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INSOMNIA IN THE ELDERLY: EVALUATION AND MANAGEMENT

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ABSTRACT

Sleep disturbance is common in the elderly and is frequently undiagnosed. It has been estimated that 75 percent of adults >65 years of age have sleep disturbance and 30 percent of them have insomnia. The classification of insomnia has less significance in older adults as the subtypes demonstrate significant overlap and treatment of the underlying disorder usually does not solve the problem or cure it. The elderly have multiple comorbidities and polypharmacy with myriad causes for insomnia. A comprehensive medical and psychiatric history together with a complete physical examination and mental state examination should be done in the evaluation of older patients. Behavioural therapy with sleep hygiene education should be the initial treatment together with the treatment of the contributing physical and psychiatric conditions. Referral to an expert for cognitive behavioural therapy or multicomponent therapy may be necessary if the initial therapy fails to produce any improvement. If medications are needed, they can be combined with behavioural therapy. Medication used should be the lowest effective dose and prescribed for a short-term use of not more than four weeks. Medications used need to be discontinued gradually and one needs to be mindful of rebound insomnia upon withdrawal. Wherever possible, it will be ideal to avoid benzodiazepines and other sedative hypnotics as the first choice for insomnia. Over-the-counter sleep aids that usually contain antihistamines may not be good choices as they carry significant risk of adverse events and drug interactions. Currently, the safest medications for use in the elderly include the Z-drugs (zolpidem, zopiclone), melatonin, and low dose tricyclic antidepressant Doxepin.

Keywords: Insomnia, Elderly, Behavioural therapy, Education

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INTRODUCTION

In an observational study published in *The Medicine Journal* in 2016 by Tan et al[1] among the 350 individuals aged between 21 to 80 surveyed at the SingHealth Polyclinic, 44 percent of them have inadequate sleep during the week and 26 percent of them have inadequate sleep on weekends. In fact, Singapore is the third most sleep-deprived country after Japan and Korea.

The amount of sleep varies between the age groups. The prevalence of insomnia in the elderly (i.e., persons older than 65) has been estimated to be about 30 percent; the high prevalence is not surprising given the physiologically-related changes such as reduction of sleep efficiency and comorbidities associated with insomnia. Chui et al[2] surveyed 1,034 elderly in Hong Kong and found that occasional or persistent sleep disturbance was reported in 75 percent, and insomnia in 38.2 percent. Advancing age is associated with a higher rate of sleep disturbance. Females have a high rate of insomnia: women are twice as likely as men to have insomnia and prevalence increases with hormonal changes such as pregnancy and menopause. Patients with comorbidities such as pulmonary disease, heart failure, and painful conditions are at increased risk of insomnia.

Sleep disturbance in the elderly is often undiagnosed and inadequately treated.[3] It has a significant impact on the quality of life, as it leads to fatigue, cognitive impairment, mood disturbance, daytime sleepiness, behavioural problems, decreased motivation, increased errors of judgement, and concerns about sleep. All these can lead to an increased rate of accidental injuries and falls.

DEFINITIONS

Insomnia is defined as the inability to fall asleep, the inability to stay asleep, or waking up earlier than desired. In order to correctly diagnose insomnia, the patient must have adequate opportunity to sleep as well as an adequate and conducive place to sleep. Insomnia can be classified on the basis of the duration, acute (<4 weeks) versus chronic, severity (mild or severe), sleep components affected (impaired sleep onset, sleep maintenance, or both), and cause (situational related to stress), primary or secondary to other medical or psychiatric disorders. However, these subtypes demonstrate considerable overlap and differentiation is no longer important in the elderly as treatment of the medical conditions that precipitate the insomnia might not necessarily provide a cure as there are perpetuating factors that need to be addressed as well.

