Substance Use and Abuse in Pregnancy – the Elephant in the Exam Room
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• I have no conflicts of interest

The Scope of the Opioid Epidemic

• Leading cause of accidental death in the United States
  – 55,403 lethal overdoses in 2015
  • 12,990 related to heroin
• 2012 259 million prescriptions were written for an opioid
  – 4-fold increase since 1999
  – 4 out of 5 new heroin users start out misusing prescription opioids
  • "Heroin "cheaper and easier to obtain"
The Scope of the Problem

- Economic Impact
  - 55 billion dollars in health and social costs related to prescription opioid abuse
  - 20 billion in ER and inpatient services for opioid poisoning

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<th>On an average day in the U.S.:</th>
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<td>3,600 people initiate non-medical use of prescription opioids</td>
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<tr>
<td>22,000 people misuse heroin use+</td>
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<td>75 people die from an opioid-related overdose**</td>
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*Opioid-related overdoses include those involving prescription opioids and illicit opioids such as heroin.
**Source: National Institute on Drug Abuse, Centers for Disease Control and Prevention, National Drug Abuse Treatment Meeting.

Opioid “Narcotics” Nomenclature

- Narcotic – Greek word for “Stupor”
  - Opium, opium derivatives and the semi-synthetic substitutes “Opioid”
  - Natural opioids and semi-synthetics– poppy papaver somniferum
    - Heroin, morphine, codeine
  - Synthetic opioids – meperidine, fentanyl, methadone

Heroin

- Most addictive, abused and rapidly acting of the opiates
- Processed from morphine, extracted from the seed pod of certain poppy plants
- First processed in 1874 by Bayer of Germany and became commonly used in medicine in the early 1900s.
Heroin

- Sold as a white or brownish powder or as the black sticky substance known as “black tar”
- Almost all heroin is “cut” with other drugs or with starch, sugar, powdered milk, quinine, strychnine, fentanyl or other poisons
  - Overdoses often occur because each batch varies in strength – never know what you are going to get…

Heroin Trafficking Trends

- “Bag” – contains 30-50 mg powder, only of portion of which is heroin
  - Traditionally purity is 1-10% but more recently ranges from 10-70% have been found
- “Black tar” is sold in chunks, usually weighing about an ounce.
  - Purity is usually less – often smoked or dissolved, diluted and then injected
Heroin Trafficking Trends

• Four foreign sources
  – South America, particularly Columbia
    • High purity powder distributed to metropolitan areas on the East coast
  – Mexico
    • “black tar” sticky or hard
  – Southeast Asia, particularly Thailand, Laos and Myanmar (Burma)
  – Southwest Asia, particularly Afghanistan and Pakistan

Heroin

• Can be injected, smoked or sniffed/snorted.
  – Injection is the most efficient way to administer low-purity heroin
  – All forms are addictive
• “Smack, thunder, horse, Chiva, Negra, hell dust, big H and nose drops, Black tar” on the streets

Heroin

• Intravenous use
  – Rush within 7-8 seconds followed by twilight state of sleep and wakefulness
• Intramuscular use
  – Slower onset of euphoria, taking 5-8 minutes
• Sniffed/Smoked
  – Peak effect in 10-15 minutes
Heroin

• With extended use, tolerance develops
  – With high doses, physical dependence and addiction develops
• Will also feel warm flushing of the skin, dry mouth, drowsiness, constricted pupils, nausea, respiratory depression and heavy extremities
• Overdose: slow shallow breathing, blue lips and fingernails, clammy skin, convulsions, coma and death

Heroin

• Long term effects
  – Bad teeth and gum inflammation
  – Constipation, cold sweats, itching
  – Collapsed veins, endocarditis, abscesses, cellulitis and liver disease
  – HIV and Hepatitis B and C
  – Pulmonary complications (depresses respiration and poor health)
  – Organ damage from additives
  – Loss of memory and intellectual performance
  – Depression

