Opioid Use Disorders and Pregnancy

Marcela Smid, MD
Maternal-Fetal Medicine
OBJECTIVES

• Definitions
• Epidemiology
• Pharmacology
• Effects on pregnancy
• Screening
• Treatment
CARE FOR PREGNANT WOMEN WITH OUD

Opioid Use in Pregnancy, Neonatal Abstinence Syndrome, and Childhood Outcomes

Executive Summary of a Joint Workshop by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, American College of Obstetricians and Gynecologists, American Academy of Pediatrics, Society for Maternal-Fetal Medicine, Centers for Disease Control and Prevention, and the March of Dimes Foundation

Uma M. Reddy, MD, MPH, Jonathan M. Davis, MD, Zhaxia Ren, MD, PhD, and Michael F. Greene, MD, for the Opioid Use in Pregnancy, Neonatal Abstinence Syndrome, and Childhood Outcomes Workshop Invited Speakers*
DEFINITIONS

• **Use** – Sporadic consumption without adverse consequences

• **Abuse** – Consumption with some adverse consequences

• **Physical Dependence** – State of adaptation manifested by a class-specific withdrawal syndrome produced by abrupt cessation or rapid dose reduction of the substance, or by administration of an antagonist

• **Psychological Dependence** – Subjective sense of a need for a specific psychoactive substance, either for its positive effects or to avoid negative effects associated with its abstinence
DEFINITIONS

• **Addiction** – A primary, chronic disease of brain reward, motivation, memory, and related circuitry.

• **Opioid use disorder** is a pattern of opioid use characterized by tolerance, craving, inability to control use and continued use despite adverse consequences.

• **Neonatal abstinence syndrome** – group of problems seen in neonates after prenatal drug exposure characterized by hyperreactivity of central and autonomic nervous system
DEFINITIONS

• **Opioids vs opiates**
  – Opioids entire class
  – Opiates are naturally occurring

• **Heroin (opiate)**

• **Prescription opioids**
  – Codeine
  – Fentanyl
  – Morphine
  – Oxycodone
  – Methadone
  – Meperidine
  – Hydromorphone
  – Hydrocodone
  – Propoxyphene (Darvocet)
  – Buprenorphine (partial agonist)
DRUG OVERDOSE DEATHS

FIGURE 2. Number of unintentional drug overdose deaths involving opioid analgesics, cocaine, and heroin — United States, 1999–2007

PREGNANCY AND OPIOID PRESCRIPTIONS

National 22%
Utah 42%
Idaho 36%
New Hampshire 34%
Wyoming 34%
Tennessee 34%

Fig. 1. Regional variation in the rates of prescription opioid dispensing during pregnancy, Medicaid 2000–2007. Arizona, Michigan, Montana, Connecticut, and Puerto Rico (white) are not represented in the cohort because of incomplete claims information.

Complicated Pregnancies or Births due to a Mother’s Drug Dependence

Figure 1. Number of hospital discharges as a result of complicated pregnancies or births due to a mother’s drug dependence, Utah, 2002–2011

Source: Utah Hospital Discharge Data
NEONATAL ABSTINENCE SYNDROME IN UTAH

Newborns with Neonatal Abstinence Syndrome

Figure 2. Number of newborns (birth to 28 days) with NAS, Utah, 2002–2011

Source: Utah Hospital Discharge Data
Charges for Newborns with Neonatal Abstinence Syndrome

Figure 3. Charges for newborns (birth to 28 days) with NAS, Utah, 2002–2011

Source: Utah Hospital Discharge Data
PREGNANCY AND OUD IN UTAH

- 2010 National Survey on Drug Use and Health: 4.4% of pregnant women reported illicit drug use in last 4 days
- Utah: 5% of neonates are positive for drugs, most are opioids
- One cause of maternal mortality in Utah is drug – related
Tolerance and physical dependence can occur in 1-2 weeks of daily use.