Most diagnoses can be made through careful history and focused physical examinations. Testing such as polysomnography and survey tools should be reserved

for those whose history suggest a particular medical condition such as obstructive sleep apnoea syndrome, restless leg syndrome, or narcolepsy etc. Treatment can be targeted at the underlying condition if any, in addition to applicable techniques involving sleep hygiene education, nonpharmacologic interventions, and drug treatment if needed. It must be stressed that secondary insomnia can coexist with the primary sleep disorders and they must be addressed to optimise the treatment efforts. The two main diagnostic criteria used for the diagnosis of insomnia are the International Classification of Sleep disorders (ICSD-3) and the Diagnostic and Statistical Manual of Mental Disorders (DMS 5) (refer to **Table 1**).

Table 1: Diagnostic Criteria for Insomnia

ICSD-3	DMS-5
Criteria A-F must be met A. Patient's report, or patient's parent or caregiver, observes one or more of the following: • Difficulty initiating sleep • Difficulty maintaining sleep • Waking up earlier than desired • Resistance to going to bed on appropriate schedule • Difficulty sleeping without parent or caregiver intervention B. Patient's report, or the patient's parent or caregiver, observes one or more of the following related to night time sleep difficulty: • Fatigue/malaise • Attention, concentration, or memory impairment • Impaired social, family, occupational, or academic performance • Mood disturbances/irritability • Daytime sleepiness • Behavioural problems (e.g., hyperreactivity, impulsivity, aggression) • Reduced motivation/energy/initiative • Proneness to errors/accidents • Concerns about or dissatisfaction with sleep C. The reported sleep/wake complaints cannot be explained purely by inadequate opportunity (enough time allotted for sleep) or inadequate circumstances (environment is quiet, dark, comfortable, and safe) for sleep D. The sleep disturbance and associated daytime symptoms occur at least 3 times per week E. The sleep disturbance and associated daytime symptoms have been present for at least 3 months F. The sleep/wake difficulty is not explained more clearly by another sleep disorder	A. There is a predominant complaint of dissatisfaction with sleep quantity or quality, associated with one (or more) of the following symptoms: • Difficulty initiating sleep • Difficulty maintaining sleep, characterised by frequent awakenings or problems returning to sleep after awakenings • Early morning awakening with inability to return to sleep • The sleep disturbance causes clinically significant distress or impairment in social, occupational, educational, academic, behavioural, or other important areas of functioning • The sleep difficulty occurs at least 3 nights per week • The sleep difficulty is present at least 3 months • The sleep difficulty occurs despite adequate opportunity for sleep • The insomnia is not better explained by and does not occur exclusively during the course of another sleep-wake disorder (e.g., narcolepsy, a breathing related sleep disorder, a circadian rhythm sleep wake disorder, a parasomnia) • The insomnia is not attributable to the physiologic effects of a substance (e.g., a drug of abuse, a medication) • Coexisting mental disorders and medical conditions do not adequately explain the predominant complaint of insomnia Specify if • Episodic: symptoms last at least 1 month but <3 months • Persistent: symptoms last 3 months or longer • Recurrent: 2 (or more) episodes within the space of 1 year

RISK FACTORS FOR INSOMNIA

Insomnia can occur alone or as a symptom complex associated with a comorbid condition. Multiple factors increase the risk for insomnia in the older adults. They include environmental, behavioural, medical, and social factors (refer to **Table 2**). As the population ages, people will have an increased tendency to have multiple co-morbidities and will be on multiple medications from different specialists, which increases their risk of developing insomnia. As the older adults retire, they may change their usual bedtime and wake time to suit their new lifestyle, which also puts them at risk of developing insomnia. Patients with movement disorders (e.g., restless leg syndrome, periodic limb movement disorder), circadian rhythm disorders, or breathing disorders (e.g., obstructive sleep apnoea) may present with insomnia.[4] Therefore, these conditions need to be identified and treated.

