



MANAGING INSOMNIA

Key Reviewer: **Dr Gavin Cape**, Senior Lecturer, Department of Psychological Medicine, University of Otago

www.bpac.org.nz keyword: insomnia

Key Concepts

- Insomnia is usually secondary to other factors such as underlying health issues or a poor sleep environment
- Best initial treatment is non-drug interventions including sleep hygiene tips (ASLEEP)
- If pharmacological therapy is required, use a short-acting benzodiazepine or zopiclone at the lowest effective dose for a short duration
- Avoid hypnotics for older people who are at increased risk of confusion and falls
- Antidepressants and antihistamines are not routinely recommended

Insomnia is common and can significantly affect wellbeing

Insomnia is defined as difficulty in falling or staying asleep, leading to impairment of daytime functioning.

Insomnia affects one in three adults intermittently and one in ten adults chronically.¹ People with insomnia frequently experience excessive daytime sleepiness, irritability and a lack of energy. Chronic insomnia may lead to psychiatric problems (e.g. depression, anxiety), problem use of drugs or alcohol, reduced quality of life and cognitive impairment in elderly people.²

Clinical assessment of insomnia includes a detailed history and examination

Many conditions can present with symptoms of insomnia

Only about 15 to 20 percent of patients with insomnia have no other associated diagnosis. It is usually secondary

to other factors such as underlying health issues, poor sleep environment, shift work or use of medications or other substances that interfere with sleep.¹ Box 1 lists some common causes of insomnia.

If initial evaluation of insomnia identifies an acute stressor such as grief or disruption of the sleep environment by noise, no further evaluation may be needed. A more comprehensive evaluation may be required in patients who fail to respond to initial treatment or if a co-morbid condition is present or suspected.^{1,3} This may include a sleep diary, laboratory testing or referral to a sleep clinic, depending on the suspected underlying cause.

Mistaken beliefs about sleep are common

It is a common belief that people require eight hours of sleep each night. However in reality physiological changes with age and decreased activity often result in a reduced requirement for sleep with no interference with daytime functioning. For example, a 15 year old requires an average of eight hours sleep whereas many people over 70 need less than six hours sleep each night.²

Education about normal sleep requirements may be all that is needed to reassure a person they do not have insomnia.

Treating insomnia

The primary goal is to remove or treat any underlying problems, prevent progression from transient to chronic insomnia and to improve the patient's quality of life.

Manage insomnia with non-drug options if possible

Education about sleep hygiene and stimulus control are part of the management of everyone with insomnia regardless of whether they require further treatment with drugs or other behavioural therapies.

Box 1: Causes of Insomnia²

Psychological

Loss, crisis, worry, anxiety, depression, dementia, other mental health issues such as hypomania or psychotic disorders.

Physical

Movement disorders – Restless legs syndrome or periodic leg movements.

Respiratory disorders – Obstructive sleep apnoea, dyspnoea and coughing.

Painful conditions – Arthritis or headaches.

Urinary frequency – UTIs or prostatic problems.

Endocrine disorders – Hyperthyroidism (sweats), diabetes mellitus (nocturia), diabetes insipidus (nocturia).

Drugs

Ceasing medication – rebound insomnia e.g. hypnotics, antidepressants.

Alcohol – may help initiate sleep but reduces quality and causes early wakening.

Caffeine – especially in the evening e.g. coffee, tea, energy drinks, cola.

Medications – Appetite suppressants, chronic benzodiazepine use, some antidepressants (mostly SSRIs), thyroid hormones, sympathomimetics (agitation), diuretics (nocturia), corticosteroids (agitation) and beta-blockers (bad dreams).

Illicit drugs – e.g. amphetamines, “ecstasy”, BZP, drug withdrawal states.

ASLEEP is a useful acronym for remembering sleep hygiene tips

- Alcohol, caffeine and nicotine should be avoided
- Sleep and sex should be the only uses of the bed
- Leave laptops, TV and paperwork out of the bedroom
- Exercise regularly but not within two to three hours of bedtime
- Early rising – avoid sleeping-in or daytime naps
- Plan for bedtime – establish a bedtime routine such as having a warm drink or a bath.^{1,4}

There are many different opinions about the effect of reading books in bed. A trial of not reading in bed might be useful.

Other behavioural interventions attempt to alter mistaken beliefs and attitudes about sleep, reduce autonomic arousal, and change maladaptive sleep habits that may contribute to maintaining insomnia. Some examples are sleep restriction, relaxation techniques and cognitive behavioural therapy (Box 2). Sleep restriction and relaxation techniques can normally be initiated in primary care however cognitive therapy usually requires referral to a psychologist.^{2,4}

In clinical practice, these methods can be initiated according to the most important perpetuating factors for insomnia. For example, sleep restriction may be more suitable for those patients who have adapted to insomnia by spending excessive amounts of time in bed. Stimulus control for those who have engaged in sleep incompatible activities and relaxation techniques may be suitable for people with tension and anxiety.⁴

Pharmacological treatments

When other approaches prove inadequate, prescription drug therapy may be required. Although drug therapy is effective in the short term there is limited evidence of its effect long term and significant concern exists about dependence, tolerance and difficulty withdrawing people after long term continuous use.

