

Epilepsy In Pregnancy

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I. INTRODUCTION

Epilepsy is a serious neurologic disorder that manifests as recurrent unprovoked seizures that result from excess neuronal discharge. Epilepsy is a problem that affects 0.5-1.0 percent of women of the reproductive age. It's an estimated prevalence of 1.2 percent of the population. While nearly 90% of women are blessed with uncomplicated pregnancy and smooth deliveries, women who suffer from epilepsy have a higher chance of developing postpartum complications, including intra-, and ante- women will be stable during pregnancy and 96% have an uninjured baby. However, for certain epileptic women, there could be a danger of significant maternal and postnatal morbidity and mortality.

The management of epilepsy during pregnancy is really challenging, especially in those taking anti-epileptic drugs. There isn't an all-time cure.

II. PRE-CONCEPTIONAL COUNSELING

Preconception counseling for women with epilepsy is a must and is associated with improved outcomes for both the mother and baby. This involves coordinated care with a multi-disciplinary team involving neurologists, physicians and obstetricians. Folic acid supplementation must begin at least three months prior to conception, as the low levels of folic acid in the serum are associated with fetal malformations and delayed neurodevelopment. Women with epilepsy. 1mg per day is the starting point and maintained throughout the pregnancy. The dosage can be increased to 4 mg per day in case of an earlier neural tube problem.

Reassure women that the majority of pregnancies (>95 percent) are expected to have a favorable outcome. Women who are seizure-free for more than nine - 12 months have an excellent chance of controlling seizures during pregnancy. Some women might require dosage changes prior to, or even during pregnancy. Women who are taking multiple AEDs could be reduced to one or two safer medications.

III. EFFECT OF PREGNANCY ON EPILEPSY

About 60% of women will remain seizure free.

20% will experience an increase in the frequency of seizures. 15% will experience lower seizure frequency. There is a low risk of seizures that occur during pregnancy (2-3 percent).

Factors that can contribute to poor seizure control during pregnancy is Pregnant women suffering from epilepsy, there is a higher chance of having seizures when they are pregnant compared to non-pregnant epilepsy patients. The risk increases with advancement of pregnancy and increasing seizure frequency during the postpartum and intrapartum period. There are a myriad of possible causes for this increase, such as less amount and quality of sleep, increased anxiety, and stress. Beyond these, one of the most important reasons for the increase in probability of seizures in pregnancy is the diminution of antiepileptic drug (AED) levels in the plasma. AED levels decrease due to increased renal and hepatic clearance, as in general, an increase in amount of diffusion during pregnancies. Things like hormonal changes as well as stress, water retention and hormonal changes can trigger seizures.

IV. FETAL RISKS

The risk is usually low to the fetus. There is a small increase in the chance of intrauterine deaths in epilepsy-afflicted women. Seizure activity in the mother has been linked to evidence of hypoxia in the fetus. In contrast, the chance of hypoxic injuries to the fetus increases with increasing gestation. The possibility of fetal injuries caused by trauma to the mother in a seizure or possibility of abruption of the placenta are indirect mechanisms that link seizures with fetal injuries. Prematurity could be another risk. There is also the risk of preeclampsia, preterm birth, intrauterine growth restriction. There is a greater risk of severe congenital malformations resulting from AEDs. There is a higher chance of developing epilepsy in childhood during the fetus's development.

V. MATERNAL RISK.

Epilepsy sufferers are at a 10-fold higher risk of maternal mortality in comparison to women with epilepsy. It might also be associated with a risk of seizure-related problems that are made worse due to the shared physiology caused by pregnancy. It could also be an increase in the incidence of the condition known by the

name sudden unexpected death in epilepsy (SUDEP). Preeclampsia is more prevalent in women with epilepsy.

VI. SYMPTOMS OF EPILEPSY DURING PREGNANCY

Seizures may be of a generalized or partial. They affect all brain's parts. They affect the entire body, causing loss of consciousness and a fall during an episode. The seizures are only affecting one area of the brain. They cause symptoms within the body that is controlled by the brain region.

Alongside convulsions, there are other signs that are:

- Headache
- Changes in the mood
- fainting and falling down
- confusion and dizziness
- memory loss
- tongue biting
- absent and repeated blinking of eyes, licking lips in absence seizures
- nausea and vomiting

			(causes drowsiness)
Phenytoin	Facial clefts poor cognition & neuro development	1-2%	Pregnancy: relatively safe breastfeeding: safe
Sodium valproate	Neural tube defects facial clefts hypospadias poor cognition & neuro development	6-10% dose dependent	Pregnancy: avoid if possible breastfeeding: safe
Topiramate	Cardiac defects facial clefts	4-6%	Pregnancy: avoid if possible breastfeeding: safe

