When Bats Come Calling, Rabies Scare

Rachel called us the morning she woke up and found a bat hanging out in her closet. As far as she could tell, she had not been bitten. She was 10 weeks pregnant and wondered what her next steps should be. Her husband also did not detect any bites. He kindly relocated the bat to the outside of their home, but now they were both exposed to potential rabies infection. She was about to leave for work, and her husband had already left for a busy day at the office.

Rachel had been down this road before in high school with a similar event in her childhood home. At that time, her whole family went to their local emergency department and were treated with a rabies vaccine series, or post exposure prophylaxis, to prevent them from becoming ill with rabies. At that time, she remembered being told that she would never need to go through the series again. She was calling us today because her OB provider referred her to MotherToBaby Connecticut for clarification.

In researching this comment about never needing to be treated again, I decided I needed some assistance from our local Poison Control. They confirmed that yes, she ***did*** need to be seen and re-treated in an emergency department of her choice. They also put me in contact with our State of CT Epidemiologist for further consultation. Our epidemiologist reiterated the need to be treated again because of this exposure. Rachel's pregnancy was ***not*** a reason to avoid treatment.

In such circumstances, the benefits outweigh the potential chances for adverse pregnancy outcome from the preventative vaccine series. Rachel's husband would need the vaccine, as well.

The Centers for Disease Control and Prevention (CDC) has a nice online review that I shared with Rachel that confirmed the need for her to receive treatment with the rabies vaccine. It also confirms the benefits of treatment in pregnancy outweighs the chances for any adverse pregnancy outcomes.

Rabies

- Because of the potential consequences of inadequately managed rabies exposure, **pregnancy is not considered a contraindication to postexposure prophylaxis**. Certain studies have indicated no increased incidence of abortion, premature births, or fetal abnormalities associated with rabies vaccination. **If the risk of exposure to rabies is substantial, pre-exposure prophylaxis also might be indicated during pregnancy**. Rabies exposure or the diagnosis of rabies in the mother should not be regarded as reasons to terminate the pregnancy.

Treatment for rabies exposures include the actual rabies vaccine as well as the Human Rabies Immune Globulin (HRIG). The HRIG is a medication given at the time of exposure to provide the patient with immediate protection from the rabies virus. It is only ever given once. That means Rachel will not need HRIG again.

Instead, she will just need two injections of the rabies vaccine (there are up to five shots given after a first exposure). The vaccine helps your body build its own immunity to protect you against the rabies virus.

Because this was her husband's first exposure, he will need the full treatment including the HRIG and up to five injections of the rabies vaccine.

How urgently did Rachel and her husband need to be treated? The epidemiologist said sooner rather than later, recommending they visit an emergency department within the day of exposure.

Though Rachel was not excited about having to get vaccinated again, she was relieved to learn exactly what she needed to do for the health of her baby, her husband, and herself.

We were grateful for the collaboration with our local Poison Control, state epidemiologist and the CDC documents. The best possible reproductive data was provided for this couple to make the best reproductive decisions for themselves. With the help of MotherToBaby and our collaborators, this was one less ***bat***-tle they had to face alone.

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"This is my first child, and I don't know what to do!" exclaimed Lyndsay, a newly pregnant woman when I answered MotherToBaby's free and confidential helpline. Lyndsay explained that she is taking several medications and was concerned about their potential effects on her unborn baby. She is currently very new to recovery from cocaine and opioid use disorder. She is taking buprenorphine and naloxone for the opioid use disorder, along with baclofen and n-acetylcysteine (NAC) for cocaine cravings. Her medication regimen also includes aripiprazole, escitalopram, bupropion and mirtazapine for depression, mood stabilization and insomnia.

"This combination has been working well for me," she explained. "Having that said, I wonder if the treatments are increasing my chances for pregnancy complications or birth defects in my baby?" She wondered if she would be

better off getting off the buprenorphine and naloxone now.

In preparing to answer her concerns, I reached out to Ellen Kolomeyer, PhD, PMH-C, a licensed clinical psychologist certified in perinatal mental health, who is part of the National Maternal Mental Health Hotline team to assist us in providing the best answers about recovery treatment while pregnant. The National Maternal Mental Health Hotline provides 24/7 support to pregnant and postpartum individuals experiencing challenges with mood and anxiety, as well as their support women and loved ones through its phone and text line 1-833-TLC-MAMA.

