

# Breastfeeding and Substance Abuse: What do we really know?

## *IHS Best Practice Guidelines*

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## Part 4 of our series

### *Illicit Substance Use around the Time of Birth: Education and Prevention Strategies*

- Upcoming topics
  - *11/4: Challenges and Prevention Strategies from Tribes and Hospitals*
  - *12/16: IHS Resources*

# Today's topic:

## Breastfeeding and illicit substance use

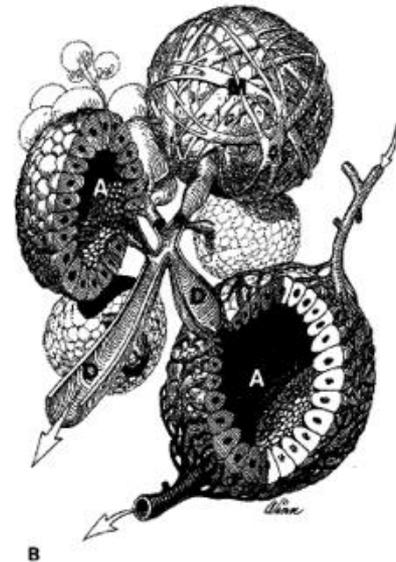
- All IHS OB facilities gained Baby-Friendly™ designation by 12/2014
- “Baby-Friendly” is a WHO initiative which promotes breastfeeding and optimal MCH practices in the hospital
- Many IHS OB hospitals have high breastfeeding rates
- Some Areas have high rates of illicit drug use
- During the IHS Baby-Friendly initiative, the question arose – how to handle breastfeeding and illicit substance use

# A complex context

- Many AI/AN women live in settings where breastfeeding is the norm and rates are high
- ‘Policing’ breastfeeding is unrealistic
- Not breastfeeding adds to health risks
- Stories emerge about women breastfeeding on drugs and infants dying
- So what do we advise?

# Background: “Drugs” in human milk

- Drugs/medications enter human milk in by *passive diffusion* via the blood supply to the alveoli in the breast
- Presence in milk depends on certain factors such as:
  - Size of drug molecule
  - Oral/gut availability
  - Half life of the drug
  - Fat solubility



# Size of molecule

- Very small molecules (< 200 Daltons) like alcohol equilibrate easily between plasma and breast milk
- Molecules >800 Daltons do not pass into the milk (\*except in 1<sup>st</sup> 1-3 days....)
- Insulin is too large to pass into human milk

# Size of molecule

- Re Illicit drugs, for example:
  - Crack/cocaine has a low molecular weight and passes easily into the breast milk
  - Methadone, marijuana, buprenorphine, and heroin have higher weight and thus transfer less easily

# Oral route availability

- Substances that are poorly absorbed via the oral route are less likely to get into the milk or into the baby via the milk
- Buprenorphine, for example, has very poor oral availability

# Half life of the drug

- Long half life drugs remain in milk for long periods, leading to a higher chance of infant exposure/retention(e.g. 24 hour allergy meds; methadone)
- If there's a choice, short half life drugs are preferable
- Breastfeed, then take the medication immediately afterwards

# Half life of the drug

- When the drug has cleared the mother's system (e.g. general anesthesia) it's cleared the breast
- If the drug builds in the mother it becomes "trapped" in the breast/milk

# Other factors

- Fat soluble drugs concentrate in milk
- Weak bases concentrate in milk and acids are inhibited – milk is slightly more acidic than plasma

# Other factors

- Highly protein bound drugs pass poorly into milk (methadone)
- Highly charged molecules pass poorly into breast milk

# The balance....

- Obviously, some drugs fall into 'conflicting' availability categories, such as, high protein binding and long half life (methadone)
- So it's not a precise science
- Added to which, the research is scarce....

