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Sleep in Older Adults – Pharmacotherapy

Jeannie Lee, PharmD, BCPS, CGP, College of Pharmacy, University of Arizona
Karen D'Huyvetter, ND, MS, College of Medicine, University of Arizona

Older adults frequently report sleep-related complaints and have questions about appropriate sleep therapies. A July 2011 edition of *Elder Care* discussed the use of non-pharmacologic, preventive, and behavioral treatments for treatment of sleep disorders in older adults.

The Role of Drug Therapy

Because many sleep agents are not appropriate for older adults as specified in the Beers Criteria, it is vital to remember that non-drug therapy and preventive/ behavioral measures should be the first-line approach in this population. One of the preventive measures related to drug therapy is to identify medications or substances used that might be contributing to sleep problems, and avoiding them or adjusting dosing times to avoid interference with sleep (Table 1). Drug therapy should be reserved for when non-pharmacological and preventive measures fail.

Risk versus Benefit of Pharmacotherapy

An older adult may receive modest sleep benefit from a sleep agent but also experience adverse effects such as cognitive impairment, confusion, sleep walking, falls, etc. Therefore, benefit-to-risk ratio should be carefully considered and explained to older patients and caregivers before starting pharmacotherapy. Current evidence supports combining behavioral therapy with pharmacotherapy for acute treatment and discontinuing the drug after 3-4 weeks. Thus, a short-course of pharmacotherapy should be combined with continued cognitive behavioral therapy to sustain sleep improvement after pharmacotherapy is discontinued.

Pharmacotherapy Recommendations

The choice of a sleep medication should be directed by several factors including: (a) insomnia pattern, (b) goals of therapy, (c) past treatment responses, (d) comorbidities, (e) contraindications, (f) side effects, (g) drug interactions, (h) cost, and (i) patient preference. The lowest effective dose of the chosen agent should be used with regular follow up to assess effectiveness, adverse effects, and need for continued use. Intermittent dosing (2-4 times/ week) may be used. Again, short-course treatment (3-4 weeks) should be used unless chronic insomnia is present due to a chronic illness. After chronic use, the medication should be tapered to prevent rebound insomnia.

Table 1. Common Medications/Substances that Cause or Aggravate Sleep Disorders in Older Adults

Agents	Effects and Advice
Alcohol	Sleep induction, subsequent disruption Limit use
Antidepressants (e.g., SSRIs, SNRIs, bupropion)	Insomnia Give stimulating agents in morning
ß-blockers, α-agonist (e.g., atenolol, clonidine)	Insomnia, may cause nightmares Use alternative agent if possible
Caffeine, Decongestants (e.g., pseudoephedrine)	Stimulating Avoid evening use
Corticosteroids (e.g., prednisone)	Stimulating, may cause agitation Prescribe lowest dose possible
Diuretics (e.g., furosemide)	Awakening due to nocturia Dose in morning or early afternoon
Levodopa	Insomnia, may cause nightmares Avoid late dosing if possible
Nicotine	Stimulating Smoking cessation
Phenytoin	Insomnia Avoid late dosing if possible
Thyroid supplements	Insomnia Check thyroid function test

SSRI = Selective Serotonin Reuptake Inhibitor, SNRI = Serotonin Norepinephrine Reuptake Inhibitor

TIPS FOR USING SLEEP PHARMACOTHERAPY IN OLDER ADULTS

- Save drug therapy for when nondrug therapy and preventive measures fail.
- Combine acute pharmacotherapy (3-4 weeks) with continued behavioral therapy for sustained improvement in sleep.
- Weigh risk versus benefit of sleep agents with older patients and caregivers when choosing pharmacotherapy.
- Use lowest effective dose of the chosen agent with regular follow up to assess effectiveness, adverse effects, and need for continued pharmacotherapy.
- To improve sleep latency, use a shorter-acting agent (e.g., ramelteon, zaleplon, zolpidem).
- To improve sleep maintenance, use a longer-acting agent (e.g., eszopiclone, zolpidem ER, trazodone).

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Table 2 describes sleep pharmacotherapy options and also notes medications to avoid in older adults.

