

Challenges in Treating Pain in Pregnancy

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- Briefly discuss the challenges of treating pain in pregnancy
- Address the concerns about providing appropriate care for mothers who need pain management
- Review some of the steps that I think obstetricians and healthcare providers can take to help decrease the incidence of NAS.

Treatment of Pain in Pregnancy

- Ideally, would like to minimize the use of all medications in pregnancy, and use nonpharmacologic therapies whenever possible.
- When medications are needed for pain, must consider the potential harm for mother and fetus.
- Most vulnerable time for fetus is during organogenesis, from 4th through 10th week.
- Harm can come from use later in pregnancy, also.
- Some drugs may not be teratogenic, but may affect fetal physiology and have adverse effects.

Non-obstetrical Pain

- Chronic, recurrent pain versus Acute, new onset pain
- Chronic, recurrent pain:
 - Back pain: radicular pain from lumbar disc disease
 - Headaches
 - Sickle cell pain crisis
- Acute, new onset pain:
 - Postoperative pain treatment (appendectomy, cholecystectomy, abscess drainage, etc)
 - Tooth infection/abscess
 - Other acute pains related to pregnancy (eg. Back pain)

FDA Risk Classification Categories for Medications Used in Pain Management

Category A	Controlled human studies show no risk to fetus. The possibility of harm to fetus seems remote
Category B	Animal studies do not indicate a fetal risk or animal studies do indicate a risk but well controlled human have failed to demonstrate a risk
Category C	Studies indicate teratogenic or embryocidal risk in animals, but no controlled studies have been done in women or there are no controlled studies in animals or humans
Category D	Positive evidence of human fetal risk, but in certain circumstances, the benefits of the drug may outweigh the risks involved.
Category X	Positive evidence of significant fetal risk, and the risk clearly outweighs any possible benefit.

Examples of Analgesics

- Category A Multivitamins
- Category B Acetaminophen, Morphine,
Oxycodone, Hydrocodone, Meperidine
- Category C Codeine, ketorolac, aspirin,
gabapentin, lidocaine, propoxyphene,
Ibuprofen (D after 30 weeks),
fluoxetine, sertraline, methadone
- Category D Diazepam, Phenobarbital,
amitriptyline, paroxetine
- Category X Ergotamine

Analgesics in Pregnancy

- Two main categories of drugs used for pain:
 - **Nonopioid analgesics:** acetaminophen, aspirin, NSAIDS
 - **Opioid analgesics:** morphine, oxycodone, hydrocodone, codeine, meperidine

Aspirin and NSAIDs in Pregnancy

- **Aspirin:** inhibits platelet function, can potentially contribute to fetal and maternal bleeding at certain doses.
 - Potentially increases risk of some birth defects, such as gastroschisis, due to increased risk of vascular disruption, although this is not proven
- **NSAIDs:** no evidence of increased birth defects in humans or animals
 - However, have negative effects on fetal physiology, causing oligohydramnios and when used late in pregnancy, increase the risk of premature closure of the ductus arteriosus.

Opioids in Pregnancy

- Highly lipophilic and have relatively low molecular weight, facilitating their transfer across the placenta barrier
- No prospective, comparative studies, but not known to cause major or minor fetal malformations
 - Collaborative Perinatal Project 1977
 - Michigan Medicaid study 2002
 - Several population based case-control studies have shown increased risk of CHD with use in early pregnancy
- **Neonatal abstinence syndrome:** complex group of problems that occur in a newborn who has been exposed to addictive medications.
 - In utero exposure versus postnatal exposure

Opioids in Pregnancy

- No predictable dose or duration of drug exposure that leads to NAS.
 - NAS has been seen in newborns exposed to minimal doses of codeine in late pregnancy
- In May, 2012, the JAMA published a study showing a nationwide increase in the incidence of NAS from 1.20 to 3.39 per 1000 hospital births per year.
 - During that period, antepartum maternal opiate use also increased from 1.19 to 5.63 per 1000 hospital births per year.
- In 2011, the CDC found that sales and deaths related to prescription pain medications increased four fold from 1999-2008

HELP NOW!

- Statewide Task Force on Prescription Drug Abuse and Newborns in the state of Florida, 2012
- Obstetricians and other healthcare workers:
 - AWARENESS of the severity of the problem/the increasing incidence of NAS.
 - Counsel patients on alternative and safer options for treatment of pain in pregnancy.
 - When necessary, use minimal effective dosages, for the shortest possible period of time
 - Avoid high volume prescriptions for opiates
 - When suspected abuse is present, communicate with pharmacies and Emergency Rooms
 - Identify patients with addiction, and quickly refer to appropriate professionals for help
 - When needed, use methadone according to recommended guidelines and with full informed consent from mother.

Obstetricians/Providers continued

- Make sure pediatricians and neonatologists are aware of maternal use in pregnancy.
- Once a baby has been identified with NAS, establish a system to review case, try to identify the nature of the abuse, prescription vs illicit, and discuss results with all healthcare providers involved.
 - Avoidable or not??
- Role of an institutional task force?
- Support and participate CME programs on the safe and appropriate use of opioids
 - Including during medical school and residency

New laws for prescribing narcotics

- In 2012, Governor Scott signed into law several bills that have helped to decrease inappropriate and fraudulent prescription of controlled substances by physicians in Florida.
- Hopefully, this will mean fewer reproductive age women addicted to prescription drugs, and thus a decline in the incidence of NAS in our state.

- In our quest to help protect babies, both in utero and after birth, from the harmful effects of maternal use of these drugs, we must be careful to consider the mother's health, and her right to appropriate treatment of pain.
- Majority of mothers are willing to make sacrifices to their own health to protect the health of their unborn babies.
- Chronic pain, anxiety and stress can have a negative impact on pregnancy outcome.
- OPEN THE DIALOGUE, YET AVOID BLAME AND GUILT
- AWARENESS, EDUCATION, INFORMED USE, NOT ABUSE!

Bibliography

1. Babb M, Koren G, Einarson A. Treating pain during pregnancy. *Can Fam Physician*. 2010 January; 56: 25,27.
2. Rathmell JP, Viscomi CM, Ashburn MA. Management of Nonobstetric Pain During Pregnancy and Lactation. *Anesth Analg* 1997; 85: 1074-87.
3. Heinomen OP, Slone S, Shapiro S. Birth Defects and drugs in pregnancy. Littleton, MA: Publishing Science Group, 1977.
4. Patrick S, Schumacher RE, Benneyworth BD, Krans EE, McAllister JM, Davis MM. Neonatal Abstinence Syndrome and Associated Health Care Expenditures. *JAMA*, 2012; 307 (18): 1934-1940.
5. Signs V. Centers for Disease Control and Prevention (CDC). Vital signs: overdoses of prescription opioid pain relievers-United States, 1999-2008. *MMWR Morb Mortal Wkly Rep*. 2011;60(43):1487-1492