Diagnosis and Management of Insomnia in Veterans

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Conflicts of Interest

- None

- Thoughts and comments are my own and do not represent the official policy of the Department of the Army, Department of Defense, or United States Government.
Outline

- Clinical Case
- Diagnosis
- Treatment
Case

- 34 year old male veteran with insomnia since 2006 deployment
- Failed multiple sleep aids (Ambien, Trazodone, and Melatonin)
- Uses alcohol to initiate sleep
Insomnia is defined as a persistent difficulty with sleep initiation, duration, consolidation, or quality that occurs despite adequate opportunity and circumstances for sleep, and results in some form of daytime impairment.
Prevalence among Veterans

- Most prevalent sleep disorder in general population
- Approximately 50% Service Members
- Comorbid with PTSD and TBI
- Increases risk of depression and suicide
Spielman Model of Insomnia

3P Model of Chronic Insomnia

- Predisposing Factors
- Precipitating Factors
- Perpetuating Factors

Insomnia Severity

Preclinical | Onset | Acute | Chronic

Insomnia Threshold
Insomnia Among Veterans

- Shift work
- Sleep environment
- Stigma
- Caffeine, Alcohol, Nicotine, Supplements
- Combat/Operational
Risk Factors for Insomnia

- Elderly (up to 65% of those over 65)
- Female sex
- Lower SES, unemployed, divorced, widowed
- Comorbid medical conditions
- Medications
  - Stimulants, antidepressants, beta-antagonists, calcium channel blockers, glucocorticoids
  - Withdrawal from hypnotics or alcohol
Differential Diagnosis for Insomnia

- Sleep Apnea
- Restless Legs Syndrome
- Circadian Rhythm Disorders
- Parasomnias
- Insufficient Sleep
Consider screening all patients
  - At a minimum, ask about sleep quality

Associated Symptoms
  - Fatigue, excessive daytime sleepiness, depression, anxiety, memory/concentration complaints, pain

Sleep Condition Index Questionnaire

Epworth Sleepiness Scale

Insomnia Severity Index

Pittsburgh Sleep Quality Index
## Appendix: The sleep condition indicator

### Item

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Thinking about a typical night in the last month...</strong></td>
<td></td>
</tr>
<tr>
<td>1. ... how long does it take you to fall asleep?</td>
<td>0–15 min</td>
</tr>
<tr>
<td>2. ... if you then wake up during the night ... how long are you awake for in total? (add all the wakenings up)</td>
<td>0–15 min</td>
</tr>
<tr>
<td>3. ... how many nights a week do you have a problem with your sleep?</td>
<td>0–1</td>
</tr>
<tr>
<td>4. ... how would you rate your sleep quality?</td>
<td>Very good</td>
</tr>
<tr>
<td><strong>Thinking about the past month, to what extent has poor sleep...</strong></td>
<td></td>
</tr>
<tr>
<td>5. ... affected your mood, energy, or relationships?</td>
<td>Not at all</td>
</tr>
<tr>
<td>6. ... affected your concentration, productivity, or ability to stay awake</td>
<td>Not at all</td>
</tr>
<tr>
<td>7. ... troubled you in general</td>
<td>Not at all</td>
</tr>
<tr>
<td><strong>Finally...</strong></td>
<td></td>
</tr>
<tr>
<td>8. ... how long have you had a problem with your sleep?</td>
<td>I don’t have a problem/&lt;1 mo</td>
</tr>
</tbody>
</table>

**Scoring instructions:**

Add the item scores to obtain the SCI total (minimum 0, maximum 32). A higher score means better sleep.

Scores can be converted to 0–10 format (minimum 0, maximum 10) by dividing total by 3.2.

Item scores in grey area represent threshold criteria for Insomnia Disorder.
Epworth Sleepiness Scale

How likely are you to doze off or fall asleep in the following situations?
Answer considering how you have felt over the past week or so.

