



Perinatal Mood Disorders

Sara Agha, MD
PGY3

Learning Objectives

- Discuss screening guidelines for diagnosis and management of perinatal depression during pregnancy
- Identify the difference between postpartum blues and postpartum depression
- Evaluate postpartum depression using validated screening tools
- Discuss both existing and novel treatment options for postpartum depression
- Identify and work up differential diagnoses when postpartum psychosis is suspected
- Discuss treatment recommendations for postpartum psychosis
- Use available resources for clinicians geared towards treating pregnant and postpartum patients

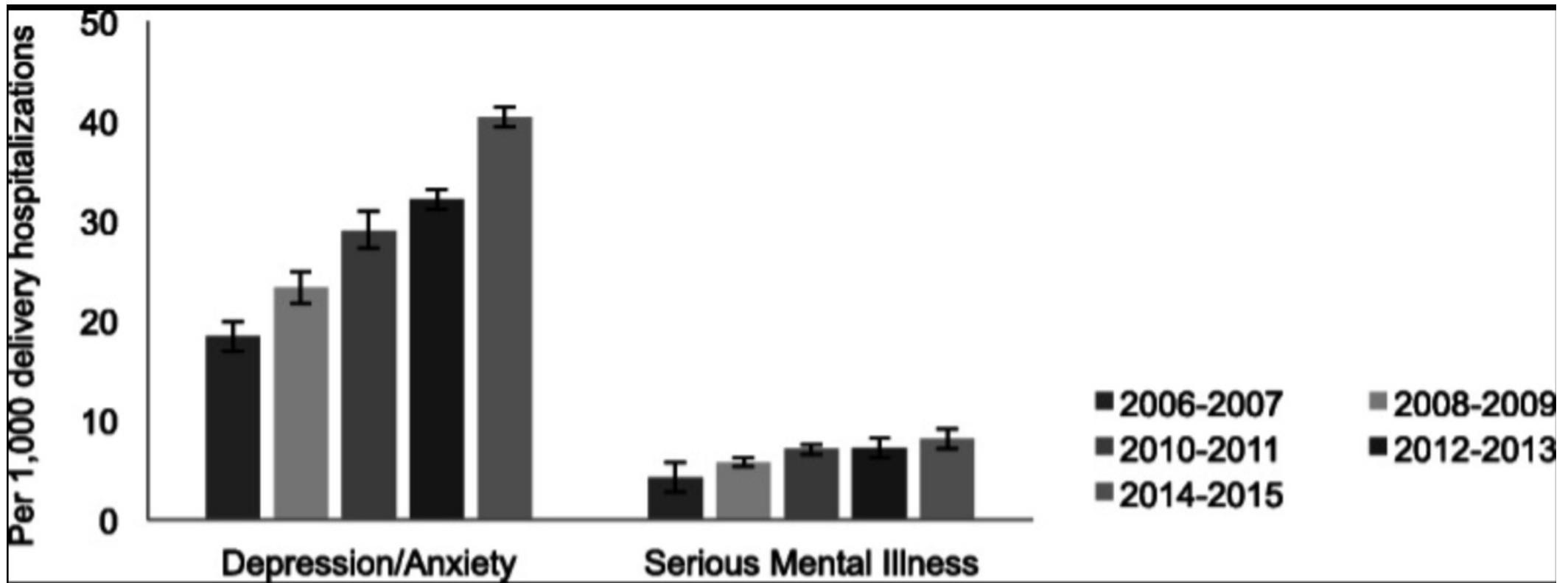


Why does this matter?

- “The infant and maternal care together form a unit; there is no such thing as an infant” - Donald Winnicott

(Winnicott, 1960)

Between 2006 and 2015, perinatal mood disorders prevalence increased from 18.4% to 40% in the US



Why does this matter?

“Perinatal” refers to the period during pregnancy and 1 year postpartum

Many psychiatric illnesses start early in life, with onset before or after pregnancy, and persist during the postpartum period

Mental illness is the leading cause of preventable maternal mortality per CDC

1 in 5 women are affected

(Moore, 2023)

Hutner et al, 2022

Poll: What percentage of pregnancies in the US are unplanned?

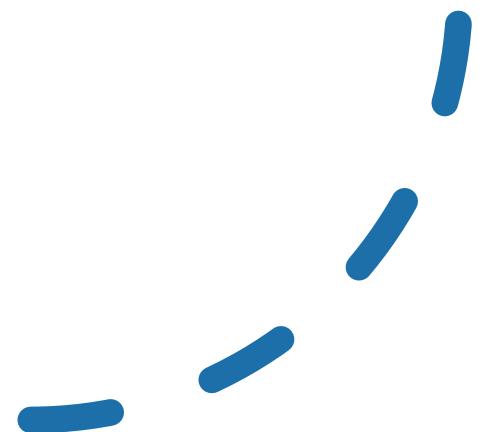
A) 20%

B) 33%

C) 50%

D) 45%

Screening and Diagnosis: Before and During Pregnancy



Perinatal Depression

Five or more symptoms present during the same 2 week period and represent a change from previous functioning; at least one of the symptoms is either 1) depressed mood or 2) loss of interest or pleasure

Note: Do not include symptoms that are clearly attributable to another medical condition.

1. Depressed mood most of the day, nearly every day, as indicated by subjective report (e.g. feels sad, empty, hopeless) or observation made by others (e.g. appears tearful). Note: in children and adolescents, can be irritable mood
2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day
3. Significant weight loss when not dieting or weight gain (e.g. a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day (Note: in children, consider failure to make expected weight gain)
4. Insomnia or hypersomnia nearly every day
5. Psychomotor agitation or retardation nearly every day
6. Fatigue or loss of energy nearly every day
7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day
8. Diminished ability to think or concentrate, or indecisiveness, nearly every day
9. Recurrent thoughts of death, recurrent suicidal ideation, or a suicide attempt

With peripartum onset: This specifier can be applied to the current or, if full criteria are not currently met for a major depressive episode, most recent episode of major depression if onset of mood symptoms occurs during pregnancy or in the 4 weeks following delivery

Distinguishing Features

- Shares many of the same features
- Difficult to differentiate normal changes of pregnancy (alterations in sleep, appetite, libido) from mood
- **Anxious distress and intrusive thoughts are common**
 - Rumination and worry about mother's or baby's health

Depressive Disorders

- Depression is the most common complication of childbirth, greater than gestational diabetes and preeclampsia
- Affects the entire family
- Pregnancy is neither protective against depression, nor does it increase risk
- Many pregnant women stop treatment and face relapse
- Little attention given to main adverse effect of depression during pregnancy: maternal suffering

Epidemiology

- Affects 7-9% of women in the United States, 16-19% (2x higher!) in low income countries
- Prevalence higher among Black and Hispanic Americans vs White Americans
- Often underrecognized – 50-66% go undiagnosed
- Somatic symptoms of depression resemble normal pregnancy
- Avoidance of disclosing symptoms due to fear of losing custody of infant

Risk Factors

- Risk factors include:
 - **Prior history of depression (almost 50%)**
 - Current anxiety
 - Unintended/unwanted pregnancy
 - Life stressors
 - Intimate partner violence
 - Poor social support
 - Chronic medical conditions

Edinburgh Postnatal Depression Scale

A

Ask all postpartum women:
During the past month, have you often been bothered by feeling down, depressed, or hopeless?
During the past month, have you often been bothered by little interest or pleasure in doing things?

Positive answer to either question

Administer Edinburgh Postnatal Depression Scale or PHQ-9

Edinburgh Postnatal Depression Scale (EPDS)

Mother's OB or Doctor's Name:

Doctor's Phone #:

Patient Label

Since you are either pregnant or have recently had a baby, we want to know how you feel. Please place a **CHECK MARK (✓)** on the blank by the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**—not just how you feel today. Complete all 10 items and find your score by adding each number that appears in parentheses (#) by your checked answer. This is a screening test; not a medical diagnosis. If something doesn't seem right, call your health care provider regardless of your score.

Below is an example already completed.

