Insomnia Treatment: 
One More Thing - I Can't Sleep

Adam Sorscher, MD

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Learning Objectives

1. Point out the harms of chronic insomnia to optimal physiological functioning and well-being.

2. Identify simple yet high impact cognitive and behavioral techniques that improve insomnia.


Audience Engagement System
Institute of Medicine: 50-70 m Americans suffer from sleep disorders

What is the function(s) of sleep? (or what suffers with inadequate sleep?)
Sleep Disorders: Excessive Daytime Sleepiness

Sleep Disorders: Mental Health Consequences
Sleep Disorders: Pain Threshold

Duration of Sleep Contributes to Next-Day Pain Report in the General Population

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See other articles in PMC that cite the published article.

Publisher's Disclaimer

Sleep Disorders: Metabolic Consequences

Hypothalamus = Homeostasis
Short-Term Physiologic Studies

- Lab settings, short-term sleep restriction leads to:
  - impaired glucose control
  - increased cortisol
  - increased blood pressure
  - sympathetic activation
  - increased CRP


“Sleep that knits the raveled sleeve of care”
Insomnia

AES question # 1

1. Which of the following is the least likely symptomatic complaint of someone with chronic insomnia?
   A. Irritability
   B. Exhaustion
   C. Excessive daytime sleepiness
   D. Depression
   E. Poor concentration
DSM-5 Chronic Insomnia

• Difficulty with quality or quantity of sleep

• Causes significant life interference

• Difficulty sleeping occurs at least three times a week and is present for at least three months
Restless Legs Syndrome

AES Question #2

1. Which of the following is a major criteria for the diagnosis of restless legs syndrome?
   A. A therapeutic response to a dopaminergic agent such as pramipexole
   B. A family history of restless legs syndrome
   C. Presence of periodic limb movements of sleep on a polysomnogram (sleep study)
   D. Increased symptomatology in the nighttime compared to daytime
# 1 - “Urge to Move….”

- Core feature
- Irresistible and overwhelming sensory component
- Always in the legs but may also involve upper extremities and trunk

http://www.healthable.org/

# 2 - Worse with Rest

- “Urge to Move” along with associated sensory symptoms are triggered by inactivity
  - Examples: sitting in a car, at the movies, in a conference, on a plane flight, or at a desk in school
- No specific body position causes symptoms

http://www.healthtap.com
# 3 – Relief with Movement

- Usually immediately or soon after activity begins
- Symptoms should not reoccur while actually moving
- Symptoms may reoccur soon after movement has stopped
- Counter stimulus (i.e. rubbing legs, hot/cold baths) serve as alternative to movement

http://www.idhumanbody.com

# 4 - Worse in the Evening or at Night

- Sensory symptoms associated with the “urge to move” have a circadian pattern with worsening or onset in the evening or at night
- Symptom occurrence and severity peak late evening or middle of night
- Protective period in the morning

http://sucessing.com/
Insomnia: When to Refer

• Sleep lab testing is not indicated for most cases of insomnia

• Refer if suspecting comorbid, testable primary sleep disorders:
  (obstructive sleep apnea/narcolepsy/parasomnias)

OSA and Insomnia

• A high prevalence (39%-58%) of insomnia symptoms have been reported in patients with OSA

• Between 29% and 67% of patients with insomnia have an apnea-hypopnea index of greater than 5

• Combination therapy, of CBTI and OSA treatment, resulted in greater improvements in insomnia than did either CBTI or OSA treatment alone
Treatment for insomnia

Cognitive/Behavioral

Pharmacologic

Sleep Efficiency

\[
\text{Sleep Efficiency} = \frac{\text{total sleep time (TST)}}{\text{time in bed (TIB)}}
\]

> 85% is good!!!
AES Question #3

1. A 64 yo man reports longstanding insomnia. He gets in bed at around 9 pm; watches TV for a few hours and then attempts to sleep. It takes him 1-2 hours to fall asleep and then he wakes up repeatedly in the middle of the night, tossing and turning in bed. He wakes up for good at 7 am. He estimates that he only gets 4-5 hours of sleep per night.

Which of the following therapies has the most robust evidence basis for chronic insomnia?

