

LETTERS TO THE EDITOR

Does sex difference play an important role in therapeutic CPAP levels?

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With the improvement in quality of life, obstructive sleep apnea (OSA) is becoming more and more common, and epidemiological studies have shown that the prevalence of OSA can reach 32.9%.¹ If untreated, OSA can cause serious health consequences, which in turn leads to an increase in mortality.² With great interest, we read the recent article by Duarte et al³ published in a recent issue of the *Journal of Clinical Sleep Medicine*, and we congratulate the authors on their effort to further shed light into the relationship between sex and therapeutic continuous positive airway pressure (CPAP) levels. This is an important field and the connection of both has been incompletely investigated so far and the conclusion is still controversial. Interestingly, Duarte et al³ found that CPAP levels are not related to sex, but are related to body mass index, age, and apnea-hypopnea index. This is different from the conclusion of Jayaraman et al,⁴ which indicates that women emerged as needing lower CPAP pressures. These findings were potentially anticipated since women typically have a lower tendency for upper airway collapse⁵ and more negative pharyngeal critical closing pressure.⁶ Moreover, the apneic events in women are commonly concentrated in rapid eye movement sleep.⁷ Thus, it would be intuitively plausible to infer that the optimal therapeutic requirement of CPAP should be lower in women when compared to men.

Duarte et al³ assume that the reason for the different conclusions is that the proportion of women in the study of Jayaraman et al⁴ is larger, and the apnea-hypopnea index obtained by baseline polysomnography was similar between sexes. Another point is that there is no mention of which mask type (nose type or face type) is used, since several studies suggest that the therapeutic CPAP levels are undoubtedly influenced by the type of mask used in the titration.^{8,9}

Duarte et al³ believe that the difference in the population selected for the study and the similarity of the apnea-hypopnea index between the male and female groups will affect the results. But a good prediction model should be applicable to different populations and different conditions at any time, so as to provide good help for clinicians (most of them are high-risk OSA populations in the hospital environment), and not because of changes in some different populations. For example, the general population to the high-risk population, people of different age groups get different conclusions, so we do not agree with these 2 views of Duarte et al. We believe that the main reasons for the

different conclusions of the 2 studies may be due to the following factors. First, it is related to the use of face masks. As reported,^{8,9} the CPAP levels are undoubtedly affected by the mask type used in the titration. A comparative study of nose type or snout type treatment should be carried out to explore relevant conclusions. Second, ethnicity may lead to different conclusions, because different ethnic groups may have different genes, environments, risk factors, resulting in different OSA prevalence, disease severity, and treatment response. Therefore, it is necessary to carry out international multicenter cooperative research to solve this problem.

Although the study has some limitations, this study suggests that sex is significantly related to clinical, anthropometric measures, and polysomnographic differences in patients with OSA. However, the conclusion that sex has nothing to do with CPAP levels still updates the clinician's concept and is worthy of further discussion.

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