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SLEEP PATTERNS IN PLHIV

Pulmonary Medicine

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ABSTRACT

Aims and objectives:
1.To study the sleep patterns in seropositive patients
2.To study the overall sleep architecture in seropositive patients
Material and method: Sample size: 50
Inclusion criteria:
1.Patients aged 18 years and above
2.Patients with seropositive status and on anti-retroviral therapy (ART)
3.Patients on regular follow-up
4.Patients with BMI more than 25kg/m2
Exclusion criteria:
1.Patients with tuberculosis and on anti-tubercular therapy
2.Patients long term oxygen therapy (LTOT)
3.Patients with recent history of myocardial infarction in past 3 months
4.Patients with history of cardiovascular accident and unable to follow commands
5.Patients unable to consent
Methodology:
Patients fulfilling the inclusion criteria were included in the study. ESS score was calculated in the study subjects. Those with ESS score more than 12 were advised polysomnography.
Results:
1.Our study was male pre-dominated with 40 males and 10 females
2.Most common age group in our study was 48±5 with p≤0.01
3.Most common BMI in our study subjects was 25±4 kg/m2 with p≤0.09
4.10 patients had ESS score of 12 and above and advised polysomnography
5.5 patients were diagnosed with mild OSA and were advised lifestyle modification
6.2 patients were diagnosed with moderate OSA and were advised CPAP titration and lifestyle modification
7.1 patient was diagnosed with severe OSA and was advised CPAP therapy, lifestyle modification and pulmonary rehabilitation
8.2 patients lost to follow-up during the study period
Conclusion: Sleep breathing disorders are at a rising rate in the patients with seropositive status. These are most commonly missed during the routine follow-ups and also there is limited literature available. Further studies are required in this regards. **Clinical implications:** Seropositive patients should also be screened for sleep breathing disorders during follow-ups.

KEYWORDS

OSA, Seropositive, ESS score, BMI, CPAP, People living with HIV (PLHIV)

INTRODUCTION:

People living with HIV (PLHIV) are those who have tested positive for a specific virus or disease, typically HIV. These individuals may face significant social stigma related to their condition, which can cause them to avoid seeking medical care or disclosing their diagnosis to others. This can put them at risk for developing communicable diseases due to their impaired immune system.

While communicable diseases remain a concern, non-communicable disorders are becoming increasingly common among seropositive patients as well. One such disorder is sleep disordered breathing, which can be caused by a sedentary lifestyle and other factors.

To better understand the impact of anti-retroviral therapy on sleep in seropositive patients, this study aims to analyze sleep patterns in this population. By gathering data on the sleep habits of these patients, researchers hope to better understand the relationship between anti-retroviral therapy, sleep, and overall health outcomes. Ultimately, this information could be used to develop more effective treatment plans for seropositive patients and improve their overall quality of life.

AIMS AND OBJECTIVES:

The study of sleep patterns in seropositive patients aims to analyze how HIV and other related conditions can affect the quality and quantity of sleep. Individuals living with HIV are known to have higher rates of sleep disturbances, such as insomnia, daytime sleepiness, and abnormal sleep-wake cycles. These sleep problems can have a significant impact on the overall health and wellbeing of seropositive patients, leading to increased fatigue, reduced immune function, and other adverse health outcomes. By studying the sleep patterns of this population, researchers hope to identify specific sleep problems and develop targeted interventions to improve sleep quality.

The study of overall sleep architecture in seropositive patients aims to analyze the different stages of sleep and how they may be affected by HIV and other related conditions. Sleep architecture refers to the different stages of sleep, including non-REM sleep and REM sleep. HIV infection has been shown to affect the sleep architecture of affected individuals, resulting in changes in the duration and quality of different sleep stages. By analyzing the overall sleep architecture of seropositive patients, researchers hope to gain insights into the mechanisms underlying these changes and develop new treatment strategies to improve sleep quality and overall health outcomes.

MATERIAL AND METHOD:

The sample size for this study is 50 individuals. In order to participate in the study, patients must meet several inclusion criteria, including being 18 years of age or older, having a seropositive status and currently receiving anti-retroviral therapy, being on regular follow-up with a healthcare provider, and having a body mass index (BMI) of 25kg/m2 or greater.

