

OBSTETRICS

Clinical care for opioid-using pregnant and postpartum women: the role of obstetric providers

Hendrée E. Jones, PhD; Krisanna Deppen, MD; Mark L. Hudak, MD; Lisa Leffert, MD; Carol McClelland, LPC, LCAS, CCS; Leyla Sahin, MD; Jacquelyn Starer, MD; Mishka Terplan, MD, MPH; John M. Thorp Jr, MD; James Walsh, MD; Andreea A. Creanga, MD, PhD

We review clinical care issues that are related to illicit and therapeutic opioid use among pregnant women and women in the postpartum period and outline the major responsibilities of obstetrics providers who care for these patients during the antepartum, intrapartum, and postpartum periods. Selected patient treatment issues are highlighted, and case examples are provided. Securing a strong rapport and trust with these patients is crucial for success in delivering high-quality obstetric care and in coordinating services with other specialists as needed. Obstetrics providers have an ethical obligation to screen, assess, and provide brief interventions and referral to specialized treatment for patients with drug use disorders. Opioid-dependent pregnant women often can be treated effectively with methadone or buprenorphine. These medications are classified as pregnancy category C medications by the Food and Drug Administration, and their use in the treatment of opioid-dependent pregnant patients should not be considered “off-label.” Except in rare special circumstances, medication-assisted withdrawal during pregnancy should be discouraged because of a high relapse rate. Acute pain management in this population deserves special consideration because patients who use opioids can be hypersensitive to pain and because the use of mixed opioid-agonist/antagonists can precipitate opioid withdrawal. In the absence of other indications, pregnant women who use opioids do not require more intense medical care than other pregnant patients to ensure adequate treatment and the best possible outcomes. Together with specialists in pain and addiction medicine, obstetricians can coordinate comprehensive care for pregnant women who use opioids and women who use opioids in the postpartum period.

Key words: opioid-agonist, opioid use, substance use

Opioid use disorders during pregnancy represent a long-standing health issue in the United States.¹ Over the last decade, the use and misuse of prescription opioids by pregnant women has increased dramatically from 1.2 per 1000 hospital live births in 2000 to 5.6 in 2009. Closely related, neonatal

abstinence syndrome (NAS) incidence increased from 1.2 to 3.4 per 1000 hospital live births.² Ideally, obstetrical care for pregnant women who use opioids should be provided in the context of comprehensive care programs that include prenatal care, specialized drug addiction treatment, mental health care, and health education.³ However, most pregnant women who use opioids in the United States are not enrolled in such programs.

Pregnancy presents providers the opportunity to screen for and assess substance use, to offer brief intervention, and to refer women to specialized treatment as indicated (Table 1). Obstetrics providers have a unique opportunity to incorporate these services into routine obstetrical care and to coordinate specialized treatment for their patients who use opioids throughout pregnancy and into the postpartum period. Research on pregnant women with opioid use disorders has focused largely on supportive care and opioid-agonist pharmacotherapy.⁴ We review clinical care issues that are related to illicit and therapeutic opioid use among pregnant women and women in the postpartum period and outline the major responsibilities of obstetrics

From the UNC Horizons Program, Department of Obstetrics and Gynecology, UNC School of Medicine, University of North Carolina at Chapel Hill, Carrboro, NC (Drs Jones and Thorp and Ms McClelland); Department of Family Medicine, Grant Medical Center, Columbus, OH (Dr Deppen); Department of Pediatrics, University of Florida College of Medicine—Jacksonville, FL (Dr Hudak); Department of Anesthesia, Critical Care & Pain Medicine, Massachusetts General Hospital, Boston, MA (Dr Leffert); Pediatric and Maternal Health Staff, Maternal Health Team, Office of New Drugs, Food and Drug Administration, Silver Spring, MD (Dr Sahin); Addiction Recovery Program, Brigham and Women’s Faulkner Hospital, Boston, MA (Dr Starer); Department of Obstetrics, Gynecology & Reproductive Sciences, Department of Epidemiology and Public Health, University of Maryland School of Medicine, Baltimore, MD (Dr Terplan); Addiction Recovery Service, Swedish Medical Center, Seattle, WA (Dr Walsh); and Division of Reproductive Health, Centers for Disease Control and Prevention, Atlanta, GA (Dr Creanga).

Received July 29, 2013; revised Oct. 4, 2013; accepted Oct. 8, 2013.

The authors report no conflict of interest.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention or the Food and Drug Administration.

Reprints: Hendrée E. Jones, PhD, UNC Horizons, 400 Roberson St., Carrboro, NC 27510. hendree_jones@med.unc.edu.