I have felt happy:

(0)
 (1)
 (2)
 (3)

Yes, all of the time
Yes, most of the time
No, not very often
No, not at all

This would mean: "I have felt happy most of the time" in the past week. Please complete the other questions in the same way.

1. I have been able to laugh and see the funny side of things:

(0)
 (1)
 (2)
 (3)

As much as I always could
Not quite so much now
Definitely not so much now
Not at all

2. I have looked forward with enjoyment to things:

(0)
 (1)
 (2)
 (3)

As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

3. I have blamed myself unnecessarily when things went wrong:

(0)
 (1)
 (2)
 (3)

Yes, most of the time
Yes, some of the time
Not very often
No, never

4. I have been anxious or worried for no good reason:

(0)
 (1)
 (2)
 (3)

No, not at all
Hardly ever
Yes, sometimes
Yes, very often

5. I have felt scared or panicky for no good reason:

(0)
 (1)
 (2)
 (3)

Yes, quite a lot
Yes, sometimes
No, not much
No, not at all

6. Things have been getting to me:

(0)
 (1)
 (2)
 (3)

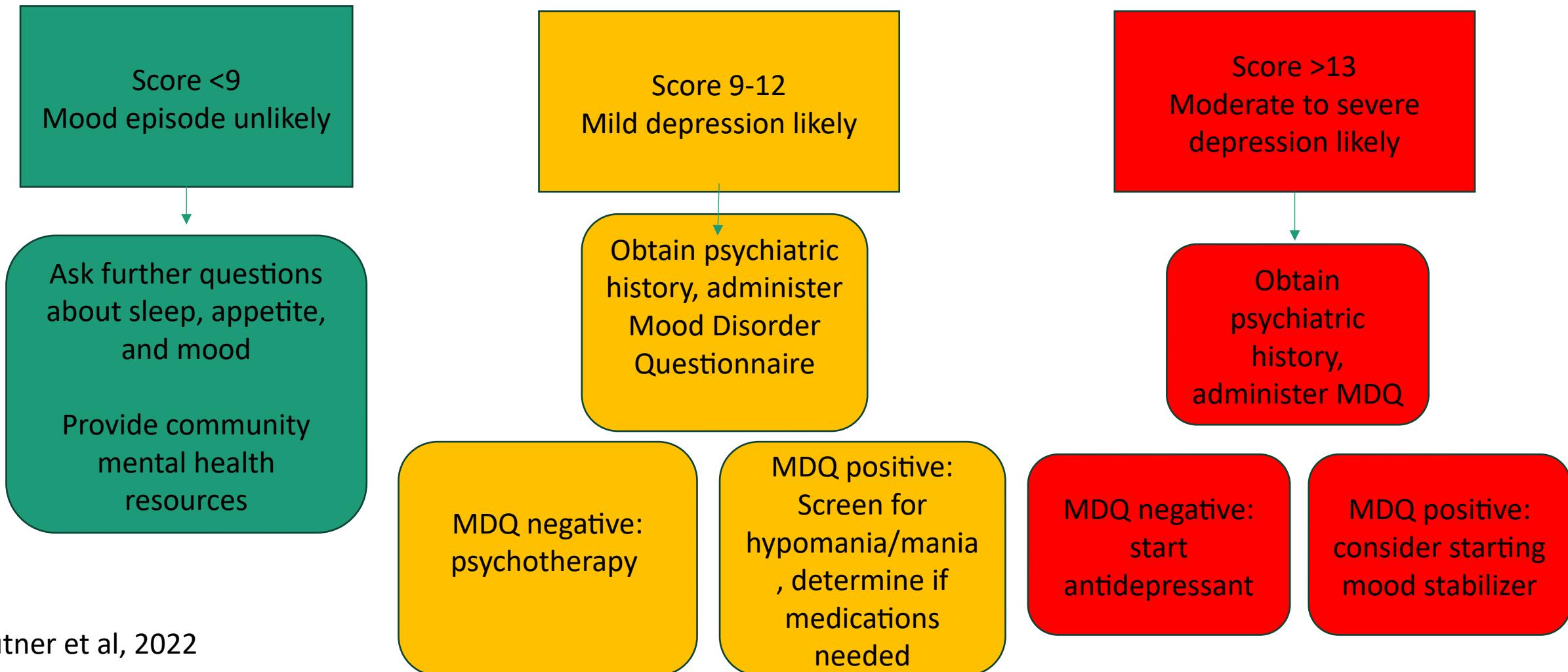
Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped quite well
No, I have been coping as well as ever

TOTAL YOUR SCORE HERE ►

Thank you for completing this survey. Your doctor will score this survey and discuss the results with you.

Verbal consent to contact above mentioned MD witnessed by:

Edinburgh Postnatal Depression Scale



Treatment and Management of PMAD: During Pregnancy



Assessing Risk

- Pregnancy is not protective against mental illness
- Risk vs benefit
 - Risk of medication
 - Risk of untreated illness
 - Benefits of treatment

What patients want to know

- Is it safe to be on medication while I'm pregnant?
- How much harm can be done to my baby if I'm on medication?
- Should I stay on my medication?
- Can I breastfeed on medication?

Conceptual model of how untreated PMADs influence maternal, child and societal outcomes

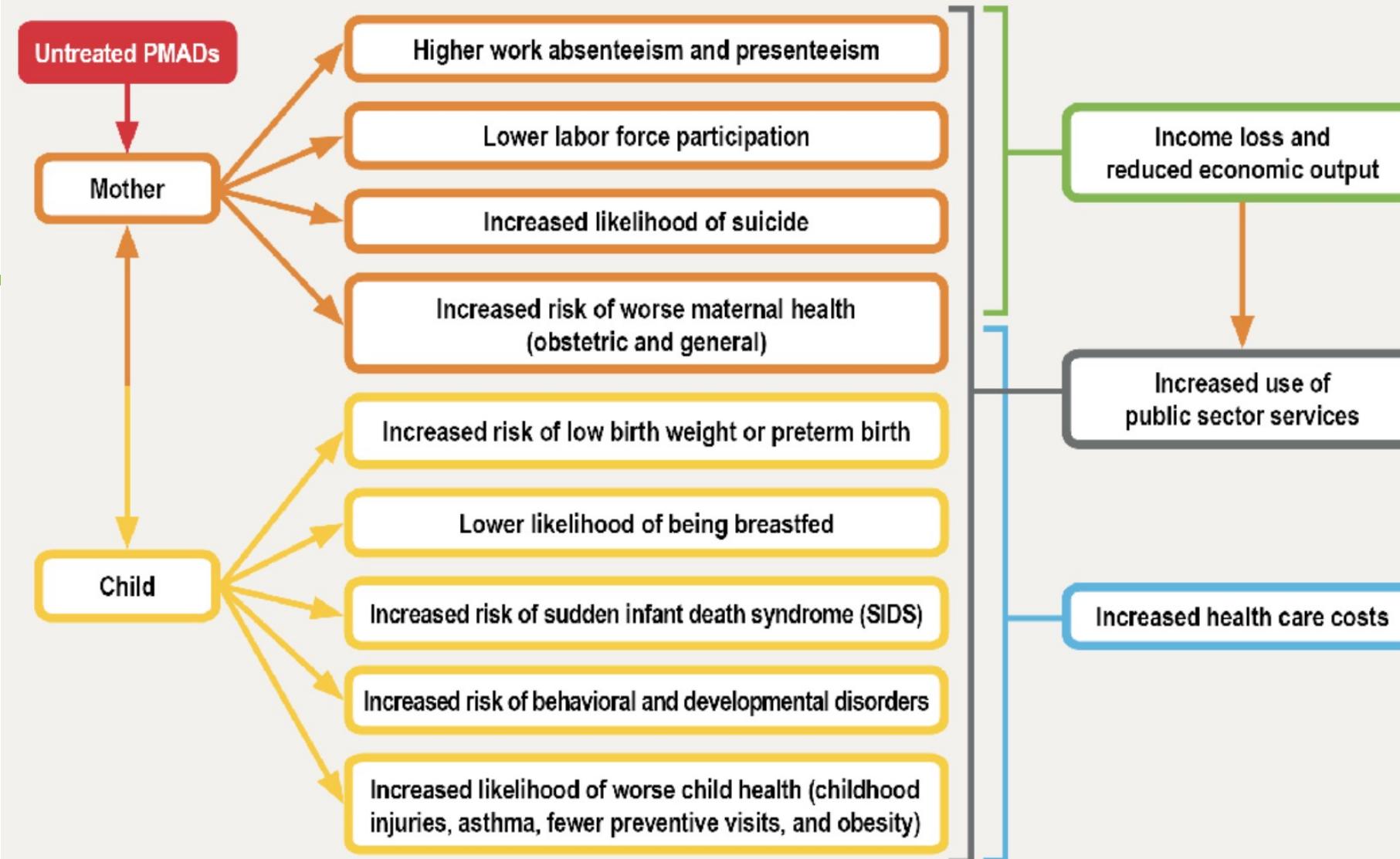


Figure 2.

