INSOMNIA

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Overview

Insomnia is commonly reported due to daytime fatigue, physical discomfort and psychological distress[1]. Although highly prevalent and can lead to physical and mental health problems as well as social, occupational and economic repercussions, poor sleep quality is often overlooked. The prevalence of insomnia is estimated to be 13.4% in Canada and 6-10% worldwide. [2]

Definitions

Acute insomnia: new onset of difficulty initiating or maintaining sleep, with the presence of an identifiable trigger lasting < 4 wks. duration; **Chronic insomnia:** symptoms lasting >4 weeks; **Primary insomnia:** a conditioned state of hyperarousal that inhibits the sleep process. Not usually associated with a comorbidity and often lasts < 1 month; **Secondary insomnia:** associated with primary sleep disorders (C: Circadian rhythm, A: sleep apnea, L: restless legs), medications, medical or psychiatric conditions (mood disorders and substance abuse) – see table 1; **Sleep-onset latency:** the time it takes to fall asleep. Normal is < 30 minutes[8]

Diagnostic Considerations

Consider diagnosis of insomnia for patients with difficulty falling asleep, staying asleep or non-refreshing sleep in a person who has the opportunity to sleep 7-8 hours per night. Clinically relevant if effects daytime functionality (daytime dysfunction, fatigue, poor concentration and irritability.) [1,3] Sleep history is essential and should include: recent life changes, alcohol/drug use, sleep and wakefulness patterns, effect on functioning.

Clinical Presentation:	Risk Factors	Red Flags:
Fatigue	Older age	Major depressive episode
Excessive daytime somnolence	Female	Bipolar disease
Depression	Lower SES	Generalized anxiety or panic disorder
Generalized anxiety disorder	Chronic Disease	Excessive daytime sleepiness, with potential harm to patient or society
Impairment of memory and concentration	Chronic Pain	
Pain	Substance misuse	Substance abuse

Clinical questions to establish diagnosis of insomnia*:[3]

Over the past month:	Never	Rarely	Occasionally	Most nights/ days	Always
1. Do you have trouble falling asleep?	1	2	3	4	5
2. Do you have trouble staying awake?	1	2	3	4	5
3. Do you wake up unrefreshed?	1	2	3	4	5
4. Do you take anything to help you sleep?	1	2	3	4	5
5. Do you use alcohol to help you sleep?	1	2	3	4	5
6. Do you have any medical condition that disrupts your sleep?	1	2	3	4	5

**Patients who answer 3,4 or 5 on any question may suffer from insomnia. If they answer 3, 4 or 5 to two more items and have significant daytime impairment the insomnia requires further evaluation and management. [9]

Common co-morbid medical conditions [4] **		Common contributing medications/substances[4]	
Neurological	CVD, dementia, PD, seizures, peripheral neuropathy	**Antidepressants**	SSRIs, SNRI, duloxetine, MAO-I
Cardiovascular	Angina, CHF, arrhythmias	**Stimulants**	Caffeine, ephedrine
Respiratory	Asthma, COPD	**Decongestants**	Pseudoephedrine
GI	Reflux, PUD, IBS	**Narcotics**	Codeine based
GU	BPH, incontinence, enuresis	**Cardiovascular**	ß agonists/antagonists, ßblockers,diuretics, lipid lowering meds
Endocrine	DM, hyper/hypothyroid	**Respiratory**	Salbutamol
MSK	Fibromyalgia, RA/OA	**Other**	Alcohol, stimulant use, nicotine
Other	Chronic pain, Depression, Anxiety		

Table 1: Common Contributing factors to Insomnia[4]

CVA: cerebrovascular disease, PD: Parkinsons disease, CHF: Congestive Heart Failure, COPD: Chronic obstructive pulmonary disease, PUD: peptic ulcer disease, IBS: irritable bowel syndrome, BPH: Benign prostatic hypertrophy, DM: Diabetes mellitus, RA/OA, rheumatoid/osteoarthritis

** Up to 80% of insomnia is associated with a comorbidity, therefore early identification and management of any comorbid disorders is essential.[8]

Consider asking your patients to keep a sleep diary for at least 2 weeks duration that can include:[8]

1. Time of going to bed and time taken to get to sleep and wake time
2. The number of episodes of waking through the night
3. Episodes of daytime tiredness and naps
4. Times of meals, alcohol consumption, caffeine consumption, and significant events during the day, such as exercise or stress.
5. Rating of sleep quality (ask the person to rate the quality of their sleep each night, from 1 to 5, where 1 is very poor and 5 is very good)

While polysomnography (sleep studies) are not routinely done for insomnia, among patients with chronic insomnia, this testing should be considered if one of the following clinical conditions is present[7]:

1. Unsuccessful treatment or initial diagnosis is uncertain
2. Precipitous arousal or violent behaviors during sleep
3. Underlying cause might be either a sleep-related breathing disorder or a periodic limb movement disorder
4. Snoring associated with observed apneas and or excessive daytime sleepiness

Consider screening for depression in patients with insomnia as the prevalence of major depressive disorder is significantly higher with patients with insomnia compared to those without (31% vs. 4%).[7] Insomnia related to major depression can be characterized as repeated awakenings in the night and premature morning awakenings.

