

Reviewer 1 v.1

Comments to the Author

Critique

Summary: Barto and colleagues present the largest to date cohort study of outcomes from use of HFCWO type chest vest therapy. This article has some issues in the methodology descriptions, conclusions, and style that need addressing to improved the manuscript readability and validity. As the authors did not provide line numbers, I have added for the whole document beginning with the title page for reference. I have outlined these critiques below:

Major Comments:

1. The Authors assert in the abstract lines 61-2 and in the methods that a sample of charts were checked for validity of recall. While this is laudable, no information was provided about the variety of charts, blinding, etc. This is helpful to understand the results of consistency with patient recall presented later in the manuscript.
2. In the abstract lines 68 onward and results/conclusions, the biases and any attempts to account for these statistically should be discussed/analyzed.
3. The last sentence of the introduction and carrying to the methods/results... The authors assert this was a real world study but present not data on the other concomitant bronchiectasis meds, etc the patients were on or the protocol followed. Therefore, revision with this data and a discussion are warranted.
4. The QOL PRO used (discussed in lines 150-54)... Is it validated, published. How was it derived if not validated/published.
5. Regarding the discussion of bias, can you comment on this concern in lines 168-72 beginning "In all methods...". What was done if a patient stopped using the device due to intolerance and/or dislike/didn't think it helped?
6. Discussion, lines 280-onward beginning with the sentence "The present study only evaluated the mode of HCFWO that uses triangle-wave pulses" is purely speculative and not the focus of the data/results/methods. I would remove or change this paragraph to harmonize with the remainder of the manuscript.
7. Conclusion, the sentence "While the cause of this improvement cannot be definitively assigned to HFCWO therapy, the data demonstrate a strong positive association" is not supported by the manuscript findings and needs to be reworded to better reflect the data/individual conclusions.

Minor Comments: There are minor stylistic or other critiques that the authors should address in revising the manuscript:

1. Abstract line 63, please clarify the phrase “patients who required no respiratory related hospitalizations”.
2. Abstract Line 73, change “in” to “on”
3. Introduction line 106, I believe the explanation for mucociliary impairment is oversimplified in this statement. A broader discussion that better justifies the assessment of HFCWO is warranted.
4. Intro, line 108, remove “the” before “pulmonary function”
5. Intro, line 109, consider removing “the goal of...”
6. Intro, line 111, consider adding the phrase “the need for” before “hospitalizations”
7. The authors should present data from medical literature review in the introduction that justifies the assertions that the endpoints they discuss are proper endpoints. The BSI data from Chalmers et al or similar would provide excellent references.
8. Page 4, lines 115-118, is this sentence necessary. IF so (related to comment 3 above), please further justify why HFCWO was chosen.
9. Introduction, line 124, change “need” to “needed”
10. Methods, line 145, please clarify what the patients were consented for and how. Was this done at a central IRB given that the data comes from patients cared for by numerous providers.
11. Please clarify the meaning of the sentence in lines 159 that begins “This approach maximized the number of patients...”
12. In the statistics section, can you comment why ANOVA was not used for these variables with multiple longitudinal timepoints?
13. Please be more precise with “Approximately 78%” in lines 188
14. Results, lines 198-, please discuss the cohort with details about PsA infection, concomitant meds, etc.
15. The Defined frequent exacerbator discussed in this phrase “Conversely, the percentage of patients who required three or more hospitalizations (frequent exacerbators)” doesn’t refer solely to hospital admissions. Please clarify. I suggest that the endpoint be reexamined as the degree/severity of infection/exacerbation.
16. Results lines 238. Like what this is an important finding? Move findings here, give confidence intervals, and statistical analysis. This is very important!! Also how was baseline FEV1/FVC defined to define changes?
17. Discussion, lines 263. There is no data in the results section to justify the correlation conclusion offered in this sentence.
18. The Sentence “Although the breadth of the data recorded, collected in a real-world setting, included a diverse range of practice patterns, the response to HFCWO therapy remained consistent” is confusing, please reword to clarify.

19. Discussion, lines 300-end of the paragraph beginning with the phrase “Second, patients in the study were not randomly selected” is awkward and hard to follow.

20. Discussion, lines 315-, the paragraph beginning “Third, the diagnosis of bronchiectasis was not independently confirmed by the investigators” discusses 2 distinct limitations.