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Obstetric management of women with opioid use disorder



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ABSTRACT

Pregnancy presents a window of opportunity for effecting positive change in the lives of women with opioid use disorder (OUD). Care should be empathetic and nonjudgmental with a focus on counseling for initiation and maintenance of beneficial health behaviors as well as development of a strong patient-provider relationship.¹ These include adherence to treatment of OUD through pharmacotherapy and behavioral counseling, smoking cessation, healthy nutrition, treatment of coexisting medical and psychosocial conditions, as well as preparation for the postpartum period through breastfeeding education and antenatal discussion of contraception. Women will also benefit from anticipatory guidance with regard to neonatal abstinence syndrome (see Chapter 7). This may include a consultation with pediatric or neonatal providers who will be caring for their infants. In the absence of other obstetric indications, minimal additional fetal assessment outside that of standard prenatal care is recommended for OUD.

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Maternal assessment and harm reduction

Urine toxicology screening

Urine toxicology should be checked periodically during pregnancy in women with OUD. If the patient is receiving pharmacotherapy from another location, such as a methadone clinic, this should be coordinated among providers so as not to be redundant. Informed consent, preferably with a signed paper or electronic form, should be obtained prior to urine collection. This should not be done with punitive intention, but rather to help women demonstrate good adherence and build trust. Additionally, it may provide an opportunity to discuss ongoing illicit substance

use, which may be indicative of inadequate treatment. Women should be asked if they expect any positive results other than pharmacotherapy. Confirmatory testing with gas chromatography or mass spectrometry should be performed in the event of a positive result.²

Prescription drug monitoring program (PDMP)

At the initial prenatal visit and periodically during subsequent prenatal care, providers should consult the PDMP to detect any ongoing use of prescription substances.² This similarly provides an opportunity to address possibly inadequate treatment if there is ongoing misuse of prescription substances. This should be done again prior to discharge home after delivery if providing a prescription for opioids for pain control.

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Involvement of social services

Providers need to familiarize themselves with the laws in their states with regard to reporting of substance use. Twenty-four states and the District of Columbia mandate reporting of suspected substance use during pregnancy. Twenty-three states and the District of Columbia consider substance use during pregnancy to be child abuse under civil child welfare statutes, and there are three states in which this is ground for civil commitment³ (Table 1). Most hospitals require that informed consent be obtained prior to screening or testing for substance use. At the time of testing, patients need to be made aware of potential consequences of a positive result.

Unfortunately, these laws are often counterproductive, in that they do not reduce recidivism, and fear of legal consequences can present a significant barrier to care for pregnant women with OUD.^{4–8} It is the ethical obligation of obstetrical providers to advocate against the separation of mothers and infants on the basis of substance use disorder (SUD) alone.⁹ Although circumstances vary, patients should be reassured that demonstrating good adherence to treatment for OUD will be viewed positively.

Harm reduction

All women with OUD should be provided with prescriptions for naloxone and education in how to use it in order to prevent death from overdose. Support people should also be educated in how to administer intranasal naloxone. Naloxone precipitates acute withdrawal, which can negatively impact the fetus, with fetal seizures and even death being the most serious consequences. At standard doses, however, these consequences are significantly less likely than the chance of respiratory compromise in the event of overdose, which could lead to both maternal and fetal death.¹⁰ In addition to naloxone administration, pregnant women who experience overdose should be transported to a hospital with maternity care for maternal and fetal assessment.

For patients with continued use of intravenous illicit opioids, needle exchange programs and supervised injection sites may reduce the chance of harm in locations where these services are available. An overview of 13 systematic reviews of needle exchange programs concluded that more high quality studies are needed.¹¹ A systematic review of supervised injection facilities found that they reduce overdose frequency.¹² If unavailable, providers should discuss the

Table 1 – State policies on substance use in pregnancy.

