Chapter 15
Sleep in Psychiatric Disorders

Roobal Sekhon and Kingman P. Strohl

Introduction

Sleep disturbances in psychiatric disorders are common because:

- Sleep disturbances occur in a large number of patients with mental illness and are an essential feature of the diagnostic criteria for some psychiatric disorders.
- Sleep disorders such as insomnia and sleep-disordered breathing can lead to worsening of psychiatric disorders.
- Improvement in sleep can be indicative of improvement in psychiatric disorders and deterioration of sleep can be an indicator of worsening psychiatric illness.
- Medications associated with the treatment of psychiatric disorders can exacerbate sleep disorders.

Program requirements for Graduate Medical Education in Sleep Medicine by the ACGME list sleep disorders and its related disorders in all areas of expected general training competencies (http://www.acgme.org/acgmeweb/Portals/0/PFAssets/ProgramRequirements/520_sleep_medicine_07012012.pdf). Sleep fellows should have experience with and develop competence in sleep disorders associated with common psychiatric conditions. Each program is required to have patients in the major categories of sleep disorders, sleep problems related to other factors and diseases, including psychiatric and psychologic disorders.

If there is one area where the sleep medicine specialists should focus their attention, it would be depression. Depression is common, morbid, and potentially fatal if

R. Sekhon, D.O.
Sleep Medicine Specialist, Fairfield, 37 Quail Ct, Walnut Creek, CA 94596, USA
e-mail: roobal@gmail.com

K.P. Strohl, M.D. (✉)
Case Western Reserve University, 11100 Euclid Avenue, Cleveland,
OH 44106-1716, USA
e-mail: kpstrohl@aol.com

K.P. Strohl, *Competencies in Sleep Medicine: An Assessment Guide*,
DOI 10.1007/978-1-4614-9065-4_15,

not recognized in its severest form. Questions about depression or the prompt interpretation of scales such as the Beck Depression Scale must be incorporated into your practice, without regard to whether you have an "interest" in psychiatry. Knowing your resources for emergent, immediate, or prompt referrals will be important in your practice for many patients presenting for evaluation of sleep disorders.

For this chapter, content domains were developed through examination of the ACGME requirements as well as discussion with faculty and prior fellows about current and/or best practice. The topics covered in this chapter focus on the illustrative psychiatric disorders in the patient with sleep disorders and vice versa. Some categories include psychotic disorders, depressive/bipolar disorders, traumatic disorders, and anxiety disorders. Specific attention will be focused on schizophrenia, depression, bipolar disorder, and PTSD as prototypic examples. The corresponding ACGME areas for general competencies are listed in Table 15.1. While not as comprehensive as one would find in a textbook, these areas touch upon all aspects of practice as well as the basic issues found in sleep and psychiatric disorders. Some of the areas like epidemiology are solely knowledge based.

The topics in Table 15.2 are organized to construct a non-comprehensive list of content domains relevant to a sleep medicine fellowship. We do not intend for sleep medicine trainees to be expert in psychiatric illnesses but the examples should illustrate the landscape of clinically useful material for referrals and assessments. After requiring reading various relevant chapters and attending didactic presentations, the program could test factual proficiency through standardized testing, exercises in matching, or structured essay answers. This content can also be demonstrably applied in an IQ case discussion or clinical presentation. Other patient assessment tools, while having theoretical underpinnings and a literature, are taught more commonly (without any organized effort to address effectiveness) by example and assessed better by observation and immediate feedback. There is an art to the clinical assessments in practice, and individual styles may vary; however, here one should attempt to define trainee comprehension concerning relevant features of an assessment including the ordering of ancillary tests.

In regard to learning opportunities, the delivery of this content would be delivered through a variety of venues including apprenticeship underpinned by instructional objectives. In this approach, the outcome is to be explicit and stated in such a manner as to capture what specific knowledge, skills, and attitudes a fellow should be able to exhibit following instruction. An objective directly links content and assessment. In this regard, some examples of objectives for each content area are presented in Table 15.2. Note that this list tries to avoid terms that are open to variable interpretation and focuses on work-related, measureable, or verifiable outcomes. Other instructional delivery can either list the objectives up front or at the middle or end of the instruction, but the goals of the instruction should be explicit. Approaches can be creative in when and how objectives are verified.

This list can be augmented or recreated by an individual training program and modified so as to address strength or weakness in overall instructional plan or expertise. One can use these questions as a basis for essay questions to amplify a topic presented in another fashion by faculty, visiting faculty, or fellow. The faculty or fellow can use the list and choose to construct lectures based on one or more

objectives. Working on this list can be a useful exercise to review prior presentations of topics or used as a springboard for written reviews or research.

An illustrative PowerPoint is presented in a PDF format on the companion website (http://competenciesinsleepmedicine.weebly.com/sleep-in-psychiatric-disorders.html). It may be reviewed by the student and the program or discussed in a group format before or after the essay questions or IQ case.

Table 15.1 Cognitive Map of the Content Domains Relevant to Psychiatric Disorders

		Knowledge	Skills	ACGME competency
I	*Epidemiology*	Yes	No	B, F
	Age			
	Risk factors			
	Special populations			
II	*Mechanisms*	Yes	No	A, B, D
	Neurophysiology			
	Behavioral modification			
	Psychopharmacology			
III	*Risk factors*	Yes	No	A, B
	Biological			
	Psychologic			
	Social			
IV	*Patient assessments*	Yes	Yes	A, C, D, E
	Adult			
	Pediatrics			
	Special populations			
V	*Diagnostic measures and interpretation*	Yes	Yes	A, B, C, F
	Mental status exam			
	Actigraphy			
	Sleep diaries			
VI	*Disease management*	Yes	Yes	A, E, D, F
	Presentation of therapeutic options			
	Coordination of care			
	Follow-up in various settings			
VII	*Health and disease clinical pathways*	Yes	Yes	A, C, F
	PTSD/nightmares			
	Agitated psychosis			
	Benzodiazepine use in anxiety vs. sleep disorders			
	Sleep disorders in institutional settings			
	Depressive and bipolar disorders			
	Code for ACGME competencies			
	A. Patient care		D. Interpersonal skills	
	B. Medical knowledge		E. Professionalism	
	C. Practice-based learning and improvement		F. System-based practice	