•Luca et. al, 2019

Healthy Practices

- Folic acid supplementation
- Adequate sleep
- Balanced nutrition and hydration
- Regular physical activity
- Communicating with healthcare providers about management of existing chronic diseases
- Minimizing stress when possible
- Abstain from alcohol/tobacco/drugs
- Self care

Social and Structural Determinants of Health

- Access to stable housing
- Access to food/safe drinking water
- Utility needs
- Safety in home and community
- Immigration status
- Employment conditions
- Transportation
- Childcare
- Refer to social services if needed

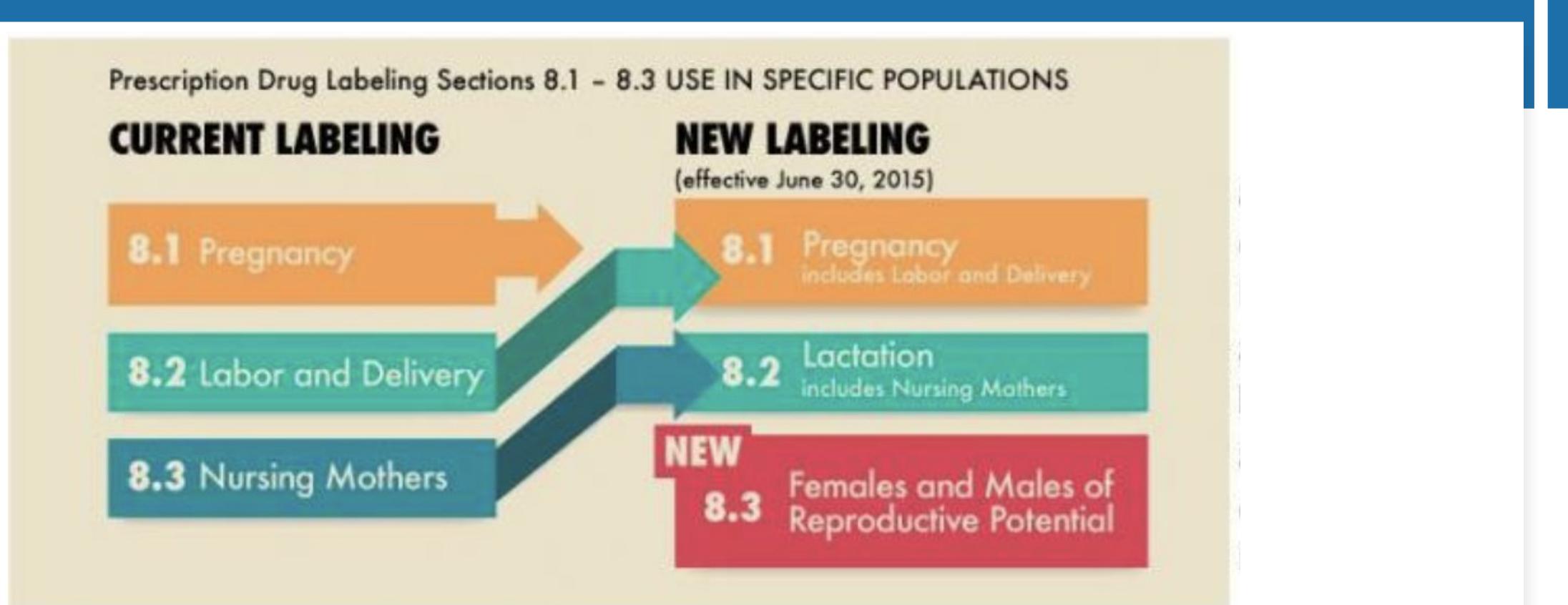
Assessing Risk

Table 1

Pregnancy Categories Prior to New Pregnancy and Lactation Labeling Rule²

Category	Risk	Examples
A	Adequate and well-controlled studies in pregnant women have failed to demonstrate a risk to the fetus in the first trimester of pregnancy.	Doxylamine Folic acid Levothyroxine
B	Animal reproduction studies have failed to demonstrate a risk to the fetus, and there are no adequate and well-controlled studies in pregnant women, or animal reproduction studies have shown adverse effects, but well-controlled studies in pregnant women have shown no adverse effects to the fetus.	Amoxicillin Loratadine Ondansetron
C	Animal reproduction studies have shown an adverse effect on the fetus, or there are no animal reproduction studies and no well-controlled studies in humans.	Fluconazole Metoprolol Sertraline
D	Positive evidence of fetal risk, but benefits may outweigh risks.	Lisinopril Lithium Phenytoin
X	Positive evidence of fetal risk, and risks clearly outweigh any possible benefit.	Methotrexate Simvastatin

Assessing Risk – Pregnancy and Lactation Labeling Rule (PLLR)



•Center for Drug Evaluation and Research. (2021).

Mild to Moderate Depression

- Lifestyle modifications & psychotherapy (CBT) recommended for mild depression
- If antidepressant needed: use lowest effective dose
 - Choose antidepressant that has worked before
 - If patient is doing well on an antidepressant, do not switch
- If antidepressant naïve: SSRI's should be considered first
 - **Sertraline or escitalopram** recommended first-line
- SNRI's second line
- Supratherapeutic doses may be needed in third trimester due to changes in physiology

Adverse Effects

- Persistent pulmonary hypertension of newborn (PPHN)
- Neonatal adaptation syndrome
- Neurodevelopmental delays
- Congenital cardiac outcomes
- Gestational diabetes
- Preeclampsia

Severe Depression

- ECT or TMS
- Effective for
 - Severe mood symptoms +/- catatonia
 - Psychotic agitation
 - Suicidality
 - Severe physical decline (malnourishment, dehydration)
- Generally used when pharmacotherapy fails

ECT

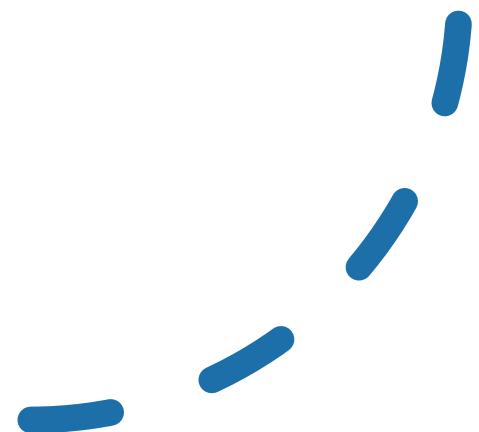
- Involves induction of a seizure and use of general anesthesia
- Typically 3x/week, most patients achieve remission in 6-12 sessions, then maintenance
- Possible side effects:
 - Time-limited neurocognitive effects
 - Prolonged seizure
 - Preterm contractions (avoid by hydrating with IV fluids)
 - Reaction to anesthesia

rTMS

- Effect is rapid (1-2 weeks)
- Well-tolerated
- No systemic effects
- No medication exposure to fetus/breastfeeding infant



Screening and Diagnosis: Postpartum Period



What is the most significant predictor of postpartum depression?