0002-9378/\$36.00 • © 2014 Mosby, Inc. All rights reserved. • <http://dx.doi.org/10.1016/j.ajog.2013.10.010>

TABLE 1
Case examples for various points of contact

Prenatal care	Triage	Labor and delivery
Cases		
A 32-year-old G3P2 came for an initial prenatal visit at 7 weeks' gestation. She started taking prescribed oxycodone for low back pain 4 years ago after the birth of her second child. After 1 year of taking the medication as prescribed, she began to run out early and started buying the medication from a coworker. She now takes 12-15 oxycodone tablets daily. When she found out she was pregnant, she tried to stop on her own; however, after 3 days, she became very sick and returned to her use.	A 24-year-old G1P0 was examined at 20 weeks' gestation because of vaginal bleeding. She has made several prenatal care appointments but had missed them all. She had been using methadone maintenance pharmacotherapy on and off over the past 4 years and was enrolled currently in a methadone maintenance program that she attended daily.	A 23-year-old G4P2 was seen at 34 weeks' gestation in active labor. She indicated that this was her first contact with an obstetrical provider since becoming pregnant. She appeared intoxicated and admitted to heroin use.
Necessary elements of obstetrics care		
Review medical care	Review medical care	Review medical care
Review obstetrical care	Review obstetrical care	Review obstetrical care
Screen for drug use	Screen for drug use	Screen for drug use
Screen for comorbid conditions	Screen for comorbid conditions	Screen for comorbid conditions
Screen for social service needs	Screen for social service needs	Screen for social service needs ^a
Refer to specialist care	Refer to specialist care	Refer to specialist care ^a
Sexually transmitted infection prevention counseling	Sexually transmitted infection prevention counseling	Sexually transmitted infection prevention counseling ^a
Contraceptive counseling	Contraceptive counseling	Contraceptive counseling ^a
Pain management for back pain	Pain management for labor and delivery	Pain management for labor and delivery
Breastfeeding counseling	Breastfeeding counseling	Delivery
Referral to postpartum care	Referral to postpartum care	Breastfeeding counseling
		Referral to postpartum care

^a After delivery.

Jones. Opioid use in pregnant and postpartum women. *Am J Obstet Gynecol* 2014.

providers who care for these patients. This article represents the formal conclusions from the proceedings of the *Expert Meeting on Perinatal Illicit Drug Abuse* that was convened by the US Centers for Disease Control and Prevention in Atlanta in September 2012.

Prenatal care

Pregnant women who use opioids should receive all elements of routine prenatal care (Tables 1 and 2). Because they often are judged by family and friends, feel guilt, and experience stigma for their substance use during pregnancy, they may expect to be similarly judged and poorly treated by healthcare providers. Providers who project a caring and nonjudgmental attitude can build strong rapport with these patients, engender trust, and facilitate

effective communication.⁵ This approach decreases patient anxiety, improves effective coping abilities, yields more productive patient-provider interactions, improves prenatal care attendance, and leads to better clinical outcomes.⁶ Techniques to build empathy with even the most difficult patients include establishing and maintaining eye contact, allowing the patient to speak without interruption, using nonverbal cues (eg, nodding) to indicate active listening, using the patient's own words to summarize what was heard, and asking for any needed clarification.^{5,7} The use of simple language to convey instructions and the reason for and the nature of any anticipated medical procedures helps to build trust and may improve adherence to treatment and care.^{8,9}

Importantly, excellent patient-provider rapport increases the likelihood that the patient will disclose an accurate history of licit and illicit substance use. Verbal, written, or computer-assisted questioning about patient history and current drug use is the gold standard for substance-use screening. Urine drug testing can also identify women who use drugs, but it should never replace written or verbal screening because biologic tests cannot diagnose a drug-use disorder or its severity, nor can it determine use quantity, frequency, or route of administration of a given drug. Before urine drug testing, providers should obtain the patient's consent and explain the reasons for and limitations of any such test. Because false-positive rates for these tests can be as high as 5%, a

TABLE 2
Clinical care considerations by type of opioid use and timing of entry into care

Action	Illicit opioid-use				Patient whose condition is maintained on opioid-agonist medication				Patient who uses opioid medication for pain management			
	Prenatal care ^a	Triage	Labor and delivery	After delivery	Prenatal care ^a	Triage	Labor and delivery	After delivery	Prenatal care ^a	Triage	Labor and delivery	After delivery
Build and maintain good rapport with the patient and ensure patient confidentiality	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Review medical and obstetrical history and care	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Screen for drug use ^b (if positive, provide assessment, brief intervention and/or brief treatment)	✓	✓	✓	✓	N/A	N/A	N/A	N/A	✓	✓	✓	✓
Screen for other substance use and comorbid conditions	✓	—	✓	✓	✓	—	✓	✓	✓	—	✓	✓
Screen for social service needs	✓	—	—	✓	✓	—	—	✓	✓	—	—	✓
Refer to specialist care (eg, pain and addiction medicine, neonatology, pediatrics, psychiatry, and/or obstetrics)	✓	✓	—	✓	✓	✓	—	✓	✓	✓	—	✓
Contraceptive and sexually transmitted infection prevention counseling	✓	—	—	✓	✓	—	—	✓	✓	—	—	✓
Provide pain management	—	✓	✓	✓	—	✓	✓	✓	✓	✓	✓	✓
Delivery care	N/A	N/A	✓	N/A	N/A	N/A	✓	N/A	N/A	N/A	✓	N/A
Breastfeeding counseling	✓	—	—	✓	✓	—	—	✓	✓	—	—	✓

N/A, not applicable.

