

Treating ADHD in Pregnancy & Postpartum

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General Disclosures

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Speaker Disclosures

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Learning Objectives

1. Apply a basic algorithm for how to approach ADHD in pregnancy and postpartum
2. Name some risks of untreated ADHD during pregnancy
3. Recognize risks and benefits of pharmacologic options for ADHD in pregnancy and postpartum
4. Describe non-pharmacologic strategies for ADHD

Epidemiology

- 3-4% prevalence of ADHD in adult women
- Comorbidities
 - Any mood disorder – 38%
 - Any anxiety disorder – 47%
 - Any substance use disorder – 15%

Louik et al 2015

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Prescribing Trends

- Adult diagnoses of ADHD have increased
- Use of ADHD meds in pregnancy has increased from 0.2% in 1997 to 1.3% in 2013
- Among women prescribed ADHD meds in pregnancy:
 - Amphetamine-dextroamphetamine (Adderall) = 57.5%
 - Methylphenidate (Ritalin, Concerta) = 29.9%
 - Lisdexamphetamine (Vyvanse) = 5.7%
 - Atomoxetine (Strattera) = 3.4%

Case

Sarah is a 28 year old woman with ADHD, depression, and anxiety who would like to get pregnant in the next year.

- Current meds: Adderall 30mg ER
- ADHD symptoms are well-controlled
- Depression and anxiety are in remission

Confirm the Diagnosis

- Inattentive and/or hyperactive symptoms
 - Adult ADHD Symptom Report Scale (ASRS)
- Symptoms cause impairment in two or more domains
- Age of onset, school history
- Rule out other potential causes (sleep apnea, anxiety, depression, substance use disorder)

What are the risks of stopping meds?

- Functional impairment
 - Poor work performance, loss of employment
 - Decreased ability to care for older children
- Comorbidities
 - Increased anxiety or depression
 - Increased risk of substance use disorders & tobacco dependence
- Safety
 - Impulsivity
 - Driving risk, accidents
- Possible pregnancy outcomes associated with untreated ADHD
 - Miscarriage, preterm birth, NICU admissions

What are non-medication options?

- Psychoeducation
- CBT for ADHD
 - Skills for task management and organization
 - Addressing common cognitive distortions
- Coaching
- ADHD support groups
- Reduce workload if possible
- Use public transport instead of driving

Sarah

- You've confirmed the diagnosis is correct
- Her symptoms are severe
- When her ADHD was previously untreated, her boss noticed decreased work performance, her depression and anxiety were much worse, and she smoked cigarettes
- She is the sole breadwinner in her family
- She has already completed CBT for ADHD and attends a support group regularly
- She says "There is no way I can make it through this pregnancy without a medication for my ADHD. I'll lose my job or start smoking again."

If you are thinking about meds ...

- Has she had a trial period off of medication in the past? What happened?
 - If not, conduct a trial and track symptoms
- Has she failed other medications in the past?
- Is there time to trial a safer medication for pregnancy?
 - Meds can be started/stopped quickly with fast effects

What are the medication options?

- Stimulants – increase synaptic dopamine
 - Methylphenidate (Ritalin, Metadate, Concerta), dexamethylphenidate (Focalin)
 - Amphetamine-dextroamphetamine (Adderall), dextroamphetamine (Dexedrine), lisdexamphetamine (Vyvanse)
- Non-stimulants
 - Bupropion (Wellbutrin) – norepinephrine-dopamine reuptake inhibitor
 - Atomoxetine (Strattera) – norepinephrine reuptake inhibitor
 - Guanfacine, clonidine – alpha 2 adrenergic agonists

ADHD Medications in Pregnancy

	Early Pregnancy	Late pregnancy	Breastfeeding?
Methylphenidate	No consistent association with overall defects (~5000 exposures); possible small increased risk of cardiac septal defects (NNH estimates range from 92-333); possible increased risk spontaneous abortions.	Small increased risk of preterm birth. Possible increased risk of preeclampsia, SGA, placental abruption, low Apgar score, NICU admission, CNS disorders, induced terminations	Low levels in breastmilk, undetectable in infant serum. Limited data without adverse effects
Prescribed amphetamines	No consistent association with malformations (~5500 exposures).	Small increased risk of preterm birth and preeclampsia. Possible increased risk of SGA, placental abruption, NICU admission, CNS disorders.	Infant dose 5-15% maternal dose. Very limited data without adverse effects.
Bupropion	No consistent association with malformations (~2300)	No adverse effects (small studies)	Nursing infant exposed to 2% maternal dose; 2 case reports of seizures at 6 months
Atomoxetine	No consistent association with malformations (~450 exposures)	Mixed evidence (~700 exposures)	Unknown
Guanfacine	Too few exposures to say (~30)	Low birth weight (very small studies)	Unknown
Clonidine	No based on data from women with HTN	Reduced fetal growth	Excreted in breast milk. Adverse events reported (hypotonia, drowsiness, apnea, seizure)

What are the risks of stimulants in pregnancy?

