Sleep Disorders in Neurology: Under diagnosed and Under reported.

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Abstract: *Sleep is a complex neurological state, with its primary function of providing rest and restoring the body's energy levels. Alterations in th quality, quantity and pattern of sleep result in sleep disorders. Persistent and repeated interruption of sleep affects the health of an individual. Undiagnosed and untreated wale/sleep complaints cause not only misery to the sufferer, but it also has socio-economic consequences. This review addresses sleep disorders commonly encountered in the neurology outpatient setting.*

Keywords: *sleep disorder, insomnia, narcolepsy, sleep symptoms*

INTRODUCTION

One of the most frequent health complaints encountered by the general physician is disordered sleep. It may vary from an occasional night of poor sleep or daytime sleepiness to chronic sleep disturbance or misalignment of circadian timing[1] These lead to serious impairment of daytime functioning and may contribute to exacerbating medical psychiatric condtions[2] Disorderd sleep has protean effects on mood, attention, memory and general sense of vigor. It is a clinical entity which if present in a patient must be addressed to allow the patient to lead a better quality of life.

A. DYSSOMNIAS

These are a group of sleep disorders associated with complaints of insufficient, disturbed, or non-restorative sleep. The sleep disturbance does not occur exclusively during the course of another mental; disorder 9e.g. major depressive disorder, generalized anxiety disorder, a delirium). The disturbance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition. These are sub-classified into primary Insomnia, primary Hypersomnia, Narcolepsy, breathing-related Sleep Disorder and Circadian Rhythm Sleep Disorder.

Primary Insomnia: The predominant complaint is difficulty initiating or maintaining sleep or non-restorative sleep for at least 1 month. The sleep disturbance (or associated daytime fatigue) causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. The sleep disturbance does not occur during the course of narcolepsy, breathing related sleep disorder, circadian rhythm sleep disorder, or a parasomnia. Detailed history is the key to diagnosis. Patients with primary insomnia should be discouraged from using sedatives. The need to regularize their daily schedules, including bed times, and to be physically active during the day but to avoid strenuous physical and mental activity before bedtime should be emphasized. Dietary excesses must be corrected with avoidance of coffee and alcohol, especially at night (Table 1). A number of behavioral modifications may be useful[3], such as using the bedroom only for sleeping, arising at the same time each morning regardless of the duration of sleep and avoiding day time naps.

Primary Hypersomnia: The predominant complaint is excessive sleepiness for at least 1 month (or less if recurrent) as evidenced by either prolonged sleep episode or daytime sleep episodes that occur almost daily. The excessive sleepiness cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. It is enhanced in situations that allow sleepiness to become manifest, such as reading or watching television in the evening. The major sleep episode may be prolonged, lasting more than 8 hours. The capacity to arouse the subject may be normal, but some patients report great difficulty waking up and experience disorientation after awakening. The excessive sleepiness is not netter accounted for by insomnia and does not occur exclusively during the course of another sleep disorder [4] (e.g., narcolepsy, breathing-related sleep disorder, circadian rhythm sleep disorder, or a parasomnia) and cannot be accounted for by an inadequate amount of sleep. Because the underlying cause of primary hypersomnia is unknown, treatment remains symptomatic in nature. Severe primary hypersomnia is a disabling problem that often leads to permanent unemployment and responds poorly to medical treatment. Modafnil, sodium oxybate, amphetamine, methamphetamine, dextroamphetamine, methylphenidate and selegiline are effective treatments for excessive sleepiness associated with primary hypersonias. Scheduled naps can be beneficial to combat sleepiness in these patients.

Table 1*.: Sleep Hygeine Tips*

1.	Do not spend much time in bed
2.	Maintain consistent sleep and wake times
3.	Get out of bed if unable to fall asleep
4.	Restrict naps to 30 min in the early afternoon
5.	Exercise regularly.
6.	Spend more time outside, without sunglasses, especially late in the day.
7.	Increase overall light exposure.
8.	Avoid caffeine, tobacco, and alcohol after lunch.
9.	Limit liquids in the evening.