Table 15.2 Examples of Topics

Item I. Epidemiology
- Consider the prevalence of sleep disorders in VA populations with PTSD
- Describe a program to detect sleep apnea in patients in a community mental health center
- Compare presentation profiles of ADHD vs. narcolepsy

Item II. Mechanisms of health and disease
- Describe the role of the raphe and locus coeruleus in sleep
- Consider the predictive ability of changes in sleep quality in bipolar disorder
- Discuss the role of various antidepressants on chronobiology
- Discuss the role of antipsychotics in sleep medicine and mental illness

Item III. Patient assessments
- Discuss the importance of the mental status exam to a thorough sleep evaluation
- Contrast pretest probability of sleep disorders in patients at a private psychiatric practice vs. a community mental health center

Item IV. Diagnostic strategies
- Discuss the importance of screening for depression vs. bipolar disorder in patients with poor sleep
- Discuss the use of actigraphy and sleep diaries
- Explain sensitivity and specificity for clinical outcomes

Item IV. Practice-based management
- Compare and contrast the principles of therapy
  - Behavioral
  - Environmental
  - Social
  - Medical
  - Pharmacologic
- Consider novel approaches to therapy

Item V. Health and disease management pathways
- Describe the principles in the initiation of therapy for sleep disorders in mental illness
- Consider the interplay between sleep disorders and mental illness as well as management in chronic illness
- List patient expectations vs. physician objectives in terms of outcomes

Item VI. Practice-based learning and improvement
- Devise methods to improve adherence to appointments as well as prescribed therapy in patients with severe mental illness
- Formulate a teaching program to educate patients as well as professionals regarding sleep disorders that are comorbid with various mental illnesses
- Discuss ways to overcome the effects of stigma in patients with mental illness and delivery of adequate care

Item VII. Interpersonal and communication skills
- Understand the role of families, case managers, psychiatrists, and the sleep physician in patients with severe mental illness and the use of an interdisciplinary treatment team
- Assess communication using evaluation of charts as well as patient feedback

(continued)

(continued)

Item VIII. Professionalism

- Obtain input from faculty, peers, and patients on the trainee's performance in treatment of patients with psychiatric disorders with respect to honesty, integrity, and ability to meet responsibilities
- Identify areas in psychiatry and sleep medicine where the trainee can improve

Item IX. Systems-based practice

- Evaluate an inpatient psychiatric facility or a community mental health center and work with staff to find ways to improve patient outcomes by using the trainee's sleep medicine expertise
- Work with a colleague or behavioral health professional in a group therapy setting

Matching Test

Questions

The mood-elevating effects of sleep deprivation can be detrimental in patients with this Axis I diagnosis. ☐

This sleep disorder can be exacerbated by SSRIs or alcohol withdrawal and is often seen in older males with Parkinsonian symptoms. ☐

This is not a common sign of schizophrenia but can be associated with certain sleep disorders. ☐

Decreased REM latency can be seen shortly after stopping medications in this class which work in the locus coeruleus. ☐

Serotonin, a neurotransmitter, is released in this part of the brain which has been implicated in major depression and sudden infant death syndrome. ☐

Hypervigilance, avoidance of specific stimuli, and reexperiencing of specific events such as recurrent nightmares are consistent with this diagnosis. ☐

This second-generation antipsychotic is one of the most commonly prescribed off-label sleep aids. ☐

Insomnia, in addition to low energy, and poor concentration are often seen with sleep-disordered breathing but are also cardinal symptoms of this common psychiatric disorder. ☐

In addition to treatment of the underlying mood disorder, this treatment been shown to be the best long-term treatment of insomnia in depressed patients. ☐

This antidepressant may have some efficacy in the treatment of sleep apnea/hypopnea; however, long-term use can lead to weight gain. ☐

Answers

1. Actigraphy
2. Acute stress disorder
3. Agoraphobia
4. Anhedonia
5. Asthenia (low energy)
6. Atypical antipsychotics
7. Auditory hallucinations
8. Autism
9. Autonomic hyperarousal
10. Benzodiazepines
11. Biopsychosocial
12. Bipolar I disorder
13. Bupropion
14. Buspirone
15. Claustrophobia
16. Cognitive-behavioral therapy
17. Delirium
18. Dementia
19. Depression
20. Dorsal raphe
21. Generalized anxiety disorder
22. Hypothalamic-pituitary-adrenal axis
23. Lithium
24. Locus coeruleus
25. Mania
26. Monoamine oxidase inhibitors
27. Mirtazapine
28. Nightmares
29. Obsessive-compulsive disorder
30. Panic disorder
31. Post-traumatic stress disorder
32. Quetiapine
33. REM behavior disorder
34. Schizophrenia
35. Short REM latency
36. Sleep diary
37. Sleep hygiene
38. Serotonin-norepinephrine reuptake inhibitor
39. Selective serotonin reuptake inhibitor
40. Suicidal ideation
41. Tricyclic antidepressants
42. Trazodone
43. Typical antipsychotics
44. Visual hallucinations

Questions with Answers

The mood-elevating effects of sleep deprivation can be detrimental in patients with this Axis I diagnosis. 12

This sleep disorder can be exacerbated by SSRIs or alcohol withdrawal and is often seen in older males with Parkinsonian symptoms. 33

This is not a common sign of schizophrenia but can be associated with certain sleep disorders. 44

Decreased REM latency can be seen shortly after stopping medications in this class which work in the locus coeruleus. 38

Serotonin, a neurotransmitter, is released in this part of the brain which has been implicated in major depression and sudden infant death syndrome. 20

Hypervigilance, avoidance of specific stimuli, negative alterations in cognition/mood, and reexperiencing of specific events such as recurrent nightmares are consistent with this diagnosis. 31

This second-generation antipsychotic is one of the most commonly prescribed off-label sleep aids. 32

Insomnia, in addition to low energy, and poor concentration are often seen with sleep-disordered breathing but are also cardinal symptoms of this common psychiatric disorder. 19

In addition to treatment of the underlying mood disorder, this treatment been shown to be the best long-term treatment of insomnia in depressed patients. 16

This antidepressant may have some efficacy in the treatment of sleep apnea/hypopnea; however, long-term use can lead to weight gain. 27

Essay Questions

Study Case 1

A 36-year-old female presents to the sleep clinic after being treated by her primary care doctor for difficulty sleeping over the past 6 months. She doesn't think she has slept at all in over 1 month although she stays in bed most of the time trying "really hard" to sleep. She indicates that she has no desire to do anything, feels miserable because "I can't eat and I can't sleep" and she states she is feeling guilty because now she is missing her social obligations. She says she is always tired because of the poor sleep and her life feels "unbearable." She is taking alprazolam 1 mg 5–6 times per day to help her sleep and feel better but has found that it no longer works.