A) Treatment with antidepressant

B) Depression prior to pregnancy

C) Depression during pregnancy

D) Response to treatment prior to pregnancy

E) Good support system

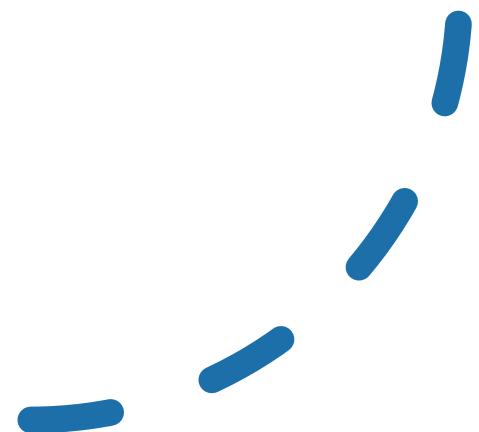
Postpartum Depression

- Can affect 15% of new mothers – higher in lower income countries
- Sleep disturbances, anxiety, irritability, feeling of overwhelm, obsessions with baby's health and feeding
- Strongest risk factor is untreated depression during pregnancy
- Risk for developing PPD is 7 times higher in women with untreated depression

Postpartum Blues

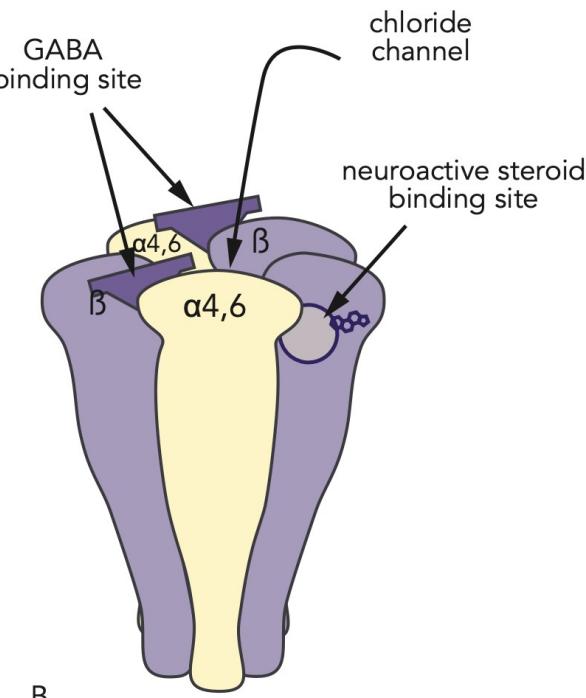
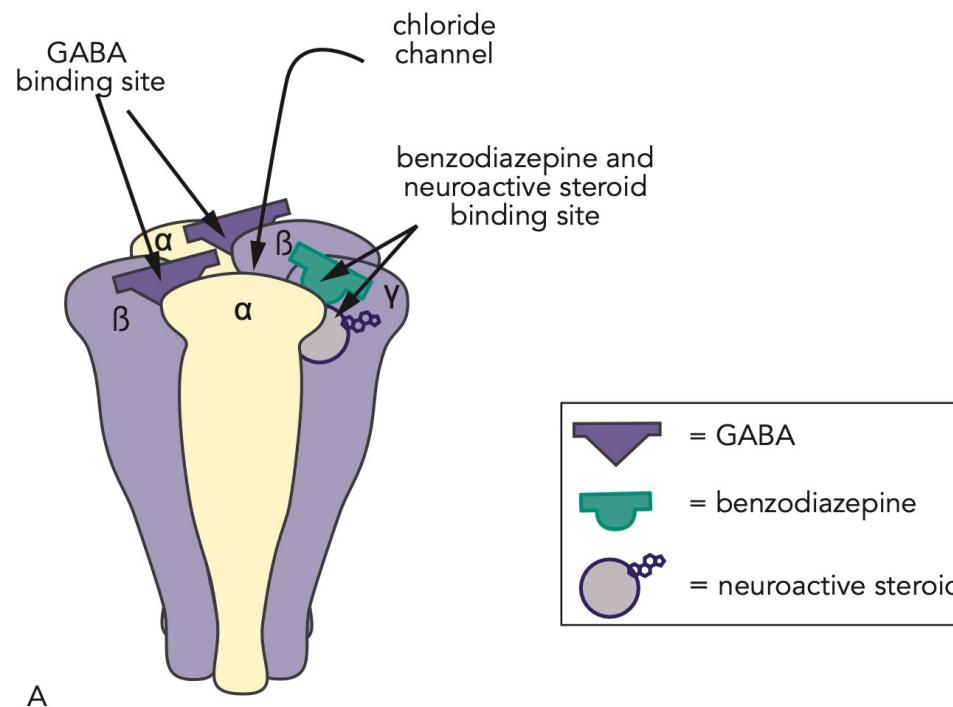
- Mood lability in the immediate postpartum period (2-5 days)
- Affects 70% of new mothers
- Weeping, sadness, mood lability, irritability, anxiety
- Resolves by 2 weeks postpartum
- Never associated with severe symptoms (i.e. suicidality)
- Doesn't significantly affect functioning
- Helps to make assessments across multiple time points

Treatment and Management: Postpartum



Moderate to Severe Depression

- Allopregnanolone: metabolite of progesterone, allosteric modulator of GABA-A receptor
- Medications such as brexanolone and zuranolone act as positive allosteric modulators at GABA-A

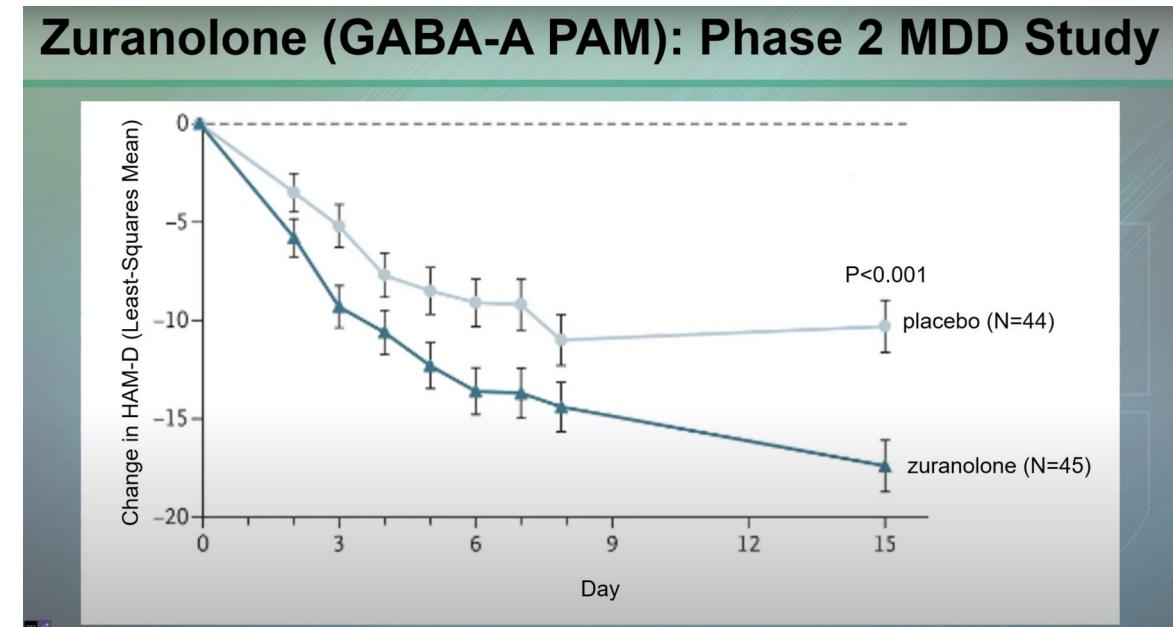


Brexanolone

- FDA approved in 2019
- IV analogue of allopregnanolone
- Two positive, controlled trials in postpartum depression (onset during third trimester of pregnancy or postpartum, presented within six months postpartum with MDD)
- Rapid onset of benefit (1-2 days), durable efficacy to 30 days
- Challenges: cost, inpatient stay (60 hours)