Narcolepsy: The term narcolepsy is derived from Greek, "seized by somnolence." Gelineau was the first to delineate the syndrome in 1880[5] Narcolepsy is characterized by the classic tetrad of excessive daytime sleepiness, cataplexy, hypnagogic hallucinations, and sleep paralysis[6]. There are irresistible attacks of unfreshing sleep that occurs daily for at least 3 months. The presence of one or both of the following is important for the diagnosis: cataplexy (i.e., brief episodes of sudden bilateral loss of muscle tone, most often in association with intense emotion) or recurrent intrusions of elements of REM sleep into the transition between the sleep and wakefulness, as manifested by hypnagogic hallucinations or sleep paralysis at the beginning or end of sleep episode. Narcolepsy frequently is unrecognized, with a typical delay of 10 years between onset and diagnosis. This disorder may lead to impairment of social and academic performance in otherwise intellectually normal children. The implications of the disease are often misunderstood by patients, parents, teachers, and health care professional. Narcolepsy is treatable. However, a multimodal approach is required for the most favorable outcome. It includes non-pharmacologic and pharmacologic measures. Sleep hygiene, scheduled naps and avoidance of foods high in refined sugars are some of the measures patients can take to help themselves along with drugs. CNS stimulants, Modafinil[7], Sodium oxybate and few other drugs have shown some benefit in treating various aspects of narcolepsy.

Breathing-related Sleep Disorder: Sleep disruption, leading to excessive sleepiness or insomnia that is judged to be due to a sleep-related breathing condition (e.g., obstructive or central sleep apnea syndrome or central alveolar hyperventilation syndrome) fall in this category. Diagnosis is reached by eliciting history from patients' bed partner and polysomnography. Depending on etiology, various non-pharmacologic and devices are available as therapy. The management of such patients should be preferably headed by a pulmonologist.

Circadian Rhythm Sleep Disorder: A persistent or recurrent pattern of sleep disruption leading to excessive sleepiness or insomnia that is due to a mismatch between the sleep-wake schedule required by a person's environment and his or her circadian sleep-wake pattern. Circadian rhythm disturbances can be

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categorized into 2 main groups; transient disorders (e.g., jet lag, changed sleep schedule due to work, social responsibilities, and illness) and chronic disorders. The most common chronic disorders are delayed sleep-phase syndrome (DSPS), advanced sleep-phase syndrome (ASPS), and irregular sleep-wake cycle. The sleep disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. Behavioral and light therapies[8] are the mainstays of treatment of circadian rhythm, disturbances. Emphasize good sleep hygiene and discourage maladaptive behaviors. Use of sedatives has been described. Melatonin has been reposted to be useful in the treatment of jet lag and I the treatment of sleep-onset insomnia in elderly patients who are melatonin deficient.

Periodic Limb Movemets in Sleep (PLMS): Previously called nocturnal myoclonus, PLMS is a disorder in which repetitive, brief, and stereotyped limb movements occur during sleep, usually about every 20 to 40 seconds. It is characterized by leg kicks every 20-40s which last for 0.5-5 seconds. Associated complaints of insomnia, excessive sleepiness, restless leg, very cold or hot feet and uncomfortable sensations in legs may also be present. PLMS is unique in that the movements occur during sleep. Most other movement disorders manifest during wakefulness. The condition is remarkably periodic, and the movements may cause poor sleep and subsequent day time somnolence. Periodic limb movement disorder may occur with other sleep disorders and is related to, but not synonymous with, restless legs, syndrome (RLS), a less specific condition with sensory features that manifest during wakefulness. The majority of patients with restless legs syndrome have periodic limb movement disorder, but the reverse is not true. Treatment involves either dopaminergic medication in an attempt to modify activity of the sub cortical motor system or, more commonly, sedative medications such as clonazepam to allow uninterrupted sleep[9]. Many new agents are proving efficacious for treatment as well.