Questions

1. What is the most likely diagnosis in this patient? What is the differential diagnosis?
2. Describe the workup of this patient.
3. What therapeutic modalities would you consider for the most likely diagnosis?
4. Consider the use of various common sleeping medications in this patient.

Ideal Answers

1. The most likely diagnosis in this patient is major depressive disorder even though she doesn't explicitly endorse depressed mood. She endorses anhedonia, poor appetite, insomnia, guilt, lack of energy, and possible suicidal ideation. A differential could include a variety of other psychiatric disorders such as bipolar disorder or an anxiety disorder. The patient's use of alprazolam should be further evaluated to see if there is a substance use disorder. Sleep-disordered breathing should also be considered.
2. The patient should have a thorough psychiatric examination in addition to a routine history and physical. Evaluation for mood, anxiety, and psychotic disorders should be done along with a suicide risk assessment. An evaluation for substance abuse and sleep disorders should also be done. A thorough sleep history should be obtained and the patient should be asked to do a sleep diary along with actigraphy. Based on evaluation, further sleep testing may be considered.
3. Moderate to severe depression responds well to antidepressants. Cognitive-behavioral therapy should also be strongly considered focused on the patient's depression and insomnia. In the case of mild to moderate depression, cognitive-behavioral therapy may be used as a first-line intervention.
4. FDA-approved treatments for insomnia such as zolpidem may be used as an adjunct but primary treatment should focus on treatment of the underlying disorder. Antidepressants such as mirtazapine or amitriptyline, used off-label to treat insomnia, are appropriate and FDA approved for patients with depression after considering risks and benefits. Atypical antipsychotics such as quetiapine are

generally not indicated in this patient unless one finds psychotic features or bipolar illness in follow-up. Benzodiazepines are CNS depressants that can cause cognitive impairment, and long-term use is generally not recommended.

Case Study 2

A 31-year-old male with a BMI of 35 presents to your office stating that he is having difficulty sleeping. He is referred by the mental health clinic where he is treated for schizophrenia, chronic paranoid type. He states that he initially had a lot of difficulty with treatment but has been doing very well over the past 3 years since starting on a long-acting injection of risperidone. However, he has gained a lot of weight and has started having trouble sleeping. He is noted to be irritable and have trouble sitting in his chair, tapping his feet, and slowly rocking back and forth.

Questions

1. What is akathisia? Discuss the importance of akathisia in the context of schizophrenia and RLS.
2. Describe the disturbances in REM sleep, SWS, and total sleep time in a patient with schizophrenia.
3. Describe the effect of antipsychotics on sleep disorders.

Ideal Answers

1. Akathisia is a syndrome characterized by an inner restlessness and an urge to move, sometimes associated with irritability, aggression, and rarely suicidal ideation. It can be precipitated by medications used to treat schizophrenia such as typical or atypical antipsychotics. There are significant similarities to RLS; however, a diurnal variation is usually seen primarily in RLS while stereotyped movements such as body rocking are more often seen in akathisia.
2. A decrease of total sleep time in patients with schizophrenia has been linked with agitated psychosis. There are data indicating that disturbances in REM are related to positive symptoms and disturbances in SWS that are related to negative symptoms and cognitive functioning. Although data is limited, long-term sleep disturbances in schizophrenia have been generally associated with worse clinical outcomes.
3. Antipsychotics act by acting on various dopaminergic, cholinergic, histaminergic, alpha-adrenergic, and serotonergic mechanisms, usually by a blockade mechanism or partial agonism. These medications may exacerbate underlying RLS or periodic leg movements. Weight gain is a common side effect of many antipsychotics, both first-generation (typical) and second-generation (atypical) antipsychotics, and may lead to worsening of sleep-disordered breathing. Sedation with antipsychotics is also common and may be involved in improving clinical outcomes in patients, however may be problematic for patients with excessive daytime sleepiness due to various sleep disorders.

Case Study 3

Post-traumatic Stress Disorder

Mr. Jones is a 25-year-old male who presents to the sleep clinic at the VA after discharging his firearm at night while sleeping in his bed with his wife at home. His wife and two young children are present with him. He is a veteran who saw active duty for 4 years in Afghanistan and has been home for approximately 6 months. He has had significant difficulty sleeping according to his wife but has been unwilling to seek help until this latest incident. The patient is very reluctant to speak and states he "really can't remember much" other than he was dreaming about his military service. He also states that he had several "close calls" when he was on active duty and had started getting "bad dreams" prior to his honorable discharge.

His sleep has progressively gotten worse. Initially he had trouble going to sleep and staying asleep but was taking OTC sleeping aids which helped somewhat. He also would drink on occasion to help him "wind down." He began having severe "episodes" where he wakes up screaming. He would initially tell his wife about the nightmares but he is now reluctant to share. His wife indicates that the nightmares were always about his military service. As the nightmares became worse, so did his intake of sleeping pills and alcohol. His wife indicates that the patient appears paranoid as he is always looking outside the windows and only sleeps with a loaded gun under his pillow. He appears to "jump" at every sudden sound. She recalls a visit to see a baseball game where "they had couple of fireworks and he nearly had a heart attack" and "we had to leave immediately." He now rarely shows any emotion until he has severe outbursts of extreme anger. He is recluse, often not leaving his house for days at a time. The patient also indicates that his nightmares, which occur almost every night, have gotten to the point where he is afraid to go to sleep.

PE: blood pressure, 146/91; respiratory rate, 16; Pulse, 98; Pox 99 %; BMI 21; Neck 15 in. Mallampati I, no retrognathia, and 1+ tonsils with a midline uvula.

ESS was 3/24.