Effects: Inhibition of ascending pain pathways, euphoria, generalized CNS depression, pinpoint pupils, drowsiness, slurred speech.

Signs of withdrawal: watery eyes, runny nose, yawning, muscle twitching, hyperactive bowel sounds, piloerection, nausea, vomiting, cramping, diarrhea.
EFFECTS ON PREGNANCY (5, 17)

- **Birth defects**
  - Heart defects
  - Spina bifida
  - Gastroschisis
- **Intrauterine growth restriction**
- **Abruption**
- **Preterm delivery**
- **Sexually transmitted infections**
- **Stillbirth**
  - Fluctuating opioid concentrations in maternal blood may lead to fetal withdrawal or death
  - Narcotic withdrawal in pregnancy: Stillbirth incidence with a case report
    - Jose Luis Rementeria, MD
    - Am J Ob Gyn, 1973
SBIRT – SCREENING, BRIEF INTERVENTION, REFERRAL TO TREATMENT

• EVERY pregnant woman prenatally and throughout pregnancy

• Utah HB 175 – REQUIRED training of physicians within nine years

SBIRT: Core Clinical Components

• Screening: Very brief screening that identifies substance related problems

• Brief Intervention: Raises awareness of risks and motivates patients to acknowledge & address problem. 1-2 sessions of 5-8 minutes.

• Brief Treatment: Cognitive Behavioral Therapy/MET with patients with higher risk or early dependence. 2-6 sessions of 30 minutes.

• Referral: Referral of those with more serious addictions to specialized treatment services.
SCREENING
(5, 6, 7, 8)

• 4 Ps
• NIDA Quick Screen
• CRAFFT

4 P’s for Substance Abuse
1. Have you ever used drugs or alcohol during Pregnancy?
2. Have you had a problem with drugs or alcohol in the Past?
3. Does your Partner have a problem with drugs or alcohol?
4. Do you consider one of your Parents to be an addict or alcoholic?

Ewing H. Medical Director, Born Free Project, Contra Costa County, 111 Allen Street, Martinez, CA 94553. Phone: (510) 946-1165.

<table>
<thead>
<tr>
<th>NIDA Quick Screen Question:</th>
<th>Never</th>
<th>Once or Twice</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or Almost Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In the past year, how often have you used the following?</strong></td>
<td></td>
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<tr>
<td><strong>Alcohol</strong></td>
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<tr>
<td>• For men, 5 or more drinks a day</td>
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<tr>
<td>• For women, 4 or more drinks a day</td>
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<tr>
<td><strong>Tobacco Products</strong></td>
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<tr>
<td><strong>Prescription Drugs for Non-Medical Reasons</strong></td>
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<tr>
<td><strong>Illegal Drugs</strong></td>
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</table>

**TABLE 5 The CRAFFT questions**

Two or more “Yes” answers suggest high risk of a serious substance-use problem or a substance-use disorder.

- **C** Have you ever ridden in a Car driven by someone who was high or had been using drugs or alcohol?
- **R** Do you ever use alcohol or drugs to Relax, feel better about yourself, or fit in?
- **A** Do you ever use drugs or alcohol when you are Alone?
- **F** Do you Forget things you did while using drugs or alcohol?
- **F** Do your family and Friends ever tell you that you should cut down your drinking or drug use?
- **T** Have you ever gotten into Trouble while using drugs or alcohol?

Abbreviation: CRAFFT, Car, Relax, Alone, Forget, Friends, Trouble.
Knight JR, et al.71
BRIEF INTERVENTION AND REFERRAL

**High Risk**
*Score ≥ 27*
- Provide feedback on the screening results
- Advise, Assess, and Assist
- Arrange referral
- Offer continuing support

**Moderate Risk**
*Score 4–26*
- Provide feedback
- Advise, Assess, and Assist
- Consider referral based on clinical judgment
- Offer continuing support