0 = Would never doze
1 = Slight chance of dozing
2 = Moderate chance of dozing
3 = High chance of dozing

1. Sitting and reading
2. Watching TV
3. Sitting inactive in a public place (e.g., theater or meeting)
4. As a passenger in a car for an hour without a break
5. Lying down to rest in the afternoon when able
6. Sitting and talking to someone
7. Sitting quietly after a lunch without alcohol
8. In a car while stopped for a few minutes in traffic
Sleep History

- Sleep need, ability, and opportunity
- Sleep patterns throughout the day
- Bedtime routine and environment
  - Light
  - Noise
  - Security
- Factors affecting sleep
  - Caffeine use
  - Exercise
  - Alcohol intake
  - Medications
Treatment

- Focus on improving quality, quantity, and timing of sleep
- Cognitive Behavioral Treatment for Insomnia (CBT-i)
- Image Rehearsal Therapy
- Pharmacotherapy
CBT-i

- Individual, group or online
  - Group sessions may be best if there is comorbid depression and anxiety or if done with other veterans

- 4-8 sessions over 6-8 weeks of therapy

- Identifying appropriate patients
  - Motivated
  - Compliant
CBT-i

- **Stimulus Control**
  - Avoid time awake in bed

- **Sleep Restriction**
  - Consolidate sleep into one nocturnal period

- **Relaxation Therapy**
  - Engage the parasympathetic nervous system

- **Sleep Hygiene**
  - Create an environment conducive to sleep

- **Cognitive Therapy**
  - Challenge catastrophic thinking
CBT-i Coach App
Online CBT-i

- May be as effective as in person CBT-i
Pharmacotherapy

- **Short term use**
  - Driving safety, appropriate use

- **Benzodiazepine receptor agonists (BZRA)**
  - Zaleplon (Sonata), zolpidem (Ambien), eszopiclone (Lunesta)

- Low dose (3-6 mg) Doxepin (Silenor) also effective with minimal side effects
### 2017 JCSM Recommendations for Chronic Insomnia in Adults

<table>
<thead>
<tr>
<th>Drug</th>
<th>Decrease in Sleep Latency (min)</th>
<th>Increase in Total Sleep Time (min)</th>
<th>Improvement in WASO (min)</th>
<th>Improvement in Quality of Sleep</th>
<th>Side Effects</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenhydramine</td>
<td>8 (2-17)</td>
<td>12 (13-38)</td>
<td>-</td>
<td>None</td>
<td>Drowsiness, dizziness, groginess</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Doxepin</td>
<td>-</td>
<td>26-32 (18-40)</td>
<td>22-23 (14-30)</td>
<td>Small-Mod</td>
<td>Somnolence</td>
<td>Sleep maintenance</td>
</tr>
<tr>
<td>Eszopiclone</td>
<td>14 (3-24)</td>
<td>28-57 (18-76)</td>
<td>10-14 (2-18)</td>
<td>Mod- Large</td>
<td>Somnolence, dry mouth, dysgeusia, dizziness</td>
<td>Sleep maintenance and sleep onset</td>
</tr>
<tr>
<td>Melatonin</td>
<td>9 (2-15)</td>
<td>-</td>
<td>-</td>
<td>Small</td>
<td>Possible with prolonged use</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Ramelteon</td>
<td>9 (6-12)</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>HA, nausea, URI</td>
<td>Sleep onset</td>
</tr>
<tr>
<td>Suvorexant</td>
<td>-</td>
<td>10 (2-19)</td>
<td>16-28</td>
<td>-</td>
<td>Somnolence</td>
<td>Sleep maintenance</td>
</tr>
<tr>
<td>Trazodone</td>
<td>10 (9-11)</td>
<td>-</td>
<td>8 (7-9)</td>
<td>None</td>
<td>HA, somnolence</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Zaleplon</td>
<td>10 (0-19)</td>
<td>-</td>
<td>-</td>
<td>None</td>
<td>HA, asthenia, pain, fatigue, somnolence</td>
<td>Sleep onset</td>
</tr>
<tr>
<td>Zolpidem</td>
<td>5-12 (0-19)</td>
<td>29 (11-47)</td>
<td>25 (18-33)</td>
<td>Mod</td>
<td>Amnesia, dizziness, HA, nausea, somnolence</td>
<td>Sleep maintenance and sleep onset</td>
</tr>
</tbody>
</table>