MSE: AAOx3. Pleasant and cooperative with appropriate grooming and hygiene. Mood "okay" with an anxious affect that is restricted in range. Mild psychomotor agitation and patient is looking around the room and sits after moving his chair to back against the wall and face the door. Thought is linear, coherent, and organized without loose associations or flight of ideas. There is no evidence of internal stimulation, hallucinations, or frank delusion although the patient appears guarded. He denies suicidal, violent, or homicidal ideation. His speech is normal in volume and prosody but there is limited spontaneity.

The rest of the physical exam was unremarkable.

A polysomnogram was ordered.

PSG results: The patient was studied from 11:05 to 06:23 with a total sleep time (TST) of 299 min resulting in a sleep efficiency of 68 %. Sleep architecture revealed

a sleep latency of 47 min and a REM latency of 55 min. Sleep stage distribution, as a percent of total sleep time, was 29.0 %, stage 1; 38.7 %, stage 2; 11.5 %, stage3; and 21.4 %, stage REM sleep. REM density was 5.1. There were 27 awakenings and 73 arousals resulting in an arousal index of 14.6 per hour.

Very light, occasional snoring was noted. Respiratory recording revealed 0 obstructive apnea, 0 central apneas, and 2 hypopneas. The apnea-hypopnea index (AHI) was 0.4 (REM AHI of 1.9; supine AHI of 0.3). Baseline oxygen saturation was 97 % with 0 % of sleep time spent below 90 %. The lowest saturation was 92 %. Average heart rate was 78, with a range of 64–106 bpm.

Periodic limb movements were not seen. There was no augmentation in EMG tone during REM sleep.

Questions

Part 1: Total Points: 5

Questions

1. Based on the history, create a differential diagnosis for this patient.
2. What are some of the symptoms of PTSD in this patient?
3. Consider the increasing alcohol use in this patient in the context of PTSD.

Ideal Answers

1. Various sleep disorders such as insomnia, nightmares, sleep-disordered breathing as well as night terrors, REM behavior disorder, and somnambulism should be considered. PTSD or another traumatic disorder, depressive disorder, and anxiety disorders should also be considered. Nightmares in the context of PTSD are most likely given the presentation.
2. The patient has had exposure to a traumatic event. Subsequently he has reexperiencing of the event through nightmares and by triggers such as fireworks. He has had changes in cognition, saying he can't remember and attempts to avoid talking about the events. He also shows hypervigilance, anger, and irritability.
3. Patients with PTSD often have comorbid substance use, particularly alcohol. Alcohol contributes to worsened sleep and perpetuates the symptoms of PTSD, particularly those associated with avoidance. Treatment of comorbid depression or anxiety symptoms can also be complicated by the use of alcohol.

Part 2: Total Points: 5

Questions

1. What is your interpretation of the patient's mental status exam?
2. How do the findings of the PSG contribute to the patient's diagnosis?
3. Discuss the benefits vs. shortcomings of in-lab PSG in this patient.

Ideal Answers

1. The patient appears to be showing signs of increased overall arousal with some guarded/paranoid behavior such as sitting to face the door. His restricted affect and limited speech may indicate numbing. There are no signs of psychosis or mania.
2. The patient had fragmented sleep with a delayed sleep onset and increased REM density. There was no evidence of clinically significant sleep-disordered breathing or increased EMG tone. While this is not diagnostic of PTSD or nightmares, it does support the diagnosis. It is important to note that similar outcomes may be seen with depression/insomnia.
3. An in-lab PSG will give the most complete data based on that night's sleep. However, it is important to assess the role of the environment in the patient's symptoms including the patient's sense of safety, the effect of the family, and the patient's use of alcohol.

Part 3: Total Points: 5

Questions

1. Discuss the role of the sleep physician in coordination of care for the treatment of the patient's nightmares.
2. What are the effects of PTSD on levels of cortisol, epinephrine, and norepinephrine?
3. Consider some of the ethical implications of this patient's presentation.

Ideal Answers

1. The sleep physician's main role is to treat the nightmares but to also understand that the nightmares are part of a larger disease process. Working with psychiatrists, primary care physicians, and substance abuse specialists are important.
2. Hyperarousal of the sympathetic system is a hallmark of PTSD. Reexperiencing in the form of nightmares or flashbacks is generally associated with a hypernoradrenergic activity and also with elevated levels of cortisol as well as epinephrine.
3. The patient may be at risk to himself or others and a thorough risk assessment should be performed.

Part 4: Total Points: 5

Questions

1. What are the commonly used medications used to treat nightmares associated with PTSD?
2. What are the effects of SSRIs and SNRIs on nightmares vs. PTSD?
3. What are non-pharmacologic measures that can be used to treat this patient?

Ideal Answers

1. The most commonly used medication used to treat nightmares is prazosin. Clonidine, another sympatholytic medication like prazosin, may be considered for therapy. The AED/mood stabilizers such as gabapentin or topiramate and atypical antipsychotics such as quetiapine have been used with some success. Occasionally, tricyclic antidepressants or trazodone are used but limited data is available.
2. SSRIs, particularly sertraline and paroxetine, are the only FDA-approved medications for the treatment of PTSD. SNRIs such as venlafaxine are also commonly used for the treatment of PTSD symptoms. However, SSRIs and particularly SNRIs have an inconsistent effect on nightmares and can exacerbate them at times.
3. Behavioral therapy is often very successful in PTSD and nightmares. Cognitive-behavioral therapy, primarily Imagery Rehearsal Therapy or IRT, is the most commonly used therapy in nightmares associated with PTSD. Various other forms of behavioral therapy such as systematic desensitization or progressive muscle relaxation have been used in nightmares not associated with PTSD.

Part 5: Total Points: 5

After a combination of individual therapy, group therapy, and medication management, Mr. Jones is feeling better and sleeping better. He is regularly going to AA meetings and no longer having nightmares. His PTSD symptoms are under control with treatment from psychiatry.

Questions

1. In 2–3 sentences, discuss ways that symptom recurrence can be prevented or minimized.
2. How would this patient's prognosis be different if he were 30 years older and 30 lbs heavier?
3. Consider how the patient's family may have had their sleep altered by his symptoms.