Q: How common is it for a woman in recovery and who is also pregnant to be treating an opioid use disorder with medications?

According to the Centers for Disease Control and Prevention (CDC), about 7% of pregnant women used opioids during pregnancy, with one in five of those women reporting that they misused opioids during pregnancy. But, only about half of the pregnant women who use opioids during pregnancy are in recovery, so it is wonderful that Lyndsay is reaching out to learn how to best care for herself and her baby. I hope her story shows that it is possible to get help and have a healthy pregnancy.

Q: What treatments can be used?

When a pregnant woman is dealing with opioid addiction, healthcare providers often prescribe medicines like methadone and buprenorphine. It is best if treatment starts before someone gets pregnant to help both the mother and baby stay healthy. But sometimes, people face challenges that make it hard to get treatment. These can be personal issues like having a tough time managing feelings or problems with relationships. There can also be unfair judgments from others about drug addiction that make it harder for people to seek help. Besides giving medicine, it is also important to get help for mental health. This means talking to a counselor or therapist about the things that might be causing someone to use drugs in the first place.

Q: Is discontinuing treatment while pregnant recommended? Why or why not?

It is important to know that stopping opioid use suddenly during pregnancy can be dangerous for both the pregnant woman and the baby. Managing opioid use with medication is a better way to stay healthy and reduce the risk of going back to using drugs. So, it is best to keep taking the medication rather than stopping it while pregnant. It is crucial to talk with a healthcare provider before making any decisions about treatment.

Q: Should a pregnant woman expect her healthcare provider to start or stop medications or switch to alternatives?

Each pregnancy is different, so there is no one answer that fits everyone. Depending on the situation, a pregnant woman might start, stop, or switch medications. It is common for healthcare providers to talk about medications, like methadone https://mothertobaby.org/fact-sheets/methadone/ or buprenorphine, https://mothertobaby.org/fact-sheets/buprenorphine/ and suggest starting them if needed. Sometimes, providers might think about changing to a different medication but they will carefully consider the risks and benefits. It is best to see a healthcare provider who knows how to give the right recommendations for pregnant women.

Q: What can a pregnant woman do to advocate for herself in this scenario?

Pregnant women who are struggling with opioid use often face challenges in getting the right information and help. Even though there can be judgment from others, pregnant individuals can benefit from speaking up for themselves. One important way to do this is to understand the reasons behind the problems they are facing and to talk about their goals.

Research shows that many people turn to drugs because of past trauma, not having enough support or money, dealing with bad feelings, and having tough relationships, among other reasons. By thinking about their own situation and struggles, individuals can work to address the main issues they're facing.

I want every pregnant woman in this situation to know that they can still have a good relationship with their baby and take care of their baby's needs. It is a good idea to find a healthcare provider who knows a lot about opioid use disorder to get the right support. Building a strong support system could be the key to making a big change and getting better.

There are some great ways that pregnant women recovering from opioid use disorder can build their support system. Talking through personal hardships in support groups, with home visitors, with a counselor, or with a therapist can help build the tools and confidence you need to learn how to advocate for yourself and your baby with medical providers.

Q: What is the best way that a pregnant woman can share her questions and concerns with their Obstetric provider?

To make sure you get the best support, it is helpful to find a healthcare provider who knows about substance use issues. One great way for a pregnant woman to talk about their questions and worries with their OB is to write them down before an appointment and bring the list with them. As the pregnancy progresses, working together with the provider to plan for labor, delivery, and postpartum care can get the parent-to-be ready for what is ahead at each stage. I suggest asking your obstetric provider to be open and share information throughout the process so that there are fewer surprises when it is time for the birth, after-birth care, and taking care of the newborn.

Q: After delivery, what does a typical newborn period look like for the parent(s) and baby?

It is common for babies to experience withdrawal symptoms from medications used to treat opioid addiction (also called neonatal abstinence syndrome), but this should not stop a healthcare provider from prescribing the medications or pregnant women from taking them. After the baby is born, parents should team up with their baby's healthcare provider to keep an eye on the newborn and get help when needed. It is important for parents to be involved in their baby's care and spend time bonding with them. If parents feel they are not getting these chances, they can speak up and ask for them.

