

Insomnia in Patients of Chronic Renal Failure on Hemodialysis

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Objective: To estimate frequency of insomnia problem in patients of chronic renal failure on hemodialysis (HD).

Study design: cross-sectional descriptive study.

Place and duration of study: This study was conducted in the department of nephrology combined military hospital (CMH) Lahore from March to July 2010.

Patients and Methods: This was an observational cross sectional study carried out over a period of five months to investigate whether the new technical and therapeutic advances of the last decade have had a positive impact on sleep disturbance in HD patients. Forty two patients (34 males, 24 females) at end stage renal disease on hemodialysis were selected conveniently from Nephrology department CMH Lahore. Patients were surveyed by using a specific questionnaire. Diagnostic instruments like Hospital Depression & Anxiety Scale (HAD Scale) Urdu version was also used for data collection. Written informed consent was obtained from study participants.

Results: Total number of patients were 42 with age ranging between (20 to 75 years)–male (27) (64.3%) and female (15) (35.7%). The present study showed that insomnia is still a major problem in these subjects, since 42.9% of our patients complained of this sleep disorder. The gender wise distribution of insomnia was 48.1% in males and 33.3% in females. Higher prevalence of insomnia was found in age group of 26-45 years males (80%), females (50%).

Conclusion: Study showed a high prevalence of insomnia (43%) in patients of chronic renal failure on hemodialysis.

Key Words: Hemodialysis (HD), End stage renal disease (ESRD), Hospital Anxiety and Depression Scale (HAD Scale), Quality of life (QOL).

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Introduction

Insomnia is commonly defined as the subjective sensation of short, unsatisfying sleep, despite the ability to sleep.¹ It may be secondary either to trouble falling asleep and / or to night-time waking, which must be persistently present (i.e. three to four times a week for several weeks).²

One of the earliest reports of subjective sleep-related complaints in dialysis patients was described in 1982 by Strub et al,³ who found 14 out of 22 patients who complained of diminished, fragmented sleep and increased time lying awake in bed. In subsequent years, sleep related complaints became increasingly recognized and are characterized by difficulty in initiating and maintaining sleep and daytime sleepiness. Indeed, sleep problems, and in particular insomnia, are among the most disturbing symptoms experienced by this group of patients and are consistently cited as major sources of stress and as factors negatively

impacting upon quality of life.⁴ Similar to the general population, increased stress, anxiety, depression and worry are also associated with poor subjective sleep quality in dialysis patients.⁵

Insomnia is a rather common sleep problem, the prevalence of which ranges between 4 and 29% of general population; such a broad spectrum depends on several variables such as its classification^{2,6}, the characteristics of the population under study^{2,7,8}, and the methodological approaches used to survey patients.⁹ Its prevalence is commonly reported to be higher in elderly or anxious subjects, and in chronically ill patients;^{10,11} among latter, uremic patients on dialysis in particular complain about insomnia and other sleep disorders.¹²⁻¹⁴

Insomnia is associated with a substantial impairment in quality of life (QOL).¹⁵ It may cause personal distress and adverse social and economic consequences, leading to a number of deleterious effects on behavior, health, sense of well being, enjoyment of interpersonal relationships and personal

safety.¹⁵⁻¹⁸ Sever insomnia can impair day time functioning and can increase the occurrence of accidents and decrease QOL.^{15,19,20}

Beyond the obvious negative influence on daytime life, the effects of sleep disorders should not be underestimated for clinical reasons. It has been reported, in fact, that fragmented sleep due to obstructive sleep apnea may result in worsening of cardiovascular risk profile²¹, and that sleep deprivation may negatively affect the immune function²²; it seems possible, therefore, that sleep disturbances may influence the leading cause of death in maintenance hemodialysis (HD) patients, i.e. cardiovascular events and infections.

The aim of the present study was to evaluate the actual prevalence of insomnia in a large population of HD patients from dialysis unit. An additional aim of our study was to understand whether the huge improvement in recent years in dialysis technique, clinical knowledge and pharmacological therapies might have modified the prevalence of insomnia substantially.

Materials and Methods

This cross-sectional study was carried out from March to July 2010 to investigate the insomnia in ESRD patients on hemodialysis using history Performa, sleep questionnaire and HAD scale. Age, gender, marital status, education level, work status, occupation, income level, present or past history of psychiatric illness and family history of psychiatric illness of all participants were recorded. Variables like recent life events, vulnerable personality traits, socioeconomic status and family system, were kept in mind while conducting the study.

Forty two cases, male (64.3%), female (35.7%) were selected at conveniently from both indoor/outdoor patients. Out of 42, one male patient went abroad for renal transplantation and did not rejoin the studies. Patients from all age groups and social class were included in study sample. Only those cases were included who were undergoing hemodialysis and had no other underlying physical illness.

Cases that were excluded from the study included patients with past history of psychiatric illness, intracranial tumors and those with febrile illness having effects of drugs that could impair their ability to participate in the study.

Subjects were explained the nature, purpose and procedure of the present study and informed consent were obtained. Demographic, clinical features and other relevant data were obtained from the patients, their medical history sheets and relatives. Consent form was duly signed by all the participants in the study. Diagnostic instruments like HAD scale

Urdu version, was used by the author and final year, MBBS medical students who were specifically trained to use them. Patients were surveyed by using a specific questionnaire. (Appendex1)

Hospital anxiety and depression scale (HAD) is a self assessment scale used to determine anxiety and depression risk, level and severity. This scale is not intended for making diagnosis. Instead, it aims to determine risk groups by rapidly screening anxiety and depression in patients with physical illness. The patient's questionnaire included questions related to night waking, trouble falling asleep, early morning wakefulness and day time sleepiness. Diagnosis of psychiatric morbidity was obtained by manual methods i.e. from the scores achieved by the patients in HAD scale. All the data obtained was categorized and calculations were done through computer by using SPSS-16.

