A Novel Approach to Reduce Pain, Prescription Opioid Use and Misuse in Pregnancy

Connie Guille, MD
Assistant Professor
Dept of Psychiatry & Behavioral Sciences
Medical University of South Carolina
Overview

- Background
- MUSC’s Women’s Reproductive Behavioral Health
  - Women’s Health Services
- Program Outcomes
- Program Expansion
Current Trends

- PO 2\textsuperscript{nd} Most Common Substance of Abuse
- PO Misuse and Abuse is a National Epidemic

(National Survey on Drug Use and Health, 2010)
(White House Office of National Drug Control Policy, 2011)
Current Trends

- PO use during pregnancy
  - Medicaid (1.1M Pregnant Women)
    - 23% filled a PO medication during pregnancy
  - Private Insurance (500,000 Pregnant Women)
    - 14% filled a PO medication during pregnancy

(Bateman et al., 2014; Desai et al., 2014)
Current Trends

- Chronic medical use of POs during pregnancy
  - 2.5 per 1,000 deliveries in 2000
  - 10 per 1,000 deliveries in 2008

(Kellogg et al., 2011)
Current Trends and Consequences

Figure 2: Unintentional drug overdose deaths by type of drug, United States, 1999-2007

- 2013
- 16,000 deaths

Source: National Vital Statistics System
Current Trends and Consequences

Figure 2: Unintentional drug overdose deaths of drug, United States, 1999-2007

- 2013: 16,000 deaths
- 2013: 3,000 deaths

Source: National Vital Statistics System

Pregnant Women admitting Prescription Opioids as Drug of Choice

Pregnant treatment admissions for opiate use grew by 611% during the previous decade.

(SAMHSA, 2012)
Current Trends and Consequences

- **Risks of PO use**
  - Unintentional overdose and death
  - Misuse, Abuse & Addiction (3-19%)
  - Functional Impairment
  - Drug Interactions
  - Sedation
  - Constipation
  - Physical Dependence
  - Hormonal changes
  - Sleep disturbances
  - Immune system suppression
  - Opioid-induced hyperalgesia

American Chronic Pain Association, 2015
Current Trends and Consequences

- Risk of PO use during Pregnancy
  - Low Birth Weight
  - Preterm Birth
  - Neonatal Abstinence Syndrome
  - Unknown long term effects

(Broussard, 2011; Epstein, 2013; Flood, 2014; Patrick, 2012)
Current Trends and Consequences

• Risk of PO use during Pregnancy
  • Low Birth Weight
  • Preterm Birth
  • Neonatal Abstinence Syndrome
    • 60-80%
  • Unknown long term effects

(Broussard, 2011; Epstein, 2013; Flood, 2014; Patrick, 2012)
Current Trends and Consequences

Growing Concern
Neonatal abstinence syndrome—or NAS—is a drug withdrawal syndrome in newborns caused by the mother’s opiate use during pregnancy.

U.S. rate of babies born with NAS, per 1,000 hospital births

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>3</td>
</tr>
<tr>
<td>2009</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Source: JAMA
The Wall Street Journal

Neonatal Abstinence Syndrome and Associated Health Care Expenditures: United States, 2000-2009
Current trends and Consequences in South Carolina

Growing Concern
Neonatal abstinence syndrome—or NAS—is a drug withdrawal syndrome in newborns caused by the mother’s opiate use during pregnancy.

U.S. rate of babies born with NAS, per 1,000 hospital births

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1</td>
</tr>
<tr>
<td>2003</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>3</td>
</tr>
<tr>
<td>2009</td>
<td>4</td>
</tr>
<tr>
<td>2012</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Source of Data:
South Carolina Office of Research and Statistics
Division of Research and Statistics
UB-04 Hospital Billing Data

Neonatal Abstinence Syndrome
ICD9 codes 779.5 and 760.72
779.5
Drug withdrawal syndrome in newborn, excluding fetal alcohol syndrome (760.71)
760.72
Noxious influences affecting fetus or newborn via placenta or breast milk, narcotics

Courtesy of Jennifer Hudson, MD
Current Trends and Consequences

- Normal healthy newborn
  - $4,300 average per newborn hospital stay
- Newborn with NAS
  - $53,400 per newborn
  - 78% Medicaid-funded

Neonatal Abstinence Syndrome and Associated Health Care Expenditures: United States, 2000-2009
Efficacy of long-term PO use is poor:
  - Surveys & case series
  - RCT < 4 months and small sample (N<300 pts)
  - Pharma sponsored
  - Pain relief is modest
  - Modest to no functional improvement

(American Pain Society and the American Academy of Pain Medicine, 2015)
Risk Benefit Discussion

