Sleep and Its Disorders in the Elderly

Debra Ann Pollack, MD
Diplomate, American Board of Psychiatry and Neurology (Neuro & Sleep Medicine)
Diplomate, American Board of Sleep Medicine
Overview

- Normal Adult Sleep
- Changes with Aging
- Insomnia (including Sleep Hygiene issues)
- Extrinsic Factors Affecting Sleep
  - Hospitalization
  - Long-Term Care Facility
  - Psychiatric Illness
  - Dementia
  - Bereavement
  - Other Medical Conditions/Medications
- Common Sleep Disorders in the Elderly
  - Restless Leg Syndrome/Periodic Limb Movements
  - Sleep Apnea (Obstructive and Central)
  - REM Behavior Disorder
- Sleep Evaluation
- Cases for Discussion
Comparison of Sleep Cycles in Young Adults and the Elderly

Hypnograms demonstrating typical sleep characteristics in young adults and elderly persons. Compared with young adults, the elderly tend to have delayed sleep onset, fragmented sleep, early-morning awakening and decreased time in sleep stages 3 and 4. (REM=rapid eye movement)

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Normal Adult Sleep vs. Aging

- Sleep Need approx 8 hours
- Bedtime approx 10pm-midnight
- 20% Slow Wave (deep or Stages 3+4) sleep
- 5-10% Stage 1 sleep (light)
- 50% Stage 2 sleep
- 25% Stage REM
- 4-5 cycles/night
- Minimal Sleep Disruption
- Sleep Efficiency over 90%
- Napping Rare or Never

- Sleep Need approx 8 hours
- Sleep Phase Advancement with EMA
- Reduced Slow Wave Sleep
- Increased Light Sleep (stages 1+2)
- Some reports of decreased REM (?)
- Fewer cycles
- Increased Sleep Disruption
- Reduced Sleep Efficiency
- Napping Common
- MAY SEE NONE OF THESE CHANGES
Insomnia

- Frequent complaint with aging (half?)
- Women report insomnia more frequently
- Often multi-factorial
- Risk factors
  - Medical Illness/Debility/Dementia
  - Bereavement (especially loss of spouse)
  - Psychiatric Conditions (especially depression)
  - Medications
  - Poor Sleep Hygiene
Treatment of Insomnia

- Behavioral
  - Improve Sleep Hygiene
    - Regularize sleep schedule (delay BT if appropriate)
    - Reduce napping
    - Do not go to bed hungry or over-full
    - Use the bed only for sleeping and sex
    - Good bedtime routine
    - “Worry Time” removed from bed time
    - Exercise regularly, but not in evening
    - Bright Light exposure (am to advance BT, late afternoon/early evening to delay BT)
    - Avoid caffeine and other stimulants, alcohol
    - Reduce wake-time spent in bed
    - Proper sleep environment
    - Medication evaluation
Treatment of Insomnia, continued

- Behavioral, continued
  - Cognitive Behavioral Therapy
    - Stimulus Control
    - Sleep Restriction
    - Relaxation Techniques
    - Psychotherapy
    - Bright Light
    - Sleep Logs
# Sample Sleep Log

## Two-Week Sleep Log

<table>
<thead>
<tr>
<th>Name</th>
<th>Please complete as directed. Thank you.</th>
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### NAPS

<table>
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<tr>
<th>Date</th>
<th>Naps</th>
<th>Time I Slept</th>
<th>Total (min/hrs)</th>
<th>Time I Went to Bed</th>
<th>Approx Time I fell asleep</th>
<th>Time I got out of bed</th>
<th>Total (min/hrs)</th>
<th># of weekend</th>
<th>Dinner Time</th>
<th>Last Time I consumed:</th>
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<tbody>
<tr>
<td>Day #1</td>
<td>1</td>
<td>1 pm, 5 pm</td>
<td>30</td>
<td>100 am</td>
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Treatment of Insomnia, continued

- Pharmacologic-OTC
  - Melatonin
    - Melatonin levels decline with aging, more so in those with insomnia complaints
    - Not FDA approved/not regulated
  - Other “supplements”
  - OTC hypnotics
    - Most have anticholinergic properties
Treatment of Insomnia, continued

- Pharmacologic-Rx hypnotics
  - Benzodiazepines
    - Short-acting for DIS
    - Longer (intermediate)-acting for DMS
    - Risk of falls, amnesia, confusion (night, next morning, next day)
    - Exacerbation of sleep disordered breathing
    - Tolerance
    - Rebound Insomnia
    - Alterations of sleep architecture
Pharmacologic-Rx hypnotics-non-benzo
- ramelteon
  - Works on melatonin receptors
- zolpidem, zaleplon, eszopiclone
  - Work on GABA receptors
Both types (above):
  - Minimal tolerance
  - Minimal rebound insomnia
  - Less risk of falls
  - No effect on SDB
  - No alterations of sleep architecture
Treatment of Insomnia, continued

- **Pharmacologic- Rx non-hypnotics**
  - Sedating Antidepressants and Antipsychotics
  - Commonly used are trazodone, mirtazapine, quetiapine; rarely TCAs (doxepin 3mg is FDA approved for insomnia), SSRIs
  - Risks include those of the hypnotics as well as the side effects of these meds
  - Best use is for primary indication, though can help with insomnia as a symptom of psych dz
Extrinsic Influences on Sleep

- Hospitalization
  - Acute medical condition
  - Disorientation of hospital (especially ICU)
  - Inactivity
  - Medications (hypnotics and those for primary condition)
Extrinsic Influences on Sleep, cont.

- Long-Term Care Facility
  - Insomnia and other sleep disturbances are a very common reason FOR placement in facility
  - All the problems of the hospital, now chronic
  - Little stimulation, in many cases
  - Frequent napping
  - Lack of bright light exposure
Extrinsic Influences on Sleep, cont.

