Sleep and Breathing (2019) 23:293–294
https://doi.org/10.1007/s11325-018-1706-7

Obstructive sleep apnea in veterans with post-traumatic stress disorder: looking beyond their complaint

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Received: 14 April 2018 / Revised: 20 April 2018 / Accepted: 5 August 2018 / Published online: 26 August 2018

To the editor,

We read with great interest the recent article published in *Sleep and Breathing* by Rezaeitalab et al. [1]. This study included 72 veterans who were diagnosed with obstructive sleep apnea (OSA) using polysomnography and were classified into two groups: those with post-traumatic stress disorder (PTSD) (40 cases) and those without PTSD (32 cases). The authors concluded that the relationships of apnea-hypopnea index (AHI) with body mass index (BMI) and Epworth Sleepiness Scale (ESS) were not significant in PTSD group; and OSA in veterans with PTSD presents more often with insomnia than obesity or increased daytime sleepiness.

We would like to acknowledge the authors for their valuable work and interesting results. However, there is a statistical issue that needs to be raised in order to avoid misinterpretation.

We found an important error in Table 1 of the above article. The authors reported that 90% of PTSD group were taken benzodiazepines versus 50% of non-PTSD group, and incorrectly noted "non-significant" for its p value. However, the correct p value for comparison of benzodiazepine use between two groups is < 0.0001, which means significant difference between groups regarding benzodiazepine use. We are concerned as to why the authors did not consider this incorrect data, because the presented error may affect results, scientific content, or conclusions.

While sedative hypnotics are recommended as main pharmacotherapy for insomnia and many PTSD patients are treated with benzodiazepine and non-benzodiazepine hypnotic drugs, the use of benzodiazepine hypnotics is proposed to be inappropriate in patients with insomnia and concurrent OSA due to their potential adverse effects, such as decrease airway muscle tone, and ventilation response to hypoxemia. These effects presented as increased AHI or decreased SaO2 and increase the severity of OSA [2]. Further to benzodiazepines, non-benzodiazepine drugs, including antipsychotic that play an important role in the treatment of some subtypes of insomnia (e.g., paradoxical insomnia), can worsen the severity of OSA that interestingly independent of weight gain [3].

Interestingly, the results of Rezaeitalab et al. study revealed that the relationship of AHI with BMI was not significant in PTSD group [1]. Further to the conclusion proposed by the authors, the results of a recent meta-analysis by Zhang et al. showed that BMI was not associated with the prevalence of OSA in PTSD patients [4]. It has been suggested that PTSD-induced sleep fragmentation has a negative effect on the human airway and increased susceptibility to the subsequent increase of upper airway collapsibility that may lead to OSA, independent of patient's BMI [5, 6]. In fact, there is a vicious cycle in which PTSD can worsen OSA (even without its common risk factors) and consequently, OSA can worsen PTSD symptoms [6].

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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

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