



Gender Specificity in Obstructive Sleep Apnea and COVID-19: Putative Associations and Risk Factors

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Editorial

The associated risk factors, comorbidities, severity and other medical conditions in between Obstructive Sleep Apnea (OSA) and COVID-19 are well predictable. Possibly the undesirable consequence developed with aging, sex, obesity, diabetes, hypertension, smoking, and other comorbidities likely for the severity associated with the infectious and non-infectious disease.

It is well acknowledged that the men are more prone to develop the risk of OSA with the occurrence of 11% and 4% of middle-aged men and women individually [1]. Interestingly, the gender predisposition to COVID-19, with men more vulnerable to being affected [2]. The putative male prevalence rate around 67% to 75% conditional on the country, mortality and diagnosis methods [3,4]. Generally, the ratio between male and female is 2.7:1 [5].

The reduced vulnerability of females to COVID-19 infections could be attributed to enhanced inborn and adaptive immune responses in females regulated by X chromosome and sex hormones [6]. Surprisingly, heighten expression level of Angiotensin-Converting Enzyme 2 (ACE-2) is reported in the lungs of males compared to females, which is the entry receptor for the COVID-19 virus [7]. However, smoking habits could be an another susceptible factor for the over expression of airway ACE2 [8,9], meanwhile the smoking effect on ACE2 expression should be analyzed [7].

Noteworthy, in a limited studies the gender variances in the number of cases, if they occurred, were not statistically remarkable [10,11], and the variances have been revealed to probably altered with age also [12]. In general, insufficient studies have provided precise data stratified by age group and gender differences [13]; this might be a notable barrier to evidence-based results making and disease management strategy [14].

Although records on gender differences are inadequate, and have not yet been assimilated in course of action and recommendations for the diagnosis, prognosis and management. Gender specificity has also been incorporated into a classifier prediction model to adopt the status of improved and dead COVID-19 patients [15]. Consequently, through the roadmap of gender specificity, we define the putative associations that are more pores for OSA patients to get infected by COVID-19 virus. Likewise, in COVID-19 and OSA cases gender specificity is a conspicuous risk factor as they both are more venerable for men as compared to women. Thus superior aid and, the new gender specific approach should be assimilated for the prevention and control of COVID-19 vulnerability in OSA patients as they are already affected with other interlinked comorbidities.

Nevertheless, due to restricted quantifiable records, it remains a task to delineate the pathophysiology that may lead to improved outcomes of using gender differences management during COVID-19 infection in OSA patients. Even though the emergent figure of recommendation evidently points out the gender-specific changes in diverse series of medical circumstances, from chronic infection to pandemics, little has been explained into gender-oriented and attuned medical strategies and health care guidelines.

In continuation with this integrative awareness for the gender specific medicine strategies which incorporates information of medical outlines of pre medical conditions, considering the changing aspects of these outlines may reduce the disease development at early stage, and may bridge this wide gap. Strategies and public well-being efforts have not reported the gender-related influences of disease occurrences [16]. Unfortunately, till date no international organizations or governing body in any affected nation has directed the gender analysis of the pandemic [10].

Herewith, we present all the expected gender specific and other related comorbidities in

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COVID-19 and OSA to increase the awareness of gender-specific variances in the field of medical sciences and clinical research to advance the preventive strategies as well as health care policies. Additionally, to heighten the personalized care, appropriately report the distinctive requirements of sexual category and hence reduce inequalities, as well as decrease existing and upcoming risk of disease at the specific, public, national and international levels.

There is a need to enhance the awareness among the patients, health care professionals and organizations for effective gender specific therapeutic approach and control measures among these patients.

Keywords: Obstructive sleep apnea; COVID-19; Gender-specificity; Angiotensin-converting enzyme-2; Global health

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