Withdrawal symptoms in a baby are treatable, but some babies need to be monitored extra closely and around the clock. It can also be helpful to prepare ahead of time and learn if it is possible that your baby might go to the Neonatal Intensive Care Unit (NICU) instead of staying in the recovery room with you. While unexpected things can happen in any pregnancy and birth, you could ask your providers ahead of time whether they think there is a reason your baby might go to the NICU and what you might expect. For example, you might want to know how long your baby could be in the NICU and make a plan for advocating to still be able to see, touch, and care for your baby as often as possible during your baby's medical care.

Q: Can you share recommended resources?

There are widely available, free, and confidential programs, resources, and provider directories that anyone can access including the following:

- National Maternal Mental Health Hotline provides 24/7 support to pregnant and postpartum individuals experiencing challenges with mood and anxiety, as well as their support persons and loved ones. Call or text 1-833-TLC-MAMA.
- MotherToBaby provides information about exposures, like medications and diseases, during pregnancy and while breastfeeding through its free phone service 866-626-6847, text 855-999-3525, email and live chat via MotherToBaby.org.
- Substance Abuse and Mental Health Services Administration (SAMHSA) offers a directory to find medical providers who specialize in treating opioid use disorders. Locate a practitioner here. SAMHSA also provides a National Helpline that can provide treatment referral and information 24/7. Call 1-800-662-HELP.
- Postpartum Support International HelpLine provides basic information, support, and resources for pregnant, postpartum, and parenting individuals and their support persons and loved ones. This line is not 24/7 but messages are returned daily. Call or text 1-800-944-4773.
- Postpartum Support International Provider Directory lists medical and mental healthcare professionals who are specially certified to care for pregnant and postpartum individuals. Access the directory here.
- The Suicide and Crisis Lifeline is available 24/7 by calling or texting 988.
- Circle of Security is an evidence-based program that helps parents build secure parent-child relationships, effectively meet babies' needs, and help parents break cycles from their own childhoods that they do not wish to carry over to their children. Learn more here and a Circle of Security Parent Educator here.

We had just shared a lot of information with Lyndsay. She was relieved to hear that her recovery treatment was going to allow her to stay well in pregnancy and give her the best chance to have a healthy baby. "I feel like I have a better idea of what questions I need to ask my OB and pediatrician," she told us. "I feel less alone in this now and it looks like there are places I can go to get more information too."

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Note: This information should not take the place of medical care and advice from your healthcare providers.

When Bats Come Calling, Rabies Scare

"I can't get rid of it fast enough!" Caroline was 5 months pregnant and at her wits end when she contacted MotherToBaby. "My migraine is so bad that I can barely get out of bed, but I feel like there's nothing I can do about it since I'm pregnant. I don't want to harm the baby!" We often get questions like Caroline's from women planning a pregnancy or already pregnant who would like information on the prevention and treatment of migraine headaches, so I start by asking Caroline what she would have used if she weren't pregnant. Caroline told me that she would have taken ibuprofen and or sumatriptan.

Migraine preventions and treatments fall into three basic categories:

- **Over the counter remedies** such as aspirin or other NSAIDs, or acetaminophen with or without caffeine.
- **Prescription medications** such as opioids, various anticonvulsants, triptans, tricyclic antidepressants and beta blockers.
- **Alternative therapies** such as Botox or other nerve block injections, massage therapy, acupuncture, high doses of magnesium, or essential oils.

Most women have tried more than one therapy that has failed before they find one or a combination of products that will work for them. Migraines can be very debilitating, so the thought of having to go without a prevention or treatment that works can be very anxiety producing. Yes, it is true that some women find that their migraines disappear during pregnancy, but in others, they become more frequent. Having a plan for prevention and treatment, just in case, is necessary. We can help with the development of that plan by providing migraine sufferers with evidence-based information about the safety of various treatments during pregnancy (and also while breastfeeding!). Below is a brief summary of many common migraine medications and treatments, but we encourage you to visit our Fact Sheets or contact our experts for more detailed information.

Over the Counter Remedies

Typically, non-steroidal anti-inflammatory medications like aspirin, naproxen and ibuprofen are not recommended in pregnancy.