A. Stimulus Control
B. Biofeedback Therapy
C. Sleep Hygiene
D. Sleep Restriction

Cognitive Behavioral Treatments

<table>
<thead>
<tr>
<th>TECHNIQUE</th>
<th>AIM</th>
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<tbody>
<tr>
<td>Sleep hygiene</td>
<td>Promote habits that help sleep; provide rationale for subsequent instructions</td>
</tr>
<tr>
<td>Stimulus control</td>
<td>Strengthen bed &amp; bedroom as sleep stimulus</td>
</tr>
<tr>
<td>Sleep restriction</td>
<td>Restrict time in bed to improve sleep depth &amp; consolidation</td>
</tr>
<tr>
<td>Relaxation training</td>
<td>Reduce arousal &amp; decrease anxiety</td>
</tr>
<tr>
<td>Cognitive therapy</td>
<td>Address thoughts and beliefs that interfere with sleep</td>
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“Sleep Hygiene”

- Regular schedule, 7 days/wk
- Relaxation / Stress reduction
- Avoid caffeine
- Avoid alcohol close to bedtime
- Dim lights close to bedtime / Limit screen time
- Limit social distractions (beeper, phone)
Graphic sleep diary in insomnia patient (42 yr. F)

Daytime rest periods
Irregular wake times
Irregular bedtimes

Stimulus Control
Sleep Restriction

• Implement especially if sleep logs show > 8.5 hours in bed; if Sleep Efficiency is < 75%

• Establish interval in which the bed is “legal” to be in: eg estimated sleep time plus 30 minutes.

• Goal: Sleep Efficiency of > 85% (80% in elderly); may liberalize allowed sleep interval week-by-week if this goal is being met

Intensive Sleep Retraining
Cognitive Behavioral Treatment: Relaxation

- Progressive muscle relaxation
- Diaphragmatic breathing
- Meditation and guided imagery
- Biofeedback (EMG)
- Mindfulness

Some Cognitive Strategies

- Dispel myths about sleep
- Avoid “Catastrophization”
- Compile “worry list” before bedtime
- Adjust expectations
Benefits of CBT-I

- Effective in 70-80% of chronic insomniacs
- Effective in comorbid insomnia
- Benefits are durable

Pharmacotherapy

- Benzodiazepine receptor agonists (includes non-benzodiazepine and benzodiazepine medications)
- Melatonin receptor agonists
- Orexin receptor antagonist
- Antidepressants
- Antihistamines
- Anticonvulsants
- Atypical antipsychotics
- Others (including alcohol, herbals)
AES Question #4

A 48 yo woman gets in bed at 10 pm and usually falls asleep within 20 minutes. However, she routinely wakes up at 3:30 am and it takes 1-2 hours to fall back to sleep despite close attention to sleep hygiene.

Which of the following sedative-hypnotic medications would be most appropriate for her?

A. zolpidem  
B. ramelteon  
C. eszopiclone  
D. triazolam  
E. melatonin
AASM Pharmacologic Treatment of Chronic Insomnia in Adults: Summary

“WEAKLY” FOR:
- s. onset: zaleplon, triazolam, ramelteon
- s. onset or maintenance: eszopiclone, zolpidem, temazepam
- s. maintenance: suvorexant, doxepin

“WEAKLY” AGAINST:
- trazodone, diphenhydramine, melatonin, tryptophan, valerian

AES Question #5

1. Which of the following unwanted phenomena is most likely to occur with prolonged use of benzodiazepines when used as a sleep aid in the elderly?
   - A. Addiction
   - B. Dependence
   - C. Tolerance
   - D. Nighttime falls
Using Pharmacotherapy: An Approach

- Establish correct diagnosis
- Evaluate carefully for apnea, respiratory impairment, organic mental disorders, substance abuse history
- Choose drug with desired pharmacokinetic profile
- Use lowest effective dose
- Monitor side effects (e.g. fall risk, sedation)
- Aim for short-term use
- Consider long-term use in carefully selected patients
- Consider CBT along with pharmacotherapy in chronic insomnia

Pharmacotherapy: Benzodiazepine Use and Abuse

- Non-medical use is seen in general population
- Abuse risk is seen almost exclusively in poly-drug abusers
- Tendency to increase dosage is seen in 5% of patients with history of alcohol abuse
- Reinforcing properties vary considerably among drugs but appear to be low in newer benzodiazepine receptor agonists
- Caution in patients > 65 years of age (Beers Criteria)
Concluding Thoughts

• Routine polysomnogram is not indicated for most cases of insomnia

• CBT works in chronic insomnia, but it is time-consuming and resources are limited

• Pharmacotherapy is effective, and the risks of dependence, tolerance, and addiction are low in the nonabusing population

Best Practice Recommendations

• A graphic sleep log, completed by the patient for 2 weeks, often provides useful information to plan treatment for insomnia

• CBT is the treatment of choice for chronic insomnia – benefits are documented in both primary and comorbid insomnia and are long-lasting

• Pharmacotherapy is effective and the risks of dependence, tolerance, and addiction are low in the nonabusing population
Questions