However, there are also exclusion criteria that must be met. Patients with tuberculosis who are currently receiving anti-tubercular therapy are not eligible to participate. Patients who require long-term oxygen therapy (LTOT) are also excluded, as are those with a recent history of myocardial infarction in the past 3 months, or a history of cardiovascular accident and are unable to follow commands. Additionally, patients who are unable to provide informed consent for participation are not eligible to take part in the study.

These inclusion and exclusion criteria help to ensure that the sample population is representative of the target population and that any observed results are relevant and applicable to the broader population

of seropositive patients on ART. By carefully selecting a sample size and defining clear inclusion and exclusion criteria, researchers can help to ensure that the study is well-designed and produces meaningful results that can be used to improve patient care and outcomes.

Methodology:

Compliance with Ethics: IRB/ethics committee approval was taken before enrolling the study subjects. Subjects who met the inclusion criteria were included in the analysis. Written informed consent was taken from the study subjects before enrolling them for study. The study was performed in accordance with the Helsinki Declaration of 1964, and its later amendments.

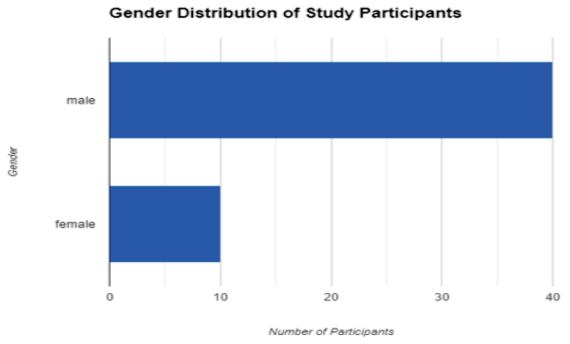
The Epworth Sleepiness Scale (ESS) score was calculated for each study subject. The ESS is a self-reported questionnaire that assesses daytime sleepiness and consists of eight questions with a score range of 0 to 3 for each question, resulting in a total score range of 0 to 24. A score of 12 or higher on the ESS indicates excessive daytime sleepiness and may indicate a need for further evaluation.

For patients who scored 12 or higher on the ESS, polysomnography was advised. Polysomnography is a comprehensive sleep study that measures various aspects of sleep, including brain waves, muscle activity, eye movement, heart rate, and breathing patterns. This test is used to diagnose sleep disorders, such as sleep apnea, narcolepsy, and insomnia.

By assessing the ESS score and performing polysomnography when necessary, researchers were able to gain a more detailed understanding of the sleep patterns and quality of the study subjects. This information can be used to develop targeted interventions to improve sleep quality and overall health outcomes in seropositive patients on ART.

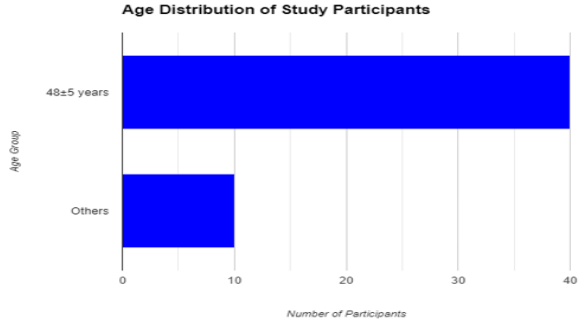
RESULTS:

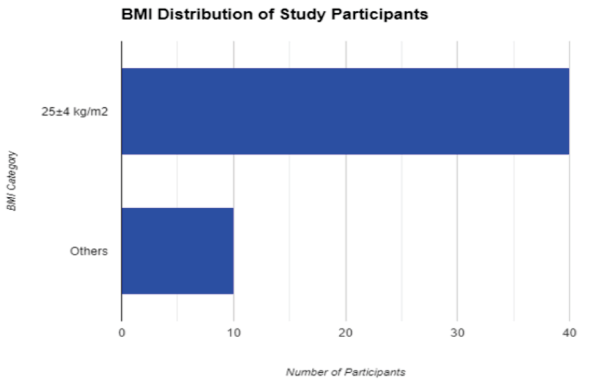
The study population was predominantly male, with 40 males and 10 females. This gender difference could potentially affect the generalizability of the study findings to female seropositive patients. However, the small number of female participants may also be a limitation in drawing conclusions about gender differences in sleep disorders among seropositive patients on ART.



