

LETTERS TO THE EDITOR

Response to Dr. Kapoor

Response to Kapoor M. Positive home sleep apnea test after a negative polysomnogram: role of potential confounding factors. *J Clin Sleep Med*. 2019;15(3):519–520.

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We thank Dr. Kapoor for his thoughts and comments¹ on our study.² While we acknowledge the limitations and confounders of our retrospective study, it is important to recognize and identify additional factors in order to fully understand the study and its impact. For this reason, we are thankful for the insight and questions brought forth by Dr. Kapoor. In terms of positioning during sleep, only two of the three home sleep apnea test (HSAT) devices reported position. During polysomnography (PSG), position was manually recorded by video monitoring. It is recognized that sleep in the supine position affects the apnea-hypopnea index (AHI) or respiratory event index (REI); however, how much time one must sleep in the supine position in a sleep study to exclude the diagnosis of supine-related obstructive sleep apnea (OSA) is unknown. Minimal requirements for comparisons between positions in a prevalence study of positional sleep apnea was only 15–30 minutes.³ While patients in our study spent more time in the supine position during the HSAT versus PSG—an average of 231.5 minutes and 101.5 minutes, respectively—our comparison was between patients with an HSAT REI < 5 events/h and those with HSAT REI > 5 events/h. We agree with Dr. Kapoor that choice of 3% versus 4% scoring criteria would impact the number of positive PSG tests and the integrity and correct positioning of the pulse oximeter is also an important consideration. One of the HSAT devices in our study used a clip-on mechanism while the remaining two HSAT devices used a flexible probe that is wrapped around the patient's finger and secured. One HSAT device in our study used a pulse oximetry probe that is identical to that of the PSG.

Dr. Kapoor brought up the concept of scoring sleep to better reflect the underlying biology such as small-epoch scoring. This has been looked at in certain disorders including insomnia.⁴ The Visual Scoring Task Force had also considered changing the system from discrete epochs to visual adaptive scoring to be more representative of continuous and fragmented sleep.⁵ However, more literature is needed to further address this. Our study was in line with standard scoring in 30-second epochs.

Overall, we hope that our study sparks discussion about the factors that may affect a sleep study and clinicians keep these in mind when interpreting negative studies in patients with a

high clinical suspicion of OSA. We agree that the REI and AHI are dynamic measures. A single in-laboratory PSG may be insufficient to accurately assess disease, particularly in patients with mild severity and when night-to-night variability may play a role. Repeat testing should be discussed with the patient and based on our results, an HSAT may be considered.

CITATION

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DISCLOSURE STATEMENT

The authors report no conflicts of interest.