ProjectTEACH
FAMILIES THRIVE WITH GOOD MENTAL HEALTH

Perinatal Insomnia

NEW YORK STATE | Office of Mental Health

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Jeffrey Iler, MD

Assistant Professor

University of Rochester Medical Center

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Disclosures

None

Case

32 G1P0 at 32 weeks presents to her family practice PCP for a follow up after earlier diagnosis of GERD. She has responded well to management of her acid reflux with famotidine, no longer complaining of nocturnal symptoms, but despite this, she reports she is still struggling to sleep. Specifically, she reports she is unable to fall asleep for “hours”, just laying in bed and finds herself awakening multiple times through the night. She has been increasingly fatigued during the day, that her “pregnancy brain” is becoming worrisome, and she jokes that she might “bite my boyfriend’s head off”.

Case

- GAD-7 and PHQ-9 are administered, and scored as a 3 and 6, respectively
- She has no history of mental health diagnoses
- Aside from GERD, her pregnancy has been uncomplicated
- She denies any use of drugs of abuse. Her only medication is famotidine
- She is in a long-term relationship with a supportive partner. Pregnancy was planned and desired. She has been working part-time as a sales associate throughout her pregnancy. No concerns for housing or food instability. DV screen is negative.
- What would be a next reasonable step?

What is Insomnia?

- Trouble initiating or maintaining sleep
- Associated with daytime consequences
  - Fatigue
  - Sleepiness
  - Poor concentration
  - Mood changes
  - Excessive worry about sleep
- Not attributable to the environment (inadequate opportunities to sleep)
- Can be a diagnosis (i.e. Insomnia Disorder) or a symptom (e.g. of major depression)

Ref: DSM-5 TR, Sateia et al, 2017

Epidemiology of Insomnia

- Comorbidity in 50-80% patients with psychiatric diagnosis
- Insomnia is more common in women than men
- Reproductive hormonal transitions make women vulnerable to insomnia, particularly in pregnancy and postpartum
  - 15% to 80% of women report sleep problems during the first trimester
  - 66% to 97% of women experience sleep problems in the third trimester
  - 50% of postpartum women are at risk of chronic insomnia (up to 2 years)

Ref: Smith et al 2002, Hillary et al 2009, Baker et al 2009 Gao M, et al BMC Pregnancy Childbirth. 2019 , Silversten et al 2015

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Sleep Disturbance in the Perinatal Period

- Multiple factors predispose patients to sleep disruption during this time
  - Physical
    - Physical discomfort
    - Medical problems
    - Hormonal changes
  - Psychological
    - Worry/stress
    - Mood changes

Ref: Manconi et al, 2024, Sedov et al, 2021

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Insomnia in the Perinatal Period

- Differentiating sleep disruption from insomnia
  - Duration/frequency (3 or more nights/week)
    - Chronic is defined as 3 months or more
  - Consequences
    - Fatigue
    - Sleepiness
    - Poor concentration
    - Mood changes
    - Excessive worry about sleep
  - *Persistence despite adequate opportunities to sleep* is a key factor to identify insomnia (which may warrant treatment) from transient sleep disruption (which does not)

Ref: Quin, et al 2022

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Adverse Effects of Untreated Insomnia in Pregnancy

- Maternal risks:
  - Pre-eclampsia
  - Gestational Diabetes
  - Gestational HTN
  - Increased risk for C-section

- Fetal/neonatal risks:
  - Pre-term birth
  - Low birth weight
  - SGA, LGA
  - Still birth

Ref: Kendle et al 2022, Lu et al 2021,Choudhary et al 2018

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Adverse Effects of Untreated Insomnia in Pregnancy (cont.)

