YOUR SLEEPLESS PATIENT: CLINICAL CONSIDERATIONS FOR NON-SLEEP SPECIALISTS TREATING PATIENTS WITH INSOMNIA

Charlene Gamaldo, MD, FAASM
Johns Hopkins School of Medicine
Baltimore, MD

Abstract: The latest reports suggest that 56%[1] of adults routinely suffer from poor or restless sleep. Prevalence and severity is even higher in the case of elderly individuals or those suffering with comorbid medical conditions. Amongst all individuals who suffer with poor sleep, approximately 30% endure this as a chronic condition. In this syllabus we will discuss insomnia which represents one of the most common primary sleep disorders that present with poor sleep and restlessness. Specifically, this syllabus will cover evaluation and management of insomnia including pharmacological and non-pharmacological strategies.

I. Insomnia

Insomnia is generally defined as difficulty initiating, maintaining or gaining restful sleep that is associated with daytime functional complaints. The prevalence can range from 10-15% based on the diagnostic criteria used.

Diagnostic Criteria for Insomnia (ICSD-3)

The International Classification of Sleep Disorders, 3rd Edition (ICSD-3) has the following criteria for insomnia:

Sleep Symptoms (Criteria A)

- 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

Daytime Symptoms (Criteria B)

- Fatigue/ malaise
- Attention, concentration, or memory impairment
- Impaired social, family, vocational, or academic performance
- Mood disturbance/irritability
- Daytime sleepiness
- Behavioral problems
- Reduced motivation/energy/initiative
- Proneness for errors/accidents
- Concerns about or dissatisfaction with sleep

Chronic insomnia

- Criteria A and B > 3 months

Short-term insomnia

- Criteria A and B < 3 months

Other insomnia disorders

Unresolved Issues and Further Directions:

- Simplification may cause generic approach to insomnia treatment that fails to benefit some insomnia subgroups
- Dumping poor sleep quality or nonrestorative sleep criteria for following reasons:
  - Usually if sole complaint occur in conjunction w/ OSA, or certain chronic medical conditions (e.g., fibromyalgia or chronic fatigue syndrome)
  - Remains a poorly defined construct

II. Management of Insomnia

The management of insomnia is guided by a comprehensive patient evaluation and a review of the differential diagnosis. Outcome and efficacy studies continue to emphasize a personalized approach that considers comorbid conditions, and the risk and benefits of both behavioral and pharmacological approaches. Data regarding long term efficacy continues to shift toward behavioral therapy however, this appears to be maximal when considering individual factors.

Insomnia has been shown to be particularly prevalent in the following neurological disorders:

1. Headaches
2. Epilepsy
3. Neurodegenerative Disorders (Alzheimer Disease, Parkinson's Disease
4. Neuromuscular Diseases (particularly treatment induced from steroids)
5. Demyelinating (Multiple Sclerosis)

III. Evaluation of insomnia: Obtaining a thorough history remains critical when evaluating the insomnia patient. Additional tools should be introduced including sleep logs, historical accounts by bed partners, and a complete medical history, psychological and mood inventory to assess contributing factors. Below we provide a list of assessment tools and strategies to consider on a case by case basis:

- Input from Bed partners/roommates
- Neuropsychological measures of cognitive and psychomotor function have been extensively employed in research settings as a measure of the clinical significance of insomnia and its consequences;
- Previous treatment trials/outcome reveals important information for planning treatments;
- Sleep logs/diaries of one to two weeks;
- Sleep questionnaires typically address more global estimates;
- Profile of Mood States;
- Actigraphy.

