Pain, Pills & Pregnancy

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Overview

Pain Management in Pregnancy

- Opioid Use in Women
- Opioid Use in Pregnancy
- Pain Management
  - Pregnancy
  - Labor & Delivery
  - Postpartum
Americans consume more opioids than any other country

Standard daily opioid dose for every 1 million people

Source: United Nations International Narcotics Control Board
Credit: Sarah Frostenson
Opioid Use in US

- 2nd Most Common Substance of Abuse in US
- Opioid Overdose Deaths is a National Emergency

Prescription Opioid Misuse: 11.2 Million
Opioid Use Disorder- Prescription Opioids: 1.8 Million
Opioid Use Disorder- Heroin: 0.6 Million

SAMHSA, 2017: 2016 National Survey on Drug Use and Health
Opioid Epidemic: Public Health Emergency

2016

64,000 Total Opioid-Related Deaths

Figure 4. Age-adjusted drug overdose death rates, by opioid category: United States, 1999–2016

1Significant increasing trend from 1999 to 2016 with different rates of change over time, p < 0.05.
2Significant increasing trend from 1999 to 2006, then decreasing trend from 2006 to 2016, p < 0.05.
NOTES: Deaths are classified using the International Classification of Diseases, Tenth Revision. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Drug overdose deaths involving selected drug categories are identified by specific multiple-cause-of-death codes: heroin, T40.1; natural and semisynthetic opioids, T40.2; methadone, T40.3; and synthetic opioids other than methadone, T40.4. Deaths involving more than one opioid category (e.g., a death involving both methadone and a natural or semisynthetic opioid) are counted in both categories. The percentage of drug overdose deaths that identified the specific drugs involved varied by year, with ranges of 75%–79% from 1999 to 2013, and 81%–85% from 2014 to 2016. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db294_table.pdf#4.
Opioid Overdose Deaths

Figure 1. Age-adjusted drug overdose death rates: United States, 1999–2016

1999-2015
Prescription Opioid-Related Deaths
• Increased 471% in women
  [218% in men]

Synthetic Opioid-Related Deaths
• Increased 850% in women

2002-2013
Heroin Use
• Increased 100% in women
  [50% in men]

1Significant increasing trend from 1999 to 2016 with different rates of change over time, p < 0.001.
22016 rate for males was significantly higher than for females, p < 0.001.
NOTES: Deaths are classified using the International Classification of Diseases, Tenth Revision. Drug-poisoning (overdose) deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. The number of drug overdose deaths in 2016 was 63,632. Access data table for Figure 1 at: https://www.cdc.gov/nchs/data/databriefs/dt294_table.pdf#1.
Gender Differences in Heroin Use

Significant increase in heroin use among women over past 4 decades. Women are now using heroin at similar rates to men.
Sex and Gender Differences in Pain

Epidemiological Studies

- Women, compared to men, have higher prevalence
  - Pain conditions
  - Past month pain
  - Pain sensitivity
  - Chronic pain
    - Fibromyalgia, migraine, chronic tension-type headache, IBS, TMJ, interstitial cystitis


Age and Gender Trends in Long-Term Opioid Use Non-Cancer Pain

Compared to men, women are more likely to be prescribed opioids, and use them for a longer period of time

Gender Differences in Opioid Use

- Women, compared to men,
  - Become dependent on substances more rapidly:
    - "Telescoping"
      - Less time between start of substance to time of problems & significant physiological consequences
      - Less time between problems and entering treatment

McHugh et al, Clin Psych Review, 2018
Back et al, Addict Behav, 2010
Gender Differences in Opioid Use

• Women, compared to men,
  • More likely to have OUD w/ comorbid psychiatric illness, trauma, functional impairment, chronic pain
  • More likely to use opioids in response to mood/stress
  • More likely to receive opioids from family & friends

• Access
• Acceptability

McHugh et al, Clini Psych Review, 2018
Gender Differences in Opioid Use

- Women, compared to men,
  - Less likely to receive treatment
  - Gender-specific barriers to treatment including:
    › Co-occurring disorders
    › Trauma
    › Financial vulnerability
    › Partner who is using
    › Less social support
    › Pregnant and parenting
    › Stigma/discrimination

