Heart & Lung 000 (2022) 1

Contents lists available at ScienceDirect

Heart & Lung

journal homepage: www.heartandlung.com

Comment on "Evaluation of pulmonary function and exercise capacity after COVID-19 pneumonia"

I have read with great interest the manuscript titled "Evaluation of pulmonary function and exercise capacity after COVID-19 pneumonia" by Okan S et al.[1] and would like to commend them for their brilliant efforts. However, there are a few additional points that I would like to highlight, and which would have enhanced the quality of this study.

The study is cross sectional in design and lacks a control group. This characteristic prevents us from comparing the lung functions of affected individuals with those of healthy individuals. Secondly because of the limited sample size and single-center study design, it is harder to extrapolate the results to a population with a wider range of demographics.

Regarding the results, they may not be applicable to a population that has received vaccinations because the study was conducted during an earlier stage of the pandemic when vaccines were scarce. Additionally, because the study was conducted on COVID-19 patients who were hospitalized during an acute infection, it is possible that the findings may not apply to COVID-19 patients who were not admitted.

Furthermore, the lack of baseline pulmonary function test results before illness makes it difficult to make a comparison with the results after the illness. It is impossible to determine the true impact caused by the infection because the study did not mention the patients' prior lung function. For instance, this study by Lewis KL et al.[2] shows that there is no difference in PFT before and after COVID-19 infection in non-critical patients. In addition to that, the patients' radiological outcomes are also unknown, and PFT or 6MWT comparisons have not been done with them.

Another point is that even though patients with COPD or ILD were excluded, underlying asymptomatic lung disease or other ailments that impact lung function cannot be ruled out, regardless of how rare they may be.

Moreover, lung capacity and volume were not assessed. It has been demonstrated that reduced DLCO, followed by TLC and FVC, are the most prevalent pulmonary function abnormalities in the study of COVID-19-infected patients.[3]

Finally, non-voluntary methods such as transdiaphragmatic pressure and diaphragm ultrasound should also be included in an appropriate investigation of pulmonary function and exercise capacity.

Declaration of Competing Interest

None

Acknowledgement

None

References

1 Okan S, Okan F, Duran Yücesoy F. Evaluation of pulmonary function and exercise capacity after COVID-19 pneumonia. *Heart Lung*. 2022;54:1–6. https://doi.org/10.1016/j.hrtlng.2022.03.004. Jul-Aug Epub 2022 Mar 11.

2 Lewis KL, Helgeson SA, Tatari MM, Mallea JM, Baig HZ, Patel NM. COVID-19 and the effects on pulmonary function following infection: a retrospective analysis. *EClinicalMedicine*. 2021 101079. https://doi.org/10.1016/j.eclinm.2021.101079. Sep; 39.

3 Hui DS, Joynt GM, Wong KT, Gomersall CD, Li TS, Antonio G, et al. Impact of severe acute respiratory syndrome (SARS) on pulmonary function, functional capacity, and quality of life in a cohort of survivors. *Thorax*. 2005;60(5):401–409.

Samar Sajid
Dow University of Health Sciences, Karachi, Sindh Pakistan

Received 23 November 2022
Accepted 29 November 2022

https://doi.org/10.1016/j.hrtlng.2022.11.017