**NEWBORN OPIOID WITHDRAWAL/NAS/NOW NOTES:**

**NAS:** Alcohol, nicotine, benzodiazepines

* 1. No evidence to support negative long-term effects
  2. Tobacco and alcohol have the most negative impacts on pregnancy

1. **NOW:** opioids
   1. Onset of symptoms within 36 hours, can last up to 4 weeks
   2. There have been potential long-term cognitive deficits, but in general, there are no known long-term complications associated with NOW
   3. Excessive crying
   4. Hyperactive Moro reflex
   5. Tachypnea
2. First-line treatment is always behavioral interventions
3. Always encourage breastfeeding (unless SUD or untreated HIV)
4. Mild cases of neonatal withdrawal: non-pharm treatment
5. Pharmacologic: opioids and non-opioids

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1. FDA-Approved Treatments for Opioid Addiction:
   1. Methadone
      1. Historically the gold standard, more data
      2. Can be challenging to get access to methadone clinics
      3. Retention may be better with methadone than Buprenorphine
   2. Naltrexone
      1. Not 1st line treatment
      2. Need detox of abstinence to get onto it
      3. Pregnancy category C
      4. NOT preferred choice of drug unless they are stable on it already, and may be justifiable to stay on it
   3. **Buprenorphine**
      1. Moving towards this being the gold standard
      2. Associated with:
         1. Lower risk of preterm birth
         2. Greater birth weight
         3. Larger OFC
         4. Lower risk of NOWS/NAS
      3. MUCH more available
      4. Some patients have lower compliance with Buprenorphine, and not everyone responds well to it, can precipitate withdrawal
      5. buprenorphine/naloxone versus buprenorphine:
         1. Still being studied, combination may be preferred but data is inconsistent
2. *Opioid agonist therapy is gold standard:*
   1. Reduction in maternal mortality, decreases risk of HIV, HBV, HCV
   2. Doses generally increase during prengnacy
      1. Increased metabolism and volume of distribution
   3. **Fetal benefits:**
      1. Decreased fluctuations in maternal opioid levels and reduced fetal stress
      2. Decrease in intrauterine fetal demise
      3. Decrease in IUGR
      4. Decrease in preterm delivery
   4. Maintenance is preferred over tapering
3. Pregnancy
   1. Women who are stable on either methadone or buprenorphine should continue on this medication throughout pregnancy and postpartum period
   2. Combination of medication and behavioral therapy
4. Detoxification from opioids is NOT recommended during pregnancy:
   1. Risk to pregnancy from stress of detox
   2. High risk of relapse and treatment drop-out
   3. Does not decrease risk of neonatal withdrawal
5. In labor:
   1. Patients with any opioid use may have higher opioid tolerance, therefore lower pain tolerance
   2. Opioid agonist treatment is not sufficient pain control
   3. Always continue opioid agonist therapy and avoid partial agonists
   4. Use epidurals and local analgesic blocks
6. Post-partum:
   1. Discontinuing treatment at this time not recommended
   2. High-risk time for return to use and death
7. Benzodiazepine
   1. Withdrawal can be  fatal and should be monitored
   2. Benzo use in pregnancy can cause:
      1. During pregnancy: spontaneous abortion, preterm birth
      2. Newborn at birth: hypothermia, respiratory distress, lethargy, death
8. Stimulants
   1. Quitting stimulants at any time during pregnancy improves outcomes
   2. Maternal outcomes of use: HTN, MI, renal failure, CVA, death, thrombocytopenia
   3. Pregnancy outcomes:
      1. LBW
      2. Preterm birth
      3. Potential miscarriages, stillbirth, uterine rupture, placental abruption