State	Child abuse	Grounds for civil commitment	Mandatory reporting of suspected substance use	Mandatory testing for suspected substance use
Alabama	X			
Alaska			X	
Arizona	X		X	
Arkansas	X		X	
California			X	
Colorado	X		X	
District of Columbia	X		X	
Florida	X			
Illinois	X		X	
Indiana	X			X
Iowa	X		X	X
Kentucky	X		X	X
Louisiana	X		X	X
Maine			X	
Massachusetts			X	
Michigan			X	
Minnesota	X	X	X	X
Missouri	X			
Montana			X	
Nevada	X		X	
North Dakota	X		X	X
Ohio	X		X	
Oklahoma			X	
Pennsylvania			X	
Rhode Island	X		X	X
South Carolina	X			
South Dakota	X	X	X	X
Texas	X			
Utah	X		X	
Virginia	X		X	
Washington	X			
Wisconsin	X	X	X	

Adapted from the Guttmacher Institute “State Policies on Substance Use in Pregnancy”.³

importance of avoiding sharing of paraphernalia and recommend using in the presence of another who could administer naloxone in the event of overdose. Further discussion of screening for and treating medical complications of pregnancy such as hepatitis and HIV can be found in Chapter 5.

Co-occurring psychiatric disease and behavioral therapy

Co-occurring psychiatric disease and history of trauma are common among patients with OUD. A study of 106 pregnant women with OUD found that 73% met criteria for a co-occurring Axis I mood disorder. Women with co-occurring mood disorders were significantly more likely to have positive urine drug screens throughout their care and had lower drug treatment attendance than women with either no psychiatric disorder or women with a co-occurring anxiety disorder ($p < 0.05$).¹³ A large retrospective cohort study showed that people with a history of 5 or more adverse childhood events (ACEs), such as physical, emotional, or sexual abuse, were 7–10 times more likely to have a substance use disorder.¹⁴ Behavioral therapy, either individual, group, or both, is therefore an important component of treatment for OUD in pregnancy.

Fetal assessment

Fetal growth

Several studies have demonstrated an association between opioid use and low birthweight (LBW) or small for gestational age (SGA).^{15,16} For this reason, we recommend a third trimester growth ultrasound, performed between 28 and 32 weeks. One study found that this association was maintained after adjusting for cigarette smoking,¹⁷ which is highly prevalent in this patient population. Infants born to women receiving treatment for OUD have significantly lower odds of low birthweight (LBW) than those born to women with untreated OUD.¹⁸ It should be noted that there is significant heterogeneity of practice with regard to sonographic assessment of fetal growth in this population. This ranges from no growth ultrasound for women with treated OUD, in the absence of ongoing illicit substance use or other risk factors, to serial growth ultrasounds.

Fetal surveillance

There are no data to support antenatal fetal testing with non-stress tests (NST) or biophysical profiles (BPP) in women with opioid use disorder in the absence of other medical or obstetric indications for testing. At our institution, we therefore do not perform antenatal testing for this indication, though it may be considered for patients with ongoing use of illicit substances.

It should be noted that the fetal heart rate is affected by pharmacotherapy in several ways. Methadone has been shown to decrease the fetal heart rate baseline, variability and accelerations.^{19,20} This results in an increase in the incidence of nonreactive testing as well as time to achieve reactivity.^{21,22} The effect of decreased baseline, variability and

accelerations is also seen with buprenorphine, though to a lesser degree.^{23,24} BPPs take longer to complete in women treated with methadone.²⁵

If antenatal testing is performed for a patient on methadone, we recommend that this be done at least 4–6 h after the patient receives her daily dose to reduce the risk of falsely nonreactive testing. This can also be achieved by performing NSTs prior to dosing.²⁶ This delay may not be necessary for patients on buprenorphine since the effect is less.

Timing and mode of delivery

Delivery is recommended for obstetric indications. Delivery prior to 39 weeks in absence of co-existing medical or obstetric indications is typically not recommended. Mode of delivery should likewise be determined by obstetric indications.

Monitoring during pharmacotherapy initiation

There are no studied fetal heart rate monitoring protocols during initiation of pharmacotherapy with methadone or buprenorphine. Our practice is to perform at least daily NSTs in women undergoing inpatient pharmacotherapy initiation after 24 weeks of gestation. This is also what we would recommend in the case of medically assisted withdrawal (see Chapter 3). Frequency of NSTs may be increased if there is added concern about a patient or in the event of co-occurring obstetric indications. Since outpatient initiation of pharmacotherapy typically occurs at a slower rate, there is likely not a need for NSTs. Of note, there is a lack of evidence to guide the decision to initiate pharmacotherapy in the inpatient versus outpatient setting in pregnancy. Some institutions initiate pharmacotherapy as an inpatient after viability. However, in many places women are not admitted for this indication.

