RCTs to compare BLVR and LVRS exist. LVRS is Evidence Level A recommendation for patients with upper lobe emphysema and low post rehabilitation exercise capacity in the GOLD Guidelines

Reply: Thank you for this comment.

Changes in text: We have added to the manuscript (lines 30-32) to reflect that patients may not wish to pursue the surgical (LVRS) approach due to risk of post operative complications.

Line 74-85 add references

Reply: Thank you for this recommendation.

Changes in text: We have made adjustments – please see new lines 75-76.

Chapter Patient selection: create a figure or table

Reply: Thank you for this recommendation.

Changes in text: We have added a new Table 1.

Line 87 define severe gas exchange impairment and severe airway pathology

Reply: Thank you for this comment.

Changes in text: Please see new lines 76-80. Defined severe gas exchange impairment. Removed "severe airway pathology" – felt to be vague/relative contraindication with severe bronchiectasis.

Line 205 - 214 add references

Reply: Thank you for this recommendation.

Changes in text: see lines 235-253 with references.

Line 197 suggest a flow chart/figure about managing pneumothorax and management of persistent air leak

Reply: Thank you for this comment.

Changes in Text: We have added flowcharts as figures 2 and 3.

Line 217 - 224 add references

Reply: Thank you for this recommendation.

Changes in text: We have added references as requested – see lines 254-270.

Recommendations about long term follow up/post valve care are missing.

Reply: Thank you for this comment/recommendation.

Changes in text: Please see added content (lines 271-277).

Reviewer C

Thanks for your good review on the current PTX knowledge after BLVR. This manuscript will help pulmonologists not familiar with the BLVR procedure. I would ask you to go a bit more into details regarding detection of risk factors and also try to add your advices - e.g. when do bullae or adhesions matter?

Reply: Thank you for this comment.

Changes in text: We have added the manuscript to include this (lines 197-213).

Should we avoid valve when left sided treatment option with these features and choose surgery?

Reply: Thank you for this question.

Changes in text: The finding of increased risk of pneumothorax with left sided valve treatment is not definitive due to differing study results. Surgery is not necessarily recommended in these cases.

And do the authors use antitussive, bedrest or subsequential valve placement? these are not part of any expert panels.

Reply: Thank you for this comment/question.

Changes in text: There is not enough data to recommend routine use of these approaches. Addendums have been added to the manuscript (see lines 220-225).

Regarding incomplete valve placement another citation is missed dealing with IBV instead of EBV and should be added: Wood et al. Bronchology Interv Pulmonol. 2014 Oct;21(4):288-97. doi: 10.1097/LBR.000000000000110.

Reply: Thank you for this advice.

Changes in text: Additional comment added to the manuscript (lines 214-219).