Zuranolone

- FDA approved in August 2023
- Nightly oral pill taken with a fatty meal for 14 days
- Participants experienced improvement in symptoms as early as day 3, effects persisted until day 42
- Adverse effects: headache, dizziness, somnolence, sedation
- Cost: \$15,900 for 14-day treatment cycle

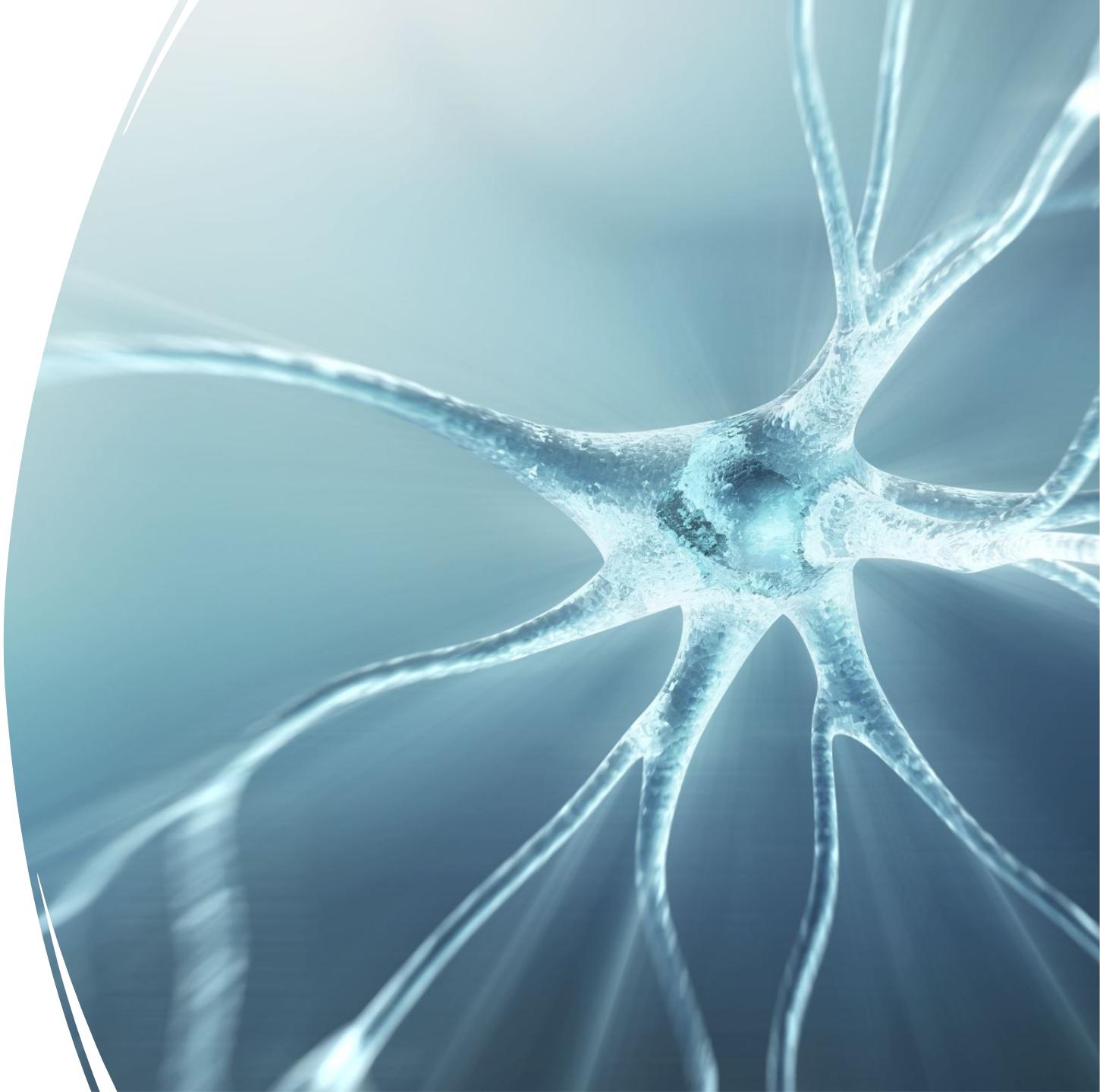


Gunduz-Bruce et al,
2019

Case Example

- 28 yo single mother of 3 month old son reports severe fatigue, general loss of interest, irritability, poor concentration, insomnia, low energy, tearfulness x 2 months
- She had similar symptoms for several weeks when she was 18 years old and again in mid-pregnancy— symptoms resolved spontaneously
- Not suicidal, not psychotic, no prior history of mania, feels she cannot cope
- How would we approach treatment?

Postpartum Psychosis



Lindsay Clancy

NBC NEWS Massachusetts woman charged with killing kids was a devoted mother and nurse, friends and colleagues wrote

CRIME & COURTS

Massachusetts woman charged with killing kids was a devoted mother and nurse, friends and colleagues wrote

In more than a dozen letters obtained by NBC News, those who know Lindsay Clancy describe her as someone who “lived and breathed for her children.”



A need for help that was not fulfilled

Reddington, her attorney, said Clancy had postpartum depression “and possibly postpartum psychosis” – a [rare condition](#) in which hallucinations alter people’s sense of reality after childbirth, sometimes driving them to harm themselves or their children.

“

“She had a special bond with all her children and was so proud to be a mom.”

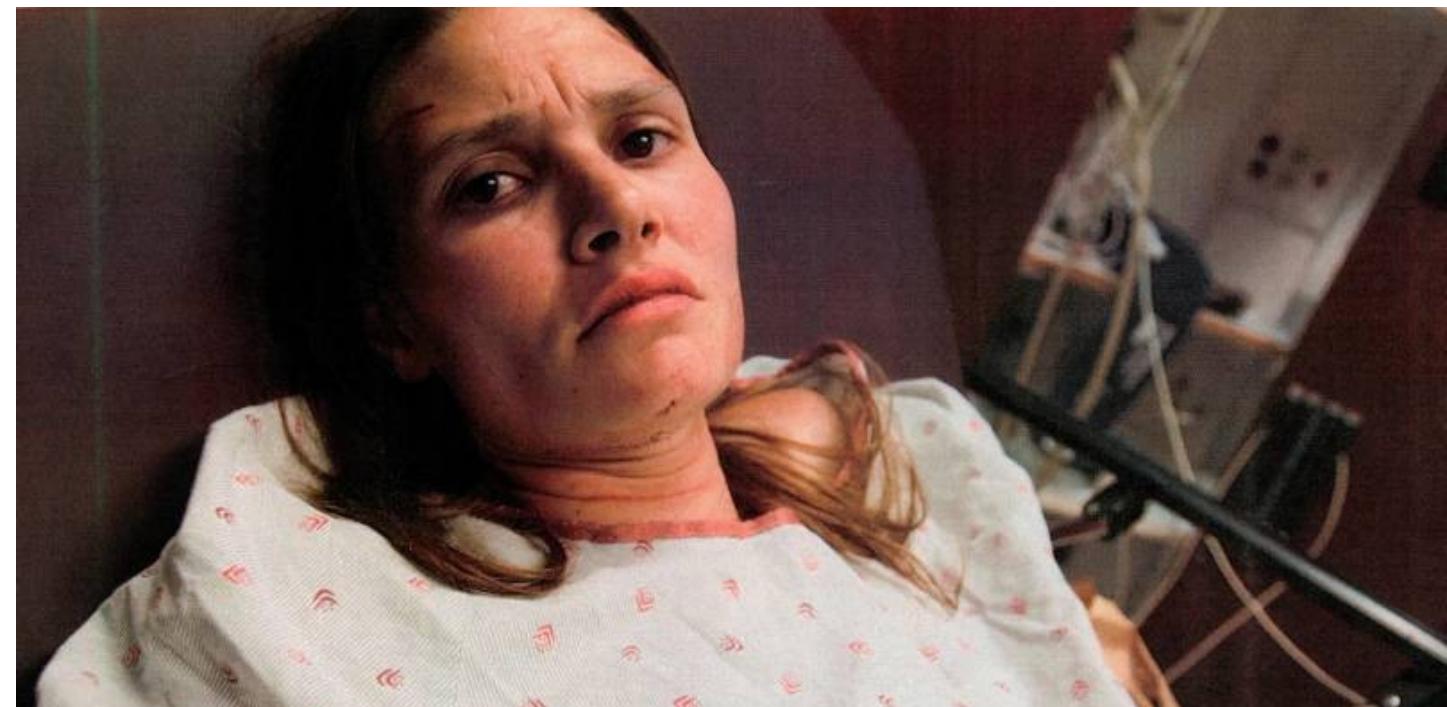
LINDSAY CLANCY'S LONG-TIME FRIEND

Chuck 2023

Carol's bizarre behavior, her confusion and detachment, she said, these are all symptoms of postpartum psychosis — and they can develop without warning.