McHugh et al, Clini Psych Review, 2018
Women and Prescription Opioid Use

Women aged 15-44 years who filled a prescription for an opioid medication, 2008-2012

(CDC, 2015)
Opioid Use in Pregnancy

- Prescription Opioid [PO] use during pregnancy
  - 14-23% fill a PO medication
  - 3-5% fill 2 or more PO medications
  - 4-fold increase in past decade

(Patrick et al., 2012; Bateman et al., 2014; Desai et al., 2014; Maeda, 2014)
Treatment of Pain

- Non-Pharmacological Treatments
- Non-Opioid Pharmacological Treatments
- Opioids
  - Counseling on risks
  - Low dose (<50 MED)
  - Avoid other CNS depressants
- Risk Mitigation Strategies
  - Determine efficacy
  - If not effective, discontinue

(Dowell, 2016)
Treatment of Chronic Pain

No Studies Evaluating Chronic Use of PO and Long-Term Outcomes Related to Pain, Function, or QOL.

Tapering PO in chronic pain conditions demonstrate pain is no worse and may even improve once POs are discontinued

(Dowell, 2016)
Treatment of Chronic Pain

• Risk vs. Risk/Benefit Discussion

Chronic PO Use for Pain
Tapering POs In Pregnancy

Pain
Drug Seeking
Tapering POs In Pregnancy

Cognitive Behavioral Therapy for Chronic Pain Medication Management
‘Open Label’ Pilot: Aims

Cognitive Behavioral Therapy for Chronic Pain
Medication Management

Improve maternal pain and functioning
Reduce PO use and misuse
Reduce NAS
‘Open Label’ Pilot: Aims

Cognitive Behavioral Therapy for Chronic Pain
Medication Management

Improve maternal pain and functioning
Reduce PO use and misuse
Reduce NAS

National Institute on Drug Abuse
The Science of Drug Abuse & Addiction
Cognitive Behavioral Therapy for Chronic Pain

Table 1: Cognitive Behavioral Therapy for Chronic Pain Session Content

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>A.</td>
<td>Introduction to the manual</td>
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<tr>
<td>B.</td>
<td>General considerations in treating chronic pain</td>
</tr>
<tr>
<td>C.</td>
<td>Therapy Sessions 1-11</td>
</tr>
<tr>
<td></td>
<td>- Session 1: Education on chronic pain</td>
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<td></td>
<td>- Session 2: Theories of pain and diaphragmatic breathing</td>
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<td>- Session 3: Progressive muscle relaxation and visual imagery</td>
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<td>- Session 4: Automatic thoughts and pain</td>
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<td>- Session 5: Cognitive restructuring</td>
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<td>- Session 6: Stress management</td>
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<td>- Session 7: Time-based pacing</td>
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<td>- Session 8: Pleasant activity scheduling</td>
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<td>- Session 9: Anger management</td>
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<td>- Session 10: Sleep Hygiene</td>
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<td>- Session 11: Relapse prevention and flare-up planning</td>
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<tr>
<td>D.</td>
<td>Handouts and Homework Checklists</td>
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Otis, 2007
Medication Management

• Education/ Risks and Benefits
• Motivational Interviewing
• Risk Mitigation Strategies
• Medication Taper
  • Shared Decision Making
    • Increase PO Dose
    • No PO Dose Change
    • Decrease PO Dose (≤20% of original dose per week)
Study Design

Enrollment
(<31 Wks. Gestation)

Inclusion
- Daily Use of PO
- PO Misuse
- Consider Reduction in PO

Exclusion
- Substance Use Disorder
Study Design

Enrollment
(<31 Wks. Gestation)

Treatment
(Weekly; 6-8 Wks.)

Delivery

Postpartum Follow-Up
(at 6-8 Wks.)

Baseline Assessments
Demographic
History of PO/Pain
Brief Pain Inventory (BPI)
Current Opioid Misuse Measure (COMM)

Weekly Assessments
Ob/Psych Safety Measures
BPI
COMM
PO Dose/Use

Follow-Up Assessment
Psych Safety Measures
BPI
COMM
PO Dose/Use
Study Design

Enrollment (<31 Wks. Gestation)

Treatment (Weekly; 6-8 Wks.)

