https://doi.org/10.5664/jcsm.8480

JCSM | Journal of Clinical Sleep Medicine

LETTERS TO THE EDITOR

Comment on obstructive lung disease and obstructive sleep apnea (OLDOSA) cohort study: 10-year assessment

Mahadevappa Hunasikatti, MD, FCCP

Food and Drug Administration, Silver Spring, Maryland

I was glad to read a positive study regarding the effects of continuous positive airway pressure therapy on patients with obstructive lung disease and obstructive sleep apnea (OSA).[1] However, the 10-year all-cause, cumulative mortality rate in the obstructive lung disease and obstructive sleep apnea cohort was 52.8%, which is much higher than the study by Marin et al[2] of similar patients with overlap syndrome and a mortality rate of 32.7%, with a median follow-up of 9.4 years. This is all the more concerning because the baseline forced expiratory volume in 1 second (FEV1) in their study was 75.4% (chronic obstructive pulmonary disease+OSA). This is in contrast to the study by Marin et al herein patients had a baseline FEV1 of 57% in patients with untreated overlap syndrome (chronic obstructive pulmonary disease+OSA). An increase of 1 standard deviation of percent predicted FEV1 is associated with a 22% risk reduction.[3] Their study had only 9.3% of patients with FEV1 < 50% (with chronic obstructive pulmonary disease + OSA), in contrast to the study of Marin et al, which had 31% of enrolled patients with FEV1 < 50%. Median baseline FEV1 was 2.1 L in their study compared with the study of Marin et al, where the median baseline FEV1 was 1.5 L. Because lower-risk patients as defined by FEV1 were enrolled, the higher mortality of 52.8% is surprising.

High comorbidity index observed in the study may not inform the specific reason for the mortality. The Charlson Comorbidity index is a method of categorizing comorbidities of patients based on the *International Classification of Diseases* diagnosis codes found in administrative data, such as hospital abstract data. Each comorbidity category has an associated weight (from 1 to 6) based on the adjusted risk of mortality or resource use, and the sum of all the weights results in a single comorbidity score for a patient. The higher the score, the more likely the predicted outcome will result in mortality. This may be because of comorbid conditions such as diabetes mellitus, chronic kidney disease, or metastatic cancer, which could explain the dramatically increased mortality observed in the study.[4] If you reanalyze the patients, excluding the patients with higher propensity scores that affect the Charlson Comorbidity index, the mortality risk may be comparable to other clinical studies. However, these concerns would not affect the conclusion that, in patients with OSA, positive airway pressure initiation and superior therapeutic adherence were associated with significantly better survival.

CITATION

Hunasikatti M. Comment on obstructive lung disease and obstructive sleep apnea (OLDOSA) cohort study: 10-year assessment. *J Clin Sleep Med.* 2020;16(8):1389.

REFERENCES

1. Ioachimescu OC, Janocko NJ, Ciavatta M-M, Howard M, Warnock MV. Obstructive Lung Disease and Obstructive Sleep Apnea (OLDOSA) cohort study: 10-year assessment. *J Clin Sleep Med*. 2020;16(2):267–277.
2. Marin JM, Soriano JB, Carrizo SJ, Boldova A, Celli BR. Outcomes in patients with chronic obstructive pulmonary disease and obstructive sleep apnea: the overlap syndrome. *Am J Respir Crit Care Med*. 2010;182(3):325–331.
3. Magnussen C, Ojeda F, Rzayeva N, et al. *FEV*$_1$ and FVC predict all-cause mortality independent of cardiac function—results from the population-based Gutenberg Health Study. *Int J Cardiol*. 2017;234:64–68.
4. Austin SR, Wong YN, Uzzo RG, Beck JR, Egleston BL. Why summary comorbidity measures such as the Charlson Comorbidity Index and Elixhauser Score work. *Med Care*. 2015;53(9):e65–e72.

SUBMISSION & CORRESPONDENCE INFORMATION

Submitted for publication March 27, 2020
Submitted in revised form April 1, 2020
Accepted for publication April 1, 2020
Address correspondence to: Mahadevappa Hunasikatti, MD, FCCP, 10903 New Hampshire Ave., Silver Spring, MD 20903; Email: drhunasikatti@gmail.com

DISCLOSURE STATEMENT

All authors have seen and approved the manuscript. Work for this study was performed at Fairfax Hospital/Food and Drug Administration. The author reports no conflict of interest.