Anti epileptic drugs

AED	Possible congenital malformations	Risk of congenital malformation	Safety in pregnancy and breastfeeding
Carbamazepine	Cardiac defects facial clefts	2-5% dose dependent risks	Pregnancy: considered safe breastfeeding: safe
Lamotrigine	Cardiac defects facial clefts	2-5% dose dependent risks	Pregnancy: considered safe; may need dose adjustment breastfeeding: safe
Levetiracetam	Cardiac defects neural tube defects	1-2%	Pregnancy: considered safe breastfeeding: safe; further studies needed
Oxcarbazepine	Cardiac defects facial clefts	1-3%	Pregnancy: relatively safe breastfeeding: safe
Phenobarbital	Cardiac defects	2%	Pregnancy: relatively safe breastfeeding: avoid

VII. MANAGEMENT OF EPILEPSY IN PREGNANCY

- A multidisciplinary team that has the capability of managing the risks of pregnancy is crucial for the prevention of epilepsy during pregnancy.

Antepartum management

- Create a thorough background from the patient or an experienced family member regarding the time and date when was epilepsy diagnosed. What kinds of seizures are being experienced as well as how often seizures occur, what was the last time a seizure occurred, any triggers, and also what AED and dose of AED she is taking.
- Begin taking folic acid 5 mg a day until at least the 1st trimester.
- Pregnancy antenatal visit frequency is recommended to be raised.
- Be aware of nausea and vomiting, because it can result in lower levels of AEDs.
- Every time you visit, talk about and be aware of triggers, make sure to ensure AED compliance, take into consideration AED levels and titrate the dosage.
- The monitoring of fetal malformations starts at the end of the first trimester.
- Mother blood AFP levels are increased in the neural tube defect that is open.
- Take a look at fetal echocardiography for women who are taking AEDs especially those taking polytherapy.
- Ultrasonography with a detailed image starting at 11-14 weeks, followed by a specific imaging scan for fetal anomalies scan around 18-20 weeks.
- The third trimester of care is marked by more visits and more monitoring that would be expected for patients who don't suffer from epilepsy.

- Every month, ultrasounds are performed for the growth of fetuses to exclude intrauterine growth restriction.
- Continue to monitor monthly plasma AED levels.
- The idea of induction is best considered during the 39 week, due to the constant possibility of maternal and fetal injury due to seizures and the fact that the fetus is been fully developed by this stage of gestation.
- Insufficient sleep is an issue for everyone mothers, yet it's especially problematic for women suffering from epilepsy.
- Patients with a medical diagnosis often notice that they wake up early after a night of sleeping and are unable to return to sleep.
- Patients must try to get the minimum of four hours of continuous sleeping and could consider taking a nap during the day if the schedule allows to increase the number of hours of sleep.

Intrapartum management

- Epilepsy sufferers are reassured that the risk of having intrapartum seizures is very low (3.5 percent).
- A proper analgesia regimen is crucial along with hydration since these could trigger for a seizure-like episode.
- The delivery model should be determined exclusively by the indication of an obstetrical doctor. Aside from an anomaly in the neuroanatomical structure.
- There is no reason to consider the cesarean birth solely because of the reason of epilepsy in the mother.
- Minimum of 4 hours of restful sleep in the postpartum period is required.
- Intravenous access must be sought even if neuraxial pain is disregarded.
- Lorazepam in both intravenous and oral preparations should be available in case of an aura or seizures 1 mg in the event of aura. 2mg for seizure activity.
- Pediatricians must be present at the birth if lorazepam was administered due to the risk that respiratory regulation may be affected in the infant.
- Hyperventilation, stress and sleep deprivation should be avoided because there is a risk of increased possibility of seizure with their usage.

Seizures in labour should be treated with

- Benzodiazepenes (IV Lorazepam 2-4 mg bolus repeated every 10-20 minutes or diazepam 5-10 mg IV in a slow bolus, if lorazepam not available)
- Left tilt lateral () or manual displacement of the lower uterus)
- Oxygenation
- Continuous electronic, fetal heart rate monitoring.

Postnatal care & breastfeeding

- The risk of having postnatal seizures is greater in the postnatal phase than pregnancy. the risk is linked to an increase in stress postpartum, sleep deprivation and less compliance to AEDs.
- Patients with epilepsy should be allowed to take a room off their child so that they get a minimum of four hours of sleep.
- Postpartum personnel may need to be informed that this isn't a just a matter of convenience, instead it is a preventative "medication".
- AED dosing must be tapered down to pre-pregnancy doses.
- Tapering should not be initiated before three days after the birth unless the patient shows signs of excessive dosing.
- The practice of breastfeeding should be encouraged. While many AEDs can be absorbed through breastmilk, levels of baby plasma are likely to be a small fraction of those in the maternal blood.
- Parents should also not participate in co-sleeping.

Contraception

- All epilepsy patients should be informed about contraception.
- Levonorgestrel release intra-uterine system (LNG-IUS and medroxyprogesterone injections must be promoted as effective contraceptives which are not impacted by AEDs that induce enzymes.

AUTHORS

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