All data were obtained from RCTs and reflect comparisons to placebo. WASO = wake after sleep onset; HA = headache.
Pharmacotherapy

- Avoid benzodiazepines
- Ramelteon- limited efficacy, expensive
- Suvorexant- limited efficacy, expensive
- Trazodone-limited evidence, frequent side effects... but cheap
- Diphenhydramine and Doxylamine- limited efficacy and rapid tolerance
- Alcohol
  - Initial CNS depression followed by rebound excitation (after 4 hours)
  - Alcohol dependence, chronic insomnia
Possibilities for Initial Treatment

- Sleep diary
- Sleep hygiene
- Restriction therapy
- Stimulus control
- CBT-I Coach App
- Short course of eszopiclone
# Sleep Diaries

## Two Week Sleep Diary

**Instructions:**

1. Write the date, day of the week, and type of day. Work, School, Day Off, or Vacation.
2. Put the letter "C" in the box when you have coffee, cola, or tea. Put "M" when you take any medicine. Put "A" when you drink alcohol. Put "E" when you exercise.
3. Put a line (!) to show when you go to bed. Shade in the box that shows when you think you fell asleep.
4. Shade in all the boxes that show when you are asleep at night or when you take a nap during the day.
5. Leave boxes unshaded to show when you wake up at night and when you are awake during the day.

**Sample Entry:** On a Monday when I worked, I jogged on my lunch break at 1 PM, had a glass of wine with dinner at 8 PM, fell asleep watching TV from 7 to 8 PM, went to bed at 10:30 PM, woke up around Midnight, woke up and couldn't get back to sleep at about 4 AM, went back to sleep from 5 to 7 AM, and had coffee and medicine at 7:00 in the morning.

<table>
<thead>
<tr>
<th>Day of the Week</th>
<th>Type of Day</th>
<th>Noon</th>
<th>2 PM</th>
<th>5 PM</th>
<th>8 PM</th>
<th>10 PM</th>
<th>11 PM</th>
<th>Midnight</th>
<th>1 AM</th>
<th>2 AM</th>
<th>3 AM</th>
<th>4 AM</th>
<th>5 AM</th>
<th>6 AM</th>
<th>7 AM</th>
<th>8 AM</th>
<th>9 AM</th>
<th>10 AM</th>
<th>11 AM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mon.</strong></td>
<td>Work</td>
<td>E</td>
<td>A</td>
<td>I</td>
<td>10 PM</td>
<td>11 PM</td>
<td>Midnight</td>
<td>1 AM</td>
<td>2 AM</td>
<td>3 AM</td>
<td>4 AM</td>
<td>5 AM</td>
<td>6 AM</td>
<td>7 AM</td>
<td>8 AM</td>
<td>9 AM</td>
<td>10 AM</td>
<td>11 AM</td>
<td></td>
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<tr>
<td><strong>Fri.</strong></td>
<td>Work</td>
<td>E</td>
<td>C</td>
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<tr>
<td><strong>Sat.</strong></td>
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<td><strong>Mon.</strong></td>
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<td><strong>Fri.</strong></td>
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*Note: C = Coffee*
Key Points

- Ask about sleep quality, especially among veterans
- Insomnia is best treated with CBT-i
- Use short course of BZRAs or doxepin as adjuncts
Helpful Resources


- Patient Handouts and Sleep Diaries: http://wrnmmmc.libguides.com/sleep/patient_ed