TACKLING INSOMNIA IN EVERYDAY PRACTICE: PART 2

In our last issue, sleep specialist Professor Gaby Badre looked at the types of insomnia and described best practice in assessment and diagnosis. Here, he explores the various approaches to treatment and discusses how this should be tailored to the patient.

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The initial step in insomnia management is to identify and address any underlying cause:

- Any health condition, pain or disease
- Consistent irregularities in the sleep – wake (circadian) pattern, such as shift work or social jet lag
- Work, family, social situation, stress, conflicts
- Muscle tension
- Depression, anxiety
- Medication (for sleep disturbance and/or other conditions)

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

Environmental approaches

Patients should be advised:

- To avoid using a smart phone or tablet in bed. Their light frequency spectrum can have a negative impact on the release of melatonin, an essential hormone for sleep
- Not to use a computer after going to bed or try to read emails whose content may lead to worries
- To avoid watching television or movies after retiring or being exposed to any situation which may increase alertness and to turn off as many electronic devices as possible
- To adjust the room and bed temperature. Although during wakefulness body temperature remains constant (through thermoregulatory mechanisms such as sweating, vasoconstriction or vasodilatation which adjust blood flow to the skin), during REM sleep, thermoregulation is minimal and body temperature falls to its lowest point or adjusts to the environment. The body cannot compensate for the ambient temperature changes and hence such changes can trigger awakening.
- Check that the room is quiet and quite dark, and that the bed/pillows are comfortable.
- Avoid clocks in the bedroom.

Cognitive and behavioural treatment of insomnia

Relaxation training for the mind and the body aims to reduce muscular and mental tension and avoid intrusive thoughts that may impede sleep. This may be:

- Cognitive: imagery (divert attention from problems and focus on interesting though trivial "pictures", e.g. based on a recent film seen or book read), meditation, music, etc.
- Somatic: breathing exercises, progressive muscular relaxation, autogenic training (simple relaxation and body awareness exercises) etc.
- Listening to appropriate music or meditation CDs, together with various biofeedback systems can also be useful.

Sleep restriction therapy

The amount of time spent in bed is limited to the actual amount of time spent asleep (as identified for example by the sleep log). This creates a mild and controlled sleep deprivation. As sleep improves, sleep time is increased progressively. This is a very efficient method but it needs to be used carefully. Restriction has to be adjusted in order to be effective, but it should be gradual or it will increase daytime somnolence, impair vigilance with risk of injuries and if extreme can trigger mental disorders (hallucinations etc.)

Stimulus control therapy

This aims to associate the bedroom with sleep and establish a solid sleep-wake pattern.

Cognitive therapy

This should address any misconceptions about the causes of insomnia, unrealistic sleep expectations, performance anxiety etc.

Sleep hygiene

Strategies that may be adopted include:

- Establishing healthy sleep habits
- Maintaining a very regular sleep schedule
- Cutting down time spent in bed
- Avoiding napping unintentionally – especially in the evening, e.g. while watching TV
- Exercising, ideally in the middle of the day, but no later than four hours before bedtime
- Avoiding alcohol, caffeine, nicotine and other stimulants close to bedtime – preferably no later than 4 hours prior going to bed
- Maintaining a healthy diet and avoiding late and/or heavy meals
- Avoiding spicy foods at bedtime
- Maintaining an adequate sleeping environment (temperature, noise, light)
- Unwinding before going to bed – no emails or other activities risking an increase in alertness.

It is counterproductive to flood the patient with all sleep hygiene rules at once. It is essential to be aware that no sleep hygiene rule works for all insomniacs, so let the patient explore which works for him/her. The sleep log is designed for just this process. It is worth remembering that behavioural and cognitive therapies take time to work.

Medication

There are four types of medications commonly used for insomnia:

- Hypnotics (benzodiazepine and non-benzodiazepine, melatonin receptor agonists etc)
- Sedative antidepressants
- Antihistamines – neuroleptics
- OTC medications

Hypnotics

Benzodiazepines (e.g. loprazolam, lormetazepam, nitrazepam, temazepam) reduce anxiety and promote calmness, relaxation and sleep, but they can lead to dependency. They should therefore be used cautiously for a limited period, preferably selecting short-acting products such as temazepam.

However, for the short-term management of insomnia it is better to use the so-called Z-medicines, similar to benzodiazepines but short acting, such as zolpidem, zopiclone and zaleplon. NICE recommends against switching to an alternative Z drug if treatment with one is ineffective.

As much as possible it is best to avoid benzodiazepines, which can lead to addiction. Since they have a long half-life they affect daytime functioning and can result in sedation, falls, or cognitive/psychomotor impairment. They also affect sleep architecture.

The speed of elimination of a benzodiazepine is obviously important in determining the duration of its effects. The box below shows the half-life of four of the most common benzodiazepines.

AGENT	HALF-LIFE (HRS)
Diazepam	40 – 100
Nitrazepam	21 – 28
Lorazepam	12 – 28
Temazepam	8 – 22

Women use more hypnotics than men, and this difference increases with age. Sedative polypharmacy is often found especially among older people. Barbiturates are not common.