# Infant factors

- Older babies who are eating solids have less exposure
- Older infants can metabolize the drugs and excrete them more easily than young infants whose metabolism is still developing
- Premies are higher risk (but also higher risk for problems related to formula feeding)

# More background: Prevalence of illicit drug use in the US

- SAMHSA: *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD*

# SAHMSA report (2013 data)

- 9.4% of the US population over 12 had used illicit drugs in the month prior to the survey
- 12% among AI/AN
- Marijuana was the most commonly used illicit drug (7% of population or 80% of users used marijuana)

# SAHMSA: Pregnant women

- 5% illicit drug use overall
  - 11% rate in same age group, not pregnant
- 15% among pregnant 15-17 year olds
- 9% among pregnant 18-25 year olds
- 3% among pregnant 26-44 year olds

# Is it just drug use?

- **Breastfeeding/illicit drugs often complicated by:**
  - Impact of drug use on parenting skills (not unique to the *breastfeeding* mother)
  - Polysubstance ; alcohol abuse
  - Potential HIV+ status (breastfeeding contraindicated)

# Is it just drug use?

- Poor nutrition
- Mental health issues (e.g. depression)
- Potential for complex issues around parenting, living circumstances, and custody/CPS

- “Despite the myriad factors that may make breastfeeding a difficult choice for women with substance use disorders, drug-exposed infants, who are at a high risk for an array of medical, psychological, and developmental issues, as well as their mothers, stand to benefit significantly from breastfeeding.”

- *Academy of Breastfeeding Medicine Clinical Protocol #21: Guidelines for Breastfeeding and Substance Use or Substance Use Disorder, Revised 2015*

# Illicit substance use and breastfeeding: Morality or Medicine?

- Hard to study for ethical reasons
- Almost zero evidence on outcomes of illicit drugs in breastfeeding infants
- Most infants also exposed prenatally, so outcomes almost impossible to define by source of exposure
- Policies couched in moralistic terms
- What about the risk/benefit ratio?

# Where can I get a “definitive” answer?

- There are no definitive answers, but LactMed is an excellent source of information
- <http://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm>
- LactMed is a service of the NIH and it updates with new evidence as it comes in
- The AAP no longer publishes a regular statement on medications and human milk and defers instead to LactMed

# Specific drugs of abuse and breastfeeding: Perspectives

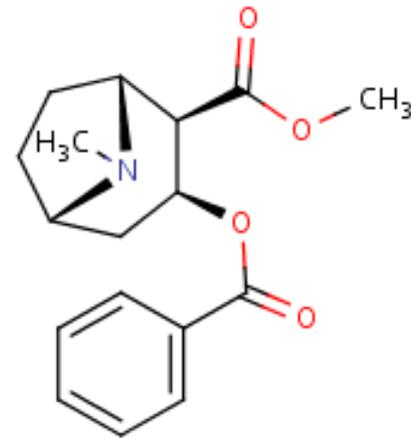
# Cocaine - LactMed

- Newborns highly sensitive to cocaine “because they have not yet developed the enzyme that inactivates it”
- Serious adverse reactions have been reported in a newborn infant exposed to cocaine via breast milk



# Cocaine

- Cocaine has been detected at high levels in breast milk
- Documentation of infant intoxication on cocaine



# Cocaine – LactMed

- Cocaine should not be used by nursing mothers or smoked (crack) by anyone in the vicinity of infants
- A breastfeeding abstinence period of 24 hours has been suggested for women who occasionally use cocaine while breastfeeding, based on the rapid elimination of cocaine by the mother

# Methamphetamine



- Mother of 2-month-old inhaled illicit street **meth**
- **Infant** found dead 8 hours after a small amount of breastfeeding and 120-180 mL of formula
- Infant serum **meth** concentration 39 mcg/L.
- Mother convicted of child endangerment
- Questionable given low infant serum and little breastfeeding

# Methamphetamine



- **Lactmed:**

- “Should not be used by *nursing*\* mothers because it may impair their judgment and child care abilities.”
- Detectable in breast milk and infant serum
- “Withholding breastfeeding for 24 to 48 hours after the maternal dose has been recommended. However, breastfeeding is generally discouraged in mothers who are actively abusing amphetamines.”