"She will look disheveled, not just unkempt, but disheveled. She'll start to look glazed over," Barnes said. "She may be looking around as though she's taking things in from the environment that may or may not be there."

Carol Coronado



What is the incidence of postpartum psychosis?

A) 1 in 300

B) 1 in 100

C) 2 in 500

D) 2 in 1000

Postpartum Psychosis (PPP)

- Affects approx 2 in 1000 women
- True psychiatric emergency
- Risk of suicide and infanticide (~4% of women commit infanticide)
- Rapid onset
- Can be difficult to recognize
- Major risk factor is bipolar disorder
 - Half of women have no psychiatric history
- No validated screening tools
- Not formally recognized in DSM 5
 - Brief psychotic disorder with postpartum onset specifier

Risk Factors

**Previous history of postpartum
psychosis**

Personal history of bipolar disorder

Family history of bipolar disorder

**Family history of postpartum
psychosis**

Primiparity

**Discontinuation of maintenance
medication**

Clinical Presentation of PPP

- Onset within 3-10 days after birth
- Early prodromal symptoms are mild and nonspecific (insomnia, decreased need for sleep, mood fluctuation, anxiety, irritability)
- Progresses to frank mood disturbances (mania, hypomania, depressive symptoms, mixed)
- Can look like delirium with waxing and waning mental status changes, acute disorganization confusion
 - Assessments should be done across multiple time points

Clinical Presentation of PPP

- Women have a low incidence of symptoms such as thought insertion, withdrawal or broadcasting, hallucinatory voices giving running commentary, or social withdrawal
- Often present as delusions involving infant
- Patients with established thought disorder present with psychotic symptoms similar to those exhibited during their previous episodes

Differentiating PPP vs OCD

- In PPP, delusions are likely to be ego-syntonic with poor insight

TABLE 16-5. Assessing thoughts of harming baby

Secondary to obsessions/anxiety	Secondary to PPP/suspected PPP
Good insight	Poor insight
No psychotic symptoms	Psychotic symptoms
Thoughts are intrusive and scary and/or cause anxiety	Delusional beliefs with distortion of reality present
Suggests <i>not</i> at risk of harming baby	Suggests <i>is</i> at risk of harming baby

PPP=postpartum psychosis.

Case Example

- Ms X is a 26 yo woman brought to the ED by her partner. She is 4 days postpartum. Her pregnancy was planned and desired without medical complications.
- No prior psychiatric history, family history notable for sibling with bipolar disorder
- During the first couple of days, pt was “full of energy” and “captivated” by her infant.
- Over the last 24 hours, she has become “obsessed” with concerns that their daughter is showing signs of neurological damage despite reassuring visits to the pediatrician.
- Was found feeding the baby a bottle of water
- Pt appears confused and disoriented, told partner she was trying to “flush out the baby’s system” because she believed the baby had been fed contaminated breastmilk.
- Set thermostat to max heat because she believed the baby was hypothermic and needed to be warmed
- Mental status exam: guarded, mild psychomotor agitation, mood was irritable, thought process was tangential

Differential Diagnosis

Infection

Autoimmune
(lupus, anti-NMDA
encephalitis)

Hormonal
abnormalities
(thyroid)

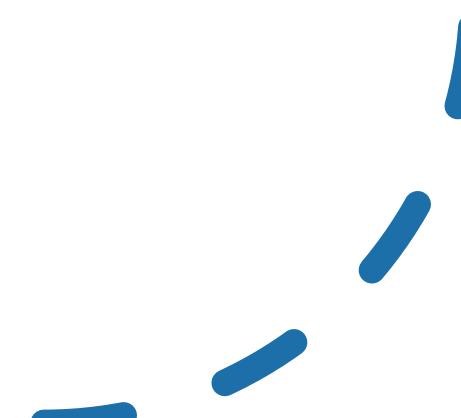
Medication
induced

Substance
intoxication or
withdrawal

Peripartum blood
loss and anemia

Workup

- CBC
- CMP
- TSH/T4
- Urinalysis
- Urine drug screen
- If neurological symptoms present, consider:
 - Autoimmune encephalitis and antibody screening
 - CSF
 - EEG
 - MRI
 - Serum ammonia



Treatment

- Inpatient psychiatric hospitalization likely necessary
- In the UK, mother baby units exist where both are admitted together
- Not available in the US – moms reluctant to separate from baby
 - May result in discharge when safety issues are resolved, but before complete stabilization is achieved
- 3 goals of pharmacological treatment:
 - Promote sleep
 - Improve psychosis
 - Stabilize mood

Treatment

- Lithium should be the initial treatment unless contraindicated
 - Showed lower rate of relapse by 9 months postpartum compared to antipsychotic monotherapy
- Known teratogen due to risk of Ebstein's anomaly (rare cardiovascular malformation) in first trimester
 - Ebstein's anomaly: 0.1% to 0.2% (risk ratio 10 to 20) – low absolute risk
- Excreted more rapidly during late pregnancy due to GFR changes. May need to increase dose
- After delivery, GFR decreases rapidly, should follow lithium levels during labor and delivery, adjust dose as needed