Concomitant use of hypnotics with behaviour therapy may reduce the efficacy of the behaviour therapy.^{1,4}

It may be appropriate to prescribe a short course of hypnotics for someone with a brief history of insomnia that is expected to resolve quickly (e.g. jet-lag, short term stress). Caution is required for someone who has a brief

Box 2: Types of non-pharmacological interventions^{3,5}

Stimulus-control therapy

- Avoid bright lights (including television), noise and temperature extremes, large meals, caffeine, tobacco and alcohol at night.
- Minimise evening fluid intake, leave the bedroom if unable to fall asleep within 20 minutes, limit use of the bedroom to sleep and intimacy.

Sleep restriction

- Reduce time in bed to estimated total sleep time determined by a sleep diary (minimum five hours).

- Increase time in bed by 15 minutes every week when ratio of time asleep to time in bed is at least 90 percent.

Relaxation therapy

- Tensing and relaxing different muscle groups, meditation, hypnosis, biofeedback or imagery.

Cognitive therapy

- Education to alter false beliefs and attitudes about sleep.

history of insomnia that is likely to persist (e.g. stress that is likely to be long term). Hypnotics are best avoided for someone with a history of chronic insomnia because the risks of long term use are high. Behavioural therapies are more durable and safer long term.⁶

Short acting benzodiazepines and zopiclone are the drugs of choice when pharmacological therapies are required. Antihistamines and antidepressants are less suitable for insomnia.

When drug treatment is required short-acting benzodiazepines or zopiclone are recommended

Short-acting benzodiazepines

Benzodiazepines potentiate the inhibitory effects of gamma-aminobutyric acid (GABA) throughout the central nervous system, decreasing time taken to fall asleep and increasing sleep duration. Short acting benzodiazepines, such as temazepam, are more suitable for the treatment of insomnia because they act for a shorter time, have no active metabolites and little or no hangover effect.

Longer acting benzodiazepines, such as diazepam and nitrazepam, are not usually recommended because they have a more prolonged action and may cause residual effects the following day.⁷

Adverse effects associated with benzodiazepine use include drowsiness and light headedness the next day, psychomotor impairment and amnesia.

Although benzodiazepines are effective, their potential for tolerance and dependence limit their use to short-term insomnia. It has been estimated that 10 to 30% of chronic benzodiazepine users are dependent on them and 50% of all users suffer withdrawal symptoms. Dependency is more likely with long term use, higher doses, higher potency benzodiazepines, or in people with psychiatric illness or a history of drug or alcohol abuse.

It is recommended that the use of benzodiazepines for insomnia is restricted to the treatment of severe short term insomnia and treatment should be at the lowest effective dose for the shortest possible time (less than four weeks and preferably five to ten days).⁸

Zopiclone

Zopiclone, a non-benzodiazepine hypnotic, is a selective GABA agonist that was developed with the aim of overcoming some of the disadvantages of benzodiazepines, such as next day sedation, dependence and withdrawal. However there is limited evidence of a clinically useful difference between zopiclone and the shorter acting benzodiazepine hypnotics in terms of effectiveness, adverse effects or

Prescribing points for hypnotics^{1,3,9}

- Identify and address any conditions or circumstances contributing to insomnia.
- Provide advice about non-drug therapies, for example good sleeping habits.
- Prescribe the lowest effective dose of a short acting hypnotic.
- Prescribe hypnotics intermittently and for short durations (less than four weeks but preferably five to ten days).
- Avoid hypnotics or use with caution for patients with a history of substance abuse, myasthenia gravis, respiratory impairment or acute cerebrovascular accident.
- Review for side effects – in particular, daytime sleepiness.
- Before prescribing for older patients, give advice about the increased risk of use and enquire about difficulties with balance which may indicate an increased susceptibility to falls.

potential for dependence or problem use. Zopiclone has been shown to cause hangover effects and impair psychomotor performance in a similar way to temazepam.⁹ Dependence has also been reported in a small number of people.⁷ An adverse effect commonly reported with zopiclone is a bitter or metallic taste in the mouth.

Zopiclone should be treated with the same caution as benzodiazepines – use for severe short term insomnia at the lowest effective dose for the shortest possible time (less than four weeks and preferably five to ten days).

Hypnotic use in older people

Caution is required when hypnotics are used to treat insomnia in older people because they increase the risk of falls, fractures and car accidents, and also impair cognition, slowing reaction times and decreasing energy.

