SLEEP MEDICINE

TACKLING INSOMNIA IN EVERYDAY PRACTICE: PART 1

Sleep disturbance is a common but complex presentation in general practice. Underlying causes are numerous and often elusive to the GP. In the first of a two-part feature on assessment and treatment of insomnia, sleep specialist Professor Gaby Badre looks at the types of insomnia and discusses assessment and diagnosis.

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What is insomnia?
Sleeplessness, or insomnia, is a disorder in which a person senses having inadequate quantity or quality of sleep and is the most common sleep complaint reported to GPs. With the modern lifestyle, and the 24/7 stress system requiring continuous connection and reachability, the incidence of insomnia is increasing in all segments of the population.

Insomnia can be either acute – lasting a few nights – or chronic, lasting many months or years. It can be isolated, but it is often a symptom of other medical or psychiatric conditions. The disorder is often associated with functional impairment during the daytime, such as reduced attention, inappropriate vigilance, dysphoric mood and fatigue. Driver sleepiness, secondary to sleep loss, accounts for about 20% of serious car crashes, independent of those caused by alcohol. Several studies have shown that the adverse effect of insomnia on quality of life is similar to that of depression. Insomnia has been shown to be both underreported and undertreated. In an earlier US poll, 70% of patients reported that they never discussed the problem with their GP; 30% mentioned it only in passing, and only 6% booked a consultation about it. In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) the term “primary insomnia” has been replaced with the diagnosis of “insomnia disorder”, thus avoiding the primary/secondary designation when the disorder accompanies other conditions and offering an improved framework for insomnia care and research.

Types of insomnia
Insomnia can be differentiated in two ways: by aetiology and by duration

Aetiology

- “Primary insomnia”: does not occur as a result of a medical or psychiatric disorder.
- Comorbid (secondary) insomnia: occurs in association with another medical, psychiatric or sleep disorder.

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There are four cardinal symptoms or types of insomnia disorder:

- Difficulties in falling asleep (initiating sleep, DIS)
- Difficulties in maintaining sleep (DMS)
- Early morning awakening (EMA)
- Non-restorative sleep (NRS), with subjects experiencing one or many of these symptoms.

In a survey of a few thousand US adults, Walsh et al observed that the most common problem was difficulty in maintaining sleep (61%), followed by EMA (52%), while DIS (37%) and NRS (25%) were less marked. Furthermore it was reported that all these symptoms were related to a wide range of co-morbid mental and physical conditions, with DMS having the strongest associations.

Duration

- Transient insomnia: Simple episode of insomnia lasting less than two weeks
- Intermittent insomnia: Repetitive episodes of transient insomnia
- Chronic insomnia: Continuous problem lasting for more than one month. In current practice insomnia is considered as chronic if it occurs at least three nights per week for at least three months.

While patients with persistent insomnia every night for years are rare, most complain of difficulty sleeping for
a few nights, followed by a few nights of better sleep before the problem returns – known as intermittent chronic insomnia.

Prevalence
Depending on the criteria and groups of patient studied, insomnia is reported to occur within a given year in 20% to 40% of the general population, with about 10-15% of adults complaining of chronic insomnia (>12 months duration) and women more afflicted than men.

Prevalence of insomnia increases with age. However it is not uncommon for elderly subjects with sleeping problems to report less clinically significant impairment, resulting in a low prevalence of insomnia diagnoses among older people. Ohayon and Reynolds suggest that current diagnostic criteria for insomnia might be inadequate for geriatric populations.

Pathophysiology
Does insomnia represent a “hyperarousal” condition of the autonomic nervous system (ANS) and central nervous system (CNS) as well at an emotional level? There is certainly evidence of sympathetic hyperarousal, raised levels of circulating catecholamines, increased basal metabolic rate and body temperature, altered heart rate variability/reduced respiratory sinus arrhythmia (RSA) and elevated beta EEG frequency.

This concept of hyperarousal is gaining more attention. It offers new therapeutic approaches beyond the standard treatment with hypnotics (with their associated risks of intolerance, abuse and dependence, rebound effect, memory impairment and nocturnal falls in the elderly).

A complex clinical picture
Chronic insomnia can develop into a complex picture with a cluster of symptoms influencing each other (see Figure 1). Sleep loss affects the response to stress, which

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in return has a negative impact on sleep. Insomnia also gives rise to anxiety and depression with somatisation (the ANS governs gastrointestinal disturbances, palpitations etc) and muscle tension, for example, which in turn worsens sleep. The patient often ends up using polypharmacy to address all these conditions.

Consequences
Economic consequences: Insomnia has a significant economic impact resulting in hugely increased health care costs and reduced productivity, including indirect costs such as absenteeism, injuries, increased alcohol consumption etc. The consequences of untreated insomnia greatly outweigh the costs incurred by adequate treatment.

Cognitive and health consequences: According to the DSM-5, six areas may be impacted by insomnia during the daytime: energy, concentration, relationships, ability to stay awake (risk of accidents), mood, and ability to work effectively. In addition, by preventing restorative sleep (hence maintaining a high level of stress agents), chronic insomnia has also been shown to be a risk factor for cardiovascular and depressive disease, as well as metabolic disorders (diabetes, triglycerides etc.).

Causes of insomnia
There are many factors that can result in insomnia, including an irregular lifestyle, stress, changes in environment and work schedules, disease, pain and tension, anxiety, depression, alcohol, caffeine, medicine, recreational drugs and of course poor sleep habits.