Delivery

Postpartum Follow-Up (at 6-8 Wks.)

Screening Women with PO use
16.2% (22/136)

Participation
90.9% (20/22)
<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>Mean (SD) (N=20)</th>
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<tbody>
<tr>
<td>Age (years)</td>
<td>30.1 (SD±3.28)</td>
</tr>
<tr>
<td>Weeks Gestation</td>
<td>19 (SD±2.98)</td>
</tr>
<tr>
<td>Gravida</td>
<td>3 (range 1-9)</td>
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<tr>
<td>Number of children</td>
<td>1 (range 0-9)</td>
</tr>
<tr>
<td>Years PO Use</td>
<td>6.2 (SD±3.20)</td>
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</tbody>
</table>
## Demographics

<table>
<thead>
<tr>
<th>Baseline Characteristics</th>
<th>% (N)</th>
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<tbody>
<tr>
<td>Caucasian</td>
<td>86.4% [17/20]</td>
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<tr>
<td>Insured by Medicaid</td>
<td>63.6% [12/20]</td>
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<td>In a relationship</td>
<td>77.3% [15/20]</td>
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<td>Completed High School</td>
<td>68.2% [13/20]</td>
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<tr>
<td>Annual Income (≤25K)</td>
<td>81.8% [16/20]</td>
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<tr>
<td>Low Back Pain</td>
<td>77.3% [15/20]</td>
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<tr>
<td>History of Mood or Anxiety Disorder</td>
<td>86.4% [17/20]</td>
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</tbody>
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Study Design

Enrollment (<31 Wks. Gestation)

Treatment (Weekly; 6-8 Wks.)

Delivery

Postpartum Follow-Up (at 6-8 Wks.)

Screening Women with PO use 16.2% (22/136)

Participation 90.9% (20/22)

Completed 6.3 (SD 1.5) weekly sessions

MED Start: M 73.06 (SD 41.6) Completed Taper: 70% (14/20)

NAS: 30% (6/20) Treated NAS: 33% (2/6)
Patient Report
Pre-Post Treatment

Brief Pain Inventory
Average Pain

Brief Pain Inventory
Worst Pain

Brief Pain Inventory
Pain Impact

* p = <0.05
Patient Report
Pre-Post Treatment

Current Opioid Misuse Measure (COMM)

Pre-Treatment
Post Treatment

* p = <0.05

Patient Health Questionnaire (PHQ-9)

Generalized Anxiety Disorder (GAD-7)
Prevalence of OUD

National Inpatient Sample- ICD-9 Codes Delivery Hospitalization Discharge

Per 1,000 Delivery Hospitalizations in US 1999-2014

Perinatal Treatment of Opioid Use Disorder

ACOG Committee Opinion No. 524 and 711:
Opioid Abuse, Dependence, and Addiction in Pregnancy (2012)
Opioid Use and Opioid use Disorder in Pregnancy (2017)

Gold Standard of Treatment:
Methadone
Buprenorphine

Substance Abuse and Mental Health Services Administration (SAMHSA), American Society for Addiction Medicine (ASAM), World Health Organization (WHO) and United Nations (UN)
Medication Assisted Therapy (MAT)

- **Naltrexone**
  - Antagonist

- **Buprenorphine**
  - Partial Agonist

- **Methadone**
  - Agonist
Substance Use Disorders in Pregnancy: Clinical, Ethical, and Research Imperatives of the Opioid Epidemic

Jeffrey Ecker, MD, Alfred Abuhamad, MD, Washington Hill, MD, Jennifer Bailit, MD, Brian T. Bateman, MD, Vincenzo Berghella, MD, Tiffany Blake-Lamb, MD, Constance Guille, MD, Ruth Landau, MD, Howard Minkoff, MD, Malavika Prabhu, MD, Emily Rosenthal, MD, Mishka Terplan, MD, Tricia E. Wright, MD, Kimberly A. Yonkers, MD

