Is obstructive sleep apnea more common in adults with arrhythmias?

Sir,

Obstructive sleep apnea (OSA), which is defined as a repetitive upper airway collapse that occurs during sleep, producing an interruption of ventilation, has a deleterious effect on the cardiovascular system.\(^1\),\(^2\) Recent studies evaluating the prevalence of arrhythmias in patients with OSA have shown that there is a close, maybe causal, link between the presence of OSA and arrhythmias.\(^3\),\(^4\) However, there has been no evaluation of the prevalence of OSA in patients presenting primarily with arrhythmias, till date.

We, therefore, conducted this study to estimate the prevalence of OSA in an Indian population group of patients with arrhythmias. The aim of this study was to study the prevalence of daytime sleepiness (Epworth sleepiness scale [ESS])\(^5\) and OSA (Berlin questionnaire [BQ])\(^6\),\(^7\) in a population of patients known to be suffering from arrhythmias, in a tertiary arrhythmia clinic. Patients having mitral/tricuspid valvular heart disease, congenital heart disease, and central nervous system disorders and with age <18 years and employed in occupations involving night-shift work were excluded from this study.

A total of 162 patients (94 (58%) males and 68 (42%) females) with arrhythmias were included in the study. The proportion (23.5%) of patients was highest in the age group of 50–59 years [Table 1]. The types of arrhythmia in the patients in the study as per location and heart rate are given in Table 2.

The patient score responses on the ESS showed a significant proportion of patients with increased propensity for sleepiness (21.6%). The age-wise stratification showed that the age group of 50–59 years had the highest percentage of patients with increased propensity for sleepiness by the ESS (28.94%). Patients with tachyarrhythmias (23.33%) showed a higher percentage of patients with ESS score ≥10 as compared to patients with bradyarrhythmias (10.52%) [Table 3].

The patient score responses on the BQ also showed a significant proportion of patients with increased risk for OSA (37.83%). By the BQ, the highest risk for OSA was observed in the 70–79 years age subgroup (71.42%). The number of patients with tachyarrhythmias (37.5%) and bradyarrhythmias (36.84%) with a BQ score ≥2 were comparable [Table 4].

In the recent years, the association between OSA and arrhythmias has been of increasing interest since cyclic variation in heart rate is considered typical in sleep disorders. Cardiac arrhythmias are presumed to be a common problem in patients with OSA although the true prevalence and clinical relevance of cardiac arrhythmias remain unknown. Previous studies in patients with OSA had documented that 48% of patients had cardiac arrhythmias with bradyarrhythmias in 18%, sustained ventricular tachycardia in 2%, sinus arrest in 11%, second-degree atrioventricular block in 8%, and frequent premature ventricular contractions in 19%.

In our evaluation of the prevalence of OSA in patients with arrhythmias, we found that the prevalence of OSA, as established by BQ, was as high as 37%. In comparison from the epidemiological data available, OSA affects only 2–4% of total population. This striking difference affirms...
The findings from this study emphasize the association between OSA and cardiac arrhythmias. It establishes a rationale for systematic arrhythmia detection and reporting in patients with OSA. The various challenges that need to be addressed include widespread comorbidities including obesity that obscure clearer understanding of any independent cardiovascular consequence of sleep apnea per se. We also need to have interventional studies addressing whether the treatment of sleep apnea confers any tangible benefit in terms of arrhythmias and vice versa.

Acknowledgments

The authors acknowledge the support of Dr. Gopi Krishna Panicker, Quintiles Cardiac Safety Services, Mumbai, in the preparation of the manuscript.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Vishisht Mehta, Anurati Mehta1, Yash Lokhandwala2, Sanjeev Mehta3

Department of Internal Medicine, Creighton University, NE, United States, 1Department of Chest Medicine, Chest and Allergy Center, Mumbai, 2Department of Cardiology, Arrhythmia Associates, Mumbai, Maharashtra, India

E-mail: dr.sanjeevmehta@hotmail.com

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How to cite this article: Mehta V, Mehta A, Lokhandwala Y, Mehta S. Is obstructive sleep apnea more common in adults with arrhythmias?. Lung India 2016;33:575-6.