Caring for Women with Substance Use Disorders in Pregnancy

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Disclosures

• No financial conflicts of interest
• Will discuss buprenorphine use in pregnancy (not FDA approved)
Learning Objectives

• Understand the **epidemiology** of substance use disorders in pregnancy
• Understand the **basic principles of care** for pregnant women with substance use disorders, particularly opioid dependence
• Learn why a **non-judgmental, harm-reduction based** and **family-centered approach** is preferred
• Incorporate a validated substance use disorder **screening tool** for use in prenatal care
• Become aware of **community resources** for care of pregnant patients with substance use disorders
What do we know about substance abuse in women?

- 2013-14 SAMHSA survey of U.S. females age 12 years or older, use in past year
  - 13.2% any illicit drug
  - 9.8% marijuana
  - 3.9% pain relievers

- 2014 SAMHSA survey: 4 million women reported misuse of prescription drugs

- 48,000 women died of prescription pain reliever overdose 1999-2010

- Most women in treatment report a history of trauma
  - Includes physical and sexual abuse
  - Approximately 25% have been diagnosed with PTSD

- Pattern of mental health problems in women is different than in men—often precedes the substance abuse problem
How prevalent is substance use, particularly opioid dependence, in pregnancy?

- **Current** illicit drug use (based on 2012-2013 averaged data)
  - 5.4% of all pregnant women (9% in first trimester)
  - 14.6% of pregnant teens ages 15-17
- **Current** alcohol use (based on 2012-2013 averaged data)
  - 9.4% annual average
  - 2.3% binge drinking
- 27% of pregnant women in U.S. who reported illicit drug abuse in last 30 days named heroin or prescription narcotics
- Estimated 57,000 pregnancies exposed to opioid abuse each year
- Opioid use is second only to marijuana use in pregnancy
- 2009 U.S. costs associated with tx of neonates exposed to opioids estimated at **$70.6 million to $112.6 million**
What co-morbidities are associated with opioid addiction?

• Polysubstance use is the rule, not the exception
• Associated use of alcohol and/or benzos greatly increases the risk of overdose
• Most overdose deaths occur at home and with others present
• Co-morbid nicotine addiction is 92% among opioid dependent people
• Lifetime prevalence of psychiatric disorders among opioid-dependent patients seeking treatment is 40-80%, mostly affective and PTSD
“I was raped 5 years ago, and I went through a very bad depression and everything. And I wanted to get messed up. I went to a friend’s house. They’re like, “Oh, these new pills are out,” and they were just a little blue pill. So cute, you know? It was tiny and blue. It was just to numb myself and what I was going through from being raped.”

(female methadone patient)
I am more than my addiction. Fighting for those I love, fighting for my life.
What are the effects of opioid dependence on pregnancy?

• No teratogenic or cytotoxic effects
• Withdrawal may increase risk of miscarriage/IUFD and preterm delivery
• Short-acting drugs cause rapid cycles of fetal intoxication and withdrawal, may cause IUGR
• Historically, 70-95% of neonates of opioid-dependent women had neonatal abstinence syndrome (NAS), however this is decreasing
  • Buprenorphine
  • “Rooming in”
  • Breastfeeding
What are the effects of opioid dependence on pregnancy?

• Heroin use confers risk of infection
  • Endocarditis, abscesses
  • HIV
  • Hepatitis C

• Opioid abuse associated with specific pregnancy risks
  • Poor nutritional status
  • Inadequate prenatal care
  • Living in a violent environment
  • Sexually transmitted infections
  • Poor pregnancy outcomes

• Pregnant opioid users face extreme stigma
  • Family
  • Medical providers
  • Society
What are special issues in the care of opioid-exposed neonates?

• Neonatal abstinence syndrome
  • Autonomic dysfunction
  • Irritability
  • Poor feeding
  • Diarrhea
  • Weight loss
  • Seizures

• NAS can occur after in utero exposure to
  • Methadone
  • Buprenorphine
  • Short-acting opioids: heroin, oxycodone, morphine, etc.