Acetaminophen alone does not always provide relief for a migraine, but its use should not be of great concern depending on how much or how often it is needed.

Caffeine can sometimes be added to enhance the relief of a migraine in some individuals. Typically, such doses of caffeine are not expected to create an increased chance for adverse pregnancy outcome. For further guidance on

caffeine, see our fact sheet.

Other over the counter remedies that fall into the herbal or supplement categories are also not recommended since they are not well regulated or studied for safety. See our fact sheet on herbal supplements.

Prescription Medications

Many women find that over-the-counter products are not helpful enough and turn to healthcare providers for prescription medication relief. Prevention of the headache in the first place is key for some.

Beta blockers have been around a long time and used daily for migraine prevention in some individuals. Studies do not suggest that their use in pregnancy is high risk. See our Fact Sheets on metoprolol and propranolol for additional information.

The tricyclic antidepressants, such as amitriptyline and nortriptyline, are older drugs that have been successful in some at the prevention of migraine headaches when used daily. They too have not been found to be high risk products when used in pregnancy.

Other medications such as certain anticonvulsants have been used to prevent or reduce the severity or frequency of migraines. However, these medications have more complex concerns when used in pregnancy. The chance for complications in pregnancy must be individually and carefully weighed against the benefits of keeping migraines in check.

The “triptan” products were designed specifically to treat migraine headaches and include sumatriptan, rizatriptan, frovatriptan and naratriptan. As the “triptan” medication that has been around the longest time, sumatriptan has relatively reassuring data on use during pregnancy.

Opioids are used to treat the extreme pain caused by migraines. While they are not typically found to cause a significant increased chance for birth defects, regular use can create problems later in pregnancy or after birth. In some cases, their use may cause rebound headaches and therefore create more need for treatment.

Alternative Therapies

Migraines can be really difficult to prevent or treat, and some women turn to alternative therapies. Botox, bupivacaine, or lidocaine injections have been used as nerve blockers to treat migraines. However, it may not be best to try these out for the first time during a pregnancy.

Some non-pharmaceutical options include massage therapy and acupuncture. Your healthcare provider may be able to refer you to someone who has experience implementing these treatments with pregnant women.

Essential oils are used topically or in a diffuser. Be careful not to ingest any. If you are nursing or have an infant, be

sure not to leave oils on your body where they might accidently ingest them.

We have had questions about the use of high doses of magnesium to curb migraines. We cannot recommend this option and suggest that you seek out the advice of your healthcare provider to determine if such treatment would be helpful or wise.

The Takeaway

I gave Caroline a summary of what is known about her usual migraine treatments, and suggested she have a conversation with her healthcare provider to discuss a safer alternative to ibuprofen and whether her provider would suggest any other changes to her treatment plan. The bottom-line is the benefits of some treatments may outweigh the risks of not treating migraines. A healthy mama from toe to head (especially a pain-free head) is best for baby too.

When Bats Come Calling, Rabies Scare

Migraine headaches affect one billion people worldwide. Migraines are more common in people who could become pregnant, and during pregnancy their frequency can increase, decrease, or stay the same. Last year we talked to Caroline about treating her migraine headache at five months of pregnancy. Now she has reached out to us to discuss treatment options before she tries to get pregnant again. Back when she was pregnant with her first child, she was using acetaminophen and sumatriptan, but found that her migraines were much less responsive to these products over time. Today, Caroline is considering the newer drugs that have come onto the market since her last pregnancy. She has never used a preventive medication and was curious about the data on the new products. Caroline's healthcare provider has mentioned trying Emgality® (galcanezumab-gnlm) or Nurtec ODT® (rimegepant).

Since there are many new drugs marketed to treat and prevent migraines, let us start with an overview. These newer medications are called calcitonin gene-related peptide (CGRP) antagonists, CGRP receptor blockers and CGRP blockers, and are a new category of migraine treatments. Some treat migraine attacks, while some prevent migraines, and some do both (like those Caroline is interested in).

There are so many choices, so let's look at what the data says when these medications are studied during pregnancy.