**Lower Risk**
*Score 0–3*
- Provide feedback
- Reinforce abstinence
- Offer continuing support
TREATMENT

- **Standard of care is opiate substitution** therapy with methadone, buprenorphine is being used more frequently
  - Prevent complications of illicit opioid use and narcotic withdrawal
  - Encourage prenatal care
  - Reduce criminal activity
  - Harm reduction
- **Detoxification is controversial**
- Allow medical stability for counseling and to deal with issues that contributed to addiction

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**TABLE 1**
Demographics, gestational age at the time of detoxification, neonatal intensive care unit admission, and pregnancy outcome of the opiate detox study population

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>108</td>
<td>23</td>
<td>77</td>
<td>93</td>
<td>301</td>
</tr>
<tr>
<td>Mean maternal age, y</td>
<td>26.9 ± 3.7</td>
<td>26.4 ± 3.5</td>
<td>26.6 ± 3.6</td>
<td>27.2 ± 3.9</td>
<td>26.8 ± 3.7</td>
</tr>
<tr>
<td>Maternal age range, y</td>
<td>18–43</td>
<td>17–38</td>
<td>18–39</td>
<td>17–39</td>
<td>17–43</td>
</tr>
<tr>
<td>Maternal age &lt;30 y</td>
<td>82 (76%)</td>
<td>18 (78%)</td>
<td>55 (71%)</td>
<td>67 (72%)</td>
<td>222 (74%)</td>
</tr>
<tr>
<td>Multiparity</td>
<td>94 (87%)</td>
<td>14 (61%)</td>
<td>54 (70%)</td>
<td>73 (78%)</td>
<td>236 (78%)</td>
</tr>
<tr>
<td>White</td>
<td>85 (79%)</td>
<td>22 (90%)</td>
<td>74 (90%)</td>
<td>84 (90%)</td>
<td>265 (88%)</td>
</tr>
<tr>
<td>African-American</td>
<td>22 (20%)</td>
<td>1 (4%)</td>
<td>3 (4%)</td>
<td>8 (9%)</td>
<td>34 (11%)</td>
</tr>
<tr>
<td>Gestational age at detoxification and NICU admission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detoxification first trimester, 5–13 wks gestation</td>
<td>10 (9%)</td>
<td>4 (17%)</td>
<td>12 (15%)</td>
<td>2 (2%)</td>
<td>28 (9%)</td>
</tr>
<tr>
<td>Detoxification second trimester, 14–27 wks gestation</td>
<td>65 (60%)</td>
<td>10 (43%)</td>
<td>36 (47%)</td>
<td>37 (40%)</td>
<td>148 (49%)</td>
</tr>
<tr>
<td>Detoxification third trimester, ≥28 wks gestation</td>
<td>33 (31%)</td>
<td>9 (38%)</td>
<td>29 (38%)</td>
<td>54 (58%)</td>
<td>125 (42%)</td>
</tr>
<tr>
<td>Preterm deliveries prior to 37 wks gestation</td>
<td>21 (19%)</td>
<td>3 (13%)</td>
<td>13 (17%)</td>
<td>16 (17%)</td>
<td>53 (17.6%)</td>
</tr>
<tr>
<td>Neonatal intensive care unit admission</td>
<td>32 (30%)</td>
<td>5 (22%)</td>
<td>60 (78%)</td>
<td>22 (24%)</td>
<td>119 (40%)</td>
</tr>
</tbody>
</table>

Pregnancy outcome

| Rate of NAS | 20 (18.5%) | 4 (17.4%) | 54 (70.1%) | 16 (17.2%) | 94 (31%) |
| Rate of relapse | 25 (23.1%) | 4 (17.4%) | 57 (74.0%) | 21 (22.5%) | 107 (36%) |
MEDICATION ASSISTED TREATMENT (MAT)

• Methadone: Long-acting
  – Withdrawal symptoms experienced between 24-36 hours of last use, may last for several weeks

• Buprenorphine, Buprenorphine/naloxone
  – Half-life of buprenorphine is 24-42 hours, naloxone is 2-12 hour
INTRAPARTUM MANAGEMENT

