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Burden of insomnia among hypertensive geriatric patients attending cardiology OPD in a tertiary care hospital in eastern India

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Abstract

Introduction: Sleep disorder is a widely prevalent often overlooked disorder that can have serious effects or associations like hypertension. Due to paucity of relevant data on sleep disorder in the geriatric age group, the present study has been undertaken.

Material and Method: Study has been conducted by enrolling patients attending cardiology OPD from Nov'15 to Apr'16. Their baseline characteristics, blood pressure and sleep related data have been collected and statistically analysed.

Result: The percentage of insomniacs were 53.1, 46.3 and 67.5 percent in Prehypertension, Stage 1 and Stage 2 respectively. The total burden of insomnia in the geriatric hypertensives attending OPD at SCB Medical College during the study was 55.6 percent.

Conclusion: The burden of hypertension, after excluding potential confounders, among geriatric hypertensives is 55.6 percent among those attending Cardiology OPD of SCB Medical College, Cuttack.

Keywords: Insomnia, prehypertension, OPD at SCB

Introduction

Insomnia is a sleep disorder that may occur acutely and dissipate or may become a vexing chronic disorder [1]. It is a common, often overlooked disorder that can have serious effect like hypertension. Insomnia is a highly prevalent sleep disorder that frequently occurs in its acute form and occurs at a rate of approximately 10 per cent in its chronic form in many countries. There is a high prevalence of insomnia in a variety of medical and psychiatric conditions for which insomnia often serves as a risk factor. The aetiology and pathophysiology of insomnia is such that several factors may predispose individuals for or precipitate and/or perpetuate the condition [2].

Due to paucity of literature on burden of insomnia among hypertensives in eastern India, the present study was conducted.

Material and Methods: With approval of the ethics committee, the study was conducted from November 2015 to April 2016. The study population comprised of patients (≥ 60 years age) attending the Cardiology OPD of SCB Medical College, Cuttack.

Exclusion Criteria: Substance abuse, chronic pain, heart failure, morbid obesity, diabetes mellitus, depression, job stress, night shift duty.

Their baseline characteristics were recorded and blood pressure was recorded using manual sphygmomanometer standardised. Information on sleep quality and duration was obtained (Pittsburg sleep scale). Data have been used for this study after obtaining informed consent of the subjects.

The International Classification of Sleep Disorders, second edition (ICSD) [3] diagnostic criteria for primary insomnia requires:

- i) A predominant complaint of difficulty in initiating or maintaining sleep or non-restorative sleep, for at least 1 month;
- ii) That the sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in social, occupational, or other important areas of functioning;
- iii) That the sleep disturbance does not occur exclusively during the course of another sleep disorder (e.g., narcolepsy, breathing-related sleep disorder, etc.)

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iv) That the disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or another psychiatric or general medical condition.

Estimates of the prevalence of insomnia depend on the criteria used to define insomnia and more importantly the population studied. A general consensus has developed from population-based studies that approximately 30% of a variety of adult samples drawn from different countries report one or more of the symptoms of insomnia: difficulty initiating sleep, difficulty maintaining sleep, waking up too early, and in some cases, non-restorative or poor quality of sleep. Conclusions from the NIH State-of-the-Science Conference held in June 2005 indicate that the addition of a diagnostic requirement that includes perceived daytime impairment or distress as a function of the insomnia symptoms results in approximately 10% prevalence of insomnia [3]. Finally, the application of more stringent diagnostic criteria, such as the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* [4], which includes the additional requirements that insomnia symptoms persist for at least 1 month and do not exclusively occur in the presence of another sleep disorder, mental disorder, or the direct physiological effects of a substance or medical condition, yields current prevalence estimates of approximately 6% [5].

The term insomnia is used in a variety of ways in the medical literature and popular press. However, for the purpose of this paper, the term insomnia will be used as a disorder with the following diagnostic criteria:

- Difficulty falling asleep, staying asleep or non-restorative sleep.
- This difficulty is present despite adequate opportunity and circumstance to sleep.
- This impairment in sleep is associated with daytime impairment or distress.
- This sleep difficulty occurs at least 3 times per week and has been a problem for at least 1 month [5] as followed by Roth *et al.*

The classification of hypertension has been made in accordance with JNC 8 [6].

Statistical analysis

The data was collected and analysed using descriptive analysis where quantitative values were reported as mean with SD and qualitative data were reported as percentage.

Result

Out of patients who reported to the Cardiology OPD, a total of 295 were included in the study. 150 were male and 145 were females. Mean age of the study participants was 66.5 years \pm 5.05. 120 of those participants were from urban areas and remaining 175 were from rural areas. On exploring their socioeconomic status 170 were found to be having documents of being below poverty line as issued by state government and 125 were of normal socioeconomic status as per government records. (Table 1).

On further analysis (Table 2) it was found that out of the 295 hypertensive patients, 145 were prehypertensives, 110 were in Stage 1 and 40 were in stage 2.77 out of the 145 hypertensives in Stage 1 were found to be chronic insomniacs. Likewise 51 out of 110 and 27 out of 40 were

insomniacs in stage 2 and 3 respectively. Thus the percentage of insomniacs were 53.1, 46.3 and 67.5 percent in Prehypertension, Stage 1 and Stage 2 respectively. The total burden of insomnia in the geriatric hypertensives attending OPD at SCB Medical College during the study was 55.6 percent.

Tables

Table I: Baseline characteristics

Gender	Male	150
	Female	145
Age (in years)	Mean (SD)	66.5 (5.05)
Residence	Urban	120
	Rural	175
Socioeconomic status	Below poverty line	170
	Above poverty line	125

Table 2: Hypertension stage wise burden of insomnia

	Normal	Insomniac	Total	Percentage
Prehypertension	68	71	145	53.1
Stage 1	59	51	110	46.3
Stage 2	13	27	40	67.5
Total	140	155	295	55.6

Discussion

Insomnia is the most commonly encountered sleep disorder in the United States, with prevalence rates of 15% to 24% [7, 8, 9]. However in our study the much higher prevalence of 55.6 percent, may be due to inclusion of geriatric age group with hypertension.

There has been robust scientific evidence associating insomnia with hypertension [10, 11, 12, 13]. Our study also has similar result with greater burden in the more severe disease group.

Conclusion

The burden of hypertension, after excluding potential confounders, among geriatric hypertensives is 55.6 percent among those attending Cardiology OPD of SCB Medical College, Cuttack.

Limitations and future study

Further study is required to distinguish the association of short sleep duration vs. poor quality of sleep with hypertension among geriatric hypertensives. Cause effect relationship too needs to be substantiated.

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