^a Includes all elements of routine prenatal care; ^b Screening may involve verbal or written or computer-assisted questioning and/or urine drug testing (ie, an initial urine toxicology assay for the presence of drugs).

Jones. Opioid use in pregnant and postpartum women. *Am J Obstet Gynecol* 2014.

TABLE 3

Selected management issues for opioid-using patients

Variable	Recommendations	Additional resources
Screening	<ul style="list-style-type: none"> Standardized screening tools substantially increase the rate of detection of substance use in pregnant women,^{31,32} yet only 23-50% of obstetricians use such tools for substance use detection.^{33,34} The T-ACE (tolerance, annoyed by criticism, cut down, eye-opener),³⁵ TWEAK (tolerance, worry about drinking, eye-opener, amnesia, k/cut down),³⁶ and 4 P's Plus (parents, partner, past, pregnancy)³⁷ are 3 instruments developed to screen for substance use in pregnant women. The commonly used CAGE-AID (cut down, annoyed by criticism, guilty about drinking, eye-opener – adapted to include drugs) instrument was not specifically developed for the pregnant population.³⁴ 	<ul style="list-style-type: none"> CSAP Special Report: provides a discussion of self-administered and interview-administered screening tools.³⁸
Buprenorphine licensure	<ul style="list-style-type: none"> The Drug Addiction Treatment Act of 2000 (DATA 2000) enables qualifying MDs and DOs to treat opioid addiction with Schedule III medications approved by the FDA for this purpose Buprenorphine derivatives approved by the FDA are buprenorphine hydrochloride (HCl) (Subutex; Reckitt-Benckiser, St. Peters, MO) and the buprenorphine HCl/naloxone HCl combination product (Suboxone; Reckitt-Benckiser) To be a licensed provider, a qualifying MD or DO must: <ul style="list-style-type: none"> Submit a Notification of Intent Form, and Obtain a waiver from the Center for Substance Abuse Treatment (CSAT) by completing an 8-hour approved buprenorphine training CME program either in person or on-line. 	<ul style="list-style-type: none"> More details can be found on the SAMHSA website: http://buprenorphine.samhsa.gov/index.html³⁹ Webinars on buprenorphine therapy are available at: http://psychiatry.org/pccsbwebinars⁴⁰
Buprenorphine induction	<ul style="list-style-type: none"> The optimal induction protocol for pregnant women with opioid use disorder is not known but the process should be similar to that for non-pregnant patients. <ul style="list-style-type: none"> The program staff should provide extensive patient support before and during the induction period. The initial induction dose(s) should be administered under supervision in the office 24 hours after the last use of short acting opioids (eg, heroin or oxycodone) or 2-3 days after the last use of long acting opioids (eg, methadone) The initial dose is 2 mg sublingual buprenorphine that can be repeated no more frequently than every 2 hours until symptoms are improved. The patient is then sent home with a prescription that will provide enough medication until the next scheduled office evaluation (in 1-3 days). The total daily dose (TDD) can be titrated every 1-3 days based on patient symptoms. The TDD typically ranges from 2 to 16 mg per day, taken either once or twice a day. The goal is to reach a TDD of buprenorphine that allows a patient to discontinue other opioid use and experience minimal withdrawal symptoms, side effects, and cravings. Greater attrition has been reported during induction onto buprenorphine therapy relative to methadone in non-pregnant patients.⁴¹ Possible explanations include: <ul style="list-style-type: none"> If patients are not in adequate withdrawal, they may experience an increase in withdrawal signs/symptoms for a longer duration. The partial μ-agonist experience of buprenorphine may be less enjoyable than that of methadone, a “full” μ-agonist. Mild withdrawal symptoms may encourage early discontinuation. A recent history of benzodiazepine and/or methadone use or new exposure to buprenorphine has been found to contribute to less successful inductions. 	<p>More information on current research and treatment are available at: http://psychiatry.org/practice/professional-interests/addiction-psychiatry/inducing-and-stabilizing-opioid-dependent-pregnant-women-on-methadone-or-buprenorphine-current-research-and-future-treatment-implications⁴² and http://psychiatry.org/practice/professional-interests/addiction-psychiatry/Buprenorphine-Treatment-During-Pregnancy⁴³ and Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction. Treatment Improvement Protocol (TIP) Series 40 available at http://www.ncbi.nlm.nih.gov/books/NBK64245/pdf/TOC.pdf⁴⁴</p>

Jones. Opioid use in pregnant and postpartum women. *Am J Obstet Gynecol* 2014.