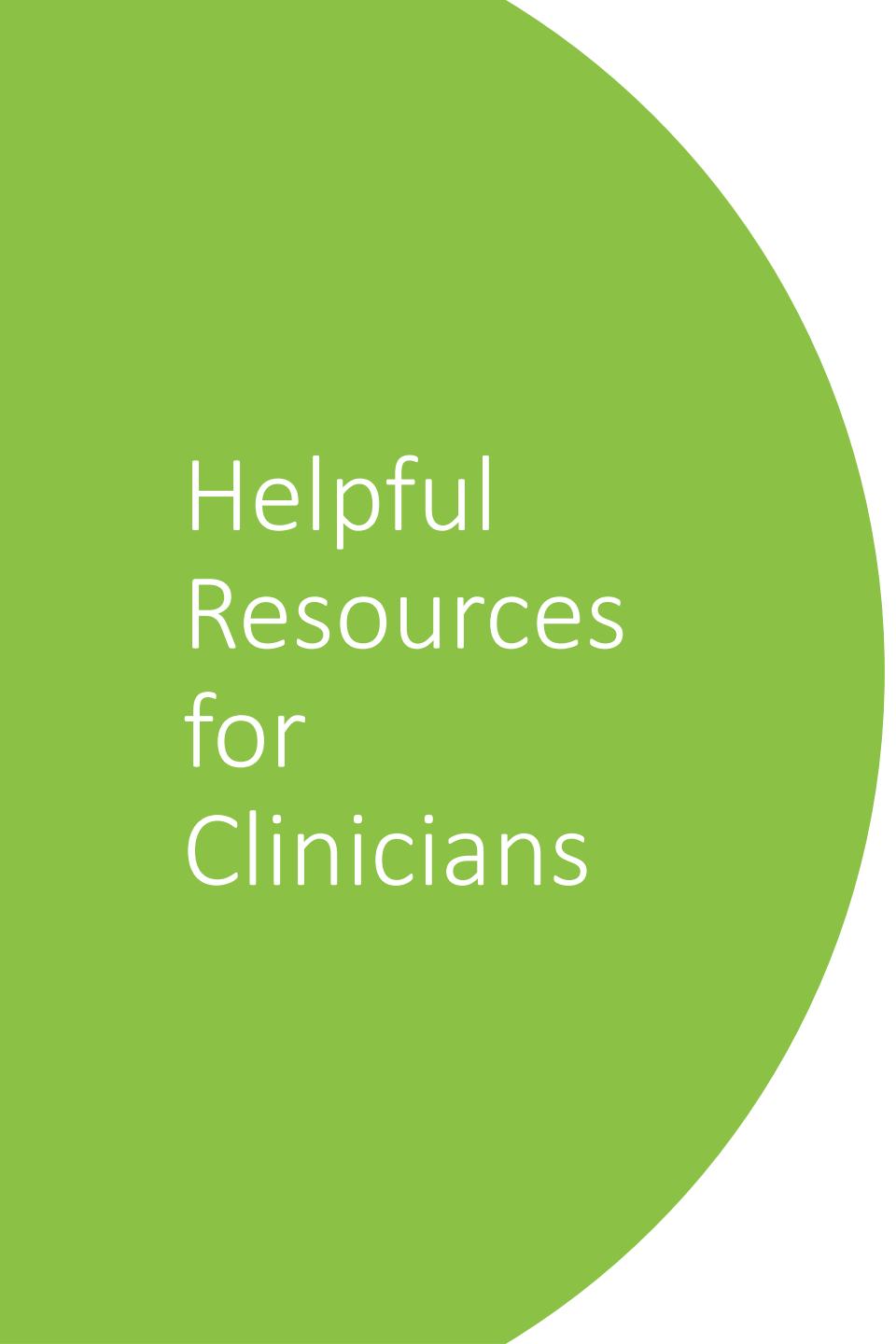
Hutner et al, 2022

Yonkers et al 2004

Newport et al 2005

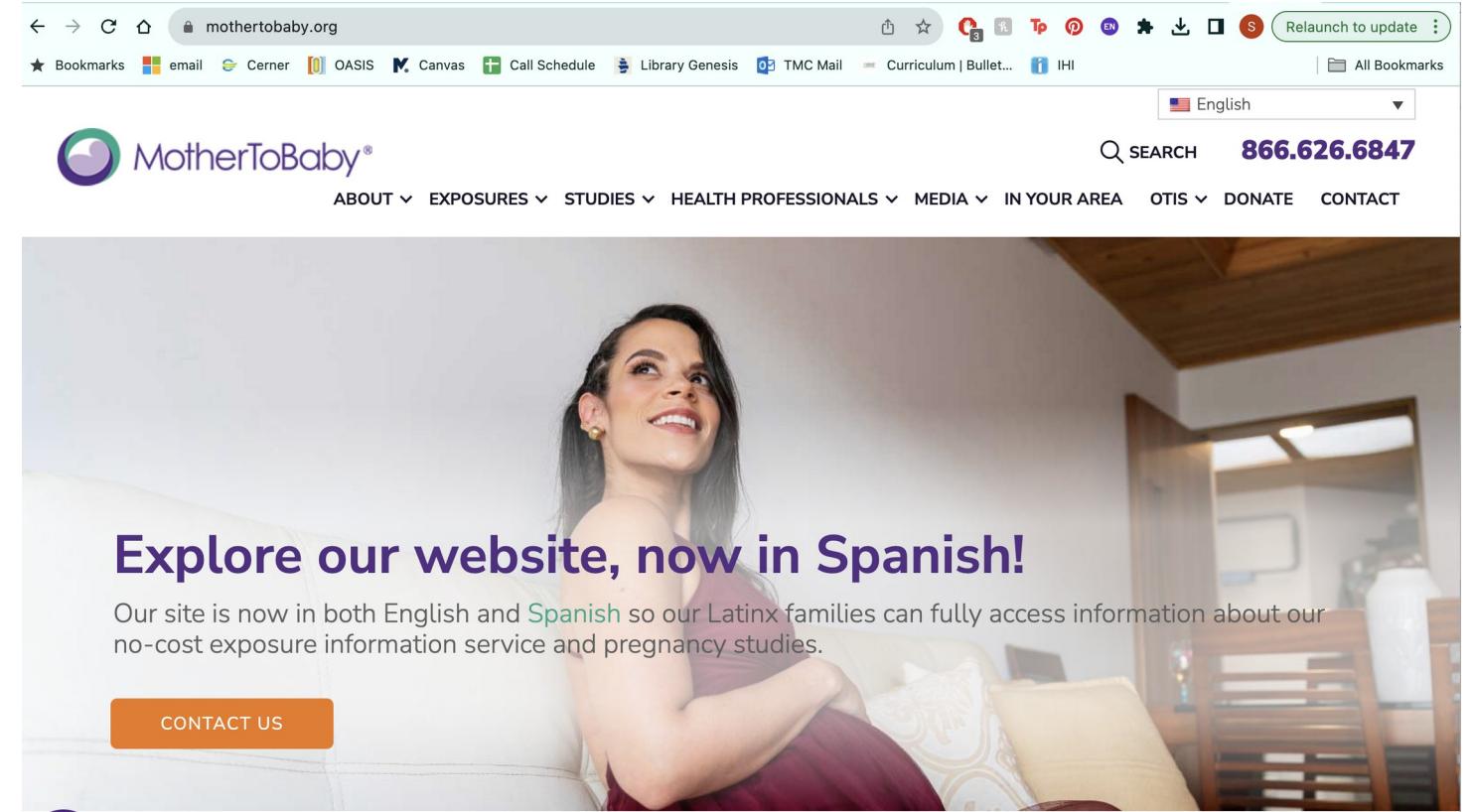
Treatment

- Antipsychotics and benzodiazepines should be considered adjunct treatments
- Maintenance treatment should be continued for 9 months after initial stabilization
- Women with prior history of PPP or established bipolar disorder should be treated prophylactically in postpartum period if not already on maintenance medication