- **Benefits**
  - Analgesia
  - Function
  - Quality of life

- **Risks**
  - Unintentional overdose/death
  - Addiction
  - Misuse, Aberrant Behaviors
  - Hormonal changes
  - Sleep disturbances
  - Immune system
  - Opioid-induced hyperalgesia
  - LBW, PTB, NAS
Perinatal Psychiatry Program

- Team Expertise:
  - Pain Management
  - Opioid Prescribing
  - Addiction
  - Perinatal Psychiatry
  - Obstetrics
Perinatal Psychiatry Program

- **Goals:**
  - Improve maternal pain and functioning
  - Reduce PO use, misuse and abuse
    - Pregnancy
    - Postpartum (1 year)
  - Reduce NAS, LBW, PTB
Initial Assessment
Pain, Addiction, Mental Health

Addiction

Substance Use Disorder Treatment

Pain, Mental Health Ob Care

Pain
(PO Risk > Benefit)

Risk Evaluation & Mitigation

Pain, Mental Health Ob Care

Pain
(PO Benefit > Risk)
Initial Assessment
Pain, Addiction, Mental Health

Pain
(PO Risk > Benefit)

Prescription Opioid Taper
Obstetrics Care
Alternative Pain Management Strategies
Risk Evaluation & Mitigation
Mental Health
Pain Management

- Physical Med/Rehab
  - PT, OT, Assistive Devices

- Alternative Medicine
  - Massage, Supplements, Acupuncture

- Lifestyle Change
  - Exercise, Weight Loss

- Pharmacotherapy
  - Opioids, NSAIDS, Adjuvant Analgesics

- Interventional Approaches
  - Injections, Neurostimulation

- Psychological Support
  - Psychotherapy, Group Support
# Cognitive Behavioral Therapy for Chronic Pain

## Table 1: Cognitive Behavioral Therapy for Chronic Pain Session Content

<table>
<thead>
<tr>
<th>A. Introduction to the manual</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. General considerations in treating chronic pain</td>
</tr>
<tr>
<td>C. Therapy Sessions 1-11</td>
</tr>
<tr>
<td>- Session 1: Education on chronic pain</td>
</tr>
<tr>
<td>- Session 2: Theories of pain and diaphragmatic breathing</td>
</tr>
<tr>
<td>- Session 3: Progressive muscle relaxation and visual imagery</td>
</tr>
<tr>
<td>- Session 4: Automatic thoughts and pain</td>
</tr>
<tr>
<td>- Session 5: Cognitive restructuring</td>
</tr>
<tr>
<td>- Session 6: Stress management</td>
</tr>
<tr>
<td>- Session 7: Time-based pacing</td>
</tr>
<tr>
<td>- Session 8: Pleasant activity scheduling</td>
</tr>
<tr>
<td>- Session 9: Anger management</td>
</tr>
<tr>
<td>- Session 10: Sleep Hygiene</td>
</tr>
<tr>
<td>- Session 11: Relapse prevention and flare-up planning</td>
</tr>
</tbody>
</table>

D. Handouts and Homework Checklists
Brief Pain Inventory
Severity of Pain

Pre-Treatment vs. Post-Treatment

- Worst Pain
- Least Pain
- Average Pain
- Current Pain
Brief Pain Inventory

Pain Interference

Pre-Treatment vs Post-Treatment

- General Activity
- Mood
- Walking
- Work
- Relationships
- Sleep
- Enjoyment
- Overall Interference

NIH National Institute on Drug Abuse
The Science of Drug Abuse & Addiction
Current Opioid Misuse Measure

![Graph showing Current Opioid Misuse Measure (COMM) with Pre-Treatment and Post-Treatment data. The graph indicates a significant decrease in misuse after treatment.]
% Reduction in Morphine Equivalents

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Percent Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>30</td>
<td>73.9%</td>
</tr>
<tr>
<td>180</td>
<td>20</td>
<td>88.8%</td>
</tr>
<tr>
<td>75</td>
<td>30</td>
<td>60.0%</td>
</tr>
<tr>
<td>90</td>
<td>15</td>
<td>83.3</td>
</tr>
<tr>
<td>120</td>
<td>10</td>
<td>91.6%</td>
</tr>
<tr>
<td>Average</td>
<td>116</td>
<td>21</td>
</tr>
</tbody>
</table>
## % Reduction in Xanax (Mg)

<table>
<thead>
<tr>
<th>Start (mg)</th>
<th>End (mg)</th>
<th>Percent Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.5</td>
<td>75%</td>
</tr>
<tr>
<td>6</td>
<td>0.5</td>
<td>91.6%</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>75%</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.5</strong></td>
<td><strong>0.63</strong></td>
</tr>
</tbody>
</table>
Newborn Outcomes
Future Direction