

Sleep Disorders in People with Type 2 Diabetes Mellitus and Hypertension.

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Abstract

Background: One of the most common non-cardiac complaints in hypertension individuals is sleep problems. Insomnia, short sleep duration, and obstructive sleep apnea are all known risk factors for high blood pressure and type 2 diabetes. There is, however, little data available on the prevalence of various sleep problems in hypertensive individuals.

Aim: In this study, patients with hypertension and type 2 diabetes were evaluated for their prevalence of various sleep disorders and their level of daytime sleepiness.

Methods: There was a cross-sectional study done with 120 patients. There are 23 healthy individuals and 38 patients with hypertension totaling 82 people with combination type 2 diabetes and hypertension. The International Classification of Sleep Disorders, Third Edition criteria were used to determine the diagnosis of insomnia. The severity of the daytime sleepiness was measured using the Epworth scale. SOMNO check micro helped to diagnose obstructive sleep apnea.

Conclusion: Insomnia and problems with the circadian rhythm of sleep and wakefulness are the most frequent sleep disorders in people with high blood pressure and diabetes mellitus. Compared to the control group, people with hypertension and diabetes mellitus experience sleep disturbances more frequently. Patients with hypertension were more likely to experience insomnia, whereas those

with diabetes and high blood pressure were more likely to experience circadian sleep disturbances.

Keywords

Sleep Wake Disorders; Dysomnias; Sleep Disorders; Circadian Rhythm; Sleepiness; Hypertension; Diabetes Mellitus; Sleep Apnea; Obstructive

Introduction

In order to live a high-quality life, one must sleep. People aged 18 to 60 should sleep seven or more hours every night [5]. The National Sleep Foundation (NSF) Consensus Report also maintains that age, gender, and genetic variables all affect how much sleep an individual needs. Adults between the ages of 18 and 64 are encouraged to get 7-9 hours of sleep per night, while those above 65 are advised to get 7-8 hours [5]. Nevertheless, the length of sleep is genetically controlled, and some healthy individuals can sleep for only a brief period of time without suffering any negative health consequences, including those to the cardiovascular system [6]. While the investigation of sleep quality receives insufficient attention. Additionally, Kocavska D, et al. findings from their analysis of the sleep patterns of more than 200 000 patients showed that poor sleep quality (13.3%) and the peculiarities of neurophysiological regulation, hormonal profile, genetic predisposition, presence of co-occurring disorders, and social and cultural factors all affect how well people sleep normally [1-3]. Healthy sleep is essential for brain function, memory retention, metabolic process control, and muscular rehabilitation. Additionally, the majority of the repair procedures take place at this time. At the same time, not all of sleep's physiological activities have been identified. The impact that restful sleep can have on the health of the cardiovascular system is particularly intriguing. However, the majority of research has focused on the connection between the quantity of sleep and the condition of the cardiovascular system [4]. The Sleep Research Society (SRS) and the American Academy of Sleep Medicine (AASM) recommend Short sleep duration (6.5% with TST 6 h) was more common in adults (18 years old) than were symptoms of insomnia (9.6-19.4%) and sleepiness (13.3%) [7].

There is some discrepancy in the data on the prevalence of different sleep disorders. Ford DE, et al. and Quera-Salva MA, et al. reported that 10 to 48% of the general population

had insomnia in their study [8,9]. Other publications claim that between 35% and 50% of adults worldwide suffer from insomnia [10]. Obstructive sleep apnea affects 2-4% of men and 1-2% of women in the general population, which is significantly less commonly than insomnia [11]. Almost no information exists on the frequency of circadian rhythm sleep disorders.

The purpose of this study was to evaluate the prevalence of various sleep disorders and the degree of daytime drowsiness in individuals with diabetes mellitus and hypertension.