(B) PARASOMNIAS

The parasomnias are a group of disorders characterized by disturbance of either physiological processes or behavior associated with sleep, but not necessarily causing disturbances of sleep or wakefulness. These have undesirable motor, verbal, or experimental phenomenon occurring in association with sleep, specific stages of sleep, or sleep-awake transition phases. Parasomnia may be categorized as [1] primary parasomnia, which are disorders of sleep states and are further classified according to the sleep state of origin, rapid eye movement (REM) or non-rapid eye movement (NREM) or[2] secondary parasomnias, which are disorders of other organ systems that may manifest during sleep such as nocturnal epilepsy, respiratory dyskinesias, arrhythmias, and gastro esophageal reflux. It includes nightmare disorder, sleep terror disorder, sleepwalking disorder and REM sleep behavior disorder. The disturbances are not due to the direct physiological effect of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Nightmare Disorder: Repeated awakenings from the major sleep period or naps with detailed recall or extended and extremely frightening dreams, usually involving threats to survival, security, or self esteem. The awakenings generally occur during the latter third part of the night, usually during REM sleep, but do not involve any motoric dream enactment. On awakening from the frightening dreams, the person rapidly becomes oriented and alert (in contrast to the confusion and disorientation seen in sleep terror disorder and some forms of epilepsy) and also has subsequent recollection of the dreams. The dream experience, or the sleep disturbance resulting from the awaking, cause clinically significant distress or impairment in social, occupational, or other important area of functioning.

Sleep Terror Disorder: It is characterized by recurrent episodes of abrupt awakening from sleep, usually occurring during the first third of the major sleep episodes primarily in stages III and IV of NREM sleep and beginning with a panicky scream. Intense fear and signs of autonomic arousal, such as tachycardia, rapid breathing, and sweating, occur during each episode. There is a relative unresponsiveness to efforts of other to comfort the person during the episode. No detailed dream is recalled and there is amnesia for the episode. The episodes cause clinically significant distress or impairment in social, occupational, or other important area of functioning.

Sleepwalking Disorder: It is also known as somnambulism. There are repeated episodes of rising from bed-during sleep and walking about, usually occurring during the first third of the major sleep episode. While sleepwalking, the person has a blank, staring face, is relatively unresponsive to the efforts of others to communicate with hi, or her, can be awakened only with great difficulty. On awakening (either from the sleepwalking episode or the next morning), the person has amnesia for the episode. Within several minutes after awakening from the sleepwalking episode, there is no impairment of mental activity or behavior (although there may initially be a short period of confusion or disorientation). The sleepwalking causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. History is typical with polysomnography demonstrating onset of episodes during the stage3/stage4 of sleep. Reassurance, relaxation techniques, mental imagery and anticipatory awakenings are the mainstay of treatment. The benign nature of the events and subsequent disappearance in most cases should be emphasized. Medication for the treatment of sleepwalking disorder may be necessary in the following situations, when the possibility of injury is real; when continued behaviors are causing significant family disruption or excessive daytime sleepiness; and when other measures have proven to be inadequate[10].

REM Sleep Behaviour Disorder: REM sleep behavior is dream-enacting behavior that includes talking, yelling, punching, kicking, sitting, jumping out of bed, arm flailing, and grabbing. An acute form may occur during withdrawal from ethanol or sedative-hypnotic drugs. The chronic from present for evaluation following observations of bed partners. It occurs during second half of night during REM sleep. Treatment for REM behavior disorder is initiated with clonazepam at 0.5-1.5 mg taken at bedtime[11.] This medication has been shown to be beneficial in the long term. Drug discontinuation often in prompt relapse. The exact mechanism of action of clonazapam in patient with REM behavior disorder is not known, but its serotonergic properties may inhibit nocturnal motor activity in the brainstem and thus prevent arousals.

CONCLUSION

To date, more than 100 sleep disorders have been identified, affecting sexes, all races and age groups. The effects of sleep disorders range from mere annoyance to life-threatening. Sleep disorders have been found to play a role in high blood pressure, heart disease, poor work performance and strained family relationships. They affect health and interfere with a happy and productive life. It is one of the common complaints any physician comes across during his practice, be it private or in a hospital setting. Earlier it was thought of as a disorder mainly afflicting the population of western countries, but in recent times it has become increasingly visible in the Indian setting. Still very few studies have been undertaken in the Indian population regarding sleep disorders. This has led to low awareness of the great physician about the same, inappropriate use of sedatives and poor quality of life for the patients.

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