- Increased risk and severity of perinatal depression
- Increased risk of other perinatal mental health disorders, including anxiety, OCD, and postpartum psychosis
- Increased risk for suicidal ideation(with or without perinatal depression)
  - Increases the odds of suicidal risk by threefold
  - Increased the risk of postpartum suicide attempts within 1 year of childbirth

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Ref: Swanson et al 2011, Wilson et al 2019, Osnes et al 2020, Sharma et al 2003 , Palagini et al 2024

Insomnia in the Perinatal Period

- Factors that increase someone's risk for perinatal insomnia
  - Presence of comorbid psychiatric (e.g. anxiety disorders) or medical conditions (e.g. elevated BMI)
  - Pre-existing insomnia, history of insomnia, history of sleep reactivity (sleep disruptions related to stress)
  - Psychosocial factors
    - Unplanned pregnancy
    - Poor social supports
    - Financial/vocational/relational stressors
  - Physical factors
    - Pain/discomfort

Ref: Roman-Galvez et al 2018, Wang et al 2025

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Assessment of Perinatal Insomnia

- Detailed history from patient and bed partner (if possible)
  - Focus on sleep onset, duration, quality of sleep, frequency and number of awakenings, daytime alertness, snoring, apnea, and limb movements
  - 2-minute sleep assessment: “What does a typical night’s sleep look like for you?”
  - Sleep diaries can be very helpful
- Screen for mood and anxiety disorders
- Assess substance use:
  - Both prescription and nonprescription medications
  - Supplements/complementary treatments
  - Drugs of abuse/illicit drugs
- Evaluate status of general medical conditions and pre-existing psychiatric disorders
- Pittsburg Sleep Quality Index as objective sleep measure

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Ref: Selvaria et al 2010

Non-Pharmacological: Sleep Hygiene

- Most common exacerbating factor: hypervigilant effort around sleep
- Education about normal sleep wake cycles and how to maintain it
- Role of exercise
- Amount exposure to light at different time during the day
- Stimulus control (bed restriction to sleep/caregiving only)
- Decreasing caffeine and fluid restriction toward bedtime
- Effects of alcohol and nicotine on sleep
- Maximizing hours of *consolidated* sleep in postpartum period

Patient Education on Sleep: Check the Project TEACH website

- PTC1043_Enduring-Materials_Sleep-Hygiene-Maternal-7.28.25.pdf

Getting enough sleep is important for your physical and mental health through pregnancy and the postpartum ... but it's often a challenge! Hormones, body changes and the needs of a newborn often leave parents exhausted and sleep deprived. Below are some general tips and best practices for getting a good night's sleep, as well as some of the issues and solutions specific to pregnancy and the postpartum period.

GENERAL SLEEP TIPS

Create routines so that your body and mind are ready for sleep.

- Limit caffeine you drink to the morning hours.
- Try not to work or look at screens (TV, phone, computer) in the evening hours.
- Engage in activities that help you unwind and increase calmness (listed below under relaxation techniques).

Reduce the amount of time you spend in bed not sleeping.

- If you are unable to fall asleep within about 30 minutes, or wake up and can't fall back to sleep, get out of

