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COMMENTARY

The PTSD-OSA Paradox: They Are Commonly Associated and They Worsen Outcomes, but Treatment Nonadherence Is Common and the Therapeutic Effect Limited. What Are Clinicians To Do?

Commentary on Orr et al. Treatment of OSA with CPAP is associated with improvement in PTSD symptoms amongst veterans. *J Clin Sleep Med.* 2017;13(1):57–63.

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Poor sleep quality is almost universal among patients with posttraumatic stress disorder (PTSD),[1] and there is a good argument to be made that disturbed sleep is actually requisite to differentiate those who process a potentially traumatic event "normally" from those who meet criteria for the disorder.[2] The most common sleep diagnoses in those with PTSD are insomnia, nightmares, and obstructive sleep apnea (OSA), but patients will typically present with a vague subjective complaint of sleep fragmentation. It is often difficult to differentiate clinically the cause of nocturnal awakenings, and many patients have multiple coexisting conditions.[3] Several studies have consistently observed a high prevalence of OSA in those with PTSD, often including a cohort that is younger and thinner than those with OSA alone. There is a growing body of evidence that the co-occurrence of these conditions worsens outcomes and diminishes treatment effects.[4] In addition, it also appears as if each condition might be a risk factor for development of the other condition.

In the current issue of the *Journal of Clinical Sleep Medicine*, Orr and colleagues continue to expand our understanding regarding the link between PTSD and sleep-disordered breathing, and explore how to properly treat these conditions to optimize outcomes.[5] The investigators conducted a prospective trial of veterans with PTSD in whom OSA was recently diagnosed, but had not yet initiated therapy for their sleep-disordered breathing. The primary outcome was the absolute change in PTSD Checklist - Specific (PCL-S) scores from baseline to 6 months following positive airway pressure (PAP) therapy. Secondary outcomes included quality-of-life (QoL) scores, sleep quality, and daytime somnolence.

Benefits were noted early in the course of treatment, with most improvements occurring within the first 3 mo. However, although symptoms improved, most patients had persistent PTSD symptoms. Overall, mild improvements in PCL-S scores were noted. On average, PCL-S was reduced by 8.2 points at 6 mo. This value is above the minimum threshold to qualify as a response to treatment,[6] but it is less than the 10 points the Department of Veterans Affairs' National Center for PTSD considers a clinically significant improvement.[7] Using a cutoff PCL-S value of 50,[8] most subjects still met criteria for PTSD despite therapy. Similar to previously published data, comorbid OSA and PTSD are difficult to treat and a blunted therapeutic response is common.[4] Although treatment of one condition most certainly affects outcomes of the other; treatment of PTSD improves sleep and treatment of OSA improves depression, anxiety, QoL, and other PTSD-related symptoms.

Secondary outcomes showed similar trends toward improved but persistent symptoms. Epworth Sleepiness Scale scores decreased, but remained at the upper range of normal for most subjects. QoL, as measured by the Functional Outcomes of Sleep Questionnaire, also improved but remained below normal. Likewise, the Pittsburgh Sleep Quality Index decreased from 15.6 to 11.6, but remained significantly higher than the cutoff value of 5, which is considered indicative of "good sleep."[9] Depressive symptoms, as measured by the nine-item Patient Health Questionnaire,[10] still were categorized as moderate, with a mean score of 11.3. It appears that although PAP improved symptoms, it did not result in resolution of symptoms for most individuals. This finding is similar to that reported in a recent publication at our center, which found that patients with PTSD and OSA experienced less improvement of these symptoms in comparison to those with OSA alone.[4]

The authors similarly found adherence to be both challenging and a major limitation to symptomatic improvements. Consistent with prior work,[11] the presence of PTSD negatively affects PAP use and poor adherence is common. Overall, PAP was used on 59% of nights, for 3.5 h per night, and only half met Medicare criteria for compliance. The percentage of nights used was positively correlated with improvement in PCL-S, but the small sample size and heterogeneity of PTSD severity among subjects may have underestimated the true effect of PAP therapy in this disorder.

Whether OSA causes PTSD (or PTSD causes OSA) or this relationship represents a unique phenotype of sleep-disordered breathing remains a topic in need of continued exploration. However, it seems clear that (1) this relationship is frequently

overlooked, (2) this co-occurrence results in worse outcomes and a diminished therapeutic response, and (3) PAP adherence is commonly poor among those with PTSD, further contributing to the persistence of symptoms.

Orr and colleagues thus present an important addition to the body of evidence highlighting the need for comprehensive management of patients with overlapping behavioral health and sleep disorders. There appears to be a dose-dependent improvement in PTSD symptoms when sleep-disordered breathing is effectively treated, but despite best efforts, adherence in the PTSD-OSA population remains unacceptably low. This study sets the stage for creative research to assess how to enhance a multimodal therapy for veterans.

CITATION

Lettieri CJ, Williams SG. The PTSD-OSA paradox: they are commonly associated and they worsen outcomes, but treatment non-adherence is common and the therapeutic effect limited. What are clinicians to do? *J Clin Sleep Med*. 2017;13(1):5–6.

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DISCLOSURE STATEMENT

The authors have indicated no financial conflicts of interest.