Ideal Answers

1. PTSD and nightmares do not have to be a chronic condition, particularly if treated early. Full treatment followed by patient getting education regarding PTSD, teaching the value of a support system, and knowing what to do in case of symptom exacerbation are keys to prevention/minimizing relapse. This is done best via an interdisciplinary model.
2. Patients with chronic PTSD can often be much more difficult to treat with medications alone and often require more intensive intervention. They can also be at risk for more other comorbid disorders such as sleep-disordered breathing,

substance dependence, and mood/anxiety disorders as well as other medical disorders.

3. Consideration of the patient's family should be taken into account in a case like this. Family members often feel high levels of stress, guilt, and anxiety. Sleep problems associated with depression and anxiety or simply because of disrupted sleep can occur.

IQ Case

Mandy Pression for Student

Goal: Understand the presentation associated with insomnia and hypersomnia with different mood disorders, the impact of medications used to treat mood disorders, and how comorbid sleep disorders can impact mood disorders.

Case Vignette

A 38-year-old female (BMI 35) presents to the sleep clinic for evaluation of trouble sleeping. Patient states that she has been a poor sleeper since a young age and has tried multiple medications without consistent efficacy and "it's getting worse!" She snores loudly with occasional periods where her husband has noted that she makes gasping sounds and her snoring has gotten worse since she has gained some weight over the past 2–3 years. She states that she is very tired during the day and her Epworth Sleepiness Score is 13/24.

She has a childhood history of bipolar disorder. Her husband of 15 years indicates that sometimes she goes days without needing more than 3–4 h of sleep but most of the time she appears exhausted but cannot fall asleep "even though I try really hard!" She was fired from her job 3 years ago after a manic episode where she went to visit her sister in Florida without telling anyone. She has been seeing a psychiatrist for bipolar disorder and was doing well but recently has stopped taking her quetiapine because of weight gain. Her husband states that he has noticed that she is again not sleeping much and she is more moody than normal, particularly in the past week.

She states that she sleeps from 8 p.m. and usually gets out of bed anywhere from 3 to 10 a.m. or "you know, whenever I am ready to get up!" It usually takes her a long time to go to sleep and she often wakes up several times during the night. She also indicates that she takes "short catnaps" during the day on the couch while watching TV, etc. She watches TV in bed, uses the computer, and often reads in bed in an effort to "try to go to sleep." She complains of mild RLS and bruxism symptoms but denies narcolepsy/cataplexy and parasomnias and has never been a shift worker. She denies drowsy driving.

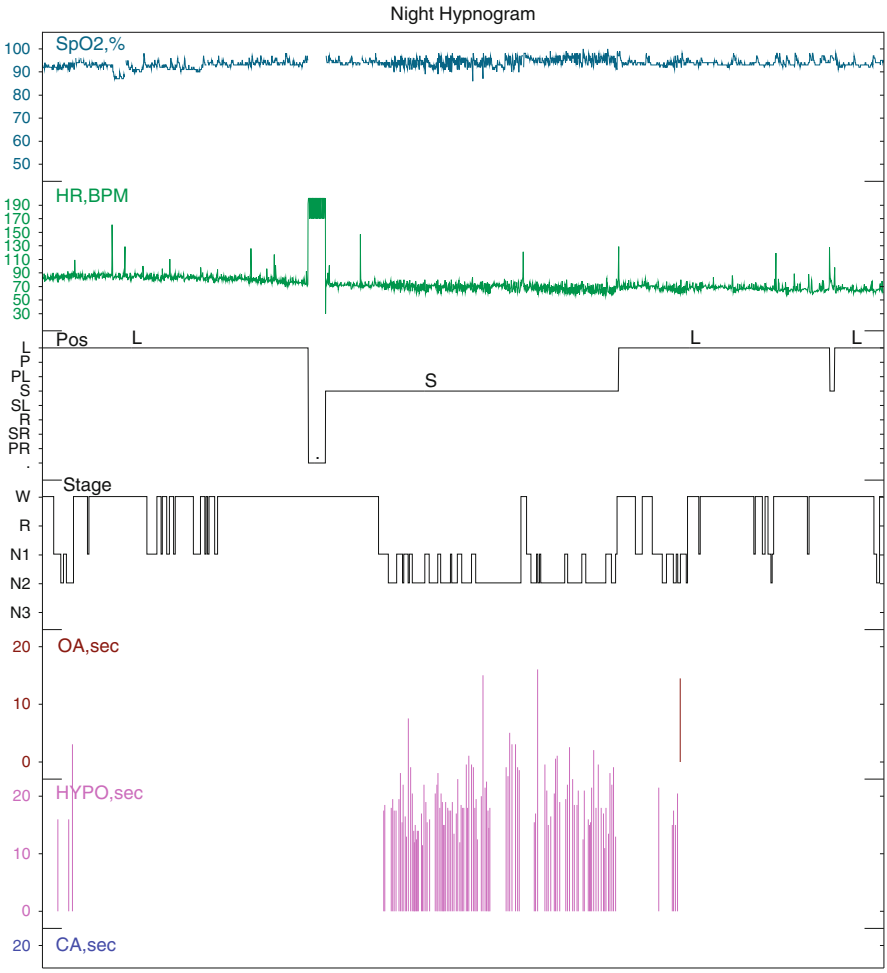
PMHX: Bipolar I, HTN
Meds: venlafaxine, quetiapine, metoprolol, OTC sleep aids
Denies alcohol or tobacco use except has gone on binges during her manic phases, last use more than 2 years ago. Drinks caffeine on occasion, 1–2 cups of coffee in the morning.