(continued)

TABLE 3
Selected management issues for opioid-using patients (continued)

Variable	Recommendations	Additional resources
Maintenance dosing	<ul style="list-style-type: none"> • The longest period of buprenorphine therapy is the maintenance phase, which can last indefinitely • Variability in buprenorphine pharmacokinetics and subjective experience from patient to patient results in a relatively wide range of effective maintenance TDD • Withdrawal and craving symptoms can be easily assessed in less than 5 minutes by measures such as the Clinical Institute Narcotic Assessment (CINA) Scale,⁴⁵ the Clinical Opiate Withdrawal Scale (COWS),⁴⁶ or the Subjective Opiate Withdrawal Scale (SOWS)⁴⁷ • Providers should anticipate the need to increase the maintenance TDD several times during the prenatal period, and then to decrease the TDD several times during the postnatal period 	<ul style="list-style-type: none"> • For more information, see Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction. Treatment Improvement Protocol (TIP) Series 40 available at: http://www.ncbi.nlm.nih.gov/books/NBK64245/pdf/TOC.pdf⁴⁴

Jones. Opioid use in pregnant and postpartum women. Am J Obstet Gynecol 2014.

confirmatory gas chromatography—mass spectrometry test may be needed.¹⁰ An “opiates” test typically detects only morphine, codeine, and heroin metabolites; detection of semisynthetic or synthetic opioids (such as oxycodone, oxymorphone, buprenorphine, and fentanyl) may require more specific testing.¹¹ Once opioid use is identified, the obstetric provider should educate the patient so that she understands the potential effects of the opioid on her, her fetus, and her newborn infant. The underlying reasons for opioid use (ie, illicit use or prescribed therapy for acute or chronic pain or an opioid use disorder) have critical treatment implications. Although patients with opioid-use disorders or patients who misuse opioids may benefit from more frequent prenatal visits, in the absence of other indications, they do not necessarily require more intense medical care than other pregnant patients.¹²

As noted in Table 2, all pregnant patients who use or are suspected of using illicit substances should be questioned about tobacco, alcohol, and other substance use, comorbid mental health conditions, and social service needs. Indications that a patient might benefit from further assessment and/or treatment by an addiction specialist include self-reported illicit substance use, clinical suspicion of illicit substance use based on substance use before and/or during pregnancy, a report of an illicit drug-using significant other, homelessness, and/or initiation of prenatal care after the first trimester of pregnancy. Similarly, the presence of a mental health disorder requires referral for appropriate specialized care. In general, the threshold for referral to specialized care is lower for pregnant women than for other patients, given concerns for both the mother and the fetus. However, a woman should not be referred to specialized addiction treatment on the basis of a positive opioid urine test if she is being treated with opioids in a legitimate pain management program or is adhering to an opioid maintenance program.

Management of opioid use in pregnant patients should be coordinated with a practitioner who is knowledgeable about pain or addiction medicine. Ideally, a staff

person within each obstetrics practice can address potential issues of substance use by screening, assessment and brief intervention and has knowledge about community resources and drug treatment programs that provide care to pregnant women. It is important to ensure that referral agencies are accessible and accept the patient’s insurance. As with referrals to any other specialist, referral to addiction medicine specialists is not a “hand-off of care” on the part of the obstetrician but rather should be integrated into the obstetrics management plan. Such referral may be complicated, given that methadone pharmacotherapy can be offered only through licensed treatment programs, and many such programs nationwide face waiting lists for treatment entry. Clinical experience suggests patient benefit if the obstetric provider validates the need for specialized addiction treatment and personally communicates with the drug addiction clinic director or specialist; this approach may also lead to a more timely patient appointment. It can be beneficial if the provider helps the patient develop strategies to overcome any barriers that may be encountered with specialized addiction treatment access or attendance. Opioid use, on its own, does not necessarily require referral to a maternal-fetal medicine specialist. Community standards, physician experience, and coexisting medical conditions should all play a role in the determination of referral decisions. An obstetrics provider who lacks the knowledge necessary to treat a patient who uses opioids may consider transferring her to a provider more skilled in this area. For patients who use opioids who meet criteria for an opioid-use disorder with current opioid dependence, opioid-agonist pharmacotherapy is strongly recommended. Considerable guidance is available about the treatment of the opioid-dependent pregnant patient with methadone or buprenorphine, both of which are classified as pregnancy category C medications by the Food and Drug Administration.^{13,14} Prescribing these medications during pregnancy is not considered “off-label” because labeling for both products specifically includes information for pregnant women.¹⁵