• NAS usually treated with opioid wean: morphine or methadone most common
Rate of Neonatal Abstinence Syndrome per 1,000 live births, Rio Arriba County, New Mexico, and U.S.

Sources:
US: Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2000, Agency for Healthcare Research and Quality (AHRQ), based on data collected by individual States and provided to AHRQ by the States. Total number of weighted discharges in the U.S. based on HCUP NIS = 36,417,565. New Mexico and Rio Arriba: 2012 Hospital Inpatient Discharge Data (HIDD).
What are the options for treatment of opioid addiction?

- Abstinence-based therapy
  - Counseling
  - Peer support
  - Social services
  - Contingency management

- Opioid antagonist therapy: blocks action of opioids, precipitates withdrawal if opioid dependence
  - Naloxone—injected or given intranasally, duration less than 30 minutes
  - Naltrexone—given orally, longer duration of action

- Opioid replacement therapy
  - Methadone
  - Buprenorphine
 Wouldn’t it be best to get women off opiates during pregnancy?

• Most opioid dependent women not able to remain drug-free throughout pregnancy
• Opioid antagonist therapy contraindicated during pregnancy
• Many women will not seek prenatal care if enforced abstinence is only approach
• Methadone maintenance therapy during pregnancy has been gold standard since 1990s
ACOG Statement on Opioids in Pregnancy

• “Withdrawal from opioid use during pregnancy is associated with poor neonatal outcomes, including early preterm birth or fetal demise, and with higher relapse rates among women; robust evidence has demonstrated that maintenance therapy during pregnancy can improve outcomes.

• Because of superior outcomes associated with MAT compared with withdrawal, ACOG continues to recommend MAT as the standard of care during pregnancy for women with opioid use disorders.

May 26 2016 Hal Lawrence MD
What benefits does opioid replacement therapy offer in the general population?

• Decreases transmission of hepatitis C, HIV, other infections
• Decreases activities associated w/ obtaining street drugs: theft, assault, sex-for-drugs, incarceration
• Facilitates return to normal activities: parenting, healthier partner relationships, employment, recreation, etc.
• Decreases risk of overdose death
• *Simple drug detoxification shows limited long term effectiveness*
Does opioid replacement really work in pregnant women?

• Methadone use in pregnancy is associated with
  • Increased utilization of prenatal care
  • Decreased fetal and neonatal morbidity and mortality, including improved birth weights
  • Decreased risk of relapse
How is methadone used to treat opioid addiction?

• Methadone is full opioid agonist, in use since 1960s
• Dispensed through approved treatment clinics because of federal law from Nixon administration
• Treats both withdrawal symptoms and craving
• Long-acting, so can be given once daily
• Efficacy is dose-dependent
• Initially patients present daily for observed dosing, w/ “take-home” doses available to some over time
• Cannot be prescribed by physicians through office setting for treatment of addiction (may only be prescribed for chronic pain)
How is methadone initiated in pregnancy?

• Does not require withdrawal and may occur in outpatient setting, although some centers require inpatient induction
• Obtain baseline EKG for QT interval
• Initial dose is 10-30mg, depending on opioid use pattern
• An additional 10 mg dose may be given on the first day
• Dose increased by 5-10mg per day to maximum of 40-50mg in the first week
How is methadone initiated in pregnancy?

• Takes 4-5 days to reach steady state
• Further dose increases based on sx’s at peak methadone levels (2-4h after administration)
• Dose increases are in increments of 5-10mg
• Increase total daily dose not more frequently than q 5 days to avoid overdose (after initial titration to maximum of 40-50mg in first week)
How is methadone initiated in pregnancy?

• High risk for overdose in initiation phase due to long half life and drug interactions with benzodiazepines and alcohol

• Dose increases in third trimester are commonly required

• Use of opioids of abuse will typically resolve once methadone dose is sufficient
What is different about buprenorphine?