# Alcohol



- “While the harmful effects of alcohol during pregnancy are well-established, the consequences of alcohol intake during lactation have been far less examined.”
- ~ 50% Of lactating women in western countries consume alcohol
- Alcohol intake inhibits milk ejection reflex, and decreases milk supply

# Alcohol

- *“Minute behavioral changes in infants exposed to alcohol-containing milk have been reported, but the literature is contradictory. Any long-term consequences for the children of alcohol-abusing mothers are yet unknown, but occasional drinking while breastfeeding has not been convincingly shown to adversely affect nursing infants.*

# Alcohol

- *In conclusion, special recommendations aimed at lactating women are not warranted. Instead, lactating women should simply follow standard recommendations on alcohol consumption.”*
- Basic Clin Pharmacol Toxicol Haastrup et al 2014

# Cannabis.....

- Little is known about the adverse effects of postnatal cannabis exposure thru breastfeeding because of a lack of studies in lactating women
- *Journal of Toxicology, 2009, Garry et al*



# Cannabis

- THC in human milk up to 8 x that of maternal plasma
- Metabolites in mec: infant absorbs and metabolizes THC
- THC stored in fat tissues up to several months
- Long half-life (25–57 hours)

# Cannabis

- Some studies conclude that [THC] could decrease motor development of the child at one year of age.
- Therefore, cannabis use and abuse of other drugs like alcohol, tobacco, or cocaine must be contraindicated during breastfeeding.
- *Journal of Toxicology, 2009, Garry et al*

# Academy of Breastfeeding Medicine

- “As laws shift and marijuana use becomes even more common in some areas, it becomes increasingly important to carefully weigh the risks of initiation and continuation of breastfeeding while using marijuana with the risks of not breastfeeding while also considering the wide range of occasional, to regular medical, to heavy exposure to marijuana”

# Marijuana

- “Uniform guidelines regarding the varied use of marijuana by breastfeeding mothers are difficult to create and cannot hope to cover all situations.” ABM Protocol 2015

# Marijuana

- Positive in urine 2–3 weeks, thus it's impossible to tell occasional from chronic users
- Effect of THC on infant development via breastfeeding alone is sparse and conflicting
- No data evaluating neurodevelopmental outcomes
- Potency of marijuana up from 3% (1980s) to 12% (2012)

# Academy of Breastfeeding Medicine

- Breastfeeding mothers should be counseled to reduce or eliminate their use of marijuana to avoid exposing their infants to this substance and advised of the possible long-term neurobehavioral effects from continued use

# Opioid use in women of childbearing age

- >25% privately insured and >33% of Medicaid-enrolled women of childbearing age filled a prescription for an opioid each year (2008-12)
- Most commonly prescribed opioids:
  - Hydrocodone
  - Codeine
  - Oxycodone

*(Ailes et al; MMWR Morb Mortal Wkly Rep Jan 2015;64)*

# Opioids in pregnancy

- Prenatal maternal opioid use up from 1.19 to 5.63 per 1,000 births; 2000-2009 (*Patrick et al: JAMA 2012;307:1934–1940*)

# Buprenorphine

- High molecular weight
- Poor oral availability (31%)
- High protein binding capacity; but fat soluble and weak base
- Unlikely to enter milk in large quantities and studies have shown this to be the case

# Buprenorphine

- LactMed: 5 studies showing women on buprenorphine maintenance with no adverse effects
- “Because of the low levels of buprenorphine in breastmilk, its poor oral bioavailability in infants, and the low drug concentrations found in the serum and urine of breastfed infants, its use is acceptable in nursing mothers.”

# Buprenorphine

- In 1 study, 76% of 85 maternal–infant pairs breastfed, with 66% still breastfeeding 6–8 weeks postpartum.
- Breastfed infants had less severe NAS and were less likely to require pharmacological intervention than formula-fed infants

# Current knowledge

- According to the ABM 2015 Protocol, providers should “Encourage stable methadone- or buprenorphine-maintained women to breastfeed regardless of dose.”