Treatment of these conditions alone may not always resolve the insomnia. Pulmonary disease, chronic pain, heart failure, gastrointestinal reflux, and prostate problems are common in the elderly and oftentimes associated with insomnia. Illicit drug use, cigarette smoking, and alcohol consumption can also cause insomnia. Insomnia is a strong predictor for the development of depression, anxiety and drug or alcohol abuse. It is also highly predictive of relapse of these condition. Depression usually improves more rapidly in patients with insomnia if both conditions are treated concomitantly.[5,6]

Table 2: Comorbidities, conditions, and substances associated with insomnia

Environment	Medications
• Excessive noise, too hot or cold, new home or hospitalisation	• Antidepressants, antihypertensives • Appetite suppressants • Beta agonist • Caffeine • Diuretics • Glucocorticoids • Theophylline, salbutamol • Sedative and hypnotics • Antihistamines, cough medications
Chronic medical conditions	**Psychiatric conditions**
• Breathing disorders (OSD, Interstitial lung disease) • Heart Failure, ischemic heart disease • GERD • Chronic pain • Rheumatic disease (arthritis) • Restless leg syndrome • Benign prostatic hypertrophy, nocturia • Dermatological condition (pruritus) • Cancer • Thyroid disorders	• Anxiety, depression • Post-traumatic stress disorder
	Substance abuse
	• Alcohol, Illicit drugs, tobacco

Case illustration:

A 69-year-old Chinese lady lives alone with a Filipino helper. She is independent in her daily activities of living. She has been on follow-up at the family medicine clinic for five years for the following medical problems: Atrial fibrillation, ischemic heart disease, hyperlipidaemia, and hypertension. She has a history of nasopharyngeal carcinoma treated by radiation therapy in 1994, thyroidectomy for multinodular goitre in 1993, and laparoscopic cystectomy for ovarian cysts. She also has SIADH diagnosed in 2014 and is put on fluid restriction. In December 2018, she was admitted to the restructured hospital for right ankle swelling and redness, which was diagnosed as cellulitis and treated with a course of clindamycin. Incidentally during admission, she was found to have persistently low serum sodium level despite fluid restriction for SIADH. A synacthen test administered diagnosed adrenal insufficiency and she was started on hydrocortisone replacement. She is currently on the following medications: warfarin 2.5 mg OM; Levothyroxine 50 mcg OM; simvastatin 10 mg ON; bisoprolol 1.25 mg OM; omeprazole 20 mg OM; hydrocortisone 10 mg OM; and hydrocortisone 5 mg at 4 pm.

Upon discharge from the ward, she was reviewed by the endocrinologist at the specialist outpatient clinic and continued on the same dosage of hydrocortisone and thyroxine. She returned to the family medicine clinic three months (March 2019) after discharge for review and for topping up of the rest of her medication. During consultation she complains that she has not been able to sleep for the past three months. Instinctively, she stopped one of her medications and she has been able to sleep blissfully. This put the clinician at a dilemma as the medication is essential to treat her underlying medical condition.

Question:

Which medication did she stop?

EVALUATION

Insomnia is a clinical diagnosis. In additional to the usual medical and psychiatric history, a detailed sleep history should also be obtained from the patient, partner, or carer. The sleep history should include details such as the timing of the insomnia, the daytime effects and symptoms, the sleep schedule, the sleep environment, and the patient's sleeping habits. The **3 Ps of insomnia**: predisposing, precipitating, and perpetuating factors should be included in the history taking (refer to **Table 3**). Relevant personal and social factors such as isolation, loneliness, bereavement, change in residence, and financial concerns, are key factors in the history and may indicate a temporary situational insomnia. Further, a complete physical examination, including neurological and mental state assessment, should be conducted to look for possible underlying medical condition, e.g., a raise in JVP and lung crackles and oedema of heart failure. Referral to a psycho-geriatrician and other specialist may be needed when the history and physical suggest sleep apnoea, restless leg syndrome, narcolepsy, and REM sleep behaviour disorder.

