# I can’t sleep- now what?!

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- I have no conflict of interest

# DEFINITION[1]

- Persistent sleep difficulty
- Adequate sleep opportunity
- Daytime functional impairment

# CLASSIFICATION

- Chronic  Insomnia Disorder (CID)
- Short Term Insomnia Disorder (STID)
- Other Insomnia Disorder (OID)

# EPIDEMIOLOGY

- Prevalence:

- CID – 10%
- STID – 15-20%
- Higher in women, older adults, medical/psych/substance abuse and lower socio-economic status.

# Chronic Insomnia Disorder

- At least 3 days a week for at least 3 months
- Symptoms:
  - Difficulty falling asleep
  - Difficulty staying asleep
  - Waking up earlier than desired
  - Resistance to scheduled bed time (children)
  - Difficulty sleeping w/o parent intervention

# Chronic Insomnia Disorder

- Symptoms
  - Daytime fatigue
  - Mood disturbance
  - Attention and focus problems
  - Daytime sleepiness
  - Behavioral problems such as hyperactivity
  - Decreased vigilance
  - Worrying about sleep

# Chronic Insomnia Disorder

- Normal sleep onset latency
  - Children/young adults <= 20 minutes
  - Middle age/older <= 30 minutes

# Chronic Insomnia Disorder

- Subtypes[2]
- 1. Psychophysiological insomnia: Heightened arousal and learned sleep-preventing associations.

- 2. Idiopathic insomnia: Genetically determined or congenital aberrations in sleep/arousal systems

# Chronic Insomnia Disorder

- 3. Paradoxic insomnia: Patient perceives insomnia w/o objective evidence
- 4. Inadequate sleep hygiene: Poor sleep habits/routine
- 5. Behavioral insomnia of childhood

# Chronic Insomnia Disorder

- 6. Insomnia due to a mental disorder
- 7. Insomnia due to a medical condition
- 8. Insomnia due to drug or substance

# Chronic Insomnia Disorder

- 9. Adjustment Insomnia: Identifiable stressor with symptoms lasting < 3 months

# Chronic Insomnia Disorder

- Predisposing Factors
- 1. Difficulty sleeping during stressful times
- 2. Habitual light sleepers

- Precipitating/Perpetuating Factors
- 1. Professional or personal (death, divorce, financial) stress
- 2. Personality factors such as high anxiety

# Chronic Insomnia Disorder

- Course:
- Onset may be acute or insidious

- May be situational, recurrent or persistent

- 70% report insomnia 1 year later and 50% 3 years later

# Chronic Insomnia Disorder

- Pathophysiology[1]:

- Heightened sympathetic nervous system activity and hypothalamic-pituitary-adrenal axis
- Elevated cortisol, ACTH, increased heart rate, increased metabolic rate,
- No discrete brain lesions

# Short Term Insomnia Disorder

- Less than 3 months
- Symptoms:
  - Difficulty falling asleep
  - Difficulty staying asleep
  - Waking up earlier than desired
  - Resistance to scheduled bed time (children)
  - Difficulty sleeping w/o parent intervention

# Short Term Insomnia Disorder

- Symptoms
  - Daytime fatigue
  - Mood disturbance
  - Attention and focus problems
  - Daytime sleepiness
  - Behavioral problems such as hyperactivity
  - Decreased vigilance
  - Worrying about sleep

# Differential Diagnosis

- Circadian rhythm sleep disorders
- Insufficient sleep syndrome
- Co morbid sleep disorders, medical/psych disorders

