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LETTERS TO THE EDITOR

Incidence of hypertension in obstructive sleep apnea

Response to Soca R, Holley A. Is the incidence of hypertension "higher"? *J Clin Sleep Med*. 2021;17(3):605. doi:10.5664/jcsm.9016

Rohit Budhiraja, MD; Stuart F. Quan, MD

Division of Sleep and Circadian Disorders, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts

We thank Drs. Soca and Holley for their insightful comments[1] on our paper.[2] We agree that the criteria used for identifying persons with obstructive sleep apnea (OSA) remain an important and unsettled matter. However, in response to their comments, we offer the following points of emphasis.

The incidence of elevated blood pressure (BP) or hypertension in those who did not have obstructive sleep apnea (OSA) by either the Centers for Medicare and Medicaid Services (CMS) (4% only) or the American Academy of Sleep Medicine (3%A) criteria was 34.7%, which is lower than the 40.1% incidence in participants who had OSA defined by 3%A criteria but were negative by CMS (4% only) criteria. This suggests that the presence of OSA contributes to the development of hypertension, a finding supported by several other large cohort studies as well. Furthermore, the prevalence of moderate-to-severe sleep apnea in the study was almost twice as high in the hypertensive group compared to the normotensive group (13.6% vs 7.4%), also supporting the role of CMS-negative OSA in the causation of hypertension.[2] Although 90.1% of the 3%A-positive CMS-negative patients in this cohort had mild OSA, 9.9% of the cohort had CMS-negative moderate-to-severe sleep apnea. We would argue that this represents a significant number of individuals when extrapolated to the universe of those with OSA in this country.

Furthermore, Sleep Heart Study being a community-based cohort, the severity of sleep apnea was generally mild. But a significant proportion of the patients seen in the clinics have attendant symptoms, and the likelihood of OSA being moderate or severe (including in those who do not meet CMS criteria) can be expected to be greater. Indeed, sleep clinicians frequently encounter patients with significant symptoms and moderate-to-severe sleep apnea who are denied OSA therapy due to the current CMS guidelines. This study, despite the lower overall severity of sleep apnea in the cohort, provides evidence for a dose-response elevation in the risk of incident hypertension in this group and supports use of the 3%A criteria to identify individuals with OSA.

Finally, Drs. Soca and Holley contend that the new American College of Cardiology/American Heart Association (ACC/AHA) hypertension guidelines do not recommend treatment for those with an elevated blood pressure or stage 1 hypertension. However, the ACC/AHA guideline paper states, "An increasing number of individual studies and meta-analyses of observational data have reported a gradient of progressively higher cardiovascular disease risk going from normal BP to elevated BP and stage 1 hypertension." Furthermore, nonpharmacological therapy is recommended for both elevated BP and stage 1 hypertension, and pharmacologic therapy is recommended for those with clinical atherosclerotic cardiovascular disease of a 10-year cardiovascular disease risk of $\geq$ 10%.[3] We would argue that the various OSA treatments are nonpharmacologic therapies and should be considered along with lifestyle modifications in this group at risk for incident hypertension.

CITATION

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Address correspondence to: Rohit Budhiraja, MD, Brigham and Women's Hospital, Harvard Medical School, 221 Longwood Avenue, Boston, MA 02115;
Email: budhi3@gmail.com

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