Table 3 presents provider information on screening, licensure, and provision of these medications. Methadone binds to and activates the μ -opioid receptors and antagonizes *N*-methyl-d-aspartate receptors. Buprenorphine is a μ -opioid receptor partial agonist with primarily antagonistic actions on κ -opioid and δ -opioid receptors. Published studies suggest that buprenorphine has similar effectiveness to methadone for the treatment of opioid-use disorders during pregnancy and may reduce the likelihood and severity of NAS.¹⁴ Some women express dissatisfaction with buprenorphine, possibly because of its partial agonist properties. Both research and clinical practice suggest that induction is easier with methadone than buprenorphine, although buprenorphine induction methods that are used in research protocols have not been optimal.¹⁶ Patients who use opioids can experience precipitated withdrawal if the initial buprenorphine dose is taken too soon after their last μ -opioid-agonist administration. The most commonly prescribed formulation of buprenorphine in pregnancy is the single-agent sublingual tablet. Although most published data and clinical use of buprenorphine in pregnancy has been with this formulation, there has been no evidence that prenatal exposure to the combination buprenorphine-plus-naloxone product that was developed to reduce buprenorphine misuse leads to worse outcomes for the mother, fetus, or neonate than either methadone or buprenorphine monotherapy.¹⁷

Available data on methadone and buprenorphine do not suggest an increased risk of birth defects among women who use these medications relative to those who do not.¹⁴ Opioid maintenance treatment can result in suppression of fetal heart rate accelerations and fetal movements; these events appear to be less common with buprenorphine than methadone.^{18,19} Clinical implications of these effects on the fetus are unknown. Neonatal characteristics are similar for exposure to methadone and buprenorphine, but there is evidence of higher-birthweight infants who are born to women who have been treated with buprenorphine.¹⁴

Both methadone- and buprenorphine-maintained pregnant women appear to require, on average, a 3-dose increase over the course of pregnancy.¹⁴ Although these dose adjustments should be managed by methadone or buprenorphine prescribers, the obstetrics provider can help prepare the patient for these adjustments by reassuring and reminding her that these increases relate to physiologic changes during pregnancy.¹³ Any prenatal medication dose adjustment should be based on individual assessment and discussion with the patient.¹³

Research strongly supports maintaining pregnant women on opioid-agonist pharmacotherapy throughout pregnancy and the postpartum period. Medication-assisted withdrawal is associated with a high opioid relapse rate, and some evidence suggests increased fetal morbidity and mortality rates.²⁰⁻²³ In rare circumstances (eg, the pharmacotherapy is unavailable or the patient is experiencing life-threatening consequences), medication-assisted withdrawal followed by a comprehensive program of medical and psychosocial support can be attempted.¹⁴ Research regarding the success of medication-assisted withdrawal for dependence on prescribed opioids currently is lacking.

Both methadone and buprenorphine are present in low levels in breast milk and are not incompatible with breastfeeding.¹⁴ Counseling regarding breastfeeding should be offered prenatally to all patients who use opioids. Providers should inform their patients who use opioids that NAS is an expected and treatable condition and discuss signs of NAS, available NAS treatments, and the anticipated maternal and newborn infant length of hospital stays. The obstetrics provider can also assist in selecting a pediatric provider, ideally well before delivery. Each patient should also receive counseling about contraception and sexually transmitted infections to allow her to make informed decisions.

Confidentiality is a critical component of patient-centered care. Although challenging, it does not have to be a barrier to the establishment of adequate rapport with and care for the patient.

Early request for the release of information from the patient to verify her participation in opioid-agonist pharmacotherapy, the type of medication, and the dose that was prescribed is vital. These releases (which must be compliant with the code of federal regulation 42, part 2, of the Health Insurance Portability and Accountability Act of 1996 and state and local laws²⁴) can facilitate communication with other providers.

Triage

Emergency Department

An obstetrics provider may first encounter a woman who uses opioids in the triage area in the Emergency Department or in labor and delivery. Although less than ideal, this encounter can provide a meaningful therapeutic contact to which the preceding guidance applies. This section discusses issues regarding pain management and opioid withdrawal in the acute care setting when the patient is not in active labor.

If the patient who uses opioids indicates that she is in pain and requests pain medication, a careful assessment of the cause of the pain is necessary. The provider should not assume that the patient is seeking medication to “get high.” An underlying physical disorder may be responsible for her pain, and adequate pain management should be provided. Full opioid-agonists can be used for pain relief; however, mixed opioid agonist-antagonists (eg, nalbuphine or butorphanol) must not be used because these medications precipitate opioid withdrawal.^{25,26} The patient’s obstetrical care should likewise be verified, and any outstanding obstetrical needs should be addressed. For nonlaboring pregnant patients who are not enrolled in prenatal care, an obstetrical referral is indicated. Triage staff should have a guide to local community drug treatment centers (address, phone number, operating hours, and fee structure) that can be provided to patients in a confidential manner. For pregnant patients who are opioid-agonist-maintained, type and dose of medication must have verification from the prescribing provider.

Labor and delivery

For patients who are opioid-agonist-maintained, it is recommended to continue the established regimen and to augment pain management for the patient's acute needs. Once the type and dose of maintenance medication are verified, the patient's daily dose and number of doses per day of the agonist medication should not be changed unless medically necessary. Pain management during labor and delivery should be provided in the safest and most effective manner possible, consistent with the patient's desire. Analgesic needs should be based on the clinical evaluation of the patient and not on the prescribed maintenance dose of opioid-agonist medication.