Medications that *prevent* chronic migraines:

- Qulipta® (atogepant) – oral; CGRP receptor antagonist
- Ajovy® (fremanezumab-vfrm)-injection; CGRP blocker
- Vyepti® (eptinezumab-jjmr)- injection; CGRP receptor blocker
- Aimovig® (erenumab-aooe)- injection; CGRP receptor blocker
- Emgality® (galcanezumab-gnlm)- injection; CGRP blocker
- Nurtec ODT® (rimegepant)- tabs; CGRP receptor antagonist

Medications that *treat* the symptoms of acute migraines:

- Emgality®(galcanezumab-gnlm) – injection; CGRP blocker
- Nurtec ODT® (rimegepant)- tabs; CGRP receptor antagonist
- Ubrelvy® (ubrogepant)- oral; CGRP receptor antagonist

Medications that *prevent* and *treat* migraines:

- Emgality®(galcanezumab-gnlm) – injection; CGRP blocker
- Nurtec ODT® (rimegepant)- tabs; CGRP receptor antagonist

Unfortunately, there is very little information involving human data on Quilipta®, Nurtec ODT® or Ubrelvy® so we are left without the information we need for a full risk assessment of these medications. However, there are some data in humans on the medications on Ajovy®, Vyepti®, Aimovig® and Emgality®. These data are limited, meaning we don't have a lot of information.

Let's begin by breaking down the information that we have on Ajovy®, Vyepti®, Aimovig® and Emgality®. These four medications are all monoclonal antibodies, which in scientific terms means they are extremely large molecules. That means that they are unlikely to cross the placenta until around mid-pregnancy after the baby's structures and organs have developed. Therefore, these medications should not have a direct impact on the baby's development. It cannot be said that there is no increased chance of the baby being affected, but these medications may not be high risk exposures. These medications stay in the person's system for a very long time. So if Caroline would like to have any of these out of her system before she gets pregnant, it may take approximately 5 months to clear.

What are the specific reports that we have on Ajovy®, Vyepti®, Aimovig® and Emgality® that help us assess the risk of use in pregnancy?

There are 13 cases of exposure prior to pregnancy and 10 exposures during pregnancy in one report on Ajovy® (fremanezumab-vfrm). In these cases, there was no increase in pregnancy loss, and one child was born with kidney and GI issues that cannot be proven to be caused by the medication treatment at this time.

There are two cases of Vyepti® (eptinezumab-jjmr) use during pregnancy. Outcome was reported on only one pregnancy which resulted in a miscarriage. However, based on what we know about monoclonal antibodies and the size of this molecule potentially being too large to pass through the placenta, it also would not be expected to have an increased risk of problems when used in the first trimester. More data and studies are needed to support this statement, though.

There are 116 cases of Aimovig® (erenumab-aooe) in one report. These studies include one prior to pregnancy, 108 during pregnancy, five during lactation and two at an unknown time. There was no increase in pregnancy loss or pattern of birth defects seen in the cases with known outcome. There were six cases of early birth in this group. One infant had growth issues but that mother was on multiple medications. There are at least five other cases in the medical literature that resulted in infants born without adverse pregnancy outcome or birth defects.

Finally Emgality® (galcanezumab-gnlm) was suggested to Caroline. There are 125 cases with data to consider. Six cases were with use of the medication prior to pregnancy, 107 cases were with use during pregnancy, 5 were with use during lactation and 1 case was use of the medication by dad. Six cases had unknown timing of use. No increase chance for pregnancy loss or pattern of birth defects was reported in this group of cases.

Back to our call with Caroline, and how we advised her on the medications that she was interested in – remember these: Nurtec ODT® and Emgality®. Both of the choices offered to Caroline can treat ***and*** prevent migraines, so one doesn't have an advantage over the other in that area. We discussed with Caroline that at this time there are no human studies on Nurtec ODT®. However, the animal data looks promising and low risk at this time. Additionally, it is a drug that quickly clears from the body. So she would not have to be off of it for months to have it clear from her body prior to pregnancy. In that time, there may be new human data reported that we could share with her closer to when she would try to conceive. Otherwise, the current human data on Emgality® looks promising. Caroline stated she plans to discuss these reproductive data with her prescribing healthcare provider and come up with a plan of action. Caroline may decide to try either of these medications now see how they work for her before trying to get pregnant knowing there may be waiting periods to have the medications clear from her body.

At the end of the day, dealing with a migraine might be a pain, but examining up-to-date data doesn't have to be a headache. That's why MotherToBaby is here to help!