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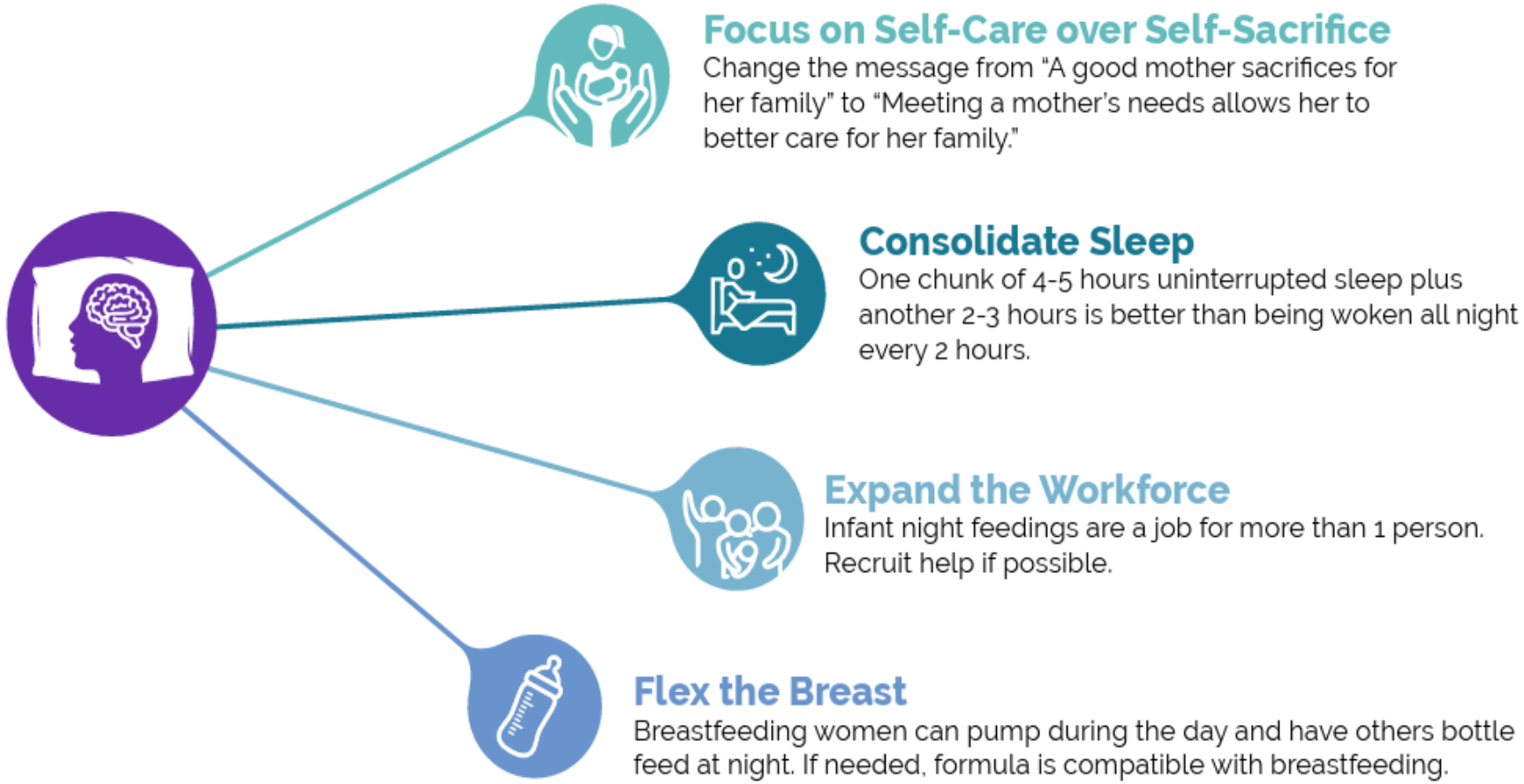
Non-Pharmacological: Prescribing Sleep

(*Ref: Leistikow et al 2022)MM*



Focus on Self-Care over Self-Sacrifice
Change the message from "A good mother sacrifices for her family" to "Meeting a mother's needs allows her to better care for her family."

Consolidate Sleep
One chunk of 4-5 hours uninterrupted sleep plus another 2-3 hours is better than being woken all night every 2 hours.

Expand the Workforce
Infant night feedings are a job for more than 1 person. Recruit help if possible.

Flex the Breast
Breastfeeding women can pump during the day and have others bottle feed at night. If needed, formula is compatible with breastfeeding.

Ref: Leistikow et al, 2023

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Non-Pharmacological: Cognitive Behavioral Therapy – Insomnia (CBT-I)

- Compared to medication treatment, CBT-I demonstrates:
  - Greater reduction in insomnia severity
  - Higher remission rates
  - Faster remission
- 40-60% of participants maintain benefit over long term follow up
  - Subjective improvement in sleep time generally greater than objective assessment
- Effective for patients with co-morbid psychiatric illness
- CBT-I can be used as adjunct or alternative to medication

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Ref: Bei et al 2010,Manber et al 2019 R, Anderson et al 2018, Taylor et al 20114, NIH 2005

Non-Pharmacological: CBT-I

- Individual or small group therapy
- 4-8 sessions averaging 6 hours of total therapy
- Face to face intervention has shown to be most effective, however digital CBT-I is being shown to have significant efficacy and is more much more widely available
  - Digital CBT-I with coach shows better results (CBT-I coach*)
    - Insomnia coach can be used independently
  - 2 small RCT with Sleepio in pregnant women
  - Other resources: Sleeprest(SHUT-i) and Sleepstation(NHS,UK)

Ref: Felder et al, 2022, Felder et al, 2020

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Non-Pharmacological: CBT-I

- Perinatal use
  - CBT-I has the strongest evidence for treatment of insomnia (reducing symptom severity and improving sleep quality with moderate-large effect size) in the perinatal period
  - Modifications recommended for this population:
    - A more flexible approach to sleep restriction (e.g. broader sleep windows to account for infant care needs, still allowing for “sleeping when baby sleeps”)
    - Less rigid application of stimulus control allowing for caregiving (e.g. breastfeeding in the bed)
      - Still emphasize not using bed for non-sleep or caregiver activities such as watching TV, being on phone, etc.
    - Psychoeducation focus on setting realistic expectations for sleep for pregnant and postpartum parents, mobilizing partner/family contributions, etc.