Discussion

The quality of your sleep is related to your overall and cardiovascular health. The majority of the studies on sleep disorders in people with cardiovascular pathology focused on sleep apnea and length of sleep, even though there were enough of them. However, there are many distinct types of sleep problems, and insomnia is one of the most common ones. In contrast to previous research that focused solely on sleep apnea or sleep length, the current study analyses all potential sleep disorders in accordance with the International Classification of Sleep Disorders.

It should be emphasised that it might be challenging to identify and confirm sleep disorders. Although polysomnography is the approach used in the majority of published studies to measure sleep, it is not ideal due to the inconvenience and potential impact on sleep quality. When we labour, we employed questions that simplify the process and had no impact on sleep quality to diagnose sleep disorders.

In order to identify sleep disorders in the broader population using self-monitoring diaries, the Behavioral Risk Factor Surveillance System undertook a population-based study of 150,000 Americans in 2006. It was found that young persons experienced general sleep disturbance the most frequently, and that rates generally decreased as people aged. According to research, the prevalence of sleep disorders in men ranged from 13.7% in the 70-74 age group to 18.1% in the 18-24 age group, and in women from 17.7% in the 80+ age group to 25.1%. (18-24 years old). Women in the cohort as a whole reported sleep issues more often than males [17]. Sleep issues were reported by 24.2% of women in the 50-54 age range, 23.3% of women in the 45-49 age range, and Between the ages of 55 and 59, 23.5%. In the male population, the prevalence of sleep disorders is 16.9% in the 45-49 age group, 16.1% in the 55-59 age group, and 17.4% in the 55-59 age group. These numbers support our findings. The majority of the patients in our study were likewise female. According to the National Health and Nutrition Examination Survey, women were more likely to have trouble falling

asleep, maintaining sleep, waking up early, and getting restorative sleep. Furthermore, women were more likely to experience daytime sleepiness. For instance, 10.6% of people reported having sleeplessness. Patients also experienced early morning awakenings (10.7%), difficulties getting asleep (11.71%), and problems maintaining continuous sleep (13.21%). We noticed obstructive sleep apnea affecting 31.5% of adults [18].

According to Fiorentini A, et al. [20], sleep disorders such as sleep disordered breathing and hypertension and diabetes mellitus are all major comorbidities. 87.1% of "poor sleepers" had hypertension, compared to 35.1% of "excellent sleepers" patients. Additionally, "poor sleepers" had a considerably greater prevalence of diabetes mellitus. Therefore, compared to 8.8% in the group with good sleep quality, 19.4% of participants with poor sleep quality had diabetes. In contrast to our study, the authors evaluated the quality of their sleep using the Pittsburgh Sleep Quality Index, however this method is similarly arbitrary [20].

The connection between type 2 diabetes mellitus and various abnormalities of sleep quality and duration has been the subject of a sizable body of literature. Numerous pathogenetic mechanisms, including eating disorders, stimulation of the sympathoadrenal system, the hypothalamic-pituitary axis, increased synthesis of counterinsular hormones, and many others [21], could be to blame for this. Obstructive sleep apnea, which is by far one of the most prevalent sleep disorders in type 2 diabetes and whose severity is correlated with the severity of diabetes and the existence of complications, was a criterion for exclusion in our study [22]. Similar to our study, daytime sleepiness was measured using the Epworth scale. Mild daytime sleepiness was the most prevalent, occurring in 17.8% of respondents. 5.8% of respondents had moderate to severe symptoms, and 10.9% reported severe symptoms. But in all of the study's groups, mild daytime drowsiness as measured by the Epworth scale predominated [18].

Conclusion

1. Compared to patients in the control group, individuals with hypertension and type 2 diabetes mellitus experienced sleep difficulties substantially more frequently.
2. Insomnia is the most frequent sleep problem in people with type 2 diabetes and hypertension, whereas circadian rhythm sleep disorders are the most prevalent sleep disorder in those with hypertension.
3. In patients with hypertension and type 2 diabetes mellitus, there were no differences in daytime

sleepiness between those who had insomnia, circadian rhythm sleep-wake disorders, and obstructive sleep apnea.

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