• Joint Workshop Report
  – Society for Maternal-Fetal Medicine,
  – American College of Obstetricians and Gynecologists
  – American Society of Addiction Medicine
Pain Management for L&D

- Opioid-Naïve Woman
  - Vaginal delivery
  - Cesarean delivery

- Opioid-Dependent Women
  - Vaginal delivery
  - Cesarean delivery
Persistent Opioid Use Following C-Section

- Opioid-naïve, undergoing c/s (N=392,492)
- Followed 1 year postpartum
- Prevalence of persistent opioid use:
  - 1 in 300
- Risk factors for persistent opioid use
  - Pre-existing psychiatric illness
  - Pain conditions (back pain)
  - Substance use disorder

(Bateman, 2016)
Leftover Opioids Use Following C-Section

- Opioid-naïve, use of opioids following c/s
  - Median # of dispensed opioid: 40
  - Median # of consumed opioids: 20
  - 95% of women did not dispose of the leftover medications
Cesarean Delivery
Opioid-Naïve

• Discharge
  – If not taking opioid in hospital
    • Don’t prescribe at the time of discharge
  – If taking opioids in the hospital
    • Shared decision-making process select the # of opioids tablets to be prescribed
    • Opioid Naïve: Oxycodone 5mg, 20 tablets

Prabhu, 2018; Osmundson, 2017; Bartels, 2016
Pain Management for L&D Opioid-Dependent Women

• Women with OUD
• >80% will have a history of trauma
  – Childhood, interpersonal violence
• Child welfare agency/custody
• Newborn withdrawal
• Risk of relapse
Women with OUD Vaginal or Cesarean Delivery

• Remain on MAT throughout L&D
• Divide dose 2-3 per day
• Encourage epidural/spinal-epidural
• Avoid nitrous oxide
• Avoid nalbuphine [Nubain] or butorphanol [Stadol]

Hoflich, 2012; Meyer, 2019
Women with OUD
Vaginal Delivery

Opioid-sparing multimodal approach

• Ice pack, heating pad, hydrocortisone, and local anesthetic

• Scheduled:
  – Acetaminophen 975mg q8h PO, or Acetaminophen 650mg q6h PO; and
  – Ibuprofen 600mg q6h PO
Women with OUD
Vaginal Delivery

Opioid-sparing multimodal approach

• Ketorolac 15mg/30mg IV/IM q6h x 48h
• Laceration/repair: Epidural morphine or hydromorphone prior to catheter removal

Opioids used as-needed, but not first line
Pain Assessment

• Functional Pain Score
• Is pain interfering with?
  – Mobility
  – Self Care
  – Newborn Care
  – Breastfeeding
  – Coping
Women with OUD Vaginal Delivery

• Opioid-sparing multimodal approach
• Opioids used as-needed based on functional impairment, but not first line
  – At the very least, prescribe what you prescribe for opioid-naïve women with vaginal delivery
    • Short course of oxycodone 5mg (reassess!)
    • Consider: Full opioid agonist with strong affinity for the mu receptor (e.g. fentanyl, hydromorphone).

Hoflich, 2012; Meyer, 2019
Women with OUD Cesarean Delivery

• Pre-operatively
  – Pain consultation
  – Plan for handling prescribed opioids

• Inter-operatively
  – Epidural, spinal or general
  – Acetaminophen, either IV or PO
  – Ketorolac 10mg

Hoflich, 2012; Meyer, 2019
Women with OUD Cesarean Delivery

• Post-operatively
  – Opioid-sparing multimodal approach
  – Acetaminophen 975mg PO q8hrs standing
  – Ketorolac 30mg IV q6 hours standing for 24 hours, followed by ibuprofen 600mg PO q6 hours
  – Opioid...
Women with OUD
Unplanned C/S

• Post-operatively
  – At the very least, prescribe what you prescribe for opioid-naïve women w c/s
  • Oxycodone: Max daily dose of 30mg – or 6 tablets of 5mg as needed, if pain is poorly controlled based on functional score
  • Consider: Full opioid agonist with strong affinity for the mu receptor (e.g. fentanyl or hydromorphone)

Hoflich, 2012; Meyer, 2019
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