An analysis of hypnotics in older people found that improvements in sleep were statistically significant but the magnitude of the clinical effect was small. The increased risk of adverse events was both statistically and clinically significant in older people already at risk of falls and cognitive impairment. In older people, the benefits of these drugs may not justify the increased risk, particularly in those patients with additional risk factors for cognitive or psychomotor adverse events.¹⁰

Hypnotics are best avoided in elderly people who are at increased risk of falls or confusion (ideally avoid in all elderly people). Increasing age, previous history of falls or confusion and concomitant medicines should be considered when assessing risk in a particular patient.²

Withdrawing people from long term hypnotics

Many people take hypnotics on a continuous basis, however this should be avoided because of tolerance to effects, dependence and an increased risk of adverse events.

Where appropriate, patients should be encouraged to gradually withdraw. Slowly tapering the dose over a number of months may help to reduce the withdrawal effects such as agitation, anxiety and insomnia.²

Some successful strategies that have been used to initiate withdrawal and reduce benzodiazepine use include:⁹

- Letters sent by GPs to long-term users explaining possible problems and inviting patients to gradually reduce their use under supervision. After six months, benzodiazepine use was reduced by one third.
- Review of patients' prescriptions by GPs at regular consultations. Over eight months one in six patients stopped using benzodiazepines.
- Review of older people's medication regimens by pharmacists. This reduced adverse events and reduced the use of sedatives and hypnotics by up to 20%.

Antidepressants are not recommended for insomnia in the absence of depression

Antidepressants are no more effective than short acting benzodiazepines and zopiclone for treating insomnia and their side effect profile, which includes cardiac dysrhythmia and orthostatic hypotension, is more severe.¹

Antidepressants, like hypnotics, increase the risk of falls in elderly people.² They appear to have less potential for abuse than hypnotics which is an advantage in people who have a history of drug or alcohol abuse.¹

SSRIs can exacerbate insomnia so when used for depression they are taken in the morning.

Antihistamines are not recommended for insomnia

Antihistamines have limited evidence of effectiveness for insomnia. Morning hangover effects may be greater than those of short acting benzodiazepines and zopiclone and they may induce significant anticholinergic effects.¹

Alternative remedies are not routinely recommended for insomnia

The efficacy and safety of agents such as valerian, kava or St John's wort for insomnia is not clear and has not been well studied.

Melatonin may be useful for short-term adaption to jet lag or other circadian rhythm sleep disorders. Effectiveness for chronic insomnia is less clear and optimal dose and long term adverse effects are unknown.^{1,11}

Summary

Insomnia is often secondary to other causes. It is essential to address these causes wherever possible before initiating pharmacological therapy. Initial treatment of insomnia involves behavioural therapies to improve sleeping habits and environment, improve relaxation and address false beliefs about sleep.

If drug therapy is needed, short-acting benzodiazepines or zopiclone are preferable. Short courses at the lowest effective dose are recommended. Hypnotics are best avoided in older people at risk of falls or confusion.

Antihistamines have limited evidence of effectiveness for insomnia and may cause significant adverse effects. Antidepressants are not recommended for insomnia in the absence of depression.

References:

1. Laine C, Goldmann D, Wilson JF. In the clinic: Insomnia. *Ann Intern Med* 2008; 148(1).
2. Clinical Knowledge Summaries. Insomnia. Available from: <http://www.cks.library.nhs.uk/insomnia>. (Accessed May 2008).
3. Ramakrishnan K, Scheid D. Treatment options for insomnia. *Am Fam Physician* 2007; 76(4): 517-526.
4. Grunstein R. Insomnia: Diagnosis and management. *Aust Fam Physician* 2002;31(11): 1-6.
5. Silber M. Chronic insomnia. *N Engl J Med* 2005; 353(8): 803-810.
6. Sateia M, Nowell PD. Insomnia. *Lancet* 2004; 364(9449): 1959-1973.
7. British National Formulary (BNF). BMJ Publishing Group and Royal Pharmaceutical Society of Great Britain. March 2008.
8. National Institute for Clinical Excellence. Guidance on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia. April 2004. Available from: <http://www.nice.org.uk/guidance/index.jsp?action=byID&o=11530>. (Accessed May 2008).
9. National Prescribing Service Newsletter. Prescribing benzodiazepines: ongoing dilemma for the GP. Available from: http://www.nps.org.au/resources/NPS_News/news24/news24.pdf. (Accessed May 2008).
10. Glass J, Lanctot KL, Hermann N, et al. Sedative hypnotics in older people with insomnia: meta-analysis of risks and benefits. *BMJ* 2005; 331(7526): 1169.
11. Zolazzi M, Fernando T. How to treat insomnia. *NZ Doctor* 2004; 20 Oct: 21-27.