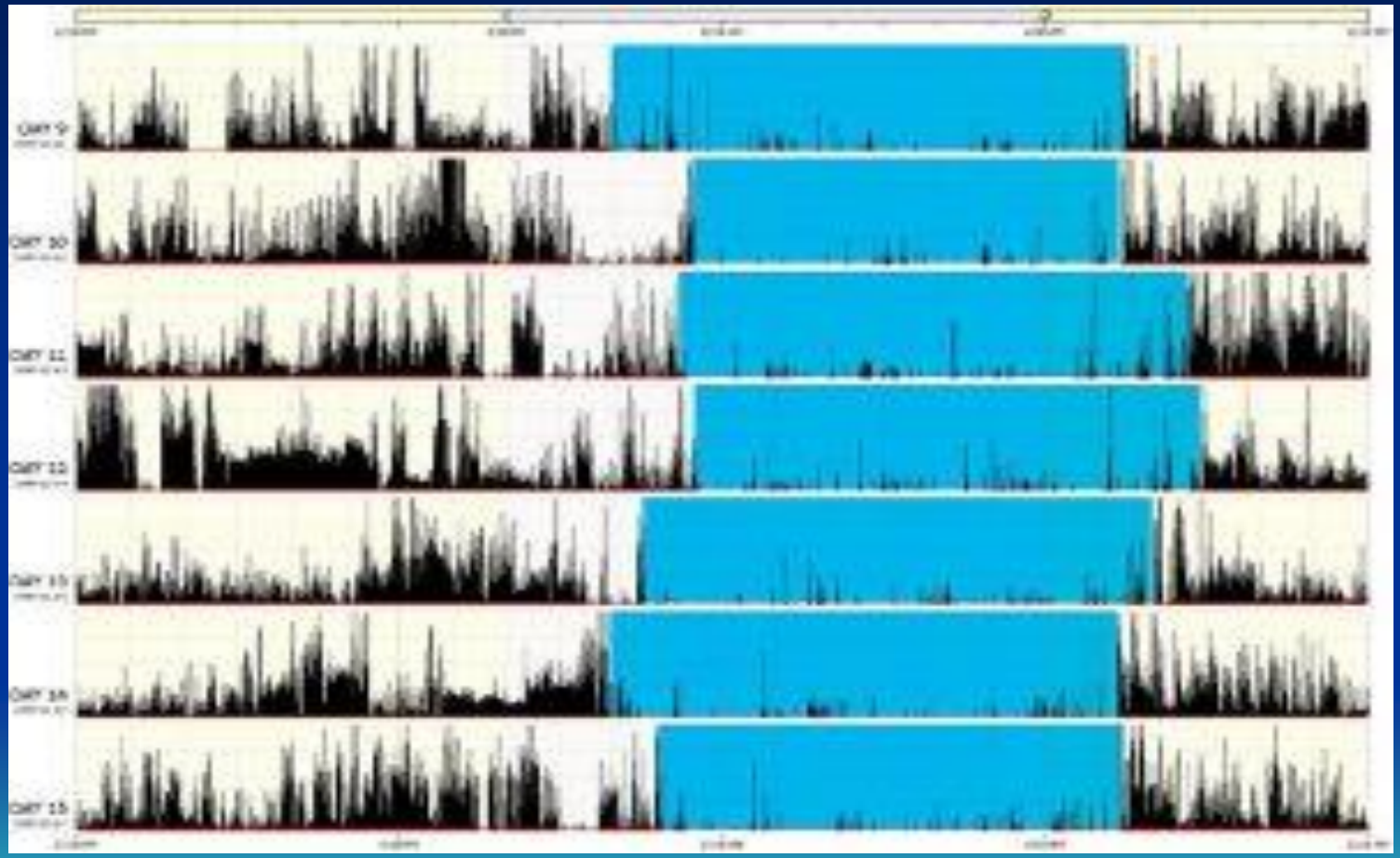
# Other Insomnia Disorder

- The complaints do not meet the Full Criteria for either CID or STID
- This diagnosis is rarely used due to its non specific nature

# Testing

- If a sleep disorder such sleep apnea or PLMS is suspected as the cause, consider polysomnogram
- Consider actigraphy monitoring to study sleep cycle and routine

# Actigraphy



# Management

- Goals
- A. Improve sleep quality/quantity
- B. Improve daytime impairment

# Management

- Approaches
- A. Psychologic & Behavioral
- B. Pharmacologic

# Cognitive & Behavioral Therapy components[3]

- Stimulus control (S) •
- Relaxation training (S) •
- Cognitive behavioral therapy for insomnia— CBT-I (S) •
- Multicomponent therapy (without cognitive therapy; G) •
- Sleep restriction (G) •
- Paradoxic intention (G) •
- Biofeedback therapy (G) •
- Sleep hygiene therapy (N)

# CBT-I

- Stimulus control: Decrease arousing mental states such as worries
- Relaxation training: Muscle relaxation, abdominal breathing, guided imagery
- Cognitive Therapy: Addressing distorted beliefs& maladaptive behaviors to sleep
- Multicomponent therapy: Behavioral components and sleep hygiene

# CBT-I

- Sleep Restriction- Decreasing time in bed
- Paradoxic Intention- Patient asked to stay awake
- Biofeedback- Decreasing somatic arousal
- Sleep Hygiene

# Pharmacologic Treatment

- Over the counter- Melatonin, antihistamines, valerian

- Prescription
- 1 Benzodiazepine receptor agonist(BZRA)
- 2 Melatonin (MT) receptor agonist
- 3 Selective antihistamine
- 4 Orexin/hypocretin antagonist

# BZRA

- Target is $GABA_A$ receptor complex
- Beneficial for sleep onset but sleep maintenance depends on half life
- Benzodiazipines: Clonazepam, Lorazepam, Triazolam
- Non-Benzodiazipines: zolpidem, zaleplon, eszopiclone

# Melatonin Receptor Agonist

- Acts on $MT_1$ and $MT_2$ receptors
- Beneficial for sleep onset
- Name- Ramelteon

# Selective antihistamine

- Central antihistamine receptors ($H_1$)
- Doxepin in low dose

# Orexin/Hypocretin antagonists

- Target is Hypocretin receptors A and B
- Example is Suvorexant
- Watch for REM phenomena such as sleep paralysis intruding into wakefulness

# References


- 1. American Academy of Sleep Medicine. International Classification of Sleep Disorders 3rd edition. 2014
- 2. American Academy of Sleep Medicine. International Classification of Sleep Disorders 2nd edition. 2005
- 3. Schutte-Rodin S, Broch L, Buysse D, et al. Clinical Guideline for the evaluation and management of chronic insomnia in adults. J Clin Sleep Med. 2008;4:487-504