Therapeutics and Clinical Risk Management

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LETTER

Correlation between obesity and chronic kidney disease: is obstructive sleep apnea an interfering factor?

This article was published in the following Dove Press journal:
Therapeutics and Clinical Risk Management
11 July 2016
Number of times this article has been viewed

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Dear editor

The increasing prevalence of obesity can be considered an alarming issue throughout the world.[1] In only 4 years, for example, the People's Republic of China has experienced an increase in the overweight population from 29.1% to 34.4%.[2] Therefore, we would like to congratulate Xu et al[3] for conducting an elegant study on a less explored topic: the accumulation of visceral fat in kidney disease. The rise in obesity may result, at least in part, from changes in lifestyle, currently characterized by sedentary, poor eating, and sleep habits. The reduction in sleep duration is known to predispose individuals to obesity by increasing the white adipose tissue deposits such as visceral fat.[4,5] Of note, obesity and visceral fat accumulation are etiopathological factors for both chronic kidney disease (CKD) and sleep disorders.[6,7]

A sleep disorder that is closely related to obesity and CKD is obstructive sleep apnea (OSA).[8,9] OSA is characterized by partial or complete obstruction of the pharyngeal airway during sleep, leading to repeated breathing pauses, oxygen desaturation, and arousals.[10] It is known that 70% of patients with OSA are overweight and have higher intra-abdominal visceral fat accumulation[11] and 40% of obese people have OSA.[7] In CKD, the situation may be worse as OSA affects up to 94% of these patients.[12] In obese people, the obstruction of pharyngeal airway becomes more frequent during sleep due to the local accumulation of fat in the neck region, which anatomically blocks the airways in the lying position.[9] In CKD, this occurs also due to the accumulation of body liquids and its shift to the neck region, which compresses the pharynx, leading to apneas.[13] It is important to consider that OSA and visceral fat accumulation represent risk factors for the development and progression of CKD.[14]

In this context, we believe that OSA screening in individuals with visceral fat accumulation can be very relevant to predict the decline in glomerular filtration rate. As indicated by the authors, visceral fat accumulation acts as a predictive factor for CKD; thus, evaluation of OSA may be relevant since it has been considered as a new risk factor for CKD. There are some questionnaires that evaluate sleep-disordered breathing risk subjectively, and, in addition, there is the polysomnography, the gold standard examination for diagnosis of OSA. In conclusion, we believe that implementing OSA screening in clinical practice when dealing with obesity and CKD is very important and may help future research in acquiring evidence for complementary therapeutic treatments based on sleep, since OSA can act as a possible aggravating factor in CKD.

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Dovepress
http://dx.doi.org/10.2147/TCRM.S112442

Acknowledgments

Our studies have been supported by Associação Fundo de Incentivo à Pesquisa (AFIP). ST and MLA are recipients of CNPq fellowships.

Disclosure

The authors report no conflicts of interest in this communication.

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