Table 3: 3 Ps of insomnia

Predisposing factors	Precipitating factors
Age Easy arousability Female Living alone Psychological disorders: anxiety, depression, substances abuse Smoking	Alcoholism Chronic pain Comorbid condition: Diabetes, pulmonary disease, ischemic heart disease, thyroid disease, heart failure Divorce, separation, loss of spouse Lower social economic status Shift work Snoring Stressful life events Substance abuse Unemployment
Perpetuating factors	
Behavioural issues: excessive time spent in bed, napping, chronic medication use Psychological issues: worry about sleep loss	

Case illustration

In the patient above, she correctly self-diagnosed that her inability to sleep properly for the past three months was due to her medications. The only new medications that had been started for her was the hydrocortisone for adrenal insufficiency. The two medications in her drug regime that can disrupt sleep are thyroxine and hydrocortisone. However, she had been taking thyroxine replacement for a number of years and there had been no prior problem with it. She stopped the hydrocortisone on her own and was subsequently able to sleep blissfully. However, this created a therapeutic dilemma as the hydrocortisone is for treatment of her adrenal insufficiency. Not having enough glucocorticoids in the body will predispose her to electrolytes abnormalities, hypotension, inability to handle stress, and inability to mount an effective response during an infection.

Not all patient diagnosis is as straightforward as the patient in the case illustration. In the elderly, insomnia can occur alone or as a symptom complex associated with multiple comorbidities. In such situation, keeping a two-week **sleep diary** (refer to **Table 4**) provides information regarding the patient's activities, bedtime routine, sleep quality, daytime symptoms, and the use of causative substances. Information gleaned can confirm insomnia and allow the physician to provide specific behavioural guidance. The ultimate treatment goal is to improve sleep qualitatively and quantitatively, decrease related stress, and improve functioning in the day.

Table 4: Sleep diary

Activity/day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Daytime activity and Pre-sleep ritual							
Naps (Number)							
Exercise (type/ duration)							
Alcohol/caffeine (amount)							
Food and drink							
Feelings	Very tired	Somewhat tired	Fairly alert	Wide awake			
Stress irritability before bedtime	None	Some	Moderate	High			
Medications/sleep aids							
Activities hour before bedtime							
Bedtime (lights out)							
Sleeping and getting back to sleep							
Wake up time							
Time to fall asleep							
Sleep breaks							
Quality of sleep	0=Worst	10=Best ever					
Total sleep time							

MANAGEMENT

The goal of treatment of insomnia is the improvement of sleep quality and/or quantity, and the reduction in insomnia-related daytime impairments. The treatment should be a shared decision between the physician and patient. The latter should be involved in the formulation of the plan about the treatment goals and choice of treatment. The therapy will depend on the patient's willingness to engage in the behaviour therapies and the possibility of side effects from the medications use. Therefore, patient co-operation is crucial for success.

In the elderly, behavioural interventions are effective and recommended as an initial treatment of insomnia. Behavioural therapy and non-pharmacology interventions appear to have better long-term efficacy with fewer side effects than pharmacologic interventions. Only when it is not effective or does not achieve the desired results are short-term medical therapies considered. It is best not to use or select benzodiazepines or other sedative hypnotics as a first choice in the management of insomnia in older adults. Hypnotics has benefits of improving sleep quality, total sleep time, and frequency of night-time awakening; however, these short-term gains are small compared to the risk of cognitive and psychomotor-adverse events.

Non-Pharmacological Treatment

Cognitive-behavioural therapy for insomnia (CBT-I) is a multi-component-based intervention involving cognitive and behavioural techniques such as stimulus control therapy, sleep restriction therapy, relaxation training, cognitive restructuring, and sleep hygiene education. CBT-I improves sleep based on constant, good quality patient orientated evidence.[7] Most of these behavioural interventions overlap and have certain similarities (refer to **Table 5**). The goal is to change patient's misconceptions, beliefs, and attitude that hinder sleep. CBT-I involves several sessions and can be delivered in various modes, in person face-to-face, in groups, through an app, via telephone, or through self-help videos. Most of the behavioural interventions can be used in the family physician office but this is not commonly done as most of us lack the training and expertise. It is also time-consuming and lacks reimbursement.