Results

There were 42 patients. The age ranged between (20 to 75 years), Male (64.3%) and female were (34.3%).

57% were not suffering from insomnia, while 43% were insomniac. Results showed high percentage of insomnia (43%) in patients of hemodialysis.

Insomnia was present in 48.1% of male patients and 33.3% in female patients.

Insomnia was present in 18.50% of patients who were not anxious, 71.4% of borderline anxious patients and 100% of anxious patients.

Insomnia was present in 23.8% of patients who were not depressed, 20% of borderline depressed patients and 73.3% of depressed patients.

Higher prevalence of insomnia was found in age group of 26-45years (males (80%), females (50%)) Figure I.

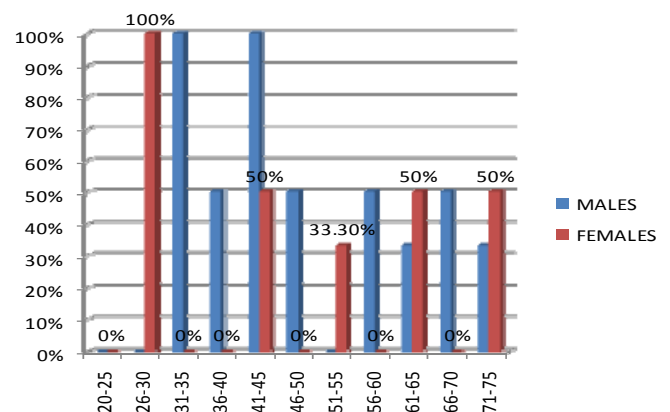


Figure I: Distribution of Insomnia in HD Patients According to Age Group and Gender (n=42).

Discussion

Insomnia is primarily a clinical diagnosis and is most frequently diagnosed using data obtained from patient histories. The prevalence estimates of insomnia vary because of difference in definition, diagnosis, population characteristics, and research methodologies. Twenty nine years after the publication of the first paper describing sleep disorder in HD patients,¹³ the present study clearly shows that insomnia is still a major problem in these subjects, since 42.9% of our patients complained of insomnia. The gender wise distribution of insomnia was 48.1% in males and 33.3% in females.

The prevalence of insomnia in dialysis patients has been reported to range between 45% and 59%.²³⁻²⁶ Furthermore, clinically significant insomnia (with daytime consequences) has been reported to be higher in dialysis patients than normal population.²⁷ This study suggests that insomnia in dialysis patients may have a greater daytime consequence than in the general population. The overall prevalence of clinically significant insomnia in Saudi population was 60.8% which is higher than the rate reported by other studies.²⁸ In a study by Sabbatini et al 44% of hemodialysis patients complained of insomnia.²⁵

In previous studies the relationship between insomnia, anxiety and depression was ignored. In our study strong association was found between insomnia, anxiety and depression. Insomnia was found in 85.71% of patients suffering from anxiety and 60% of the patients suffering from depression. Psychiatric problems, which are often omitted by patients and their family, are overlooked and neglected by the physicians as well. The main reason for this include (i) a negative approach or prejudiced of patients, their family and physicians against psychiatric disorders, (ii) lack of knowledge or lack of interdisciplinary communication and cooperation between several medical specialties. The reported causes of insomnia clearly suggest that the psychological status of patients greatly influences the onset of insomnia.²⁹ Psychiatric assessment of patients undergoing hemodialysis treatment in order to detect anxiety and depression and to initiate appropriate treatment programs will both facilitate psychosocial adaptation of the patients and reduce treatment-related costs by increasing treatment success and decreasing hospitalizations.

What is certain, however, is that very little attention is devoted by physicians to the problems of sleep disorders,³⁰ since many of the reported causes of insomnia such as anxiety and depression, might be conveniently treated, thus improving the well being of the patients. In our study higher prevalence of

insomnia was found in age group of 26-45years (mostly males 80%, females 50%). In contrast to our study, a study by Sabbatini et al²⁵ reported a higher prevalence of insomnia in females and in older patients.

Unruh compared sleep quality in patients on HD who underwent overnight sleep studies and completed a sleep habits questionnaire. He found that HD patients were three times more likely to sleep less than five hours per night, and that more than half reported difficulty getting back to sleep, waking up too early, feeling tired and not getting enough sleep.³¹ Sabry et al found insomnia in 65.9% in hemodialysis patients³². In a study conducted by Rai et al insomnia was present in 60.9% and significantly higher in patients on dialysis for more than one year ($p=0.003$)³³. Dr. Mark Unruh, a nephrologist at the university of Pittsburgh Medical center and his colleagues reported in August issue of the American journal of Kidney Diseases, Insomnia in 50-80% of patients on maintenance hemodialysis.³⁴

Conclusion

Our study demonstrates that the prevalence of insomnia in HD patients is high (43%) and sleep problem represents a major problem. Age group commonly affected ranges from 26-45 years (males 80%), (females 50%). This distribution in the age group shows that the prime time of the patient's life is adversely affected which leads to decreased quality of life of the patient and adversely affects the family economically, and socially.

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