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SLEEP DISORDERS IN ELDERLY

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Introduction

Sleep occupies a third of our adult lives and disrupted sleep has immediate and long-term consequences on physical and mental health.

For the old age psychiatrist, two of the most important functions of sleep remain regulation of normal affect and normal cognition—not only just simple attention and vigilance, but also the key role of memory consolidation and new learning.

Primary sleep disorders are common with the prevalence of these disorders increasing with age. These include sleep related breathing disorders, restless legs syndrome (RLS), periodic limb movements of sleep (PLMS), circadian rhythm disorders, and parasomnias such as REM sleep behavior disorder (RBD).

Sleep disturbance may also be a result of medical and psychiatric comorbidities, as well as polypharmacy.

Introduction

Sleep disturbance commonly occurs in psychiatric disorders.

Insomnia has been shown to be a risk factor for subsequent development of depression

There is often a tendency to attribute sleep disturbance in those with mental health problems to the psychiatric diagnosis or the psychotropic medication, rather than as a distinct and treatable set of disorders.

Introduction

Sleep disturbance is common in patients with dementia, with a prevalence of 24.5% reported in a sample of patients with mild to moderate Alzheimer's disease (AD)

In neurodegenerative disorders, the development of a significant sleep disturbance is often the reason for a patient to enter residential care COVID-19.

The association between sleep and dementia is bidirectional

Treatment of sleep disorders in the field of dementia remain challenging: hypnotic medications are commonly used, but evidence for efficacy is lacking and limited by side effects . Melatonin and nonpharmacological interventions like light therapy have not yet demonstrated efficiency in clinical trials

Current classification of sleep disorders

Sleep disorders are classified into one or more of four categories:

hypersomnia, insomnia, circadian rhythm disorder, and parasomnia.

Common evening and night time disorders also include restless legs syndrome (RLS) and associated periodic limb movements of sleep (PLMS).

The most recent International Classification of Sleep Disorder, 3rd Edition (ICSD-3) (was revised in 2014) and DSM-5 diagnostic classifications has been used for the diagnostic criteria

Influence of Aging on Sleep and Circadian Functions

Numerous physiological changes in sleep occur as part of normal ageing:

Frequent interruption of sleep by periods of wakefulness

Decreased total sleep time and increased time to fall asleep

Reduced sleep efficiency and increased sleep fragmentation

Tendency to phase advance

Decreased slow-wave sleep and REM sleep

Increased stage 1 and 2 sleep

How to assess a patient for a sleep problem—taking a sleep history

Given the value placed on the history taking within psychiatry, a sleep history should be routine.

Many sleep disorders can be accurately diagnosed by history alone.

Simple screening questions will often help to identify the type of sleep problem.

A collateral history from the bed partner is very helpful.

Comorbid medical or psychiatric disorders and the occurrence of chronic pain, and their relationship with the onset of the sleep problem should be explored.

A list of prescribed and over-the-counter medications, as well as the timing of medications should be obtained.

How to assess a patient for a sleep problem—taking a sleep history

In the elderly with unexplained sleepiness, special attention should be paid to nocturia as it could be the only clue to previously undiagnosed obstructive sleep apnea.

Insomnia disorder

Insomnia disorder is defined as difficulty falling asleep, difficulty staying asleep, and subsequent daytime distress and impaired functioning.

Earlier diagnostic criteria for insomnia emphasized a distinction between 'primary' and 'secondary' insomnia. With the increasing recognition that medical and psychiatric disorders are often comorbid

The most recently revised ICD-10 and DSM-5 diagnostic criteria for insomnia have now merged these previously distinct diagnostic entities into the single entity of Insomnia Disorder.

Numerous epidemiological studies have shown an association between reduced sleep duration with adverse medical and psychiatric outcomes: including a greater risk of cardiovascular disease and increased risk of the subsequent development of depression

Insomnia disorder

Insomnia remains the commonest sleep disorder in primary care, with at least 10% of the population affected. Increasing age is a risk factor for insomnia due to both accumulating comorbidities as well as age-related physiological changes in sleep.

The diagnosis is typically made on the basis of the history, Polysomnography is generally unhelpful unless a secondary cause of insomnia is suspected such as OSA.

Insomnia disorder

Cognitive behavioral therapy

the recently published guidelines have again emphasized the role of cognitive behavior therapy for insomnia (CBTi) as the first line treatment for insomnia where available, with pharmacological therapies considered only as second line treatments.

Obviously, the presence of significant cognitive impairment precludes the use of CBTi and pharmacological therapies are typically used instead. CBTi has been shown in randomized control trials to result in sustained benefits and was superior to benzodiazepine therapy.

recent studies on internet-based CBTi have been promising, showing similar efficacy to traditional forms of CBTi.

Insomnia disorder

Cognitive behavioral therapy

CBTi would typically include: sleep hygiene, sleep restriction, stimulus control, cognitive therapy and relaxation therapy.

Exercise was not emphasized in the original CBTi regimes, although recent research has highlighted its positive impact on sleep

Sleep restriction is the cornerstone of treatment in CBTi. Using a sleep diary, the average sleep duration is obtained, which is then used to restrict the time that the patient can spend in bed in order to achieve a high sleep efficiency.