• Buprenorphine is a partial opiate agonist at the mu receptor
  • Escalating the dose does not give infinitely higher effect = ”ceiling effect”

• Decreases the euphoria, and also the risk for overdose and respiratory depression

• Seems to be less sedating than methadone
What is different about buprenorphine?

• Can precipitate withdrawal in those not already in significant withdrawal when dosed due to
  • partial agonist
  • high affinity for the opiate receptor

• Is less dangerous than methadone in combination with other sedatives, although deaths due to drug interactions have occurred
What is different about Subutex compared to Suboxone?

• Buprenorphine is sold in the U.S. as Suboxone, Zubsolv, or Bunavail, which are a combination of buprenorphine and naloxone (Narcan), or as Subutex, which is buprenorphine alone

• The naloxone is not active when Suboxone is dissolved under the tongue, as directed

• If the tablet is crushed and injected, the naloxone causes rapid opioid withdrawal

• This reduces the value of the drug for abuse (though it certainly has a street value....)
What is different about buprenorphine?

• Buprenorphine can be prescribed by physicians who have undergone special training and received special DEA license
• Ceiling effect means less risk of overdose death
• Use in primary care settings
  • Greatly increases availability of opioid replacement therapy
  • Helps establish primary care homes for patients with many health needs
  • Decreases the stigma associated with therapy
  • Decreases contact w/ individuals the patient associates w/ opioid abuse
What are potential advantages of buprenorphine compared to methadone in pregnancy?

• Women who are addicted to prescription narcotics may refuse to go to a “methadone clinic” but accept buprenorphine
• Accessible for non-urban women who may either have local physician or can travel weekly (or less) to urban site
• Perception among patients that it is easier to wean postpartum
• Decreased incidence/severity of neonatal abstinence syndrome
• Less risk of overdose death from drug interactions with benzodiazepines and alcohol compared with methadone
How is buprenorphine used/initiated in pregnancy?

- Induction from active opioid dependence requires patient to be in moderate withdrawal
- Induction is managed in hospital if fetus is near viability (22+ weeks GA)
- When moderate withdrawal is noted based on COWS score
  - 4mg SL buprenorphine is given
  - If sx’s are not worse in 1 hour, another 4mg dose is given, followed by another 4mg dose in 2 hours
  - Additional doses are given if withdrawal symptoms and/or cravings
- Typical daily dose is 12-24mg
MOTHER project = Maternal Opioid Treatment: Human Experimental Research

• 2005-2008, comparing safety and efficacy of methadone and buprenorphine in pregnancy
• Randomized controlled trial: double-blind, double-dummy, flexible-dosing, parallel groups
• 175 opioid-dependent pregnant women
No significant differences between buprenorphine- and methadone-exposed newborns re.

- Percentage requiring tx for NAS
- Peak NAS score
- Birth weight/length/head circumference
- Gestational age at delivery
- Apgars

But…buprenorphine-exposed neonates

- Required **89% less morphine** (mean totals of 1.1 mg vs. 10.4 mg)
- Spent **43% less time in hospital** (10.0 vs. 17.5 days)
- Spent **58% less time receiving morphine** (4.1 vs. 9.9 days)
For each item, write in the number that best describes the patient's signs or symptom. Rate on just the apparent relationship to opiate withdrawal. For example: If heart rate is increased because the patient was jogging just prior to assessment, the increased pulse rate would not add to the score.

| Patient Name: ___________________________ | Date: ____________ |
| Buprenorphine Induction: ___________________________ |

Enter scores at time zero, 30 minutes after first dose, 2 hours after first dose, etc. Times of Observation: ____________

**Resting Pulse Rate: Record Beats per Minute**
0 = pulse rate 80 or below
1 = pulse rate 81-100
2 = pulse rate 101-120
4 = pulse rate greater than 120

