Sleep and Breathing (2019) 23:295–296
https://doi.org/10.1007/s11325-018-1707-6

Response to a letter to the editor by Mohammad Rasoul Ghadami et al.: "Obstructive sleep apnea in veterans with post-traumatic stress disorder: looking beyond their complaint"

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Received: 18 May 2018 / Revised: 14 July 2018 / Accepted: 5 August 2018 / Published online: 13 August 2018
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Dear Editor in chief,

We appreciate Dr. Ghadimi et al. for their attention to our research article: "Different polysomnographic patterns in military veterans with obstructive sleep apnea in those with and without post-traumatic stress disorder" [1].

The letter quite rightly expresses that benzodiazepines are widely used by veterans to treat sleep disturbances, and there is a typographic mistake in Table 1 of the original article. We agree that the PTSD group veterans were significantly on benzodiazepines and their sleep apneas may be made worse by such medications. However, there is a considerable number of studies suggesting that there is no evidence of deleterious effect of benzodiazepines on the severity of OSA [2, 3]. Thus, and according to the medical ethics, the subjects had not been withdrawn from their regular medications; meanwhile, opium addicts were excluded from our study. We think that based on the mentioned references [2, 3], the outstanding results regarding sleep apnea achieved in our study could not be seriously affected by medications. Regarding sleep-related movement disorders, which may be improved by benzodiazepines, the results were interpreted by caution [1].

One important aim of our article was to highlight the importance of the diagnosis of OSA in PTSD veterans with sleep disturbances, even without classic signs and symptoms like obesity and daytime sleepiness. As the letter mentioned, BMI has been shown not to be associated with the apnea-hypopnea index (AHI) in PTSD veterans. In addition to clinical importance, we believe that this novel finding from Iranian veterans, parallel to similar reported studies from other ethnic groups, may enlighten on some aspects of the pathophysiology of OSA. While the definite pathophysiology of OSA is not clear, the role of factors like serotoninergic and neuroadrenergic systems has been proposed. It has been demonstrated that the neuromuscular control of upper airway patency implicates the excitatory effect of serotonin on the genioglossus muscle [4]. Interestingly, disturbances of the serotoninergic and neuroadrenergic systems have been shown to play a crucial role in the pathophysiology of PTSD [5]. It seems that there are more complex reasons for the occurrence of OSA in these patients, and not just sleep fragmentation due to a psychological condition.

Altogether, it can be concluded that there is a high frequency of OSA in a subgroup of patients without the well-known risk factor of being overweight, but with a dysregulation of brain neurotransmitters, may support the role of such neurotransmitters in the pathophysiology of OSA. This article suggests that further investigation in this area should be conducted.

This article is part of the Topical Collection on Comorbid Insomnia and OSA (COMISA) in Veterans.

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