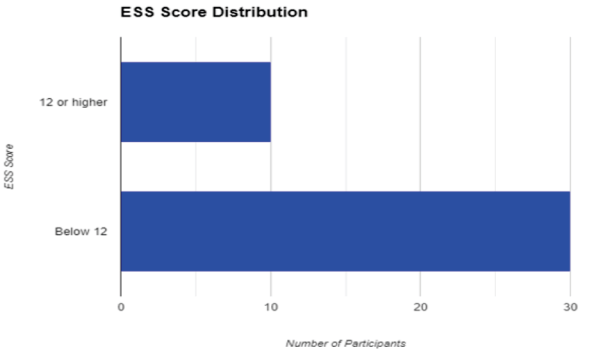
The most common age group in the study was 48±5 years, with a p-value of ≤0.01, indicating statistical significance. This suggests that seropositive patients on ART who are middle-aged may be at higher risk for sleep disorders, although further research is needed to confirm this relationship.

The most common BMI in the study subjects was 25±4 kg/m2, with a p-value of ≤0.09, indicating a trend towards significance. This suggests that higher BMI may be associated with increased risk for sleep disorders among seropositive patients on ART. However, larger studies are needed to confirm this finding.





Ten patients had an ESS score of 12 or higher and were advised to undergo polysomnography. Of these patients, 5 were diagnosed with mild OSA and were advised lifestyle modifications, such as weight loss and avoiding alcohol before bedtime. This highlights the importance of lifestyle modifications in the management of sleep disorders, particularly in mild cases.



Two patients were diagnosed with moderate OSA and were advised CPAP titration in addition to lifestyle modifications. One patient was diagnosed with severe OSA and was advised CPAP therapy, lifestyle modifications, and pulmonary rehabilitation. This underscores the need for individualized treatment plans for patients with sleep disorders, as the severity of the condition can vary widely.

During the study period, two patients were lost to follow-up, which may affect the reliability and generalizability of the study results. Future studies should strive to minimize loss to follow-up to ensure more accurate and representative findings.

CONCLUSION:

Sleep breathing disorders, particularly obstructive sleep apnea, are becoming increasingly common among individuals with seropositive status who are on anti-retroviral therapy. However, these disorders are often overlooked during routine follow-up visits due to a lack of awareness and limited literature on the topic.

Therefore, further research is needed to understand the prevalence and risk factors associated with sleep breathing disorders in seropositive patients. Future studies may also explore the potential impact of these disorders on the overall health and well-being of these patients, as well as the effectiveness of different management strategies, such as lifestyle modifications, CPAP therapy, and pulmonary rehabilitation.

By increasing awareness and understanding of sleep breathing disorders in this population, healthcare providers can better identify and manage these conditions, potentially improving the quality of life and health outcomes for seropositive patients on ART.

Limitations of the study:

The sample size of our study was small. Due to the small sample size it was not possible to do a multivariate analysis for identifying the specific risk factors that leads to development of OSA. Also, we used ESS score for the initial assessment of the study subjects and might have missed some patients due to reluctance in giving proper response.

Clinical implications:

Seropositive patients on anti-retroviral therapy are at a higher risk of developing sleep breathing disorders, particularly obstructive sleep

apnea. Therefore, it is important for healthcare providers to screen these patients for sleep breathing disorders during routine follow-up visits.

Screening for sleep breathing disorders can be done using tools such as the Epworth Sleepiness Scale (ESS) or questionnaires that assess symptoms such as snoring, daytime sleepiness, and morning headaches. Patients who are identified as at risk for sleep breathing disorders should be referred for further diagnostic testing, such as polysomnography, to confirm the diagnosis and determine the severity of the condition.

By including sleep breathing disorder screening in routine follow-up visits for seropositive patients, healthcare providers can help identify these conditions early and provide appropriate management and treatment options. This may ultimately improve the quality of life and health outcomes for seropositive patients on ART who are at risk for sleep breathing disorders.

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