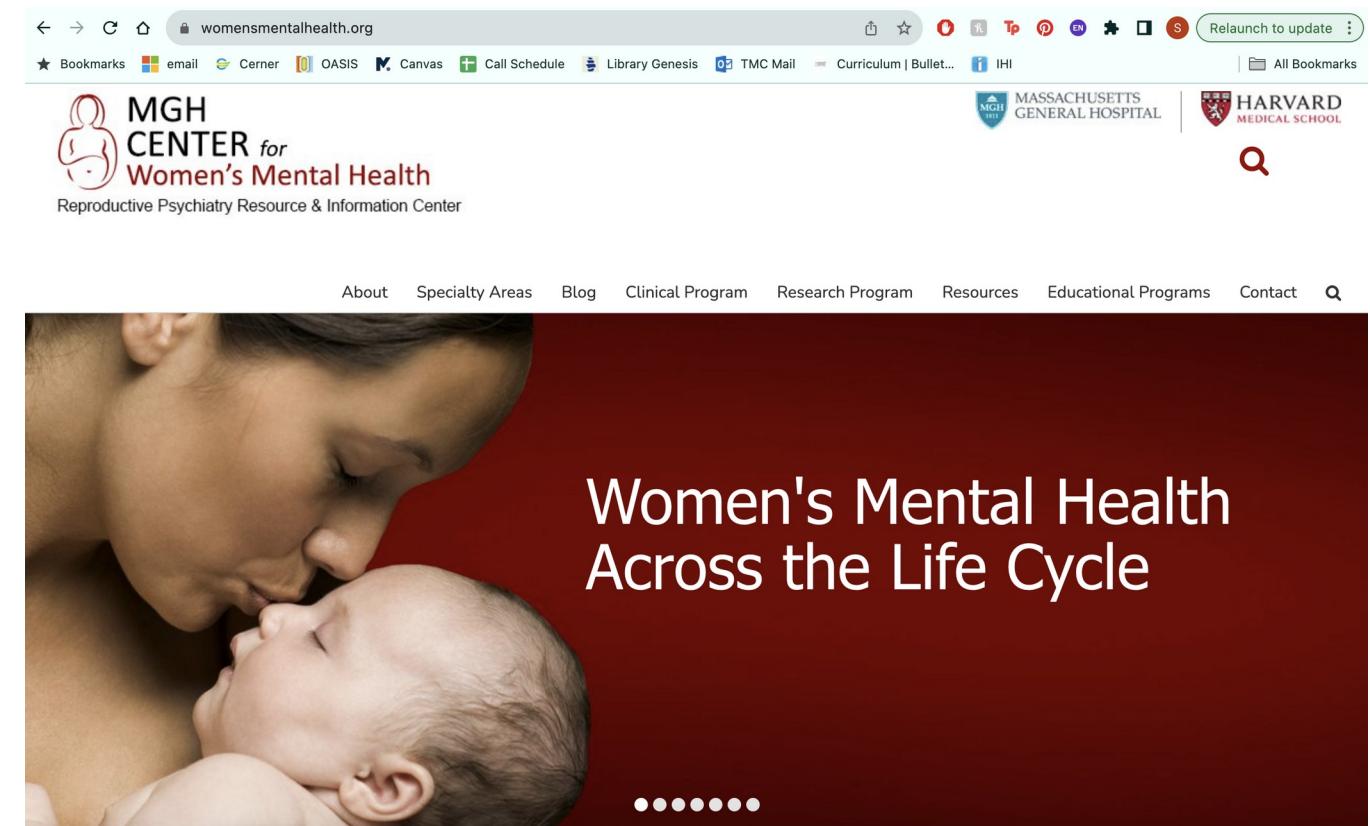
Helpful Resources for Clinicians

Mother to Baby



The screenshot shows the homepage of the MotherToBaby.org website. The header includes the MotherToBaby logo, a search bar, and a phone number (866.626.6847). The main navigation menu has links for ABOUT, EXPOSURES, STUDIES, HEALTH PROFESSIONALS, MEDIA, IN YOUR AREA, OTIS, DONATE, and CONTACT. A banner features a woman smiling and the text "Explore our website, now in Spanish! Our site is now in both English and Spanish so our Latinx families can fully access information about our no-cost exposure information service and pregnancy studies." A "CONTACT US" button is visible at the bottom of the banner.

MGH Center for Women's Mental Health



The screenshot shows a web browser window for the URL womensmentalhealth.org. The page header includes the MGH logo, the text "MGH CENTER for Women's Mental Health", and the subtitle "Reproductive Psychiatry Resource & Information Center". The header also features links for Bookmarks, email, Cerner, OASIS, Canvas, Call Schedule, Library Genesis, TMC Mail, Curriculum | Bullet..., IH, and All Bookmarks, along with social media icons for Relaunch to update, O, R, Tp, P, En, S, and a magnifying glass icon for search. The main content area features a large image of a woman kissing a baby's forehead. Overlaid on the image is the text "Women's Mental Health Across the Life Cycle" and a series of five dots at the bottom right. The navigation menu below the image includes links for About, Specialty Areas, Blog, Clinical Program, Research Program, Resources, Educational Programs, Contact, and a magnifying glass icon for search.

- Postpartum Support International offers a perinatal psychiatric consult line – free service staffed by volunteer reproductive psychiatrists who provide guidance

1.800.944.4773 MEMBER PORTAL



PERINATAL PSYCHIATRIC CONSULT LINE

Fill out this form to request an appointment with one of our psychiatric consultants.

Call 1-877-499-4773 and leave a voicemail or email Chrissy@postpartum.net if you have questions.

LactMed

ncbi.nlm.nih.gov/books/NBK501922/

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Help Disclaimer

Drugs and Lactation Database (LactMed®)

Bethesda (MD): National Institute of Child Health and Human Development; 2006-. Copyright and Permissions

Search this book



The LactMed® database contains information on drugs and other chemicals to which breastfeeding mothers may be exposed. It includes information on the levels of such substances in breast milk and infant blood, and the possible adverse effects in the nursing infant. Suggested therapeutic alternatives to those drugs are provided, where appropriate. All data are derived from the scientific literature and fully referenced. A peer review panel reviews the data to assure scientific validity and currency.

Contents

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(1-14C)-Triolein
(14C)-Glycocholic Acid

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Drugs and Lactation Database (LactMed) - Glossary

LactMed Selected References

Drugs and Lactation Database (LactMed) - About Dietary Supplements

ncbi.nlm.nih.gov/books/NBK501016/

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Relaunch to update

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Drug Levels and Effects

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Breastfeeding Links

Related Information

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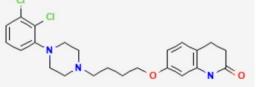
Relaunch to update

Aripiprazole

Last Revision: August 15, 2023.

Estimated reading time: 9 minutes

CASRN: 129722-12-9



Drug Levels and Effects

Go to:

Summary of Use during Lactation

Limited information indicates that maternal doses of aripiprazole up to 15 mg daily produce low levels in milk. Aripiprazole can lower serum prolactin in a dose-related manner. Cases of lactation cessation have occurred, but cases of gynecomastia and galactorrhea have also been reported. Weight loss and poor weight gain have been reported in breastfed infants whose mothers were taking aripiprazole. Until more data become available, an alternate drug may be preferred, especially while nursing a newborn or preterm infant.^[1]

Drug Levels

Maternal Levels: A woman who was 6 months postpartum was taking aripiprazole 15 mg by mouth daily. Milk levels

Discusses use during lactation, drug levels, and effects in breastfed infants. Example shown above for aripiprazole.

Heartburn Pepcid AC ⓘ

Currently displaying **Lactation Risk Category** preview. Tap to change.

FAMOTIDINE

Trade Names: Pepcid, Pepcid AC, Zantac 360

Overall Rating: ⓘ L2 - Limited Data-Probably Compatible

✓+	✓+	✓+	BIRTH	✓+	✓+	✓+
1st	2nd	3rd		0-6	6-12	12+
Trimester Months						

Pregnancy Overview

Several large retrospective, clinical trials examining the safety of famotidine in pregnant women have found no association between the drug and any adverse fetal outcome. Outcomes examined included ...[View More](#)

Lactation Overview

Famotidine is a typical histamine-2 receptor antagonist that reduces stomach acid secretion. Levels in milk are low.[View More](#)

Drug Overview

Drug Category: [Gastric Acid Secretion Inhibitor](#)

Side Effects: Headache, dizziness, diarrhea or constipation.

Usual Dose: 20-40 mg twice daily.

Relative Infant Dose ⓘ: 1.9%

Home ⓘ

Indication, medication, ingredient... Ⓢ

 Learn about the InfantRisk Center See More

Explore by Category [View All](#)

 RX  Otc  Conditions  Vitamins

Quick Links

[Call InfantRisk](#) [Reading Entries](#) [Rating Scale](#)

[App Updates](#)

Popular Searches

✓	DEXTROMETHORPHAN L3 - No Data-Probably Compatible	>
✓++	IBUPROFEN L1 - Extensive Data-Compatible	>
✓+	SERTRALINE L2 - Limited Data-Probably Compatible	>

News and Research

Apps:

InfantRisk

ReproTox

Take Home Points

- 50% of pregnancies are unplanned
- Treatment of perinatal mood disorders is collaborative to ensure that a thoughtful risk:benefit analysis is conducted. Always weigh the risks of underlying illness vs. risk of medication exposure during pregnancy or lactation
- Severe perinatal depression can be treated with pharmacotherapy, including novel agents such as synthetic neurosteroids, TMS, or ECT
- Postpartum psychosis is a true psychiatric emergency.
 - Lithium monotherapy has the most evidence

Conclusion

- “The perinatal period represents a unique moment of opportunity for patients and families to engage in positive changes that can affect not only the course of a woman’s psychiatric illness but also the well-being of her family.”

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