Table 5: Overview of behavioural therapies for insomnia

Sleep Hygiene Exercise regularly but not 4 hours before bedtime No large meals, limit fluid intake in evening No caffeinated and alcoholic drinks No smoking Maintain regular sleep-wake cycle Avoid distracting stimuli at bedtime	**Stimulus Control** Lie down to sleep only if sleepy Use bedroom for sleep and sex only Avoid watching TV use of handphone Leave bed if unable to sleep within 20 mins Maintain a consistent sleep-wake cycle by setting an alarm	**Sleep Restriction** Limit time in bed to the time actually spent sleeping, gradually increase as sleep efficiency improves
Paradoxical Intention Advise to remain awake to alleviate the anxiety associated with the pressure to sleep	**Relaxation Training** Autogenic training: imagine a calm environment Imagery training: focus on pleasant image Hypnosis, meditation, yoga, breathing exercise, progressive muscle relaxation Visual or auditory feedback	**Cognitive therapy** Counselling Identify and replace dysfunctional belief regrading sleep Use journal to write down thoughts
Cognitive behaviour therapy for insomnia (CBT-I) and multicomponent therapy Combination of stimulus control, relaxation therapy, sleep hygiene education and cognitive therapy		

A. Sleep Hygiene Education

Education is key in virtually all sleep disorders and it can be easily ministered by the family physician in the consultation room. However, time needs to be invested as some of the behavioural interventions might be difficult for patients to accept or understand without careful explanation. Sleep hygiene education is recommended as an initial intervention for all adults with insomnia so that personal habits and environmental factors that negatively impact sleep can be identified and corrected.[8] Patients are advised to exercise regularly (but not within four hours of bedtime), avoid eating large meals and limit intake of fluid in the evening, and avoid caffeinated drinks, tobacco, and alcohol intake 4-6 hours before bedtime. The bedroom should be used for sleep and sex only. One needs to maintain a regular sleep-wake routine and avoid daytime naps. The room should be comfortable with a cool temperature and there should not be noises that can disrupt the sleep (refer to **Table 6**).

B. Stimulus Control Therapy

Stimulus control helps to establish a regular sleep-wake cycle and associate the bedroom with sleep. Specific instructions given to patients include the following: to lie down to sleep only if you feel sleepy; use the bed for sleeping and sex only; do not watch TV in bed or eat in bed; and leave the bed if unable to fall asleep within 20 minutes and return to bed only when sleepy. It is also essential to establish a regular sleep-wake routine by setting the alarm at the same time every morning regardless of how many hours of sleep occurs.[9,10]

C. Sleep Restriction Therapy

This method is beneficial for patients who spent lots of time in bed trying to fall asleep. The idea is to limit the amount of time spent in bed to only the number of hours that the patient spends sleeping only. This time should not be less than five hours and it is gradually increased as sleep efficiency improves. Note that this method has a risk of causing sleep deprivation and excessive daytime sleepiness.

D. Cognitive Restructuring Therapy

This aims to reduce worrying and change misconceptions associated with sleep and insomnia using Socratic questioning. It changes how the patient perceives the effect of sleep on his life by challenging inaccurate patterns of thinking. The patient also uses a journal to record troubling thoughts and worries before bedtime. The transfer of thoughts to paper may help the patient clear his mind, making it easier to fall asleep.

