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LETTERS TO THE EDITOR

Hypopneas with arousals: an important feature of central nervous system sympathetic activation in posttraumatic stress disorder

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Javaheri and Gay[1] have discussed the very important findings of Budhiraja and colleagues[2] from the Sleep Heart Health Study data, which showed a strong association between the apnea-hypopnea index (AHI) and hypertension using the American Academy of Sleep Medicine definition of hypopneas (30% reduction in airflow associated with ≥ 3% oxyhemoglobin desaturation and/or an arousal) and not the current Centers for Medicare and Medicaid Services (CMS) criterion of a ≥ 4% oxyhemoglobin desaturation with no consideration for an arousal component. The authors[1] propose that hypopneas with arousals alone or obstructive sleep apnea (OSA) arousal syndrome should be considered by CMS as a valid event representing disordered breathing, as arousals are associated with serious health outcomes such as hypertension.[1,2] In one study the odds of hypertension increased approximately 20% per 5-unit increase in arousal index; the authors note that arousals are associated with sympathetic activation with consequent increased elevated blood pressure and long-term sleep fragmentation.[1] Javaheri and Gay[1] refer to the seminal work of Christian Guilleminault,[3] who had first described the upper airway resistance syndrome and the importance of treating arousals alone.

It is very important to consider arousals in the definition of hypopneas in OSA in psychiatric disorders such as posttraumatic stress disorder (PTSD) that are associated with sympathetic activation. PTSD is associated with a higher prevalence of OSA[4] and increased cardiovascular morbidity including increased risk for early incident hypertension by more than 30%.[5] The sympathetic activation in PTSD can lead to increased cortical activation and directly affect AHI.[6] Furthermore the inclusion of arousals in the definition of OSA also has potential implications for the management of OSA, for example, consideration of interventions to decrease cortical activation with treatments such as anticonvulsant mood stabilizers and neurofeedback. This may be especially relevant in patients with PTSD in whom the adherence to standard positive airway pressure therapy can be problematic.[4]

CITATION

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Off-label or investigational use: yes (mention of anticonvulsant mood stabilizers). The author reports no conflicts of interest.