# Methadone

- Commonly used in treatment programs
- Even with high maternal dose, very little passes into milk
- High molecular weight; high protein binding
- Small amounts enter milk due to fat solubility and weak base
- AAP approves because of low amounts and lack of evidence for adverse outcomes

# Methadone

- “Lack of support from the healthcare community and misinformation about the dangers of breastfeeding while on methadone therapy are significant, yet modifiable, barriers to breastfeeding success in these women.”
- “Given the benefits to these mothers and infants to remain on methadone maintenance therapy and breastfeed, it is important for us to provide robust ongoing support for this vulnerable group.”

(ABM protocol)

# Opiates – the Canadian view...

- “All opiates have been documented in breast milk in small amounts and are unlikely to be of any clinical significance.... maternal opiate use is considered compatible with breastfeeding.”
- Society of Ob and Gyn of Canada

# *Breastfeeding and Illicit Drug Use: Indian Health Service Best Practice Guidelines*

## **Background**

The IHS recommends and supports breastfeeding as the normal method of infant feeding, in alignment with their adherence to the WHO Baby-Friendly Hospital Initiative. Formula feeding is associated with short and long term health risks. However, specific drugs can also potentially cause harm to infants when used by breastfeeding mothers. Decisions should be made on a case by case basis by the clinicians, in consultation with the new mother.

# *Breastfeeding and Illicit Drug Use: IHS Service Best Practice Guidelines*

## **Counseling and documentation**

- Women who are using illicit substances during pregnancy, at the time of birth, and/or postpartum, should **be referred to relevant counseling services and treatment programs.**
- Comorbid illnesses which are often related to substance abuse, such as HIV and hepatitis, should be considered and maternal-infant dyads should be appropriately tested and treated.
- Counseling, referrals, and education should be documented in the medical record.

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**Drug specific information: refer to Lactmed; use clinical judgement**

# *Breastfeeding and Illicit Drug Use: IHS Service Best Practice Guidelines*

**Drugs that are considered incompatible with breastfeeding include *Cocaine, Methamphetamine* and *Heroin***

- Infants are at serious risk of adverse outcomes if their mothers use these substances and breastfeed.

**Drugs approved by the AAP for use in breastfeeding mothers include *Methadone***

- Methadone is often used for treatment of opiate addiction in pregnancy and is considered safe for breastfeeding babies.

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**Drugs where there is no definitive evidence to discontinue breastfeeding include:**

- *Buprenorphine/Subutex*
- *Marijuana*
- *Alcohol*
- *Benzodiazepine:* (Infants should be monitored for apnea, especially where long-acting benzodiazepines are involved).  
*Prescription pain pills:* (Oxycodone; Morphine; Hydrocodone; Fentanyl)

# *Breastfeeding and Illicit Drug Use: IHS Service Best Practice Guidelines*

- Especially where there is very little research or evidence on which to base clinical practice, clinicians should assess each situation on a case by case basis, taking into consideration, for example, the amount of the drug used, and the mother's the individual circumstances, such as available support, treatment plan, and access to care.

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## **Follow up**

- Infants exposed to drugs in utero, especially infants exposed to opioids, may withdraw and show signs of Neonatal Abstinence Syndrome
- Hospital discharge should be delayed for approximately 72 hours to observe the newborn for signs of withdrawal. All infants should be seen by a trained clinician within 24-48 hours of discharge.

# *Breastfeeding and Illicit Drug Use: IHS Service Best Practice Guidelines*

- Referral to a lactation consultant and/or lactation support in the community is recommended.
- Close follow up is critical....infants should have continued follow up until weight gain and growth is established and general assessment is stabilized. A referral should also be made to Public Health/Community Health Nursing.
- Maternal substance abuse relapses should prompt reevaluation of whether breastfeeding is safe for that maternal-infant dyad.

# References

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# In conclusion.....

- The science is far from perfect
- 'Enforcement' is not easy
- Clinical judgment and consistency are important
- Tailor policies to a realistic expectation of the patient population
- Avoid confusing 'morality' with medicine
- Many communities deal with unprecedented rates of substance abuse and known strategies are scarce