- Psychiatric Disorders, especially depression with EMA
- Dementia: sleep-related signs of aging are more prominent, behavioral difficulties (e.g. nighttime wandering/wakefulness)
- Bereavement (anxiety, depression, changes in lifestyle/schedule)
- Other medical conditions/medications: stimulants, diuretics, urinary problems, GERD, thyroid dz, pain
Common Sleep Disorders in the Elderly

- **Restless Leg Syndrome**
  - Discomfort in the legs (and/or other body parts), prominent in the evening, interfering with sleep onset, relieved by movement, can occur in other sedentary situations
  - Clinical dx, no sleep study necessary, but can see signs
  - Associated with
    - Iron deficiency, with or without anemia (ferritin<50)
    - B12/folate deficiency
    - Pregnancy
    - Diabetes, especially if neuropathy
    - Parkinson’s Disease
    - Renal failure
    - Medications (TCAs, SSRIs, antipsychotics?)
Common Sleep Disorders in the Elderly, continued

- Periodic Limb Movement Disorder
  - Kicking or twitching of the limbs during sleep, causing sleep disruption (patient or bedpartner)
  - PSG diagnosis
  - RLS and PLMD frequently co-exist, but can occur separately
Common Sleep Disorders in the Elderly, continued

- RLS/PLMD treatment
  - Address medical conditions/laboratory abnormalities
  - Dopamine agonists (side effects and augmentation): carbidopa/levodopa, pramipexole, ropinirole
  - Gabapentin
  - Benzodiazepines-short-acting for RLS alone, longer-acting for PLMD
  - Opiods
  - Support, validation, good sleep hygiene
Obstructive Sleep Apnea
- Clinical history of snoring, sleep disruption, unrefreshing sleep, nocturia, witnessed apneas/choking/gasping, daytime sleepiness (or its equivalents!); PMH commonly includes HTN, cardiovasc risks
- Physical findings of obesity (especially upper body), thick neck, crowded oropharynx
- Sleep study reveals AHI $\geq 5$/hour, +/- oxygen desaturations, sleep fragmentation
Common Sleep Disorders in the Elderly, continued

- Obstructive Sleep Apnea treatment
  - CPAP is the treatment of choice, if tolerated
  - Oral appliances
  - Upper airway surgery
  - Sleep positional therapy (avoid supine position)
  - Weight loss
  - Address safety concerns, e.g. driving
Common Sleep Disorders in the Elderly, continued

- **Central Sleep Apnea**
  - Symptoms include sleep disruption, unrefreshing sleep, daytime sleepiness (or its equivalents!), witnessed apneas
  - PMH often includes Neuro disease, use of sedating medications, CHF
  - Treatment with CPAP or BiLevel PAP, sometimes O2 alone, respiratory stimulants?
Common Sleep Disorders in the Elderly, continued

- REM Behavior Disorder
  - Parasomnia during REM sleep
  - Symptoms of dream-directed behaviors during sleep, can be injurious (to patient or bedpartner), men > women
  - Associated with Parkinson’s Disease (pre or post)
  - PSG reveals REM without atonia
  - Treatment with clonazepam (start low!) and safety measures!
Effects of Sleep Disturbances

- Poor memory and cognition
- Impaired mood, irritability, agitation
- Poor daytime functioning (job, driving, etc)
- OSA is a risk factor for HTN, cardiovasc dz, cerebrovasc disease
- Daytime sleepiness
- Nocturnal wakefulness taxes the household, caregivers
Sleep Evaluation

- The decision to evaluate/treat should not be based on age alone
- Screen for symptoms of DIMS, snoring, apneas, leg kicking/discomfort, nocturnal behaviors, daytime dysfunction
- Concurrent medical conditions (contributing to or resulting from the sleep disorder)
- Medications contributing (dosage schedule, direct effects, side effects)?
- Screen for psychiatric disturbances
- Evaluate sleep hygiene/sleep schedule
- How bothered is the patient, bedpartner or caregiver?
Epworth Sleepiness Scale

Name: ____________________________________________  Today's date: ________________
Your age (Yrs): ___________  Your sex (Male = M, Female = F): ______
How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just
tired?
This refers to your usual way of life in recent times.
Even if you haven't done some of these things recently try to work out how they would have affected
you.
Use the following scale to choose the most appropriate number for each situation:
0 = would never doze
1 = slight chance of dozing
2 = moderate chance of dozing
3 = high chance of dozing
It is important that you answer each question as best you can.
Situation Chance of Dozing (0-3)
Sitting and reading
Watching TV
Sitting, inactive in a public place (e.g. a theatre or a meeting)
As a passenger in a car for an hour without a break
Lying down to rest in the afternoon when circumstances permit
Sitting and talking to someone
Sitting quietly after a lunch without alcohol
In a car, while stopped for a few minutes in the traffic
Total
Case #1

- 74 y.o. woman, complains of difficulty falling asleep
- What other sleep history will you obtain?
- What other medical history will you obtain?
- Office examination?
- Laboratory examination?
- How will you determine if this patient needs a sleep study/evaluation?
Case #1, continued

- No difficulty maintaining sleep
- Creepy-crawly sensations in legs in evenings
- No known medical conditions
- Physical exam normal, mental status normal
Case #1, continued

- Laboratory exam remarkable for Hgb=8, ferritin=18
- Treatment?
- Further eval (medical)?
- Further eval (sleep)?
Case #2

- 82 y.o. man complains of sleep disruption, unrefreshing sleep, nocturia, daytime sleepiness
- Denies snoring, breathing pauses/gasping, lives alone
- Additional history?
- Sleep study/evaluation?
Case #3

- 80 y.o. woman with early morning awakenings