

Will minimizing dyspnea impact sleep quality?

Aaron B. Holley

Received: 19 January 2012 / Revised: 19 January 2012 / Accepted: 23 January 2012 / Published online: 23 February 2012
© Springer-Verlag 2012

In their article published in this issue of *Sleep and Breathing*, Nunes et al. present actigraphy data on COPD patients and provide a comparison to controls. It is well known that COPD patients often report poor-quality sleep [1–3]. Therefore, it is not necessarily surprising that they found worse sleep on actigraphy in their COPD patients.

There are two findings that deserve mention though. One is the absence of correlation between actigraphy findings and subjective measures of sleep quality (Pittsburgh Sleep Quality Index, PSQI; Epworth Sleepiness Scale, ESS). This lack of correlation suggests actigraphy reveals decrements in sleep that might otherwise go undetected. Of course, actigraphy should only be ordered if it has prognostic or therapeutic value that is independent of subjective measures of sleep quality.

This leads to the second finding, the independent association between dyspnea and sleep parameters measured on actigraphy (sleep efficiency and total sleep time). Because this is a cross-sectional study, the direction of causality, and for that matter causality itself, cannot be definitively established. For example, patients with worse dyspnea are more likely to be on medication, and some medications have been associated with sleep fragmentation. [4]. Dyspnea may simply be a surrogate marker for more medication use, rather than an actual cause of disrupted sleep. Although patient medications are mentioned, there are no data on correlation with actigraphy, PSQI, or ESS. COPD severity is another potential confounder that is not accounted for in their model.

If there is causality though, either poor sleep worsens dyspnea or, as the authors suggest, dyspnea adversely affects sleep. In this case, actigraphy provides important information that may not be captured by subjective questionnaires like the PSQI. It may prove to be a valuable, non-invasive tool to help improve symptoms in patients with COPD and poorly controlled dyspnea.

Conflict of interest The author declares he has no conflict of interest.

References

1. Cormick W, Olson LG, Hensley MJ, Saunders NA (1986) Nocturnal hypoxaemia and quality of sleep in patients with chronic obstructive lung disease. *Thorax* 41:846–854
2. Nunes DM, Mota RM, de Pontes Neto OL, Pereira ED, de Bruin VM, de Bruin PF (2009) Impaired sleep reduces quality of life in chronic obstructive pulmonary disease. *Lung* 187:159–163
3. Stege G, Vos PJ, van den Elshout FJ, Richard Dekhuijzen PN, van de Ven MJ, Heijdra YF (2008) Sleep, hypnotics and chronic obstructive pulmonary disease. *Respir Med* 102:801–814
4. Mulloy E, McNichols WT (1993) Theophylline improves gas exchange during rest, exercise, and sleep in severe chronic obstructive pulmonary disease. *Am Rev Respir Dis* 148:1030–1036

A. B. Holley (✉)
Walter Reed National Military Medical Center,
8901 Wisconsin Ave,
Bethesda, MD 20889, USA
e-mail: aholley9@gmail.com