On physical exam:

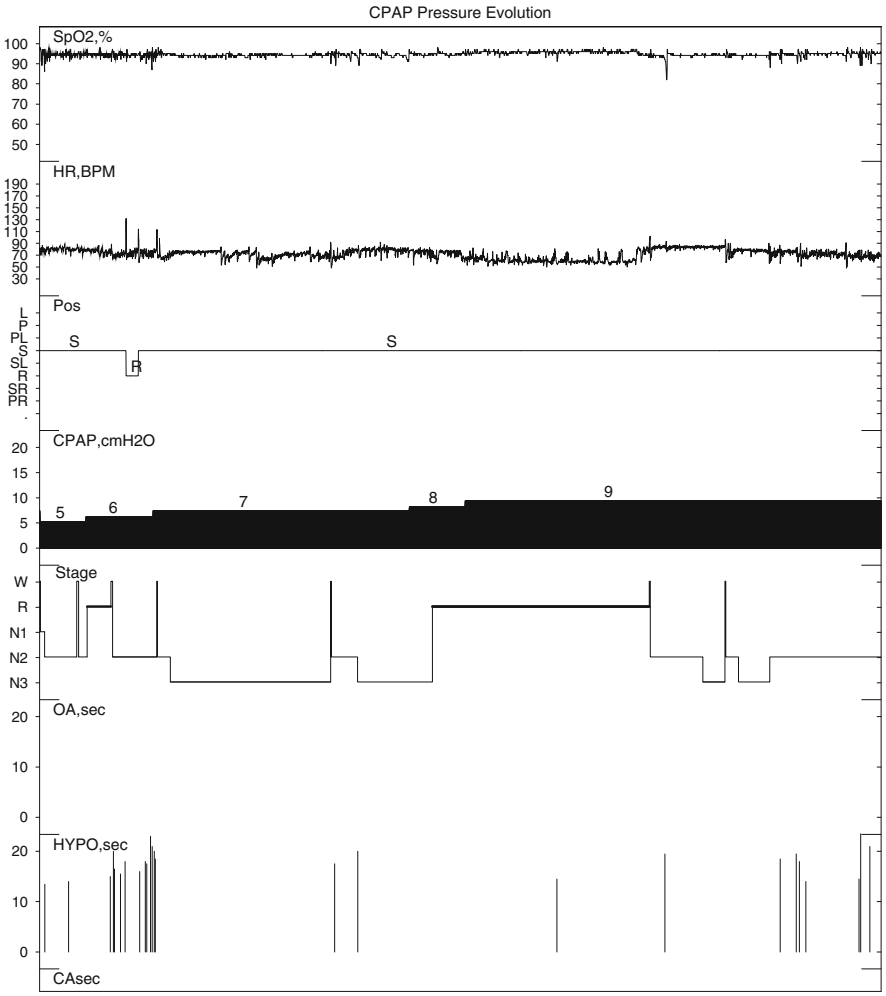
Mental status exam: Cooperative and engages appropriately. Mild psychomotor agitation; animated speech that is pressured but interruptible. Circumstantial without tangential thought or flight of ideas. No hallucinations, delusions, or loose associations, but mild grandiosity is present. Denies suicidal ideation. Mood is "pretty great" and affect is expansive and labile as the patient goes from being very happy to being irritated 2–3 times with me and her husband for brief periods of time.
VS: BP 115/78, HR 73, 99 % on RA, neck 14.5 in.
HEENT: MMM, Mallampati III, 1+ tonsils, midline uvula with scalloping of the tongue. No retrognathia
Lungs: CTAB
Heart: RRR
Neuro: No gross motor or sensory deficits

A sleep study is ordered and the results are as follows:

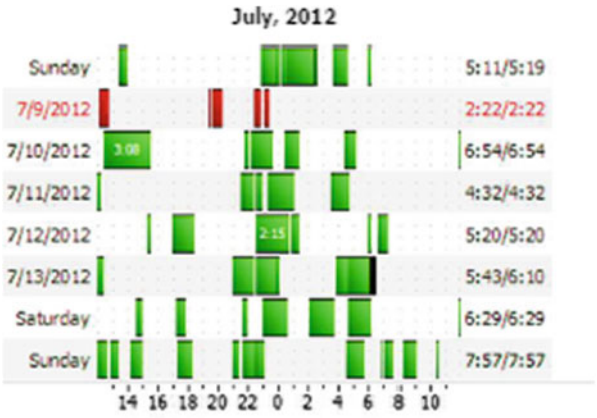
Sleep efficiency 41 % (121/298 min).
Sleep latency 4 min, REM latency no REM achieved.
REM sleep 0 %, NREM 100 %.
Overall AHI: 56.3.
Baseline O_2 sat 95 %, lowest recorded 84 %.
Below is the hypnogram of the PSG.



The patient was scheduled for a follow-up CPAP titration and the hypnogram is shown below.



She was prescribed a CPAP and followed up in 2 months with complaints of poor sleep. She had been changed from quetiapine to lamotrigine to decrease weight loss and now was taking the lamotrigine regularly. Her husband indicated that she appeared significantly improved from the previous few years with no manic symptoms but she still had problems with insomnia. The CPAP data from the last week is shown below:



Days used: 58/58
Hours used on average: 5:33 min
Time in large leak per day: 1 min and 13 s
Average residual AHI: 1.2
CPAP setting: 9 cm H_2O

Mandy Pression for Facilitator

Goal: Understand the presentation associated with affective illness and sleep complaints, the impact of medications used to treat mood disorders, and how comorbid sleep disorders can impact mood disorders.

Learning Objectives

A. Understand the diagnosis of bipolar disorder and major depressive disorder.
B. Create a differential diagnosis of insomnia in bipolar disorder.
C. Consider the role of sleep disturbance as a harbinger of affective illness.
D. Understand the challenges faced in treatment of sleep-disordered breathing in patients with bipolar disorder.
E. Discuss the common PSG findings seen in a patient with mood disorders.
F. Describe the treatment of mood disorders in patients with co-occurring sleep disorders.

Case Vignette

A 38-year-old female (BMI 35) presents to the sleep clinic for evaluation of trouble sleeping. Patient states that she has been a poor sleeper since a young age and has tried multiple medications without consistent efficacy and "it's getting worse!" She snores loudly with occasional periods where her husband has noted that she makes

gasping sounds and her snoring has gotten worse since she has gained some weight over the past 2–3 years. She states that she is very tired during the day and her Epworth Sleepiness Score is 13/24.

She has a childhood history of bipolar disorder. Her husband of 15 years indicates that sometimes she goes days without needing more than 3–4 h of sleep but most of the time she appears exhausted but cannot fall asleep "even though I try really hard!" She was fired from her job 3 years ago after a manic episode where she went to visit her sister in Florida without telling anyone. She has been seeing a psychiatrist for bipolar disorder and was doing well but recently has stopped taking her quetiapine because of weight gain. Her husband states that he has noticed that she is again not sleeping much and she is more moody than normal, particularly in the past week.