Melatonin

Melatonin is a naturally occurring hormone that helps regulate the circadian rhythm. Melatonin and its agonists have been shown to be effective in treating sleeplessness in older people.

Circadin, a slow-release melatonin (2mg) can be prescribed for people older than 55 years and for up to 13 weeks. It often proves efficient in both improving sleep quality and circadian rhythms. It should be avoided if there is a history of liver impairment and used with caution in those with a kidney disorder. There are some minor side effects such as constipation and headache.

Another product is Agomelatin (melatoninreceptor agonist and t-HT2 antagonist); however, this is only licensed in the UK specifically for major depressive episodes.

Sedative antidepressants

Doxepin, mirtazapine, trazodone and trimipramine promote sleep, probably through resynchronisation of the circadian rhythm. (Trazodone 50 mg/7 days has improved sleep but impaired memory and driving.)

Mirtazapine, a potent antidepressant, is often very effective in maintaining sleep (15-30 mg at bedtime). It has no sexual side-effects but increases appetite, hence risks for weight gain.

Doxepin is efficient in the treatment of insomnia characterised by difficulties in maintaining sleep (3-6 mg). Rebound insomnia is not an issue.

It should be noted, however, that many antidepressants can also worsen sleep.

Neuroleptics

Neuroleptics should not generally be used for treating insomnia due to their side-effects. Antihistamines, such as alimemazine, clemastine and hydroxyzine hydrochloride, can be effective against anxiety. Levomepromazine can be tested, as can promethazine hydrochloride – the latter being indicated for insomnia and one of the few medications suitable for pregnant women.

Emerging agents

New products expected to appear shortly on the market include:

- A novel orexin1 and 2 receptor antagonist which was very promising in pre-clinical studies
- Histamine H3 agonists
- GABA agents, SEGA (selective extrasynaptic GABA agonists) with both GABA agonist, e.g. gabaxadol and GABA reuptake inhibitor, e.g. tiagabine.

OTC and alternative therapies

There is not yet enough evidence supporting these therapies for insomnia. There are reports of the positive impact of acupuncture, valerian, passionflower, chamomile, but evidence is less convincing for hypnotherapy or other herbal remedies.

Light therapy, efficient for adjusting the circadian rhythm, has also been reported to have a positive effect on sleep in the elderly.

Prescribing

When prescribing medication it is important to recognise the type of insomnia in order to select the most appropriate drug. It is for example unwise to recommend a short acting hypnotic at bedtime for someone who can fall asleep easily but has difficulties in maintaining sleep.

One should exercise caution with sedative/hypnotic use in the following cases:

- Obstructive sleep apnoea (OSA) or snoring
- Elderly patients
- Excessive alcohol consumption
- Pregnancy
- Renal, hepatic or pulmonary disease
- A need to maintain alertness during usual sleep period – for instance in shift workers
- Concomitant use of other drugs
- Suicidal tendencies

Adverse effects of hypnotics include:

- Performance decrements – the longer the half-life, the greater the effect
- Cognitive impairment: anterograde amnesia
- Incoordination: falls and hip fractures
- Motor vehicle accidents
- Possible increased mortality

Rebound insomnia

One of the major side effects of hypnotics besides possible dependency is rebound insomnia. There are four determinants:

1. Dose: the higher the dose, the greater the rebound
2. Half-life: Long-acting drugs have less rebound because they self-taper
3. Duration of administration: the longer the duration, the more intense the rebound
4. Individual differences: the poorer the basal sleep, the higher the probability of a rebound

Side effects may include risks of breathing disorders (due to relaxation), morning drowsiness, possibility of hangover or temporary memory impairment.

It is noteworthy that increasing the dose will rarely be more effective but will produce more side effects.

Short-term insomnia (acute situational insomnia)

For short-term insomnia, provide general recommendations about sleep and sleep hygiene, as above, and address anxiety. Prescribe a short lasting hypnotic (benzodiazepine agonist) using the lowest effective dose for the shortest amount of time, for example zaleplon (T_ 1.0 – 1.4 hrs), zopiclone (T_ 4 – 6 hrs) or zolpidem (T_ 1 – 3 hrs). All these have a short half-life which means less daytime sleepiness.

The treatment period should usually not exceed three weeks. Consider using intermittent doses and treatment-free days. Discontinue the hypnotic gradually and re-evaluate the patient frequently.

Management of chronic insomnia:

Chronic sleep disturbance is often secondary to somatic or psychiatric illness. Identify and treat the underlying medical or psychiatric condition (e.g. anxiety).
There are three treatment options:

- Psychological or behavioural therapy. CBT has been reported to be effective for treating insomnia, and its effects may be more durable than medication. It is often recommended as a first-line option for insomia.
- Pharmacological therapy
- Combined approach, which is the most rewarding.

Consider a tailored approach as far as possible.

Additional information on treatment of insomnia in elderly patients can be found on the BJFM website. Visit **www.bjfm.co.uk**.

KEY POINTS FOR PRESCRIBING

- Sleeping pills can be effective, but chronic use should be avoided
- Always recommend sleep hygiene
- Consider a combined behavioural and hypnotic approach
- Most hypnotic side effects are dose-related
- Use the lowest effective dose for the shortest amount of time