

UNIT NO. 2

NON-PHARMACOLOGICAL & PHARMACOLOGICAL OPTIONS IN MANAGING INSOMNIA

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ABSTRACT

In managing insomnia, non-pharmacological and pharmacological approaches can be employed. Non-pharmacological methods are effective and should be considered as first line treatment. Methods such as sleep hygiene, stimulus control therapy and relaxation techniques are discussed. The various medications commonly used to treat insomnia are: benzodiazepine sedatives, nonbenzodiazepine hypnotics, antihistamines, and antidepressants with higher sedation properties.

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INTRODUCTION

Insomnia is a symptom of a variety of disorders and poses significant socioeconomic consequences. If left untreated or treated inadequately, insomnia may become chronic and increasingly severe.

It is important to remember that by and large, insomnia is a symptom and not a diagnostic entity by itself and treatment would first begin by establishing if there is an underlying diagnosis for example, an underlying depression or anxiety disorder and targeting treatment at this if present. While it is easy to prescribe medication, certain non-pharmacological interventions can be useful and minimise the risk of dependence on medications. If medications are deemed necessary, then a combined approach where non-pharmacological approaches are combined with very short term use of medication is also more likely to lead to better long-term outcomes. The patient is better able to maintain sleep even after medications are withdrawn when this is employed. The discussion would centre on both non-pharmacological and pharmacological approaches to the treatment of insomnia.

NON-PHARMACOLOGICAL TREATMENTS FOR INSOMNIA

The underlying principle of non-pharmacological intervention lies in Cognitive Behavioural Therapy (CBT). There are multiple possible approaches using CBT for the treatment of insomnia. Some of these include cognitive psychotherapy, sleep hygiene, stimulus control, sleep restriction, paradoxical intention, and relaxation therapy. Some of these that are more applicable to the family practitioner would be highlighted in this paper. A sleep

diary should be kept for about 2 weeks to identify any correctable causes. It should contain information about time of going to bed and getting up. It should also include time taken to get to sleep, number of episodes of waking through the night, episodes of daytime tiredness and naps. A record of timing of meals, alcohol consumption and exercise should be maintained and significant stressful events during the day should be noted.

Stimulus Control Therapy

Here the aim is to be in bed only when sleepy and maintain a regular sleep / wake cycle. The patient is advised not to nap during the daytime. The bed is also used only for sleep or sex. This is so that an association with the bed and sleep is established. Often people with insomnia would read or watch television in bed and this is to be strongly discouraged in the patient who is already facing challenges sleeping.

There is often significant anticipatory anxiety in patients who suffer from insomnia. Rather than lying in bed and begin worrying about his inability to sleep, the patient is to get out of bed, if he is unable to sleep within 20 minutes of being in bed. He should then engage in a relaxing activity until drowsy before return to bed. He is advised to repeat this until he falls asleep.

Sleep Hygiene

The following would be the advice you would give a patient to improve his sleep hygiene and improve upon his overall success at being able to fall asleep naturally.

- Maintain a regular sleep schedule, i.e. go to sleep and wake up at the same time as far as possible. This establishes a routine that the body gets accustomed to. Do not nap, especially close to bedtime.
- Avoid sleeping in after a bad night's sleep. The temptation to do so comes from trying to get more rest, or the fear of the lack of energy during the day. This would however cause problems with the ability to fall asleep that night and also disrupt the regularity of his sleep wake cycle.
- Avoid watching the clock, and do not lie awake in bed for long periods. Many people when they can't fall asleep constantly check the clock and count the hours left before they wake up. They get more anxious as they realise that they would not get enough sleep and rest and this paradoxically gets them tenser. This as a result keeps them more alert and awake. The increased level of anxiety makes it harder to sleep and reinforces their fear of being unable to sleep.
- Restrict excessive liquid intake or heavy evening meals. This prevents the need to wake up to go the toilet. Patients with insomnia may have difficulty falling asleep again after visiting the toilet. An overly active digestive system near bedtime is also disruptive to sleep.