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Ref: Felder et al, 2022, Felder et al, 2020

Medications for Treatment of Perinatal Insomnia

- The American Academy of Sleep Medicine does not suggest any medication treatment for management of insomnia with more than a “weak” recommendation (based on a combination of poor evidence and generally negative risk/benefit analysis)
  - Orexin-agonists (suvorexant)
  - “Z” drugs (zolpidem, zaleplon, eszopiclone)
  - Benzodiazepines (triazolam, temazepam)
  - Melatonin receptor agonist (ramelteon)
  - Antidepressants (doxepin)

Ref: Sateia et al, 2017

Reproductive Risks of AASM Recommended Medications

- Orexin-agonists – no published human data
- "Z" drugs (zolpidem best studied)
  - Probably do not increase risk of congenital malformations (at normal doses)
  - May increase risk of fetal growth restriction and preterm delivery
  - Potential for neonatal complications (e.g. respiratory depression)
  - Limited data are reassuring for use in lactation (particularly for zolpidem)
- Benzodiazepines
  - Temazepam and triazolam specifically are poorly studied in pregnancy, suspected to share similar risks to other benzodiazepines
- Ramelteon – no published human data
- Doxepin
  - Expected to share similar risks with other antidepressants
  - Some negative effects in breastfed infants reported (sedation/decreased respiratory drive)

Medications for Treatment of Perinatal Insomnia

- Commonly used options (not recommended by AASM):
  - Melatonin
  - Antihistamines (diphenhydramine, hydroxyzine, doxylamine)
  - Other antidepressants (trazodone, mirtazapine, amitriptyline)
  - Other benzodiazepines (clonazepam, lorazepam, alprazolam, diazepam)
  - Atypical antipsychotics (quetiapine, olanzapine)

Reproductive Risks of Non-AASM Recommended Medications

- Melatonin
  - 1% women use melatonin during pregnancy
  - No monitoring by FDA
  - Limited data and mostly from animal studies
  - Available data conflicting
  - Supplemented doses are much higher than physiologic doses
  - Exogenous supplementation can alter endogenous secretion and affect fetal circadian rhythm

Ref: Freeman et al 2016,Prazinko et al 2000,Choudhry et al 2018

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Reproductive Risks of Non-AASM Recommended Medications

- Antihistamines (hydroxyzine, doxylamine, diphenhydramine)
  - Data primarily from studies when used as anti-emetics
  - Available data is limited but does not show association with congenital malformation or poor neonatal outcomes
  - Theoretical risk of decrease in milk supply
  - **Doxylamine(25-50 mg)** is the preferred and often the first line medication for insomnia in pregnancy due to familiarity and better safety data
  - **Diphenhydramine**: Very limited data
    - Studies have not shown any consistent association with any specific congenital malformation. No adverse effects in lactation, occasional use considered ok
  - **Hydroxyzine**: Human data limited, animal studies not reassuring
    - No consistent pattern of malformation. No specific data available related to lactation

Ref : Li et al 2013,Andreak et al 2012,smedt et al 2014.Choudhary et al 2018

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Reproductive Risks of Non-AASM Recommended Medications

- Other antidepressants: trazodone, mirtazapine, amitriptyline
  - Trazodone
    - Less well studied than SSRIs, likely shares similar risks
  - Mirtazapine: (RID 0.5-3%)
    - Less well studied than SSRIs, thought to have similar risks
    - Low RID (estimated < 3%)
  - Amitriptyline
    - Expected to have similar risks to other antidepressants
    - Low RID (estimated 1-2%)

Reproductive Risks of Non-AASM Recommended Medications

- Atypical antipsychotics
  - Not FDA indicated for insomnia and have significant risks with long-term use
  - Sedating atypical antipsychotics like quetiapine and olanzapine have reassuring safety data in pregnancy and breastfeeding
  - Low dose, short term use may be beneficial – consider comorbidities