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics.

Management

In patients with insomnia, educational or behavioral intervention combined with pharmacologic agents is more beneficial than either therapy alone. The different modalities work well in combination as initially medications may assist with short term regulation of sleep patterns and behavioral therapy will have more sustained effects.[7] In patients with acute insomnia, an inciting cause should be sought out. Brief episodes of acute insomnia should be treated when daytime effects are severe as untreated acute insomnia can lead to chronic insomnia[7, 8].

Behavioural therapies: sleep hygiene, sleep consolidation (fixed sleep prescription), stimulus control (re-associate bedroom with sleep), and relaxation techniques

Cognitive Behavioural Therapy: address inappropriate attitudes that cause/worsen insomnia. Research has demonstrated that CBT may have long-lasting positive effects on sleep. The benefits tend to be greatest with sleep-onset difficulty.[7] Sleep Hygiene Advice [5, 8]

Sleep Hygiene Advice[5,8]

- Avoid vigorous exercise within 2H bedtime (exercise earlier in day is beneficial)
- Attempt to have fixed time for sleep and for waking up
- Avoid sleeping-in after a poor night of sleep
- Avoid napping during the day
- Avoid watching or checking the clock
- Avoid excessive liquids or heavy meals in evening
- Avoid caffeine, nicotine, alcohol before bed (within 6 hours)
- Maintain quiet, dark, safe comfortable sleep environment
- Wind down schedule before bed
- Attempt to use bedroom for sleep and sexual activity only

Pharmacotherapy for Insomnia*:

When prescribing medications, remember to: Start with lowest effective dose; Discontinue the medications gradually; Be alert for rebound insomnia;

	Medication (short term recommended 3-4 wk)	**Recommended dose**	**Indication/Efficacy**	**Contraindication/Precaution/Adverse Effects**
mild potency	Non-Benzodiazepine Hypnotic Zopiclone [Imovane ™]	Onset 30 min 3.75-7.5mg qhs	Consider for elderly sensitive to cognitive impairment or concern re: substance abuse Reduces sleep latency [9,10] (15mins) [11] Increases sleep time (45-60mins)[11] no altered sleep structure[10]	Metallic taste +/- residual daytime drowsiness [10] Less tolerance, dependence than BZD [9,10] Less rebound insomnia/withdrawal [9,10]
	Benzodiazepine (BDZ) Temazepam [Restoril ™] Oxazepam [Serax ™] Lorazepam [Ativan ™] Clonazepam [Rivotril ™]	Slow Onset>1h[9] 15-30mg qhs [9] 10-30mg qhs [9] Onset 30-60min[9] 0.5-1mg qhs [9] 0.25-1mg qhs [9]	Consider for panic, restless legs, seizure d/o Clonazepam preferred if long term day time anxiety[9]. Reduces sleep latency [9,10] Increases sleep time [9,10] (45mins)[11]	CI: Substance abuse, Depression, Sleep Apnea (respiratory depression) Alters sleep structure (↓REM/delta sleep, ↑ stage 2) [9,10] Residual sedation/hangover [9,10,11] Decreased cognition, anterograde amnesia [9,10,11] ↓Coordination long term use, ↑ risk falls/accidents (esp. elderly) [9,10] Tolerance if used >1 month [9,10] Dependence, rebound insomnia [9,10] ++withdrawal, taper if >1month use [9,10,11] Fatal overdose w/CNS depressant or ETOH (rare) [9,10,11]
medium potency	Trazodone [Desyrel ™]	Onset 30-60min 25-50mg qhs	Consider for Depression, Antidepressant induced insomnia (SSRI, Buproprion), chronic pain, agitated dementia, substance abuse. Improves sleep continuity, no altered sleep structure	CI: Seizure, Disordered eating Residual sedation Hypotension Appetite suppressant Priapism (rare)
	Amitriptyline [Elavil ™] (long ½ life) Nortriptyline [Aventyl ™] (short ½ life)	Slow Onset >1h 10-50mg qhs 10-25mg qhs [9]	Consider for Chronic pain, Depression Improves sleep continuity, corrects sleep structure [10,11]	CI: No amitriptyline in elderly, nortriptyline better tolerated. [9,10,11] Anticholinergic side effects [9,10,11] Cognitive impairment, residual sedation [9,10,11] Hypotension [9,10,11]
high potency	Methotrimeprazine [Nozinan] ™	Slow Onset >1h 5-50mg qhs [9]	Consider for Severe Insomnia[9]	Anticholinergic/extrapyramidal side effects [9] Decreased cognition[9] Hypotension [9] ↑ LFT (rare) [9]
Natural/OTC remedies/OTC	Melatonin	Slow Onset 2h 1-5mg qhs	Consider for Child/Elderly with neurological impairment, Jetlag effect - variable evidence [9,10,11]	Unregulated ~ inconsistent potency[10] Headache, nightmare [9,10,11] ↑ HR 9,10,11, Rash [9,10,11]