- Exercise regularly, but not within 3-4 hours of bedtime. Exercise has been shown to improve the ease of initiating sleep and also the quality and depth of sleep. Exercising too close to bedtime however results in its stimulating effect still persistent at bedtime.
- Minimise or avoid caffeine, alcohol, tobacco, and stimulant intake.

Paradoxical Intention

Here the aim is to deliberately attempt to remain awake to reduce the anticipatory anxiety of trying to fall asleep which leads to more arousal. The belief is that “performance anxiety” prevents sleep and by getting the patient to do what is most feared which is to stay wake, the level of anxiety drops and he is able to sleep.

Relaxation Techniques

This would include the following:

Paced respirations

Practice holding a deep breath for 5 seconds, repeating several times, and focusing on the relaxing feel as you exhale.

Guided imagery

Guide the patient through imagery training with use of visualization techniques to focus on pleasant or neutral images to bring the patient to a safe and comfortable place conducive for sleep. The patient then learns to do this and is able to practice this at night on his own.

A sample script of what you could use with a patient

- Guided imagery is a lot like daydreaming, as it involves you using your imagination to create beautiful pictures, serene scenes or enjoyable activities
- Lie in bed when it's your bedtime.
- Close your eyes, be comfortable and breathe deeply.
- You might imagine yourself lying in a green pasture, floating in a river or resting on a cloud. Whatever scene you choose is your personal choice.
- You may for example, imagine that you are walking on the beach: The sand feels soft under your feet and the warm sun caresses your face and body. You look out across the ocean and watch the rays of light dancing on the rolling waves. A seagull calls in the distance. A soft breeze blows your hair into your eyes and you gently brush it away.
- The sky is a brilliant blue. You pause and breathe in the fresh ocean air that surrounds you. Stay there as long as you like and visualize yourself slowly drifting into deep and restful sleep.

Progressive Muscle Relaxation

The Progressive Muscle Relaxation technique was invented by Edmund Jacobson. The basic idea is to systematically train tensing and relaxing groups of muscles. This is what you should do with your patients. During the first training session, each

group of muscles (forearm, upper arm and so on) is exercised separately. Later these exercises are combined so that at the end they should be able to relax the whole body at once.

- Lie comfortably in bed. Now just do the following exercises in a quick order to learn the sequence and how to do it.
- Concentrate in turn on:
 - o Both hands and arms
 - o Face, neck and shoulders
 - o Chest, back and belly
 - o Both legs
- Tighten each group of muscles and hold the tension for about 5 seconds, then relax for about 30 seconds. While focussing the inner perception on the muscles just exercised, you will sense that the process of relaxation progresses a little after loosening the muscles.
- At the end keep your eyes closed for a short while and enjoy the rest a little longer. Breathe in deeply and continue to enjoy the relaxation as you slowly drift to sleep.

PHARMACOLOGICAL APPROACHES

Pharmacological intervention has been the most common approach to treating insomnia over the past few decades. They should however only be used after considering non-pharmacological methods. Concerns have been raised over the use of addictive and dependence causing drugs to treat insomnia. Drugs used include antihistamines, benzodiazepine and non-benzodiazepine receptor agonists, sedating antidepressants, neuroleptics and, even melatonin. Because of concerns about problems associated with the benzodiazepine treatments, use of non-hypnotic medications has increased. Guidelines have also been set-up by the Ministry of Health with regards to the safe prescribing of Benzodiazepines. This should be referred to when there is an intent to prescribe benzodiazepines.

Benzodiazepine Sedatives

Judicious use of hypnotic medications (e.g. benzodiazepines) may be indicated for the short-term (up to 2-4 weeks). These medications are allosteric modulators of GABA receptors. Depending on their pharmacokinetic profile, benzodiazepines can be roughly classified into 3 groups: short half-life (< 3 hours), medium half-life (8-24 hours), and long half-life (> 24 hours). Short-acting compounds tend to initiate sleep well but may not maintain sleep and are useful for patients with sleep initiation difficulty. Medium or longer acting drugs are useful for those with interrupted sleep, but the longer acting drugs also have the drawback of daytime somnolence and more cognitive impairment. Short acting drugs in particular have also a greater risk of tolerance and dependence and should be used with even more caution.