In this situation, higher opioid doses likely are needed for patients who are opioid-dependent.^{27,28} Long-term exposure to opioids produces both tolerance (ie, reduced opioid analgesic effectiveness) and hyperalgesia (ie, increased pain sensitivity).²⁵ There are fewer appropriate intravenous pharmacologic choices to treat labor pain in patients who use opioids relative to patients who do not use opioids because of the need to avoid partial agonist/antagonists. Labor epidural or combined spinal/epidural analgesia typically works well.^{26,28,29} Initiating neuraxial (ie, spinal or epidural or combined spinal/epidural) analgesia early in labor may be particularly beneficial in attaining adequate pain relief in this population. Patients with concurrent stimulant use may demonstrate agitation and increased hemodynamic instability. In these cases, judicious use of small doses of benzodiazepines for agitation and of pressors (eg, phenylephrine) and adequate hydration to maintain blood pressure at the time of epidural or spinal anesthetic can be helpful. Consistent with routine care, epidural catheter replacement should be considered in cases of persistent breakthrough pain during labor. For cesarean delivery, neuraxial anesthesia is preferred, if feasible. To safely undergo cesarean delivery or other procedures under neuraxial analgesia, the patient who uses opioids must be alert, cooperative, breathing adequately, and able to protect her airway from aspiration. General anesthesia may be necessary in emergency situations or if

there is no epidural catheter in situ, if the patient is uncooperative, or if the patient has additional contraindications to neuraxial anesthesia. Patients who chronically use opioids or other illicit substances may have airway compromise (eg, poor dentition, airway burns, chronic lung disease, decreased gastric emptying) or increased circulating catecholamines if they use stimulants that can interact unfavorably with some anesthetic agents.

Multimodal therapy for postoperative pain management can be beneficial and typically involves some combination of nonsteroidal antiinflammatory drugs (beginning with an intraoperative ketorolac dose, if appropriate), spinal or epidural morphine, and acetaminophen with or without patient-controlled analgesia for break-through pain. If spinal or epidural morphine is used, then supplemental patient-controlled analgesia should be provided by demand only, and the patient should be monitored carefully for respiratory depression. Consideration should be given to adjunct therapies such as transversus abdominis plane block, wherein a number of abdominal wall nerves are accessed through a single entry point with the goal of providing more localized analgesia.

Concurrent benzodiazepine use or misuse is common in patients who use opioids. Thus, patients who report prescribed benzodiazepines need for the regimen to be verified by the prescriber. For patients who use illicit benzodiazepines or who supplement their medication with illicit doses, treatment to prevent benzodiazepine withdrawal may be indicated.

Postpartum care

The immediate postpartum period is an ideal time to (re)screen, (re)assess, provide brief intervention for substance use, and discuss contraceptive and sexually transmitted infection prevention plans. Screening for postpartum depression should be routine, and screening for other comorbid conditions should be considered on a case-by-case basis. Breastfeeding should be encouraged, unless there are specific contraindications. Many women would also benefit from nurse home visits and from support for their

family. Child and family welfare departments may be involved in determining postpartum services as well as conducting custody determinations.

Generally, care for patients with an opioid-use disorder in the postpartum period should be coordinated with addiction medicine specialists. After delivery, the patient should be monitored for possible sedative effects of her agonist and other postpartum medication. Benzodiazepines and zolpidem should be used rarely among women on opioid-agonist treatment and then with great caution, because significant additional sedation and respiratory depression may occur in patients who use opioids. Care after discharge should be consistent with the care of a patient who does not use opioids and should involve the prescription of sufficient postpartum pain medication. The patient should be reminded to return either to her methadone maintenance facility to resume daily dosing or to her buprenorphine provider as required. Hospital release should be coordinated so that she can obtain her opioid-agonist medication without interruption.

Definitive data are lacking to guide clinicians about the duration of opioid-agonist pharmacotherapy. Expert consensus is that pharmacotherapy should be stopped only after an adequate period of stability and when the patient is ready to live without the medication.³⁰ When opioid-agonist medication is discontinued, gradual dose reduction may be the preferred approach. Safeguards are needed regarding stopping the dose reduction and resuming adequate dosing if the patient's health worsens or she experiences overwhelming drug cravings, intolerable withdrawal, relapse, or worsening of psychiatric illness. The patient should be encouraged to postpone becoming opioid-free until she is living in a drug-free home, until her infant sleeps through the night, until breastfeeding is completed, and until she has multiple indicators of life stability.