**Sweating: Over Past 1/2 Hour not Accounted for by Room Temperature or Patient Activity**
0 = no report of chills or flushing
1 = subjective report of chills or flushing
2 = flushed or observable moistness on face
3 = beads of sweat on brow or face
4 = sweat streaming off face

**Restlessness Observation During Assessment**
0 = able to sit still
1 = reports difficulty sitting still, but is able to do so
3 = frequent shifting or extraneous movements of legs/arms
5 = unable to sit still for more than a few seconds

**Pupil Size**
0 = pupils pinned or normal size for room light
1 = pupils possibly larger than normal for room light
2 = pupils moderately dilated
5 = pupils so dilated that only the rim of the iris is visible

**Bone or Joint Aches if Patient was Having Pain Previously, only the Additional Component Attributed to Opiate Withdrawal is Scored**
0 = not present
1 = mild diffuse discomfort
2 = patient reports severe diffuse aching of joints/muscles
4 = patient is rubbing joints or muscles and unable to sit still because of discomfort

**Runny Nose or Tearing Not Accounted for by Cold Symptoms or Allergies**
0 = not present
1 = nasal stuffiness or unusually moist eyes
2 = nose running or tearing
4 = nose constantly running or tears streaming down cheeks

**GI Upset: Over Last 1/2 Hour**
0 = no GI symptoms
1 = stomach cramps
2 = nausea or loose stool
3 = vomiting or diarrhea
5 = multiple episodes of diarrhea or vomiting

**Tremor Observation of Outstretched Hands**
0 = no tremor
1 = tremor can be felt, but not observed
2 = slight tremor observable
4 = gross tremor or muscle twitching

**Yawning Observation During Assessment**
0 = no yawning
1 = yawning once or twice during assessment
2 = yawning three or more times during assessment
4 = yawning several times/minute

**Anxiety or Irritability**
0 = none
1 = patient reports increasing irritability or anxiousness
2 = patient obviously irritable/anxious
4 = patient so irritable or anxious that participation in the assessment is difficult

**Gooseflesh Skin**
0 = skin is smooth
3 = piloerection of skin can be felt or hairs standing up on arms
5 = prominent piloerection

**Score:**
- 5-12 = Mild
- 13-24 = Moderate
- 25-36 = Moderately Severe
- More than 36 = Severe Withdrawal

| Total score | Observer's initials |

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*Source: Wesson et al. 1999.*
How can we help women with opioid addiction prepare for birth?

• Encourage breastfeeding when appropriate
• Readdress the 96h observation and NAS treatment
• Discuss rooming-in option
• Encourage LARC methods prior to discharge if interested
• Discuss labor pain issues
UNM Guidelines for breastfeeding on methadone or buprenorphine

• Must be HIV negative
• No active polysubstance abuse
• Hepatitis C okay if no bleeding from nipples
• Need to be in a monitored program
• Plan to monitor infant if rapid wean occurs
• Prenatal breastfeeding evaluation at Milagro clinic
• Consistent with guidelines of Academy of Breastfeeding Medicine
How is labor pain managed?

- Continue buprenorphine through labor or scheduled delivery
- IV fentanyl of limited value and will need higher dose
- Epidural is primary analgesia for most opiate addicted women
- “Natural” pain management or nitrous oxide are options
- Doula can be very helpful with coexisting anxiety and PTSD issues affecting labor
How is postpartum pain managed?

• Women on buprenorphine with vaginal delivery need less postpartum oral pain medicines than others
• Women with cesarean can be challenging
How is postpartum pain managed?

• Divide buprenorphine dose--analgesic effect is shorter duration (e.g. change 16 mg qd to 4 mg q 6h)
• 24-48h of scheduled ibuprofen and/or acetaminophen (with attention to hep C status and hypertensive issues)
• Oral opioid pain med requirements will be higher in post-op patients on methadone or buprenorphine
• Continuous post-op epidural is excellent option and can be done on postpartum unit but requires continuous cardiopulmonary monitoring
What other techniques exist for postop pain management?