E. Relaxation Therapy

The relaxation techniques used include deep breathing exercises, progressive muscle relaxation, biofeedback, and guided imagery. These aim to reduce tension and reduce intrusive thoughts that interfere with the ability to fall asleep. Mindfulness-based stress reduction techniques is a form of relaxation therapy aimed at changing reactions to stress by teaching purposeful awareness and acceptance of the present state. It includes breathing, body scan, meditations, and yoga.[11,12]

Table 6: Sleep hygiene education: Instructions for patients

Behavioural Patterns	Sleep Environment
Keep a regular sleep-wake schedule	Identify snoring or disruptive bed partners
Do not go to bed unless sleepy	Keep bedroom cool and dark
Decrease or get rid of daytime naps	Eliminate as much noise as possible in the sleeping room
Exercise regularly (But not 4 hours before sleep)	Place clocks out of sight
Increased exposure to natural light and bright light during the day and early evening. Avoid exposure to light close to bedtime and during awakening at night	Can consider soft, soothing music
No heavy meals within 3 hours of bedtime	To consider keeping pets outside of the room if they interfere with sleep
Eliminate alcohol, caffeine and nicotine especially before bedtime	
Keep a relaxing routine (warm bath, wind down)	
Wear comfortable clothing	
Avoid distressing talk with bed partners	
Do not use the bed for watching TV and reading	
Get out of bed once awake	

Lifestyle and complementary approaches have some benefits. **Regular moderate intensity exercise** improves the quality of sleep in older adults. A randomised controlled trial showed that low impact exercise Tai-Chi reduces daytime sleepiness and improves sleep quality in older adults with moderate sleep problems.[13] **Bright light therapy** may be used to restore the normal circadian rhythm by providing time-exposure to bright light source, which helps to delay sleep. The family physician can recommend white light sources with a bluish tint during the time exposure during the time interval patients tend to be more tired.[14] A study demonstrated that just two four-hour evening sessions of exposure to bright light can improve early morning awakenings for up to a month following the treatment.[15] **Acupuncture** at specific points to stimulate the body has been shown to improve insomnia symptoms in older adults.[16]

PHARMACOLOGICAL TREATMENT

Medications may be used early in the treatment for relief of temporary/situational insomnia when an immediate response is required. More often, it is reserved for patients demonstrating significant consequences of insomnia refractory to other treatments. As with all medications prescribed to the elderly, lowest doses and shortest duration of administration are preferred. Medication use should be tapered gradually to prevent rebound or withdrawal symptoms when treatment is completed. If higher doses are used, it is important to monitor for dependency and abuse especially in those who are resistant to tapering and those requesting for higher doses of the medications.[17,18,19]

The classes of drugs available for the management of insomnia include the following:

A. Benzodiazepines

Benzodiazepine decreases sleep latency and nocturnal awakenings. However, benzodiazepines such as lorazepam, diazepam, etc may increase the risk of memory impairment, falls, fracture, and vehicular accidents, and increase emergency department visits and unnecessary hospitalisations. Long-term usage can lead to psychological dependence and there is an increased risk of addiction and abuse. Tolerance can also develop over time, requiring higher dosages to be effective. Therefore, wherever possible, its use should be minimised in the elderly.

B. Non-benzodiazepine hypnotics

This class of drugs is commonly known as the z-drugs (zolpidem, zopiclone) with similar actions to benzodiazepines. It reduces sleep latency. In the elderly, it should be used in the short term (not more than three months) as it causes confusion and increases the risk of falls and fractures in adults with dementia and cognitive impairment. There is also potential for abuse: in higher dosages, the medication can cause stimulation, euphoria, and anxiolysis in some patients. Uncommon complex sleep-related behaviours (sleep driving, sleep eating) have been reported in patients taking higher dosages.

C. Melatonin and melatonin receptor agonist

Melatonin receptor agonists (Ramelteon) and melatonin reduce sleep latency and increase sleep duration. Their side effects are usually mild, such as gastrointestinal disturbances and neurological such as giddiness and headache. They are relatively safe and there are no documented rebound insomnia or withdrawal side effects. Melatonin is a health supplement that is not regulated by the Health Science Authority and is available as an over-the-counter product in Singapore. Melatonin receptor agonists are not approved for sale in Singapore and hence not available. Circadin (Melatonin prolong release tablets) is available in Singapore for the short-term treatment of primary insomnia characterised by poor quality of sleep in older patients.