Comment

Obstetrics providers have an ethical obligation to screen, assess, and provide brief interventions and referral to

specialized treatment to pregnant women and women in the postpartum period who have substance-use disorders. Drug-use screening is an opportunity to engage the patient in dialog regarding her use of alcohol, tobacco, opioids and other substances throughout pregnancy. Women with opioid-use disorders come from all socioeconomic backgrounds, and their lives are often complicated by complex psychosocial and environmental factors that include a history of sexual abuse and/or interpersonal violence, poor nutrition, unstable housing, and co-occurring psychiatric conditions. An empathic, non-judgmental approach that establishes a strong rapport, trust, and open communications between providers and pregnant women who use opioids has the potential to increase the patient's willingness to seek and receive the needed medical and social support services. Opioid-use disorders during pregnancy rarely constitute medical emergencies; rather, they provide opportunities for life-changing interventions. Obstetricians who acquire the knowledge and skills and avail themselves of specialty support maximize their chances to provide excellent healthcare to pregnant women and women during the postpartum period who use opioids. ■

REFERENCES

1. Earle FB. Maternal opium habit and infant mortality. *Med Standard* 1888;III:2-4.
2. Patrick SW, Schumacher RE, Benneyworth BD, Krans EE, McAllister JM, Davis MM. Neonatal abstinence syndrome and associated health care expenditures: United States, 2000-2009. *JAMA* 2012;307:1934-40.
3. Ashley OS, Marsden ME, Brady TM. Effectiveness of substance abuse treatment programming for women: a review. *Am J Drug Alcohol Abuse* 2003;29:19-53.
4. Center for Substance Abuse Treatment. Substance abuse treatment: addressing the specific needs of women: treatment improvement protocol (TIP) series 51; vol HHS publication no. (SMA) 09-4426. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2009.
5. Kim SS, Kaplowitz S, Johnston MV. The effects of physician empathy on patient satisfaction and compliance. *Eval Health Prof* 2004;27:237-51.
6. Ptacek JT, Eberhardt TL. Breaking bad news: a review of the literature. *JAMA* 1996;276:496-502.
7. Mercer SW, Reynolds WJ. Empathy and quality of care. *Br J Gen Pract* 2002;52(suppl):S9-12.
8. Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract* 2000;49:796-804.
9. Stewart MA. Effective physician-patient communication and health outcomes: a review. *CMAJ* 1995;152:1423-33.
10. Wagar EA, Stankovic AK, Raab S, Nakhleh RE, Walsh MK. Specimen labeling errors: a Q-probes analysis of 147 clinical laboratories. *Arch Pathol Lab Med* 2008;132:1617-22.
11. White RM, Black ML. Pain management testing reference. Washington, DC: AACCPress; 2007.
12. Fitzsimmons J, Tunis S, Webster D, Izes J, Wapner R, Finnegan L. Pregnancy in a drug-abusing population. *Am J Drug Alcohol Abuse* 1986;12:247-55.
13. Jones HE, Martin PR, Heil SH, et al. Treatment of opioid-dependent pregnant women: clinical and research issues. *J Subst Abuse Treat* 2008;35:245-59.
14. Jones HE, Heil SH, Baewert A, et al. Buprenorphine treatment of opioid-dependent pregnant women: a comprehensive review. *Addiction* 2012;107(suppl 1):5-27.
15. Food and Drug Administration. Guidance for Industry Providing Clinical Evidence of Effectiveness for Human Drugs and Biological Products. US Department of Health and Human Services Food and Drug Administration, Center for Drug Evaluation and Research (CDER), Center for Biologics Evaluation and Research (CBER), May 1998, Clinical 6.
16. Jones HE, Fischer G, Heil SH, et al. Maternal opioid treatment: human experimental research (MOTHER): approach, issues, and lessons learned. *Addiction* 2012;107(suppl 1):28-35.
17. Lund IO, Fischer G, Welle-Strand GK, et al. A comparison of buprenorphine + naloxone to buprenorphine and methadone in the treatment of opioid dependence during pregnancy: maternal and neonatal outcomes. *Subst Abuse* 2013;7:61-74.
18. Jansson LM, Dipietro JA, Elko A, Velez M. Infant autonomic functioning and neonatal abstinence syndrome. *Drug Alcohol Depend* 2010;109:198-204.
19. Salisbury AL, Coyle MG, O'Grady KE, et al. Fetal assessment before and after dosing with buprenorphine or methadone. *Addiction* 2012;107(suppl 1):36-44.
20. Rementeria JL, Nunag NN. Narcotic withdrawal in pregnancy: stillbirth incidence with a case report. *Am J Obstet Gynecol* 1973;116:11526.
21. Zuspan FP, Gumpel JA, Mejia-Zelaya A, Madden J, Davis R. Fetal stress from methadone withdrawal. *Am J Obstet Gynecol* 1975;122:43-6.
22. Jones HE, O'Grady KE, Malfi D, Tuten M. Methadone maintenance vs. methadone taper during pregnancy: maternal and neonatal outcomes. *Am J Addict* 2008;17:372-86.
23. Dashe JS, Jackson GL, Olscher DA, et al. Opioid detoxification in pregnancy. *Obstet Gynecol* 1998;92:854.
24. Health Insurance Portability and Accountability Act of 1996 (HIPAA). Pub. L. 104-191, 110 Stat. 1936, enacted Aug. 21, 1996.
25. Savage SR, Schofferman J. Pharmacological therapies of pain in drug and alcohol addictions. In: Miller NS, Gold MS, eds. *Pharmacological therapies for drug and alcohol addictions*. New York: Marcel Dekker; 1995:373-409.
26. Cassidy B, Cyna AM. Challenges that opioid-dependent women present to the obstetric anaesthetist. *Anaesth Intensive Care* 2004;32:494-501.
27. Alford DP, Compton P, Samet JH. Acute pain management for patients receiving maintenance methadone or buprenorphine therapy. *Ann Intern Med* 2006;144:127-34.
28. Meyer M, Paranya G, Keefer Norris A, Howard D. Intrapartum and postpartum analgesia for women maintained on buprenorphine during pregnancy. *Eur J Pain* 2010;14:939-43.
29. Meyer M, Wagner K, Benvenuto A, Plante D, Howard D. Intrapartum and postpartum analgesia for women maintained on methadone during pregnancy. *Obstet Gynecol* 2007;110:261-6.
30. Ksouda K, Bloch V, Dugarin J, et al. [When and how to detoxify clients from methadone maintenance treatment?]. *Presse Med* 2013;42:e28-36.
31. Bailey BA, Sokol RJ. Pregnancy and alcohol use: evidence and recommendations for prenatal care. *Clin Obstet Gynecol* 2008;51:436-44.
32. Svikis DS, Reid-Quinones K. Screening and prevention of alcohol and drug use disorders in women. *Obstet Gynecol Clin North Am* 2003;30:447-68.
33. Diekman ST, Floyd RL, Decoufle P, Schulkin J, Ebrahim SH, Sokol RJ. A survey of obstetrician-gynecologists on their patients' alcohol use during pregnancy. *Obstet Gynecol* 2000;95:756-63.
34. Oser C, Biebel E, Harris M, Klein E, Leukefeld C. Gender differences in provider's use of a standardized screening tool for prenatal substance use. *J Addict Med* 2011;5:36-42.
35. Sokol RJ, Martier SS, Ager JW. The T-ACE questions: practical prenatal detection of risk-drinking. *Am J Obstet Gynecol* 1989;160:863-70.
36. Russell M. New assessment tools for risk drinking during pregnancy: T-ACE, TWEAK, and others. *Alcohol Health Res World* 1994;18:55-61.
37. Chasnoff IJ, Wells AM, McGourty RF, Bailey LK. Validation of the 4P's plus screen for substance use in pregnancy validation of the 4P's plus. *J Perinatol* 2007;27:744-8.
38. Center for Substance Abuse Prevention. CSAP special report 13: maternal substance

