

## Effect of Positive Airway Pressure on Hospitalization in Patients with Chronic Obstructive Pulmonary Disease



To the Editor:

I read the article by Vasquez et al<sup>1</sup> with interest. The prevalences of noninvasive positive pressure ventilation, bilevel positive airway pressure, and continuous positive airway pressure in patients with chronic obstructive pulmonary disease were <1%, 1.5%, and 5.6%, respectively. Adjusted odds ratios (95% confidence intervals) of noninvasive positive pressure ventilation, bilevel positive airway pressure, and continuous positive airway pressure in patients with chronic obstructive pulmonary disease for any hospitalization were 0.19 (0.13-0.27), 0.42 (0.39-0.45), and 0.70 (0.67-0.72), respectively. Chronic obstructive pulmonary disease–related hospitalization showed the same trend of significance in relation to positive airway pressure therapies. I have some concerns about their study.

First, the lowering effect on hospitalization was stronger in patients with mild treatment of positive airway pressure ventilation. I suppose that severity in insufficiency of ventilation would lead to intensive treatment of positive airway pressure ventilation and to the risk of hospitalization. Namely, the severity of chronic obstructive pulmonary disease should be included for the risk assessment of hospitalization.

Second, Budhiraja et al<sup>2</sup> described the prevalence and risk factors of insomnia in patients with stable chronic obstructive pulmonary disease. The prevalence of insomnia was 27.3%, and odds ratios (95% confidence intervals) of current smokers, patients with frequent sadness/anxiety, and oxygen use for insomnia were 2.13 (1.02-4.44), 3.57 (1.31-9.62), and

0.35 (0.14-0.9), respectively. The use of oxygen was a protective factor for insomnia. Vasquez et al<sup>1</sup> also recognized that comorbid sleep-disordered breathing was associated with greater benefits from positive airway pressure therapy, and sleep disturbance/disorder in patients with chronic obstructive pulmonary disease should be considered for the effect of positive airway pressure therapies on subsequent hospitalization.<sup>3</sup>

Finally, chronic bronchitis, which is a component of chronic obstructive pulmonary disease and known as the state of chronic mucus hypersecretion, is common in cigarette smokers.<sup>4</sup> The development of airway inflammation and the progression of airflow obstruction by mucins has been clarified,<sup>5</sup> and it would be linked to disease progression, hospitalization, and mortality.<sup>6,7</sup>

Tomoyuki Kawada, MD

Department of Hygiene and Public Health  
Nippon Medical School  
Tokyo, Japan

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