Preparation for the postpartum period

Breastfeeding

Breastfeeding should be strongly supported for women with OUD on pharmacotherapy. Breastfeeding has been shown to decrease neonatal abstinence syndrome (NAS) severity, reduce need for treatment of NAS, and decrease neonatal length of stay for treatment of NAS in infants born to mothers with OUD who are on pharmacotherapy.^{27–29} Patients should be aware that breastfeeding is not advised if there is concurrent use of illicit substances, including marijuana, due to the potential for adverse neonatal outcomes. Women with OUD should be made aware that toxicology screening may be performed on the neonate, and mothers may be prohibited from breastfeeding if this is positive for substances other than the pharmacotherapy or pain control agents received peripartum. Breastfeeding is contraindicated in women with Human Immunodeficiency Virus (HIV). It is not contraindicated for women with Hepatitis C Virus (HCV) (see Chapter 5). However, women with OUD and HCV may have significant hesitation and fears about breastfeeding due to inaccurate information obtained from peers and other providers, and reassurance should be provided.

Contraception counseling

Pregnant women with OUD should receive antenatal counseling on options for postpartum contraception, with an emphasis on long-acting reversible contraception (LARC). However, this should be done within a framework of reproductive justice with the goal of empowering women with regard to achieving their desired interpregnancy spacing and family size, rather than sending a message of judgment about suitability of parenthood. Research has demonstrated significant disparity in this population with regard to contraception. A systematic review found that women with SUD were less likely to use contraception than women without SUD (56% vs. 81%).³⁰ In addition, a large retrospective cohort study of 7805 women with OUD found only 7.4% utilized a highly effective method (LARC or female sterilization). Use of LARC was associated with a longer interpregnancy interval (HR 0.43, 95% CI 0.26–0.69).³¹

Conclusion

Prenatal care for women with OUD should be provided in a non-judgmental and empathetic manner. There is a role for ongoing screening for other substances and for encouraging treatment with pharmacotherapy. Prenatal care provides a unique opportunity to educate patients and their supporters about naloxone for prevention of overdose. Outside of these general principles, standard obstetrical care is not substantially impacted. A growth scan is recommended at 28–32 weeks given the association between opioid use and growth restriction. Fetal surveillance is not indicated on the basis of opioid use alone. Similarly, OUD does not affect the timing or mode of delivery. Guidance related to pain management intrapartum and postpartum is included in Chapter 4. More information about models of care for women with OUD with emphasis on integrated, multidisciplinary care can be found in Chapter 2.