- 2005 Expert Panel of the Center for the Evaluation of Risks to Human Reproduction concluded insufficient information to comment
- More studies since 2005
 - ~9000 exposures to prescribed amphetamines
 - ~7000 exposures to prescribed methylphenidate
- Issues with these studies
 - Treatment groups have psychiatric comorbidities, take more medical and psychotropic medications, and use alcohol, tobacco, and other substances.
 - Women with more severe ADHD are more likely to remain on stimulants during pregnancy

Methylphenidate in Pregnancy

Methylphenidate	No consistent association with overall defects (~5000 exposures); possible small increased risk of cardiac septal defects (NNH estimates range from 92-333); possible increased risk spontaneous abortions.	Small increased risk of preterm birth. Possible increased risk of preeclampsia, SGA, placental abruption, low Apgar score, NICU admission, CNS disorders, induced terminations	Low levels in breastmilk, undetectable in infant serum. Limited data without adverse effects
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This translates to an increase in the rate of cardiac malformations from 10 per 1000 births to 13-21 per 1000 births.

High doses may interfere with milk supply.

Amphetamine Abuse in Pregnancy

- No consistent association with malformations
- Increased risk of miscarriage, gestational hypertension, preeclampsia, placental abruption, preterm birth, IUGR, lower Apgar scores, fetal/neonatal/infant death
 - Proposed mechanism of action: Vasoconstriction --> Decreased uteroplacental perfusion
- Withdrawal symptoms at birth (poor feeding, sleeping disruption, abnormal muscle tone, jitteriness, breathing difficulties)
- Children have increased risk of learning difficulties, behavioral problems, externalizing disorders, anxiety, depression, structural brain changes on MRI

Prescribed Amphetamines in Pregnancy

Prescribed amphetamines	No consistent association with malformations (~5500 exposures).	Small increased risk of preterm birth and preeclampsia. Possible increased risk of SGA, placental abruption, NICU admission, CNS disorders.	Infant dose 5-15% maternal dose. Very limited data without adverse effects.
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Preterm birth OR ~1.3
Preeclampsia OR ~1.3

High doses may interfere with milk supply.

Tips for Prescribing Stimulants in Pregnancy

- Use the lowest dose possible
- Skip days if possible (e.g. weekends)
- Augment with non-pharmacologic strategies (CBT for ADHD, coaching)
- Monitor BP, maternal weight gain, and fetal growth

Non-Stimulants in Pregnancy

Bupropion	No consistent association with malformations (~2300)	No adverse effects (small studies)	Nursing infant exposed to 2% maternal dose; 2 case reports of seizures at 6 months
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Possible increased risk
of miscarriage

Atomoxetine	No consistent association with malformations (~450 exposures)	Mixed evidence (~700 exposures)	Unknown
Guanfacine	Too few exposures to say (~30)	Low birth weight (very small studies)	Unknown
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Treatment algorithm

Mild ADHD without comorbidities	<ul style="list-style-type: none">• Discontinue medication• Optimize non-pharm strategies
Moderate ADHD with functional impairment +/- associated comorbidities	<ul style="list-style-type: none">• Assess for comorbidities• Optimize non-pharm strategies• Consider bupropion vs. prn stimulant
Severe ADHD with functional impairment + comorbidities	<ul style="list-style-type: none">• Continue stimulant at lowest effect dose (consider weekend drug holidays)• Monitor maternal BP & weight gain, monitor fetal growth• Optimize non-pharm augmentation strategies

Sarah

- Severe symptoms, sole breadwinner, failed bupropion, already did CBT for ADHD, has experienced depression/anxiety off meds as well as smoking
 - Doing well on Adderall, wants to take a med, understands the risks
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- Alternatively, what if Sarah's ADHD had been moderate, she was a non-smoker, she had never tried any other medications, and she worked part-time with a supportive partner and parent to help with childcare?

What if Sarah were already pregnant?

- Minimize exposures to the fetus

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Contact

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