Insomnia disorder

Pharmacological treatments

hypnotics are approved for only for short-term (two to four weeks) treatment of insomnia.

The non-benzodiazepine receptor agonists ('Z-drugs') were developed with the aim of avoiding the side effects of benzodiazepines but they are associated with adverse cognitive outcomes, sleep walking, fractures, and serious injury.

Sedating antidepressants have weak evidence for benefit, with tolerance developing quickly: low-dose doxepin is recommended only for sleep maintenance and trazodone is not recommended by the American Guidelines

Antihistamines and antipsychotics are not recommended for the treatment of insomnia

Insomnia disorder

Pharmacological treatments

Melatonin acts on the melatonin receptors, Newer drugs acting on this pathway include ramelteon, and agomelatine. Melatonin and ramelteon have been shown to reduce sleep onset latency. However, their overall benefits are modest and the evidence for their use in insomnia is limited .

In the American Guidelines, ramelteon has a short half-life and is recommended for sleep onset insomnia but there is no convincing role for melatonin.

Suvorexant, a reversible antagonist at the orexin receptors A and B, has been recently licensed for use in the US. Benefits so far have been modest, with a meta-analysis showing that it resulted in a modest decrease in sleep latency. It has only been recommended for the treatment of sleep maintenance insomnia in the American Guidelines

Insomnia disorder

Box 48.2 Pharmacological therapies recommended for the treatment of insomnia

Recommended drug classes for the short-term (≤ 4 weeks) treatment of insomnia when CBT-I is not effective or not available:

- Benzodiazepines
- Non-benzodiazepine receptor agonists
- Sedating antidepressants

Drug classes NOT recommended for the treatment of insomnia:

- Antihistamines
- Antipsychotics
- Melatonin
- Phytotherapy
- Valerian
- Other complementary therapies

Periodic Limb Movement Disorder and Restless Legs Syndrome (PLMD , RLS)

PLMD: repetitive muscular contractions during sleep, most commonly involve the legs, cause sleep disturbances/ arousal .clinically significant PLMD is seen in 30%–45% of adults age 60 years or older. complain of leg kicks (most commonly noticed by the bed partner), cold feet, excessive daytime sleepiness, and insomnia.

when a history is suggestive of PLMD, standard practice is to make a referral for a polysomnogram for definitive diagnosis.

Periodic Limb Movement Disorder and Restless Legs Syndrome (PLMD , RLS)

Restless Legs Syndrome

RLS: is often associated with PLMD, an uncomfortable feeling in the lower extremities that creates an irresistible urge to move (walking, rubbing, or stretching their legs) and is present in up to 28% of patients older than 65 years. Polysomnography is not needed for a diagnosis of RLS.

risk factors of RLS: elderly women/ ferritin levels lower than 45 $\mu\text{g/L}$ in elderly/ diabetes mellitus/pregnancy/ iron deficiency anemia/antidepressants /antipsychotics.

PLMD , RLS

Medications:

- Primary treatment : dopaminergic agonists such as ropinerole and pramipexole.
- Second-line treatment: anticonvulsants (gabapentin) and benzodiazepines (clonazepam).
- Opiates.

Medications

Restless Legs Syndrome, Periodic Limb Movements in Sleep

Pramipexole	0.125 mg qhs	Increase in 0.125-mg increments q2-3d	0.25– 0.75 mg/nigh
Gabapentin	100 mg qhs	Increase in 100-mg increments q2-3d	300– 1800 mg/nigh
Pregabalin	25– 50 mg qhs	Increase in 25–50 mg increments q3-7d	100– 600 mg/night

Breathing-Related Sleep Disorders

- **Apnea** and **hypopnea**

- The predominant type of sleep apnea seen in elderly persons is obstructive sleep apnea., frequency of OSA increases with age.
- apneas or hypopneas → hypoxemia , changes in autonomic nervous system activity , increases in systemic and pulmonary arterial pressure, changes in cerebral blood flow.
- The episodes are generally terminated by an **arousal**.
- Arousal → fragmentation of sleep /excessive daytime sleepiness / cognitive difficulties / insomnia.
- The treatment of choice for obstructive sleep apnea is continuous positive airway pressure (CPAP).

Breathing-Related Sleep Disorders

- Central sleep apnea is relatively rare, a 4%–10% of patients with apnea.
- Etiology: weakening alveolar hypoventilation, CHF, neurological disorders (stroke, brain tumor...) , opiate medications
- treatment: underlying disease, PAP

REM sleep behaviour disorder (RBD)

In RBD, a progressive degeneration of descending, glutaminergic signal from the brainstem results in the loss of normal REM atonia, resulting in dream enactment behavior alongside vivid and often violent dream content.

RBD is traditionally classified into idiopathic or secondary forms. Secondary RBD can be caused by a neurodegenerative disorder, antidepressants, in particular the SSRIs and SNRIs, beta-blockers; and alcohol withdrawal.

REM sleep behaviour disorder (RBD)

Medications

REM Sleep Behavior Disorder

Clonazepam	0.25 mg qhs	Increase in 0.25-mg increments q7d	0.25– 0.75 mg/nigh
Melatonin	3 mg	3– 6 mg/night	3–12 mg/nigh

END