• If general anesthesia used, some may do best initially with hydromorphone PCAs
  • Hydromorphone PCA for opioid dependent patients can be started at 0.2mg q 10 minutes on demand with a one-hour lockout of 1mg
  • Avoid using basal rate to decrease risk of over-sedation
  • Continuous pulse oximetry considered due to potential need for larger doses to achieve adequate pain control.

• Transitioning to oxycodone as soon as tolerating oral intake usually results in better pain control
How can we optimally manage oral opioids for acute pain?

• Typical doses of oxycodone for non-opioid dependent postop women are 5-10mg q 4-6h
• Opioid dependent women often need higher doses in range of 15-20mg q 4-6h
• Order 10mg q4h prn moderate to severe pain, with 5mg dose available prn breakthrough pain
• Once prn dose is needed, baseline dose is increased to 15mg q 4-6h, with 5mg dose available again for breakthrough pain.
• In this way, dose is titrated to effect quickly
How is pain managed upon d/c from the hospital?

• Expect postop patients to continue using approximately same amount of oxycodone in first 2-4 days at home as during last day of hospitalization
• Use should decrease over following 1-2 weeks
• No further oxycodone typically needed after 3 weeks postpartum, barring surgical complications such as wound infections
• Important to discuss with patients anticipated process of weaning opioid pain medications
What can we do to help women overcome barriers to treatment?

• Ask all women about tobacco, alcohol, and other substance abuse in pregnancy

• Consider using a specific screening tool to increase sensitivity (4 P’s, T-ACE, etc.)

• When a woman is reluctant to provide a urine sample for drug testing, focus on developing a trusting relationship
Supreme Court Decision: Drug Screening in South Carolina

- Preferentially screened African Americans
- Permission not asked or granted
- Results given directly to police
- US Supreme court ruled this is in violation of 4th amendment protection from warrantless searches
4 P’s

• Have you ever used drugs or alcohol during this *Pregnancy*?
• Have you had a problem with drugs or alcohol in the *Past*?
• Does your *Partner* have a problem with drugs or alcohol?
• Do you consider one of your *Parents* to be an addict or alcoholic?
What else can we do to help women overcome barriers to treatment?

• Comprehensive care provided at one site is cost-effective and produces better outcomes for both mother and child

• Screen for co-morbid conditions
  • Depression, anxiety, and other mental health disorders
  • Intimate partner violence and abuse
  • Psychosocial support system

• Encourage partner involvement in prenatal care and addiction treatment—it is critical for success
Features of Milagro Perinatal Substance Abuse Program at the University of New Mexico

• Integrated, multidisciplinary care
  • Prenatal visits at 2 different Family Medicine clinic locations
  • Maternal Fetal Medicine and Psychiatry consultation available
  • Substance abuse counseling—referrals and on-site
  • Buprenorphine management
  • Postpartum services, including contraception management, with emphasis on LARCs

• Continuity of care for prenatal care, delivery, postpartum

• Residential treatment available via Mariposa Program
  • Group apartments at county-run substance abuse program
  • Women and infants can stay up to 6 months postpartum
Additional Features of Current Milagro Program

• Standardized approach to pain management in labor and postpartum
• Couplet care is emphasized
  • Infants requiring NAS treatment are in Mother Baby unit, Carrie Tingley Pediatric Unit, or Intermediate Care Nursery
  • Breastfeeding supported for stable moms
• FOCUS Program for ongoing primary care of the family
Additional Perinatal Considerations

• High incidence of IUGR--we do growth ultrasounds at 28 and 34 weeks
• We do not perform antenatal surveillance for mothers who are stable on buprenorphine or methadone
• Delivery at term, with induction for usual indications
• If ongoing stimulant use, illicit PSA, or unsafe social situation, we recommend 38 week induction
I am more than my addiction.
I am more than what you see.

Artwork by: Adelina Cruz & Al’Nair Lara - 2014.