Table 2. Medications to Use and Not Use for Sleep

Melatonin Receptor Agonist - no abuse potential
- Ramelteon (Rozerem®) 8 mg within 30 mins of bedtime (avoid high-fat meal)

Benzodiazepine Receptor Agonists - severe allergic reactions and sleep-related behavioral disturbance possible; Beers Criteria recommends to avoid chronic use (>90 days)
- Eszopiclone (Lunesta®) 1-2 mg (avoid high-fat meal)
- Zaleplon (Sonata®) 5 mg (avoid alcohol or food)
- Zolpidem, Zolpidem ER (Ambien®, Ambien CR®) 5mg (avoid alcohol or food)

Antidepressants - comorbid depression; orthostatic effect
- Trazodone (Desyrel®) 25-100 mg
- Mirtazapine (Remeron®) 7.5-15 mg (Beers Criteria recommends use with caution for potential SIADH)
- Doxepin (Silenor®) 3-6 mg (Beers Criteria limits dose to <6mg/day; many potential drug interactions)

Anticonvulsants - severe allergic reaction possible; renal dosing
- Gabapentin (Neurontin®) 100 mg to start

Atypical Antipsychotics - increased risk of stroke and mortality among dementia patients
- Quetiapine (Seroquel®) 12.5-25mg to start

Short-Intermediate Acting Benzodiazepines - comorbid anxiety; abuse potential; anticholinergic effects; Beers Criteria recommends avoid using all type for treatment of insomnia (few examples provided here)
- Alprazolam (Xanax®) 0.5-1mg (avoid alcohol)
- Estazolam (ProSom®) 0.5-1mg (avoid alcohol)
- Lorazepam (Ativan®) 0.25-2 mg (avoid alcohol)
- Temazepam (Restoril®) 7.5-15mg (avoid alcohol)

Medications to Avoid
- Over-the-counter Antihistamines (e.g., diphenhydramine)
- Long-acting Benzodiazepines (e.g., clonazepam, diazepam)
- Barbiturates (e.g., phenobarbital)
- Chloral Hydrate
- Tricyclic Antidepressants (TCAs; e.g., amitriptyline)

To improve sleep latency, use a shorter-acting agent (e.g., ramelteon, zaleplon, zolpidem). To improve sleep maintenance, use a longer-acting agent (e.g., eszopiclone, zolpidem ER, trazodone). Most pharmacotherapies have potential drug/herbal/food interactions and adverse effects that need close monitoring. Thorough patient education is key: (a) expectation and treatment goals, (b) safety concerns, (c) potential adverse effects, (d) potential drug interactions, (e) dose escalation plan, (f) rebound insomnia, and (g) other treatments (cognitive behavioral therapy).

Supplements for Sleep

Complementary and alternative medicine (CAM) use increases with age. A 2005 report found that 30% of people over 65 report using CAM, and 70% of those are 85 and older. Several supplements are used for sleep.

Melatonin Synthesized endogenously in the pineal gland, evidence suggests that older adults may have melatonin deficiency when compared to younger adults, and melatonin supplementation may be beneficial for insomnia. It is generally well tolerated, but may exacerbate dysphoria in depressed patients, and have an additive effect with sedatives. Melatonin can also increase the effectiveness of anticoagulants, may reduce glucose tolerance and insulin sensitivity, and may cause orthostatic hypotension.

Valerian Thought to have sedative-hypnotic, anxiolytic, antidepressant, anticonvulsant and antispasmodic effects, valerian modestly reduces sleep latency and improves subjective sleep quality. It is generally well tolerated, but cases of headache, gastrointestinal upset, excitability, and cardiac problems have been reported. It may have hypotensive effects, and has an additive effect with sedatives.

Passionflower The FDA has given passionflower a "generally recognized as safe" status for use in foods. Preliminary research indicates that drinking one cup of passionflower tea an hour before going to bed improves sleep quality. It has no effect on sleep latency or nighttime awakenings, however. It can cause dizziness, confusion, sedation, and ataxia in some patients. One case of cardiac side effects has been reported. Passionflower may have an additive effect with sedatives.

References and Resources

American Geriatrics Society 2012 Beers Criteria http://www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2012

Natural Medicines Comprehensive Database http://naturaldatabase.therapeuticresearch.com

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Interprofessional care improves the outcomes of older adults with complex health problems

Editors: Mindy Fain, MD; Jane Mohler, NP-c, MPH, PhD; and Barry D. Weiss, MD

Interprofessional Associate Editors: Tracy Carroll, PT, CHT, MPH; David Coon, PhD; Jeannie Lee, PharmD, BCPS; Lisa O'Neill, MPH; Floribella Redondo; Laura Vitkus, BA

The University of Arizona, PO Box 245069, Tucson, AZ 85724-5069 | (520) 626-5800 | http://aging.medicine.arizona.edu

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