She states that she sleeps from 8 p.m. and usually gets out of bed anywhere from 3 to 10 a.m. or "you know, whenever I am ready to get up!" It usually takes her a long time to go to sleep and she often wakes up several times during the night. She also indicates that she takes "short catnaps" during the day on the couch while watching TV, etc. She watches TV in bed, uses the computer, and often reads in bed in an effort to "try to go to sleep." She complains of mild RLS and bruxism symptoms but denies narcolepsy/cataplexy and parasomnias and has never been a shift worker. She denies drowsy driving.

PMHX: Bipolar I, HTN

Meds: venlafaxine, quetiapine, metoprolol, OTC sleep aids

Denies alcohol or tobacco use except has gone on binges during her manic phases, last use more than 2 years ago. Drinks caffeine on occasion, 1–2 cups of coffee in the morning.

Mental status exam: Cooperative and engages appropriately. Mild psychomotor agitation, animated speech that is pressured but interruptible. Circumstantial without tangential thought or flight of ideas. No hallucinations, delusions, or loose associations, but mild grandiosity is present. Denies suicidal ideation. Mood is "pretty great" and affect is expansive and labile as the patient goes from being very happy to being irritated 2–3 times with me and her husband for brief periods of time.

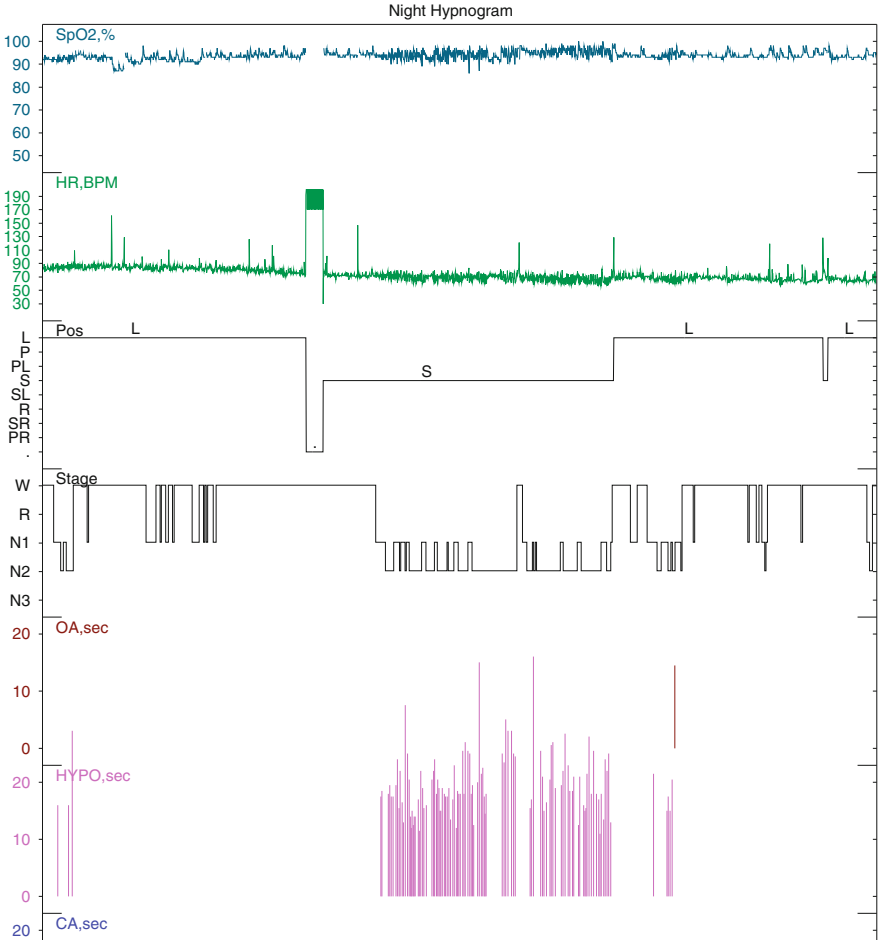
On physical exam:

VS: BP 115/78, HR 73, 99 % on RA, neck 14.5 in.
HEENT: MMM, Mallampati III, 1+ tonsils, midline uvula with scalloping of the tongue. No retrognathia
Lungs: CTAB
Heart: RRR
Neuro: No gross motor or sensory deficits

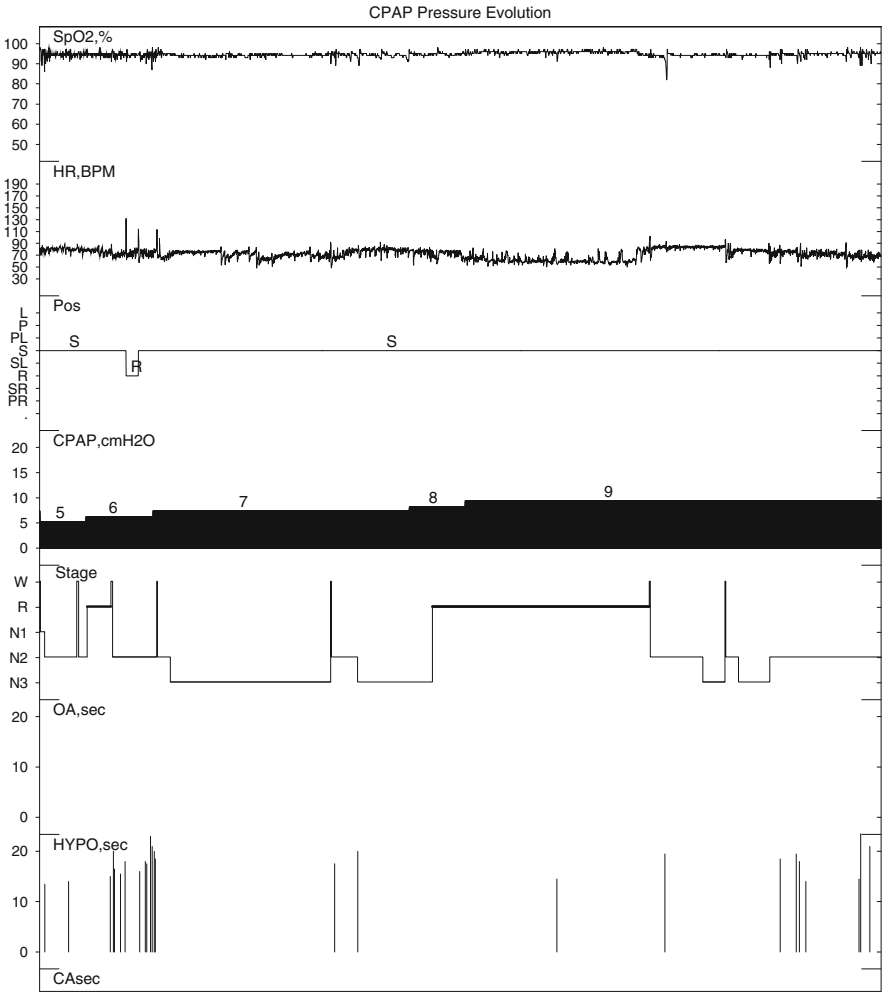
A sleep study is ordered and the results are as follows:

