Epilepsy in Pregnancy

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Epilepsy is a chronic neurological disease. Women of childbearing potential may have epilepsy from childhood, adolescence or even adulthood, and or may rarely manifest this disease during pregnancy.

Generalized maternal seizures are particularly risky for the fetus because they induce lactic acidosis in the mother's bloodstream, which can cause fetal bradycardia. These seizures pose a higher risk than antiepileptic drugs. Status epilepticus also poses a risk. Conversely, focal and other generalized seizures (absences, myoclonus) do not pose an increased risk to the fetus.

Antiepileptic drugs are necessary during pregnancy in patients at risk for generalized convulsive attacks or epileptic status. Ideally, the lowest dose monotherapy is used to prevent threatening seizures. About 1/5 of women with epilepsy worsen compensation during pregnancy. One of the reasons may be a decrease in the plasma level of the antiepileptic drug, therefore it is appropriate to monitor the level of the antiepileptic drug (depending on the type of antiepileptic drug once a month to once a trimester). The cause may be hyperemesis gravidarum (vomiting shortly after ingestion of the drug), but also a simple pregnancy progress - weight gain, increase in volume of distribution, increase in clearance, changes in plasma protein spectrum, decrease in albumin concentration and increase in hepatic cytochrome P450 activity. Sleep deprivation and psychosocial influences may also contribute to the decompensation of epilepsy. Another problem is noncompliance, where the patient, despite the doctor's recommendation, reduces or discontinues antiepileptic drugs with the intention of protecting the fetus.

Epileptics who use antiepileptic inducers of hepatic enzymes during pregnancy (phenobarbital, phenytoin, primidone, carbamazepine and topiramate) should receive 10 mg of vitamin K daily (= Kanavit 10 drops) in the last month of gestation. If a woman did not take vitamin K during pregnancy, she must receive vitamin K1 (Kanavit) intramuscularly or intravenously in a dose of 10-20 mg before delivery. The reason is the risk of haemorrhagic disease of the newborn.[1]

The effect of antiepileptics on the fetus

Women with epilepsy on monotherapy have a 2-4 times higher risk of large congenital malformations of the fetus compared to the general population - ie. defects that require surgical treatment and endanger the fetus/child - heart defects, cleft neural tube and facial defects, palate, urogenital and skeletal defects.

Of all the monotherapies, valproate monotherapy is considered the most risky, especially at doses higher than 800–1,000 mg/day. The lowest percentages of teratogenic risk are published for carbamazepine and lamotrigine. There is insufficient data for all new antiepileptics except lamotrigine. Polytherapy is significantly riskier than monotherapy. Preconceptual preventive administration of folic acid is currently considered a measure that can reduce the teratogenic risk.[1]

Differential diagnosis of convulsions in pregnancy

Eclampsia

- definition: one or more seizures in a patient with preeclampsia; encephalopathy caused by vasoconstriction, cerebral edema and microhemorrhages in disseminated intravascular coagulation;
- clinically manifested by headache, visual disturbances and usually tonic-clonic seizures;
- preeclampsia (EPH-gestosis) is characterized by edema, proteinuria and hypertension.[1]

Epilepsy at labour

The risk of a tonic-clonic seizure during childbirth is low (approximately 1-2%). It is treated by administering diazepam i.v. or p.r., or administration of midazolam i.v., i.m. or buccally. Epidural analgesia is not contraindicated in patients with epilepsy. From an epileptological point of view, caesarean section is indicated only in patients at high risk of generalized seizures, epileptic status and prolonged or cumulative focal/partial seizures. Regular use of antiepileptic drugs is important also during childbirth, and transient parenteral administration is possible as well.[1]

Epilepsy after labour

For a woman with epilepsy, it is important to be able to rest and sleep for at least 4-5 hours continuously. Sleep deprivation is one of the most common causes of postpartum epileptic seizures. It is also important to take antiepileptic drugs regularly and to monitor plasma levels, especially if the dose has been changed during pregnancy.[1]

Epilepsy and breastfeeding

Women taking antiepileptics may breast-feed. The benefits of breastfeeding outweigh the potential risks. Different antiepileptic drugs are excreted in breast milk in different amounts depending on plasma protein binding.

With higher doses of primidone, phenobarbital and benzodiazepines, there is a risk that the baby may become depressed and fall asleep during breastfeeding, will not be sufficiently satiated and will cry again after a short time. The solution may be to alternate breastfeeding and artificial milk, thereby reducing exposure to antiepileptics. There is also risk of developing withdrawal syndrome if the mother has used these antiepileptic drugs during pregnancy and does not breast-feed after giving birth. However, these antiepileptics are currently used exceptionally.[1]

Links

Related articles

- Epilepsy • Epilepsy/PGS • Epilepsy/PGS (GP) • Epilepsy (pediatrics) • Antiepileptics

External Links

- J. Zárubová: Epilepsie, těhotenství a kojení (https://www.neurologiepropraxi.cz/pdfs/neu/2010/05/03.pdf)
- RCOG Guideline: Epilepsy in Pregnancy (2016) (https://www.rcog.org.uk/globalassets/documents/guidelines/green-top-guidelines/gtg68_epilepsy.pdf)

References

1. ZÁRUBOVÁ, J. Epilepsie, těhotenství a kojení. *Neurol. pro praxi* [online]. 2010, roč. 11, vol. 5, s. 292-296, dostupné také z <https://www.neurologiepropraxi.cz/pdfs/neu/2010/05/03.pdf>.