Commonly prescribed medication in this class would include medications such as Lorazepam (Ativan). Short half-life benzodiazepines, such as Midazolam (Dormicum) and nimetazepam (Erimin) are known to be useful in treating

insomnia, but concerns have been raised regarding the high potential for tolerance and dependence of these drugs. They are not recommended for routine outpatient prescription as they are highly addictive and commonly abused in Singapore

This class of drugs should be used only for the short-term and at the lowest possible dose. There are potential drawbacks to benzodiazepine use, including residual daytime cognitive impairment (with long half-life agents, e.g. Diazepam (Valium), psychological and physical dependence especially with short-acting drugs, tolerance, and nocturnal or day-time motor dysfunction. Patients should be routinely warned that these medications may cause drowsiness and may impair ability to perform hazardous activities that require mental alertness or physical coordination. Concomitant use of alcoholic drinks should also be avoided. At times, paradoxical disinhibition may occur and this may rarely give rise to rage or violence.

Nonbenzodiazepine Hypnotics

Of late, the treatment of insomnia has moved toward the use of nonbenzodiazepine sedative hypnotics. The two that are currently in use in Singapore, are Zolpidem (Stilnox), and Zopiclone (Imovane). These are selective for GABA-A receptors containing $\alpha 1$ subunits and for this reason, these compounds may feature fewer treatment emergent side-effects. However caution should also be applied to this group of drugs as we would with benzodiazepines.

Zolpidem and zopiclone have half-lives of approximately 2.4 and 5 hours, respectively. The short half-life and selective action may explain the limited negative influences of these agents on day-time performance. Psychomotor tasks and memory capacities appear to be better preserved by nonbenzodiazepine agents than by benzodiazepines. Any cognitive deficits almost exclusively coincide with the peak plasma concentration. In particular, impairment can emerge in the first hours after drug administration, whereas psychomotor and memory tests carried out seven to eight hours later (i.e. in the morning) generally show no relevant alterations.

Therefore this group of drugs may be better for those that require their cognitive skills intact the next morning. Somnambulism however may be a treatment emergent side

effect to watch out for with Zolpidem and Zopiclone may cause a bitter taste in the mouth or throat in some patients.

Antihistamines

Drugs like Hydroxyzine (Atarax) at doses of 25 to 50 mg at night are a safe choice as well for short-term insomnia. There is no cognitive impairment and it is not known to cause dependence. Dry mouth is perhaps the commonest side-effect.

Antidepressants with Higher Sedation Properties

If co-existing depression or anxiety is present, anti-depressants with sedation as a key property could be employed to help with the sleep difficulties faced in such patients. Such medications include the tricyclic anti-depressant such as amitriptyline and dothiepin (Prothiaden). These drugs carry sedation as significant side-effect but this is useful for patients with co-existing insomnia. Caution should be taken about anti-cholinergic side-effects, postural hypo-tension and danger in overdose. Another useful anti-depressant would be Mirtazapine (Remeron). This paradoxically carries higher sedation at the lower dose of 15mg rather than higher doses of 30-45 mg. Trazodone is another anti-depressant with higher sedation properties.

CONCLUSIONS

The approach to insomnia should take a holistic approach, excluding underlying medical and psychiatric disorders like depression or anxiety and treated with a combination of pharmacological and non-pharmacological approaches where appropriate. Hypnotics if prescribed, should be given for the shortest time possible. Consider referring to see a psychiatrist if the patient is not responding or shows signs of dependence or tolerance to the hypnotics.

FURTHER READING

MOH. CLINICAL PRACTICE GUIDELINES 2/2008. Prescribing of Benzodiazepines. Singapore 2008.

LEARNING POINTS

- **Insomnia commonly presents as part of an underlying disorder.**
- **Treatment should focus on treating the underlying disorder.**
- **Non-pharmacological strategies are effective and should be considered and employed first.**
- **Pharmacological management should be used at the lowest dose for the shortest time possible.**
- **Consider referral to a psychiatrist if the patient is not responding or shows signs of dependence or tolerance to the hypnotics.**