Psychophysiological insomnia
This common problem is a conditioned arousal to the physical sleep environment comprising a paradoxical behavior: the subject has difficulty getting to sleep at night but can fall asleep unintentionally and can sleep better away from the bedroom. He/she ruminates and worries in bed, becoming more and more frustrated in trying to sleep. The consequences include daytime tiredness, performance anxiety and muscle tension.

Co-morbid insomnia (associated with other disorders)
There are five major diagnostic categories (see Figure 2)
- Medical
- Psychiatric
Pharmacological

Behavioural

Primary sleep disorders

Medical disorders
Numerous medical disorders are associated with insomnia, including: hyperthyroidism, arthritic conditions, chronic renal disease, chronic lung disease, heart failure, reflux oesophagitis, hepatic disease, sleep-related asthma and myalgic encephalopathy (ME).

Common co-morbid neurological disorders include multiple sclerosis, cerebral degenerative disorders, dementia, Parkinsonism, sleep-related headaches, and electrical status epilepticus in sleep (ESES).

Pain is also a prominent factor; 50-70% of patients with chronic pain have impaired sleep.

Psychiatric disorders
Most patients with psychiatric disorder develop insomnia at some point, and when prolonged (>1 year) insomnia may be an early warning of developing a psychiatric disorder (40% of patients with chronic insomnia have one).

Mood disorders include depression, anxiety disorders, panic disorders, schizophrenia, personality disorders and alcoholism. Obsessive-compulsive personality disorder is also a common cause of insomnia.

The severity of insomnia co-varies with the severity of the underlying disorder; the incidence of major depression, anxiety disorder, alcohol and drug abuse/dependency is much higher if there is a prior history of insomnia.

Early morning waking could indicate depression, whereas trouble falling or staying asleep is one of the criteria for anxiety disorder.

Pharmacological factors
Insomnia may be caused by withdrawal from many different drugs, including:

- Alcohol, CNS stimulants, nicotine, beta blockers, bronchodilators, corticosteroids, decongestants
- Stimulating antidepressants (imipramine, desipramine, fluoxetine, paroxetine, venlafaxine, reboxetine, bupropion)
- Thyroid hormones, phenytoin

Behavioural causes
These include poor sleep hygiene, an irregular sleep schedule, excessive napping, caffeine, exercise and mental stimulation close to bedtime or negative sleep associations (reading, TV etc).

Primary sleep disorders
Among the primary sleep disorders which can develop insomnia symptoms are periodic limb movement disorders (PLMD), restless leg syndrome (RLS) and in some subjects obstructive sleep apneoa (OSA).

Circadian rhythm disorders are a major cause of insomnia: “eveningness” – delayed sleep phase syndrome observed in young people, “morningness” – advanced sleep phase syndrome, often observed in the elderly; shift work and jet lag (although this seldom yields to chronic insomnia).

Assessment and diagnosis
A comprehensive medical history is essential and is the most important part of the diagnosis. It aims to determine personal health and recognise present and past causal factors, predispositions and other possible contributory health conditions.

It is also important to evaluate any childhood insomnia disorder. Adverse childhood experiences are associated with adult insomnia in a dose-related fashion.

Sleep inventories and other questionnaires, including the Insomnia Severity Scale (ISS: See figure 2), as well as various sleepiness scales, should provide information about sleep-wake habits and patterns.

The patient should be given a sleep log book, in which they can record key factors, such as bedtime, wake up time, sleep quality and other information related to the wake-sleep conditions which may be of relevance (many examples can be found on the internet, e.g. http://www.railroadersleep.org/).

A sleep log should be kept simple – even at the expense of losing some information. It should be quick and easy to fill in and should be kept for at least two weeks to include two weekends.

While a sleep log reflects a subjective view of the sleep-wake pattern, it is often recommended to complement it with an objective measurement such as actigraphy (a small instrument similar to a wrist-watch that continuously measures physical activity). A sleep-wake pattern is obtained by means of an algorithm and can be compared to the sleep log, with which it should be used simultaneously.

Blood tests should be performed to rule out any underlying medical condition, such as thyroid problems or other co-morbidities, which can disrupt sleep.

Overnight sleep studies should be performed only when it is necessary to gather more information about night-time sleep which may contribute to insomnia, such as a co-morbidity, abnormal movements or behaviour disorders.

It is essential to identify the type of insomnia (DIS,
DMS etc.), recognise any co-morbidity and rule out other conditions which may look like insomnia (e.g. narcolepsy with its paradoxical daytime sleepiness and difficulties sleeping at night).

Management
The initial goal of management is to recognise and address any underlying cause:

- Any health condition, pain or disease
- Consistent irregularities in the sleep – wake (circadian) pattern, e.g. shift work or social jet lag
- Work, family, social situation, stress, conflicts
- Muscle tension
- Depression, anxiety
- Sleeping pill, other medication
- Impaired sleep hygiene

In order to be effective, insomnia treatment should ideally be addressed on three levels, namely environmental, behavioural/relaxing and sleep aids (prescription and non-prescription/OTC medication and other means).

It is essential to identify the type of insomnia, recognise any co-morbidity and rule out other conditions

Part 2, to be published in the next issue of BJFM, will explore the various approaches to treatment and discuss how this should be tailored to the patient.

References
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