use assessment methods reference manual: a review of screening and clinical assessment instruments for examining maternal use of alcohol, tobacco, and other drugs. Rockville, MD: US Department of Health and Human Services, Public Health Service, Substance Abuse and Mental Health Services Administration; 1993.

39. Center for Substance Abuse Treatment. Buprenorphine. Available at: <http://buprenorphine.samhsa.gov/index.html> Accessed Sept. 30, 2013.

40. American Psychiatric Association. PCSS-B Training: an education resource for those treating patients with opioid use disorders. HOT TOPICS in buprenorphine treatment webinars. Available at: <http://psychiatry.org/pcssbwebinars>. Accessed Sept. 30, 2013.

41. Holbrook AM, Jones HE, Heil SH, et al. Induction of pregnant women onto opioid-agonist maintenance medication: An analysis of withdrawal symptoms and study retention. *Drug Alcohol Depend* 2013;132:329-34.

42. Jones HE. Inducting and stabilizing opioid-dependent pregnant women on methadone or buprenorphine: current research and future treatment implications 2010. Available at: <http://psychiatry.org/practice/professional-interests/addiction-psychiatry/inducting-and-stabilizing-opioid-dependent-pregnant-women-on-methadone-or-buprenorphine-current-research-and-future-treatment-implications>. Accessed Sept. 30, 2013.

43. Meyer MC. Buprenorphine treatment during pregnancy 2012. Available at: [\[psychiatry/Buprenorphine-Treatment-During-Pregnancy\]\(http://psychiatry.org/practice/professional-interests/addiction-psychiatry/Buprenorphine-Treatment-During-Pregnancy\). Accessed Sept. 30, 2013.](http://psychiatry.org/practice/professional-interests/addiction-</p></div><div data-bbox=)

44. Center for Substance Abuse Treatment. Clinical guidelines for the use of buprenorphine in the treatment of opioid addiction: treatment improvement protocol (TIP) series 40. DHHS Publication No. (SMA) 04-3939. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2004.

45. Peachey JE, Lei H. Assessment of opioid dependence with naloxone. *Br J Addict* 1988;83:193-201.

46. Wesson DR, Ling W. The clinical opiate withdrawal scale (COWS). *J Psychoactive Drugs* 2003;35:253-9.

47. Handelsman L, Cochrane KJ, Aronson MJ, Ness R, Rubinstein KJ, Kanof PD. Two new rating scales for opiate withdrawal. *Am J Drug Alcohol Abuse* 1987;13:293-308.