Disclosure

The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

REFERENCES

- Krans EE, Rothenberger SD, Bogen DL. Caring for opioid-dependent pregnant women: prenatal and postpartum care considerations. *Clin Obstet Gynecol*. 2015;58(2):370–379.
- Substance Abuse and Mental Health Services Administration. *Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants*. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2018 HHS Publication No. (SMA) 18-5054.
- Guttmacher Institute. Substance use during pregnancy. <https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy>; 2018 Accessed July 29, 2018.
- Sutter MB, Gopman S, Leeman L. Patient-centered care to address barriers for pregnant women with opioid dependence. *Obstet Gynecol N Am*. 2017;44:95–107.
- Krans EE, Patrick SW. Opioid use disorder in pregnancy: health policy in the midst of an epidemic. *Obstet Gynecol*. 2016;128(1):4–10.
- Jones HE, Deppen K, Hudak ML, et al. Clinical care for opioid-using pregnant and postpartum women: the role of obstetric providers. *Am J Obstet Gynecol*. 2014;210(4):302–310.
- Terplan M, Kennedy-Hendricks A, Chisolm MS. Prenatal substance use: exploring assumptions of maternal unfitness. *Substance Abuse*. 2015;9:1–4.
- Flavin J, Paltrow LM. Punishing pregnant drug-abusing women: defying law, medicine, and common sense. *J Addict Dis*. 2010;29(2):231–244.
- Committee on Obstetric Practice. Committee opinion no. 711: opioid use and opioid use disorder in pregnancy. *Obstet Gynecol*. 2017;130:e81.
- Blandthorn J, Bowman E, Leung L, et al. Managing opioid overdose in pregnancy with take-home naloxone. *Aust N Z J Obstet Gynaecol*. 2017. <https://doi.org/10.1111/ajo.12761>.
- Fernandes RM, Cary M, Duarte G, et al. Effectiveness of needle and syringe programmes in people who inject drugs—an overview of systematic reviews. *BMC Public Health*. 2017;17(309):1–15.
- Potier C, Lapr evote V, Dubois-Arber F. Supervised injection services: what has been demonstrated? A systematic literature review. *Drug Alcohol Depend*. 2014;145:48–68.
- Fitzsimons HE, Tuten M, Vaidya V, et al. Mood disorders affect drug treatment success of drug-dependent women. *J Subst Abuse*. 2007;32:19–25.
- Dube SR, Felitti VJ, Dong M, et al. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. *Pediatrics*. 2003;111(3):564.
- Nirgaard M, Nielsson MS, Heide-Jrgensen U. Birth and neonatal outcomes following opioid use in pregnancy: a Danish population-based study. *Subst Abuse*. 2015;9(s2):5–11.
- Cleary BJ, Donnelly JM, Strawbridge JD, et al. Methadone and perinatal outcomes: a retrospective cohort study. *Am J Obstet Gynecol*. 2011;204:139.e1–139.e9.
- Mactier H, Shipton D, Dryden C, et al. Reduced fetal growth in methadone-maintained pregnancies is not fully explained by smoking or socio-economic deprivation. *Addiction*. 2014;109:482.
- Kotelchuck M, Cheng ER, Belanoff C, et al. The prevalence and impact of substance use disorder and treatment on maternal obstetric experiences and birth outcomes among singleton deliveries in Massachusetts. *Matern Child Health J*. 2017;21:893.
- Jansson LM, Dipietro J, Elko A. Fetal response to maternal methadone administration. *Am J Obstet Gynecol*. 2005;193:611.
- Ramirez-Cacho WA, Flores S, Schrader RM, et al. Effect of chronic maternal methadone therapy on intrapartum fetal heart rate patterns. *J Soc Gynecol Investig*. 2006;13:108.
- Archie CL, Lee MI, Sokol RJ, et al. The effects of methadone treatment on the reactivity of the nonstress test. *Obstet Gynecol*. 1989;74:254.
- Levine AB, Rebarber A. Methadone maintenance treatment and the nonstress test. *J Perinatol*. 1995;15:229.
- Jansson LM, Dipietro JA, Velez M, et al. Fetal neurobehavioral effects of exposure to methadone or buprenorphine. *Neurotoxicol Teratol*. 2011;33:240.
- Janson LM, Velez M, McConnell K, et al. Maternal buprenorphine treatment and fetal neurobehavioral development. *Am J Obstet Gynecol*. 2017;216:529.e1.
- Cejtin HE, Mills A, Swift EL. Effect of methadone on the biophysical profile. *J Reprod Med*. 1996;41:819.
- Anyagbunam A, Tran T, Jadali D, et al. Assessment of fetal well-being in methadone-maintained pregnancies: abnormal nonstress tests. *Gynecol Obstet Invest*. 1997;43:25.
- Abdel-Latif ME, Pinner J, Clews S, et al. Effects of breast milk on the severity and outcome of neonatal abstinence syndrome among infants of drug-dependent mothers. *Pediatrics*. 2006;117(6):e1163–e1169.

28. Bagley SM, Wachman EM, Holland E, et al. Review of the assessment and management of neonatal abstinence syndrome. *Addict Sci Clin Pract*. 2014;9(1):19.
29. Jansson LM, Choo R, Velez ML, et al. Methadone maintenance and breastfeeding in the neonatal period. *Pediatrics*. 2008;121(1):106–114.
30. Terplan M, Hand DJ, Hutchinson M, et al. Contraceptive use and method choice among women with opioid and other substance use disorders: a systematic review. *Prev Med*. 2015;80:23–31.
31. Krans EE, Kim JY, James AE, et al. Postpartum contraceptive use and interpregnancy interval among women with opioid use disorder. *Drug Alcohol Depend*. 2018;185:207–213.