Diagnostic Studies

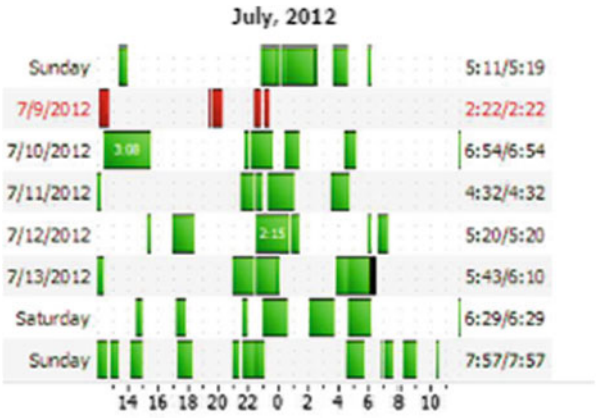
Sleep efficiency 41 % (121/298 min).
Sleep latency 4 min, REM latency no REM achieved.
REM sleep 0 %, NREM 100 %.
Overall AHI: 56.3.
Baseline O_2 sat 95 %, lowest recorded 84 %.
Below is the hypnogram of the PSG.



The patient was scheduled for a follow-up CPAP titration and the hypnogram is shown below.



She was prescribed a CPAP and followed up in 2 months with complaints of poor sleep. She had been changed from quetiapine to lamotrigine to decrease weight loss and now was taking the lamotrigine regularly. Her husband indicated that she appeared significantly improved from the previous few years with no manic symptoms but she still had problems with insomnia. The CPAP data from the last week is shown below:



Days used: 58/58
Hours used on average: 5:33 min
Time in large leak per day: 1 min and 13 s
Average residual AHI: 1.2
CPAP setting: 9 cm H_2O

Probing Questions

1. What is the differential diagnosis for the patient's sleep complaints?
2. What are the risk factors for OSA in this patient?
3. What is the relevance of patient's report of being a poor sleeper since "a young age"?
4. What are the diagnostic criteria for bipolar disorder?
5. What is the relationship between OSA and bipolar disorder?
6. Consider the role of sleep as a predictor of mania and as a marker of response in mania.
7. Based on the additional information, how does this impact your previous answers regarding differential diagnosis as well as the report of sleep problems at a young age?
8. What is the relationship between sleep architecture and bipolar disorder?
9. What is the risk of sleep restriction therapy in the treatment of insomnia in bipolar disorder?
10. What is the value of the mental status exam in assessing sleep disorders?
11. What is the risk of sleep restriction therapy in the treatment of insomnia in bipolar disorder?
12. What is the relationship between OSA and bipolar disorder?
13. What do you tell the patient and what is your treatment plan?
14. What do you expect to see after OSA treatment?
15. What are the common PSG findings in a patient with bipolar disorder? Major depression?
16. How does this affect your differential diagnosis?

17. How do you think this will impact the patient's bipolar disorder and sleep complaints going forward?
18. Evaluate the CPAP download data and how the various diagnoses of bipolar, insomnia, and OSA interact.
19. What treatment modalities are recommended for this patient, if any?

IQ Case Handout/Objectives

Goal: Understand the presentation associated with insomnia and hypersomnia with different mood disorders, the impact of medications used to treat mood disorders, and how comorbid sleep disorders can impact mood disorders.

Learning Objectives

A. Describe the sleep disorders commonly seen in bipolar disorder.
B. Consider the role of serotonin and norepinephrine in sleep and affective illness.
C. Discuss the evaluation of insomnia in a patient with bipolar disorder.
D. Discuss the common PSG findings seen in a patient with depression.
E. Describe the treatment of bipolar disorder in the settings of RLS and narcolepsy.
F. Consider the treatment of mood disorders with sleep deprivation and light therapy.

Selected References

1. Courtet P, Olie E. Circadian dimension and severity of depression. Eur Neuropsychopharmacol. 2012;22 Suppl 3:S476–81.
2. Froese CL, Butt A, Mulgrew A, et al. Depression and sleep-related symptoms in an adult, indigenous, North American population. J Clin Sleep Med. 2008;4:356–61.
3. Baandrup L, Jennum P, Lublin H, et al. Treatment options for residual insomnia in schizophrenia. Acta Psychiatr Scand. 2013;127:81–2.
4. Bersani FS, Iannitelli A, Pacitti F, et al. Sleep and biorhythm disturbances in schizophrenia, mood and anxiety disorders: a review. Riv Psichiatr. 2012;47:365–75.
5. Boland EM, Alloy LB. Sleep disturbance and cognitive deficits in bipolar disorder: toward an integrated examination of disorder maintenance and functional impairment. Clin Psychol Rev. 2013;33:33–44.
6. Germain A. Sleep disturbances as the hallmark of PTSD: where are we now? Am J Psychiatry. 2013;170:372–82.
7. Jackson ML, Bruck D. Sleep abnormalities in chronic fatigue syndrome/myalgic encephalomyelitis: a review. J Clin Sleep Med. 2012;8:719–28.
8. Krystal AD. Psychiatric disorders and sleep. Neurol Clin. 2012;30:1389–413.