*Avoid: Antidepressants and antipsychotics (in the absence of co-morbid conditions), antihistamines, intermediate and long-acting benzodiazepines, muscle relaxants. Most have excessive risk of tolerance and anticholinergic side-effects. Special considerations: individual consideration and caution with pharmacologic therapy when caring for: children/adolescents; pregnant/lactating women; elderly

Practical Pearls: [5]

First visit: Behavioural/cognitive therapies, initiate sleep diaries, consider role of medication/review use of substances and OTC meds to aid sleep

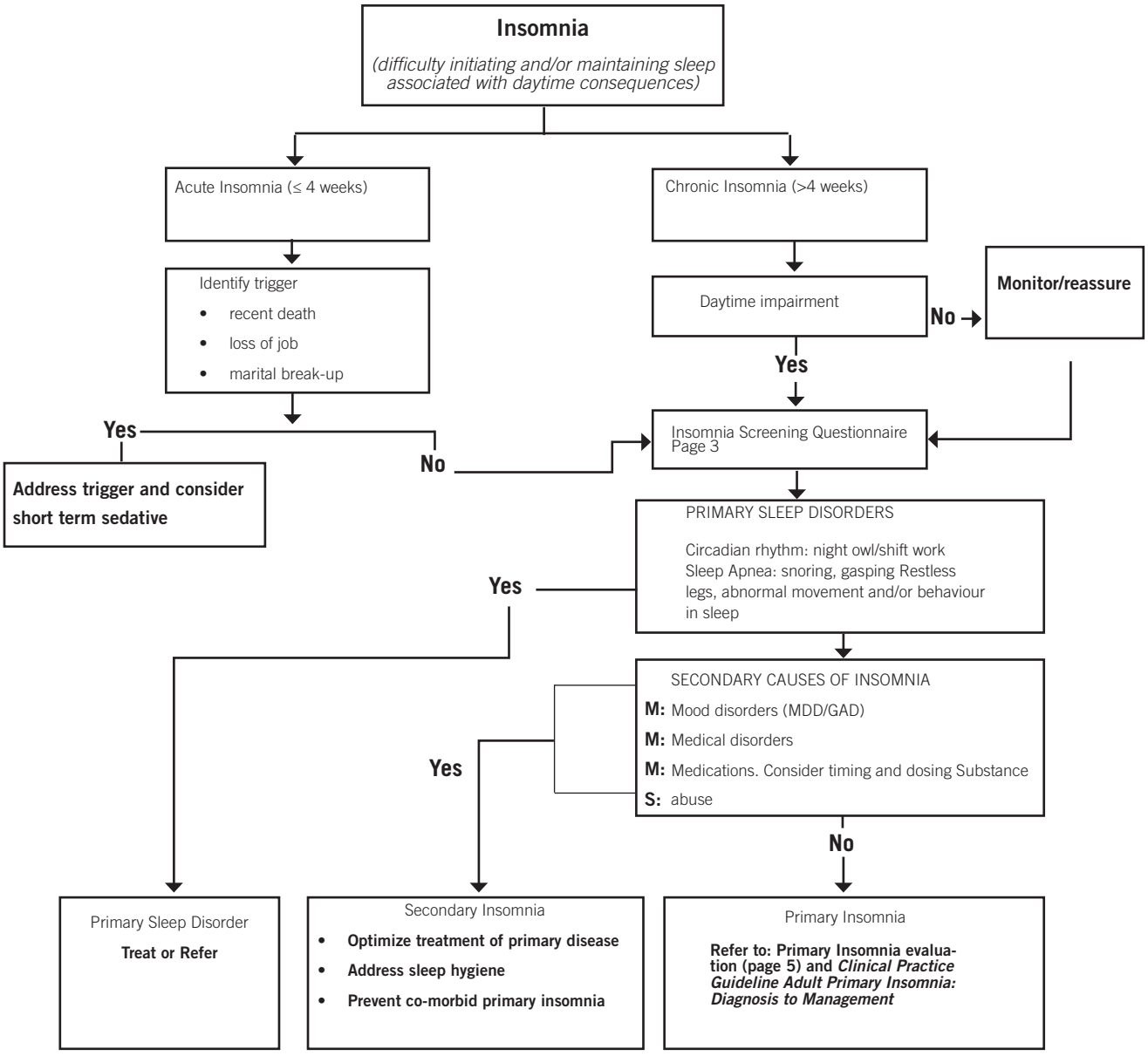
Follow up: 2-4 weeks: Evaluate sleep quality and patterns, Reinforce behavioural modifications, Review need for/continuation of medications

Follow up: 3 months Consider referral to sleep psychologist, Refer to sleep clinic to rule out co-morbid conditions if not done.

Patient resources:

1. The College of Family Physicians of Canada: http://www.cfpc.ca/English/cfpc/programs/patient%20education/insomnia/default.asp
2. The Canadian Sleep Society (CSS): http://www.css.to
3. American Academy of Sleep Medicine – sample sleep diary: http://www.sleepeducation.com/pdf/sleepdiary.pdf

Algorithm for Insomnia Management



References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm