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LETTERS TO THE EDITOR

Moving beyond the AHI

Response to Lin CH, Yu CC. Apnea-hypopnea index vs oxygen desaturation index for diagnosis of obstructive sleep apnea in patients with atrial fibrillation: six of one, half a dozen of the other? *J Clin Sleep Med*. 2021;17(11):2333–2334. doi:10.5664/jcsm.9524

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We wish to extend our thanks to Lin and Yu[1] for their insightful commentary regarding our recently published article: "Clinical Screening Tools for Obstructive Sleep Apnea in a Population With Atrial Fibrillation: A Diagnostic Accuracy Trial.[2]"

Regarding the particular scoring algorithm used, we used ApneaLink Air in "Auto AASM" scoring mode. Automated scoring was used in order to improve accessibility to this home sleep apnea test (HSAT) as a screening tool for obstructive sleep apnea (OSA) in patients with atrial fibrillation (AF), while still maximizing diagnostic accuracy. Manual scoring, although it may be preferred in an ideal scenario, is significantly more labor intensive and may not be available in all AF centers. The "Auto AASM" scoring algorithm considers both oxygen saturations and nasal airflow when defining hypopneas, as distinct from the "Auto" mode, which considers nasal airflow only. The sensitivity and specificity of the Auto AASM scoring system have been shown to be noninferior to manual scoring at all levels of OSA severity.[3]

We agree that the level 3 HSAT (ApneaLink Air) performed with good (AUC, 0.8–0.9) to excellent (AUC, 0.9 – 1.0) diagnostic accuracy at all levels of OSA severity using either the apnea-hypopnea index (AHI) or oxygen desaturation index (ODI) as the diagnostic metric. The advantage of a level 3 device when compared with a level 4 device is that both these metrics will be available for clinician interpretation and can be used together as part of the overall holistic assessment. However, in centers where overnight oximetry alone is accessible, clinicians must rely on the ODI only. Hence, the diagnostic accuracy of the ODI alone has significant "real-world" clinical relevance. Whether AHI or ODI is marginally superior to the other in each severity group may be less clinically important than the finding that both of these perform well and can be used as needed depending on availability. In addition, the sleep field is questioning the adequacy of the AHI as a metric to define OSA,[4] and recent papers have highlighted that hypoxic burden rather than AHI may be a better marker of cardiovascular risk. For example, hypoxic burden was superior to AHI for the prediction of incident heart failure in 2 large cohorts of patients with OSA,[5] and ODI was superior to AHI as a predictor of hypertension in a large multicenter cohort.[6] Such studies emphasize the importance of thinking beyond the AHI as a measure of OSA severity.

We agree with Lin et al that ODI alone should not be regarded as the sole diagnostic tool for OSA, and with this in mind, we have reported the diagnostic accuracy of ODI and AHI from an HSAT as well as a range of other commonly used clinical screening tools across all levels of OSA severity in an AF population.[2] The key point is that clinicians involved in the care of patients with AF are mindful of the high prevalence and influence of OSA in this group, and have access to tools for easily assessing its prevalence and severity in order to improve the overall management of these patients.

CITATION

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