



Epilepsy and Pregnancy

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The most common, understandable question for any mother-to-be, whether suffering from epilepsy or not, is "will my baby be normal"? It is important at the outset to reassure the reader that more than 90% of all babies born to mothers with epilepsy are healthy and normal.

But for women with epilepsy there are several additional questions:

- (1) Will the epilepsy or the medications I take make it harder to conceive?
- (2) Once I am pregnant, what will happen with regard to my seizures?
- (3) What might happen if I have a seizure while pregnant?
- (4) Once I am pregnant, what will anticonvulsant drugs do to the fetus?
- (5) After the birth can I breastfeed?

Epilepsy, antiepileptic drugs, and fertility

There are some confusing and conflicting issues with respect to women who have epilepsy and their ability to become pregnant; relatively speaking, a woman with epilepsy has about a 1 in 3 chance of getting pregnant compared to a woman who does not suffer epileptic seizures. On the other hand, the antiepileptic drugs (AEDs) used to treat epileptic seizures may interfere with the oral contraceptive pill and lead to a very slight risk of "contraceptive failure." Therefore, it is advised that women taking oral contraceptive pills for fertility control also take additional precautions. One of the most important pieces of advice to minimize the risks associated with pregnancy in epilepsy, is that the pregnancy be planned.

Epilepsy, anticonvulsant drugs, and pregnancy

Despite the suggestion above that some women with epilepsy may find it hard to become pregnant, the majority of women with epilepsy, when they decide to have a baby, conceive relatively easily and will deliver a normal, healthy baby.

Once pregnant, what happens to the seizures?

As a rule of thumb, during the 9 months of a pregnancy:

- Between 15% to 30% of women will experience an increase in seizures
- A small percentage of women may note an improvement in seizure control
- The majority (50% to 70%) will experience no change in seizure activity

There is some evidence that suggests if the epilepsy is under excellent control before pregnancy, then seizures will remain well controlled during pregnancy. Conversely, seizures that are frequent and difficult to control before conception are likely to be just as difficult to control and even more frequent during pregnancy.

There is no single reason for an exacerbation of seizures during pregnancy, it is probably a combination of lower drug levels in the body as weight increases, hormonal changes, and even perhaps the psychological stresses of pregnancy, including the understandable anxiety and apprehension of not knowing the ultimate pregnancy outcome. Occasionally a woman may decide on her own to stop anticonvulsant drugs because of fears they may "harm the baby." Although this is understandable it sadly may lead to a worse outcome than continuing medication. It is very important that women with epilepsy be open and frank with their neurologist and obstetrician and discuss any fears and anxieties they have, and that they DO NOT stop taking prescribed medication suddenly without telling their doctor(s).

Type of seizure may be an important factor in discussing risks during pregnancy. A generalized tonic clonic seizure (grand-mal) may be potentially more catastrophic to mother, fetus, or both, than a partial seizure

where there is just a transient loss of awareness, often without a fall.

Anticonvulsants and teratogenesis (fetal malformations)

Women with epilepsy have a slightly increased risk of fetal malformation. There are 2 possible reasons:

-- A grand mal seizure (generalized tonic/clonic) is often so convulsive that it may: rarely induce a miscarriage, or injure the fetus in the womb, or briefly reduce the supply of blood (and therefore nutrition and oxygen) to the fetus, and may even cause trauma to the mother.

-- Anticonvulsants may affect the developing embryo, mainly in the first 6 weeks of pregnancy, as the baby's tiny organs, including the brain and spinal cord, are forming.

In the past it was hard to provide women with good scientific information on the risks associated with antiepileptic drugs and pregnancy, as reports of babies being born with malformations are very rare. This lack of good and reputable data led a few years ago to an international "Pregnancy Register" that includes data from Europe, North America, and Australia. The information is shared and combined; consequently, the true risks of a baby being born with malformations to a mother taking antiepileptic drugs can now be discussed with some confidence, with up-to-date statistics.

It is important that all women with epilepsy are familiar with the risks of fetal malformations in the "normal" female population. In other words, what is the risk of a healthy woman without epilepsy and not taking drugs having a baby born with a malformation? The answer is between 2% to 3% (or 2 or 3 out of every 100 normal births).

The reassuring statistics are that for every 100 women with epilepsy who are taking antiepileptic drugs and who have a successful full-term baby, about 88 (88%) have an absolutely normal baby. The remaining 12 women will have complications, of which, 6 (6%) will have a baby with a fetal malformation. Although this calculates out to a rate that is double the normal rate of complications, it must be remembered that this is still a small absolute number and risk.

The other 6 women will experience either spontaneous abortions or death of the baby in utero. However, these latter rare and catastrophic complications occur in women without epilepsy and not taking antiepileptic drugs at about this rate.

There is increasing evidence from these statistics, that of all antiepileptic drugs, valproate (Epilim, Valpro) has a slightly greater risk of causing potential malformations. However, this increased risk was only seen in patients taking high doses, of the order of 2000 mg per day (4 tablets at 500 mg strength). At a dose of 1000 mg, the risk was much lower. This isolated finding needs to be considered on an individual basis, as it's possible that not taking valproate may be associated with a greater risk of damage to the baby due to uncontrolled seizures.

Current recommendations

Current recommendations in women who suffer generalized tonic clonic seizures (grand mal) are:

- (1) that all women of child bearing age who are capable of conceiving take folic acid supplements together with their antiepileptic drugs. How much folic acid remains open to argument, but there have been scientific trials in which dosages from 0.8 milligram per day to 5 milligram per day have been used successfully. The current recommendation by the Center for Disease Control is that all women of childbearing age should supplement with 0.4 milligrams per day of folic acid. The folic acid must be taken before conception, hence the emphasis on planning pregnancy. Starting folic acid after conception is probably too little and too late. Many neurologists have adopted the practice of adding folic acid to the prescription for all fertile, sexually active females taking valproic acid for epilepsy control.
- (2) that pregnancy should be planned so that the treating neurologist and female patient may discuss possible anticonvulsant combinations

(3) that the ideal situation is to use 1 drug rather than multiple drugs and at the lowest possible dosage to control seizures (recognizing that in some women 2 or more drugs may be necessary to control potentially damaging seizures).

Breast feeding

In an ideal world, most experts agree, that infants should be breast fed. Of course there may be valid reasons to choose infant formula. All antiepileptic drugs are to some extent excreted in the mother's milk but it is not the only pathway, the liver and kidney are the major ways in which drugs are broken down in the body and then excreted. How much of a drug appears in the milk, is largely dependent on the degree to which the antiepileptic drug is bound to protein molecules in the blood plasma. Some of the older drugs used to treat epilepsy, such as barbiturates and phenytoin, may cause a moderate degree of sedation (sleepiness) in a breast feeding infant. As a general rule, however, provided the mother is taking only ONE type of antiepileptic drug, the risk of any serious adverse reaction in the baby is extremely low. But again, the final decision is one to be made in consultation with your obstetrician and neurologist.

Finally, a word of reassurance: the risk of damage to the developing fetus because of either seizures or the use of antiepileptic drugs is minimal. Current evidence suggests about 90% of women with epilepsy will have a normal, healthy baby.

This information was written by Graham Norton FRACP, and is herewith used with permission. It was last updated May 12, 2013.

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