D. Over-the-counter sleep aid and antihistamines

These medications decrease sleep latency but they produce rapid tolerance and are highly anticholinergic. The side effects include dry mouth, constipation, blurring of vision, and acute retention of urine. They should be avoided in the elderly as they increase the risk of cognitive decline and impairment.

E. Antidepressants

Many antidepressants (Mirtazapine, fluvoxamine, amitriptyline, and nortriptyline) have sedative side effects and are sometimes used to treat insomnia, especially in those with concurrent depressions. However, most are also highly anticholinergic and increase the risk of falls and accidents in the elderly. The only drug that has been approved for the treatment of insomnia by the FDA is tricyclic antidepressant Doxepin. Its mechanism is unknown but compared to placebo, doxepin at 3 mg to 6 mg improves sleep efficiency and latency.[20] The side effect profile at these dosages is favourable in the elderly. In Singapore, it is available at an inexpensive 10 mg dosage.

It must be emphasised that the management of insomnia in elderly is behavioural therapy as the first line and combination with medications if the intervention is ineffective. All medication increases the risk of falls and the use of over-the-counter sleeping aids should be avoided in the elderly. It is recommended that medications should be avoided or be used only for the shortest period of time in the elderly. Currently, the medications considered the safest and most effective prescription sleeping aids for geriatric patients are zolpidem, zopiclone, melatonin, Ramelteon (not available in Singapore), and low-dose tricyclic antidepressant Doxepin. For sleep-onset insomnia, one can consider prescribing a shorter acting agent such as zolpidem. For sleep maintenance insomnia, a longer-acting agent such as zolpidem CR, zopiclone, and doxepin can be used. In patients with concomitant anxiety, consider an SSRI.

Herbal therapy or folk remedies usage is not uncommon

as a form of treatment in traditional Singapore. Common herbal therapy includes St John's wort, Chamomile, kava, etc. Most are untested and have no known efficacy or safety profile and may even be toxic. Generally, advice should be given to avoid them.

CONCLUSION

In the elderly, insomnia can affect personal well-being and lead to significant morbidity. Many elderly experience difficulties with falling asleep, or waking up too early, which leads to daytime impairment. Sleep assessment should be considered as an integral part of a comprehensive geriatric assessment. Identification and treatment of the many potentially contributing factors are essential to effective therapy. For most patients, behavioural therapy should be the initial treatment. Avoid benzodiazepines and other sedative hypnotics as the first choice for treatment. If medications are needed, they should always be used in combination with behavioural therapy and always use the lowest effective dose.

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LEARNING POINTS

- **Incidence of insomnia increases with age. It can include difficulty falling asleep at the start of the sleep period, waking up and difficulty falling back asleep, and waking up early and unable to get back to sleep. Difficulty staying asleep and early morning awakening are common in the elderly. Waking up early can also be due to advanced sleep phase syndrome.**
- **A thorough history (both medical and psychiatric) and physical examination are required when diagnosing insomnia.**
- **Behavioural therapy should be the first line of therapy and sleep hygiene education can be conducted by the family physician in the clinic. If there is little improvement, referral should be considered to a specialist geriatrician or psychiatrist for Cognitive Behavioural therapy (CBT-I) or multicomponent therapy.**
- **CBT-I for insomnia has been shown to be more effective than medications for long-term management of insomnia in the older adults.**
- **Medications should be used sparingly and where possible be discontinued. If medications are needed, it should be used in conjunction with behavioural interventions.**
- **Wherever possible, it is wise to avoid using benzodiazepines or other sedative hypnotics in older adults as a first choice for insomnia, agitation, or delirium.**
- **Currently, the appropriate drugs to use in the elderly are zolpidem, melatonin, zopiclone, and doxepin.**