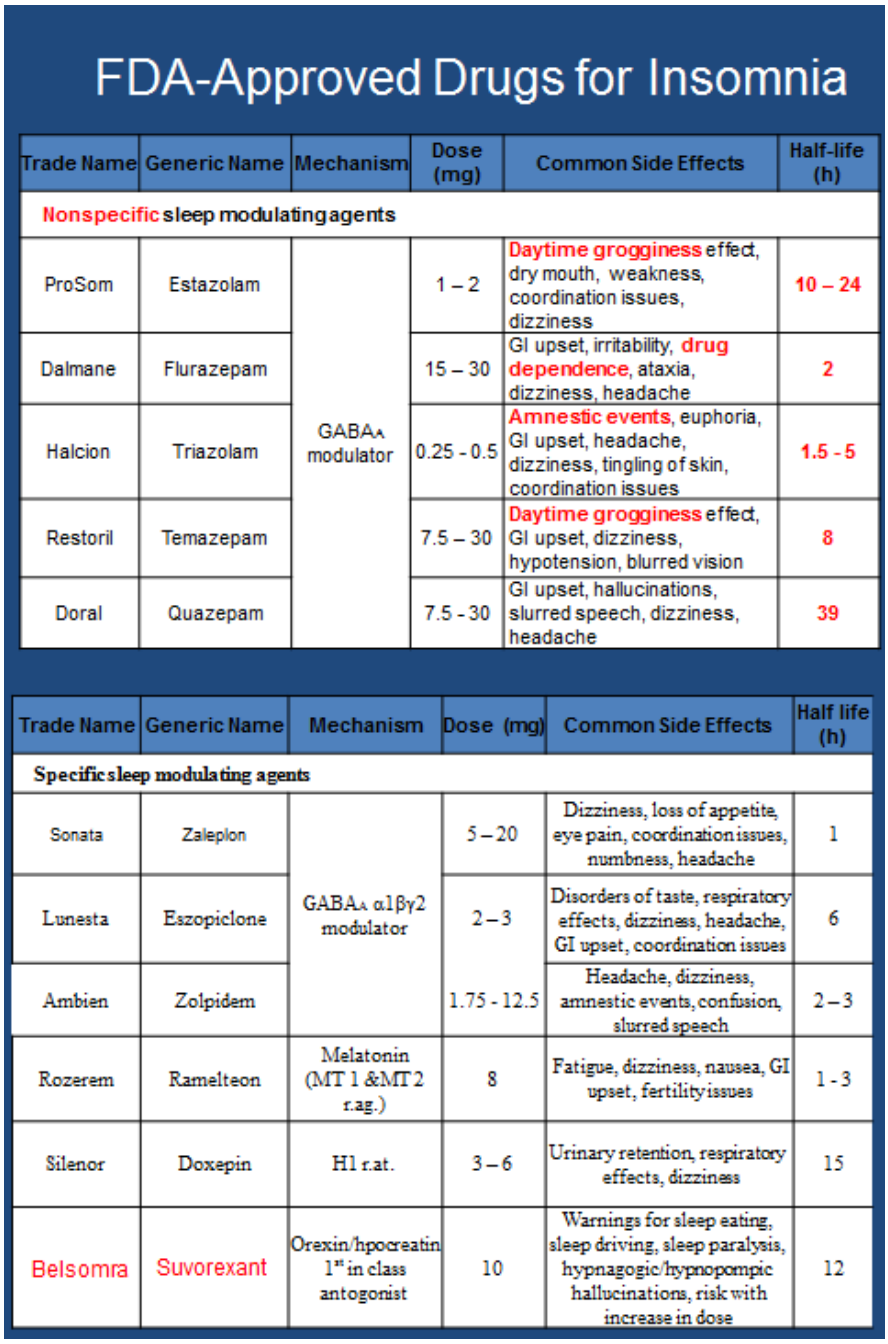
IV. Treatment pharmacotherapeutic and Non-therapeutic for insomnia

Pharmacotherapeutic Options:

Common Over-the-Counter Sleep Aids

Name	Mechanism	Common Side Effects	Half life
Nytol Sominex Sleepinal	H1 r.at.	Daytime grogginess, daytime impairment, dizziness, dyskinesia, xerostomia, urinary retention	4-8 h
Unisom	H1 & H2 r.at.	Daytime grogginess, daytime impairment	6-8 h
Melatonin	MT 1 and MT 2 r.ag.	Daytime grogginess, daytime impairment, confusion	30-50min
Tryptophan	Modulation of serotonin	Drowsiness, headaches, dizziness	1-3 h
Combination drugs			
Diphenhydramine hydrochloride	H1 & H2 r.at.	Daytime drowsiness, daytime impairment	N/A
Nyquil		Daytime grogginess	
Anacin PM Tylenol PM	H1 r.at.	Same as Nytol	
Herbal aids			
Valerian, kava, chamomile	unknown	Hepatotoxicity	N/A
H = histamine; MT = melatonin; r.ag. = receptor agonist; r.at. = receptor antagonist			

FDA-Approved Drugs for Insomnia



Trade Name	Generic Name	Mechanism	Dose (mg)	Common Side Effects	Half-life (h)
Nonspecific sleep modulating agents					
ProSom	Estazolam	$GABA_A$ modulator	1 – 2	Daytime grogginess effect, dry mouth, weakness, coordination issues, dizziness	10 – 24
Dalmane	Flurazepam		15 – 30	GI upset, irritability, drug dependence, ataxia, dizziness, headache	2
Halcion	Triazolam		0.25 - 0.5	Amnestic events, euphoria, GI upset, headache, dizziness, tingling of skin, coordination issues	1.5 - 5
Restoril	Temazepam		7.5 – 30	Daytime grogginess effect, GI upset, dizziness, hypotension, blurred vision	8
Doral	Quazepam		7.5 - 30	GI upset, hallucinations, slurred speech, dizziness, headache	39

Trade Name	Generic Name	Mechanism	Dose (mg)	Common Side Effects	Half life (h)
Specific sleep modulating agents					
Sonata	Zaleplon	$GABA_A$ $\alpha 1\beta\gamma 2$ modulator	5 – 20	Dizziness, loss of appetite, eye pain, coordination issues, numbness, headache	1
Lunesta	Eszopiclone		2 – 3	Disorders of taste, respiratory effects, dizziness, headache, GI upset, coordination issues	6
Ambien	Zolpidem		1.75 - 12.5	Headache, dizziness, amnestic events, confusion, slurred speech	2 – 3
Rozerem	Ramelteon	Melatonin (MT 1 &MT 2 r.ag.)	8	Fatigue, dizziness, nausea, GI upset, fertility issues	1 - 3
Silenor	Doxepin	H1 r.at.	3 – 6	Urinary retention, respiratory effects, dizziness	15
Belsomra	Suvorexant	Orexin/hpocreatin 1st in class antogonist	10	Warnings for sleep eating, sleep driving, sleep paralysis, hypnagogic/hypnopompic hallucinations, risk with increase in dose	12

Trade Name	Generic Name	Mechanism	Dose (mg)	Common Side Effects	Half-life (h)
Nonspecific sleep modulating agents					
ProSom	Estazolam	$GABA_A$ modulator	1-2	Daytime grogginess effect, dry mouth, weakness, coordination issues, dizziness	**10-24**
Dalmane	Flurazepam		15-30	GI upset, irritability drug dependence, ataxia, dizziness, headache	**2**
Halcion	Triazolam		0.25-0.5	Amnestic events, euphoria, GI upset, headache, dizziness, tingling of skin, coordination issues	**1.5-5**
Restoril	Temazepam		7.5-30	Daytime grogginess effect, GI upset, dizziness, hypotension, blurred vision	**8**
Doral	Quazepam		7.5-30	GI upset, hallucinations, slurred speech, dizziness, headache	**39**
Specific sleep modulating agents					
Sonata	Zaleplon	$GABA_A$ α1βγ2 modulator	5-20	Dizziness, loss of appetite, pain, coordination issues, numbness, headache	1
Lunesta	Eszopiclone		2-3	Disorders of taste, respiratory, effects, dizziness, headache, GI upset, coordination issues	6
Ambien	Zolpidem		1.75-12.5	Headache, dizziness, amnestic, events, confusion, slurred speech	2-3
Rozerem	Ramelteon	Melatonin (MT 1 &MT 2 r.ag.)	8	Fatigue, dizziness, nausea, GI upset, fertility issues	1-3
Silenor	Doxepin	H1 r.at.	3-6	Urinary retention, respiratory, effects, dizziness	15

Non-pharmacotherapeutic Options:

Cognitive Behavioral Therapy is a form of treatment for those diagnosed with insomnia.