Heroin

• Withdrawal peaks within 48-72 hours and subside after about a week
  – Regular users will often experience it within a few hours
    • Drug craving
    • Restlessness
    • Muscle and bone pain
    • Insomnia
    • Diarrhea and vomiting
    • Cold flashes with goose bumps (“cold turkey”)
    • Kicking movements
Cheese

- A highly addictive drug known as “cheese heroin” is a blend of black tar Mexican heroin (called “black tar” because of its color) and over-the-counter cold medication, such as Tylenol PM.
- The drug costs only a couple of dollars a hit and children as young as 9, hooked on cheese heroin, have been rushed to hospital emergency rooms for heroin withdrawal.

Synthetic Opioids

- “Pink”
  - 2016 46 confirmed deaths in 2015
  - Powder and counterfeit tablets
  - More potent than morphine
  - Labeled as a “research chemical” so people could order over the internet

Non-Medical Use of Prescription Drugs

- Opioid prescribing has increased 4-fold since 1999
  - Codeine, fentanyl, opium, methadone
- Increase in ER visits
- 2.1 million Americans used for the first time in 2015
  - 5,750 initiates per day
  - 54% females, 30% adolescents
  - Older age groups
Opioid Use and Abuse in Pregnancy

- First Trimester Effects
  - Congenital heart defects with codeine
  - Minimal increase in absolute risk
- Second and third trimester
  - IUGR
  - Placental abruption
  - Fetal death
  - Preterm labor
  - Meconium aspiration

ACOG and the ASAM 2012 Committee Opinion

Consequences of Opioid Use in Pregnancy

- Neonatal Abstinence Syndrome (NAS)
  - Increased 500% in the last decade
- Opioid prescriptions
  - 14.4% private insurance and 21.6% uninsured have at least one Rx during a pregnancy
  - Long term effects limited data
- Infectious Diseases: HIV, HCV, HBV
- Motor Vehicle Accidents
- Incarceration

Management of Opioid Use in Pregnancy

- Methadone maintenance
  - Most of the data are with heroin use
  - Decrease complications from illicit use and narcotic withdrawal
  - Increase prenatal care
  - Needs to be part of a comprehensive package
  - Adjust dosing to avoid withdrawal symptoms
    - May need to increase dose or split the dose
  - Needs to be given in a licensed treatment program
Management of Opioid Use in Pregnancy

- Buprenorphine
  - Acts on the same receptors as morphine and heroin
  - Lower risk of overdose, fewer drug interactions, can be treated outpatient by a licensed physician and possible decrease in NAS
  - Increase in hepatic dysfunction and limited data in pregnancy
  - Bup with Naloxone: prevents injected use

Points to remember …..

- When undergoing a vaginal or Cesarean delivery, treat as if not on maintenance opioids as the maintenance dose is not enough to control the pain
  - May require significantly more than you would expect
  - Injectable non-steroidals
- Avoid agonist-antagonist medications
- Communicate with the pediatricians
- Breastfeeding?

What is being done on a national level?

- 2015 Secretary of Health and Human Services
  - Initiative to address the rising opioid epidemic
  - Implementation of prevention and treatment strategies
    - Prescribing practices
    - Naloxone deployment to first responders, family, friends, schools
  - Improve education in schools and communities
  - Prescription Drug Monitoring Programs (PDMPs)
What is being done on a national level?

- Revamping justice-involved individuals from incarceration to drug treatment programs
- Improve access to Medication-Assisted Treatment (MAT)

Early data from several states showing the benefit of these measures

What is being done on a national level?

- 2015 CDC Guidance for the Treatment of Chronic Pain
- White House Symposium 2015 and 2016
- Increase in Addiction trained physicians
  - ACGME and AAAP Fellowships
  - ASAM Courses and Fellowships
  - Buprenorphine education and certification
  - National Practice Guidelines

In the Future…

- While this seems like a daunting problem, an impressive amount of time, intellect and resources are working on the problem.
- Education, regulation and improved patient services
- Marijuana use...