• Treat women with OUD in labor on just like others
  – Continue ethadone or buprenorphine

• Avoid opioid antagonists (butorphanol, nalbuphine, pentazocine) which can precipitate withdrawal

• Pediatric staff should be available

• Awareness
  – More analgesia during labor than non opioid-dependent patients
  – Neuraxial anesthesia is appropriate as needed
POSTPARTUM MANAGEMENT

• Increased pain
  – increased opioid treatment whether on methadone or buprenorphine

• Breastfeeding can be encouraged with methadone or buprenorphine
  – NOT if continuing to use heroin or HIV
  – Hepatitis B and C NOT a contraindication

• Contraception
• Naloxone counseling
• Drug treatment
# OPIOID WITHDRAWAL

## TABLE 7
### COWS

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Scores</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting pulse rate</td>
<td>0-4</td>
<td>0=80 or less; 1=81-100; 2=101-120; 4=120 or greater</td>
</tr>
<tr>
<td>Sweating</td>
<td>0-4</td>
<td>0=none; 4=sweat streaming from face</td>
</tr>
<tr>
<td>Restlessness</td>
<td>0-5</td>
<td>0=sits still; 5=unable to sit still (even for a few seconds)</td>
</tr>
<tr>
<td>Pupil size</td>
<td>0-5</td>
<td>0=normal; 5=dilated (only iris rim visible)</td>
</tr>
<tr>
<td>Bone or joint aches</td>
<td>0-4</td>
<td>0=none; 4=severe discomfort</td>
</tr>
<tr>
<td>Runny nose or tearing</td>
<td>0-4</td>
<td>0=none; 4=constant</td>
</tr>
<tr>
<td>GI upset</td>
<td>0-5</td>
<td>0=none; 5=multiple episodes of vomiting or diarrhea</td>
</tr>
<tr>
<td>Tremor</td>
<td>0-4</td>
<td>0=none; 4=gross tremor</td>
</tr>
<tr>
<td>Yawning</td>
<td>0-4</td>
<td>0=none; 4=yawning several times/minute</td>
</tr>
<tr>
<td>Anxiety &amp; Irritibility</td>
<td>0-4</td>
<td>0=none; 4=severe, precluding participation</td>
</tr>
<tr>
<td>Gooseflesh skin</td>
<td>0-5</td>
<td>0=smooth; 5=prominent piloerection</td>
</tr>
</tbody>
</table>

COWS=Clinical Opiate Withdrawal Scale; GI=gastrointestinal.

Score: 5-12 mild; 13-24=moderate; 25-36=severe.

NALOXONE

NALOXONE RESCUE KIT
EXPIRATION DATE: 2/29/2022
PLEASE CONTACT IF USED FOR EXCHANGE
PHONE: 301-232-5417
EMAIL: UtahNaloxone
www.UtahNaloxone

If you see or hear any sign of opioid overdose, call 9-1-1 or get medical help immediately.

Naloxone Rescue Kits
(385) 495-9050
www.UtahNaloxone.org
UtahNaloxone@gmail.com

YOU CAN SAVE A LIFE
NALOXONE UPDATE
TREATMENT

• **Coordinated care**
  – Non-judgmental care with chronic care model
  – Prescription drug monitoring programs
  – Monitoring (urine tox)
  – OB care
  – NICU
  – Naloxone training
  – MAT
  – Prenatal Ultrasounds
  – Addiction specialists
  – Social support
  – Primary care
  – Contraception
SUPERAD CLINIC – (SUBSTANCE USE IN PREGNANCY RECOVERY, ADDITION AND DEPENDENCE)

- South Jordan Health Center
- Monday afternoons
- Appointments (801) 581-8425
REFERENCES

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7. Ewing H. A practical guide to intervention in health and social services with pregnant and postpartum addicts and alcoholics: theoretical framework, brief screening tool, key interview questions, and strategies for referral to recovery resources. (copyrighted)
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