Main Components of CBT-I

- Stimulus control
- Sleep restriction
- Sleep hygiene
- Relaxation therapy
- Phototherapy
- Cognitive therapy

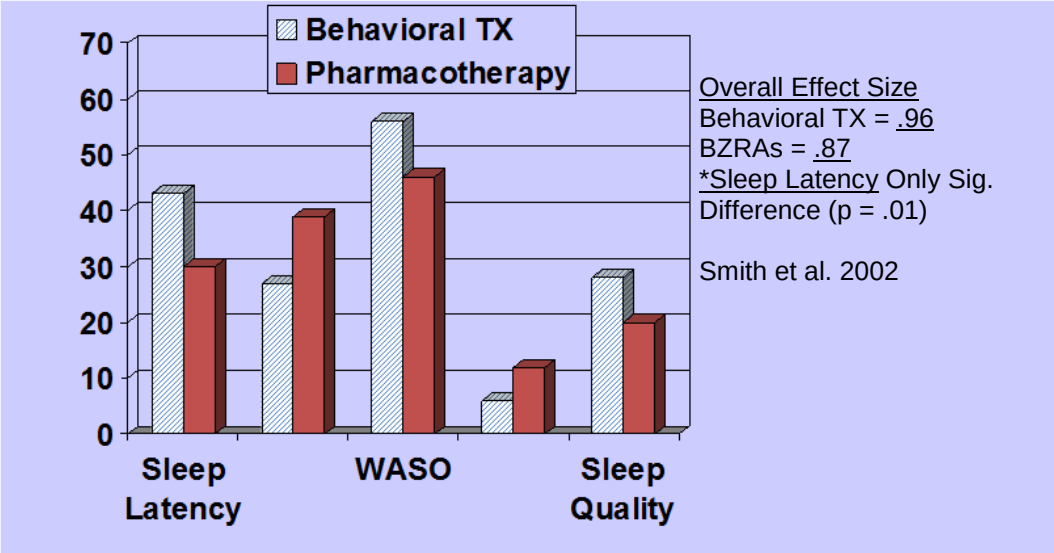
Sleep Hygiene

- Exercise
- Caffeine, ETOH, Nicotine
- Naps
- Outside Light
- Comfort in bedroom
- Passive Body Heating
- Meals
- Quiet time, Rituals

Relaxation Therapy

- Abdominal (Diaphramatic) Breathing
- Progressive Muscle Relaxation
- Guided Imagery
- Yoga & Mindful Meditation
- Other benefits: stress management, pain, anxiety disorders etc.

Comparative Meta-Analysis of Behavior Therapy & Pharmacotherapy for Chronic Insomnia



Reference:

1. http://www.sleepfoundation.org/sites/default/files/RPT495a.pdf

2. American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

3. Gulyani S, Salas RM, Gamaldo CE. CHEST: Sleep Medicine Therapeutics Overview: Today, Tomorrow, and the Future (Part 1: Insomnia, Circadian Rhythm Disorders, and Obstructive Sleep Apnea). 2012: Dec 142 (6).

4. Watson N, Viola-Saltzman M. CONTINUUM: Lifelong Learning in Neurology: February 2013 - Volume 19 - Issue 1, Sleep Disorders - p 148–169.

5. Perlis M, Jungquist C, Smith M, Posner D. Cognitive Behavioral Treatment of Insomnia: A Session-by-Session Guide. Springer Science and Business Media, Inc, 2005.