OSA Among Patients With Pneumonia

A Higher Risk for Complications or Simply an Overlapping Disorder?

To the Editor:

We read with interest the article by Lindenauer et al in CHEST (May 2014), who retrospectively reported the outcome of patients hospitalized with pneumonia who had coexisting OSA. The study showed higher initial rates of mechanical ventilation, with a modestly lower risk for inpatient mortality among patients with pneumonia who had OSA. However, a few points need clarification before associating OSA with increased rate of mechanical ventilation and lower risk for inpatient mortality in patients with pneumonia.

The authors reported that obesity was more prevalent among patients with OSA (37.8% vs 6.2%); however, they did not report the BMI. It is difficult to attribute the findings to OSA alone. We think that the higher initial rates of mechanical ventilation and the lower mortality rates could be explained by obesity. It is known that obese patients in the ICU require mechanical ventilation more often than normal-weight patients and for longer periods. Morbidly obese patients devote a good proportion of total body oxygen consumption to maintain the high demand of the respiratory work, even during quiet breathing, which results in a decreased ventilatory reserve and a predisposition to respiratory failure even during mild pulmonary or systemic insults. Moreover, studies have shown no increase in mortality of obese patients who were in the ICU and mechanically ventilated compared with normal-weight patients.

Current evidence suggests that adipocyte-secreted hormones such as leptin and IL-10 have immunomodulatory properties that might suppress the inflammatory response and improve host survival in obese patients with severe illness. Therefore, it is possible that the reported differences in hospital course and outcome between patients hospitalized with pneumonia with and without OSA are due to obesity. Future studies should assess the effect of OSA on hospital course and outcome of patients with pneumonia while controlling for BMI.

References


Response

To the Editor:

We thank Drs BaHammam and Esquinas Rodriguez for their letter about our recent study. As they correctly note, the prevalence of obesity (as reflected by International Classification of Diseases, Ninth Revision, codes) was roughly six times higher among patients with OSA than in those without OSA. Given the high potential for obesity to serve as a confounder, our multivariable analyses included obesity as a covariate, thereby yielding an estimate of the independent association between OSA and the two outcomes we studied: (1) in-hospital mortality and (2) initiation of mechanical ventilation or transfer to the ICU after the second hospital day (a measure of clinical deterioration). In light of
the comments by Drs BaHammam and Esquinas Rodriguez, it is also worth noting that in the multivariable analyses (presented in e-Tables 2 and 3 of our article), obesity remained associated with lower in-hospital mortality. However, obesity was not associated with late mechanical ventilation in these analyses. Finally, although we did not include these results in the article, we also investigated the possibility of an interaction between obesity and OSA. The P value for the interaction term was .81, suggesting that patients with OSA and obesity had similar outcomes to patients with OSA who were not obese.

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