

The Modern Approach To The Management Of Pregnancy And Childbirth In Women With Epilepsy

Fotima Khodjaeva Taxirovna

Assistant, Department of 1st Obstetrics and Gynecology, Andijan State Medical Institute, Andijan, Uzbekistan.

Abstract: *The onset of pregnancy in a woman with epilepsy is not only desirable but also a very important stage in life. Therefore, a patient of fertile age needs to explain immediately at her first visit to an epileptologist that this event, like any good impromptu, should be planned. The ability to have children with epilepsy in women is reduced by an average of 2 times compared with the general population. This is due to both social and organic reasons. Pregnancy is contraindicated only for women with severe epilepsy, when the use of AED does not allow avoiding frequent generalized seizures, in addition, the woman has severe mental disorders. Epilepsy is not a contraindication to IVF, although one should not forget that to stimulate the production of an egg, women who are candidates for IVF are massively injected with hormonal drugs. This can sometimes trigger seizures.*

Keywords: *Pregravid, women with epilepsy, antiepileptic drugs, miscarriage*

1. INTRODUCTION

Pregravid (from Lat. Gravida - pregnant) preparation is a complex of preventive, diagnostic, and therapeutic measures, the result of which is the readiness of future parents to full conception, bearing, and the birth of a healthy child. Pregnancy planning is not limited to taking vitamins, quitting drinking, and smoking in 1–2 months. before conception. Pregravid preparation begins in 6-10 months. before the desired pregnancy and includes a specific list of procedures.⁵

Pregravid preparation takes place in several stages:

Medical examination of the spouses.

Preparing a couple for conception, women - for bearing a child.

Determination of favorable days for conception.

In the pregravid period, it is recommended to consult a geneticist to determine the risk of epilepsy in an unborn child. Epilepsy is not inherited, but in some cases, it can be inherited. The risk of transmission of epilepsy to a child from the mother with genetic epilepsy is on average 10%, with unknown etiology and structural epilepsy - 3%. The risk of transmission of epilepsy from the father is 2.5% on average. If both parents suffer from epilepsy, the risk of the child inheriting epilepsy increases to 10–12%.⁷ If a woman suffers from structural or epilepsy of unknown etiology, the risk for the unborn child increases threefold compared to the general population, in the case of genetic generalized or focal epilepsy - 10 times .^{1,4}

You need to undergo a genetic examination if:

in a couple both partners have epilepsy;

the couple already has a child with epilepsy;

in the genus, one or both parents had cases of epilepsy, malformations (congenital cleft of the upper palate or "cleft lip", deformities of the fingers, etc.) and hereditary diseases; the patient had 2 or more spontaneous miscarriages, cases of fetal or newborn death.

It is essential to acquire control above the attacks early the desirable gestation happens. An important pointer is the duration of the abstraction of seizing in the patient early gestation it for 9 months. Absence of seizures, it is rating potential that there testament be no seizures during gestation either. Nevertheless it is difficult to augur the form of each particular gestation.⁵

2. MATERIALS AND RESEARCH METHODS

An indication for an unscheduled determination of the concentration of AED in the blood before pregnancy is an increase / worsening of attacks or the appearance of symptoms of intoxication.

It is inappropriate to cancel taking AED (Antiepileptic drugs) for the period of conception. A woman should be warned that the risk of developing congenital fetal anomalies while taking AED increases three times, but that refusal to take the drug is fraught with even more serious consequences - injury or death of the fetus in the event of an epileptic seizure. It is necessary to explain to the patient that sudden cessation of AED intake dramatically increases the risk of seizures, can lead to a breakdown in remission, and increase the frequency of existing seizures.

The appointment of folic acid is indicated in order to prevent pathological effects on the fetus and reduce the risk of miscarriage (spontaneous miscarriages). Folic acid supplements must be prescribed before the patient becomes pregnant since for most women the pregnancy itself is a surprise. It is recommended to start taking folic acid supplements 3 months before. before the expected pregnancy at a dosage of 3-5 mg/day and continue taking up to 14 weeks. pregnancy. In addition to folic acid, the use of complex vitamin preparations recommended for pregnant women is also shown. Therapy for anemia is carried out before pregnancy with the use of preparations containing iron and folic acid.

Since sodium valproate more often than carbamazepine has a teratogenic effect, and the combination of valproate and lamotrigine is especially dangerous, carbamazepine is the drug of choice, however, only if there are no contraindications to its use (most forms of generalized genetic epilepsy, secondary bilateral synchronization on the EEG in patients with focal epilepsy). Information about the influence of "new" AEDs on the intrauterine development of the fetus is still insufficient, therefore it is better to refrain from their introduction into therapy during preparation for pregnancy without an urgent need.

The doctor is at a very disadvantageous position. By allowing a woman to get pregnant and have a baby, he takes on additional responsibilities and new risks. If teratogenic consequences occur, the patient and her relatives will attribute this to the AED prescribed by the doctor; with exacerbation of the disease, the cause of suffering will be considered incorrectly selected therapy, and not a long-awaited pregnancy. In addition, the question of having a child in patients with epilepsy, for various reasons, does not arise at a very young age.

3. RESULTS AND DISCUSSION

For this period of life, the leading physician is an obstetrician-gynecologist, whose patient should be monitored regularly. Until the 28th week. examinations are carried out 1 r. / month, from the 28th to the 36th week. - 1 time in 2 weeks, and after the 36th week. - every week. During the entire period of pregnancy, a woman should be monitored by an epileptologist: with full control of seizures - 1 time per 2 months, with repeated partial seizures - 1 r. / Month. The patient should be warned about the need to see a doctor if seizures increase. In case having any concomitant pathology such as: diabetes mellitus,

anemia, arterial hypertension, kidney disease, etc., the supervision of related specialists is required. Most gynecologists, neonatologists and pediatricians are very much afraid of the negative effects of AED on the mother and fetus, at the same time they do not attach such importance to the drugs they themselves prescribe. However, the appointment of AED is the competence of the epileptologist; changing the treatment regimen is possible only in agreement with him. If other specialists make adjustments to the therapy or insist on the abolition of the AED, then the epileptologist should be reported.

Currently, there are no reliable data on an increase in the incidence of pregnancy complications (preeclampsia, arterial hypertension, spontaneous abortions, changes in the frequency of seizures, status epilepticus) in women with epilepsy taking AEDs compared to the general population.

During pregnancy, the minimum effective dose of AED should be used, preferably in monotherapy.⁴ Taking one drug reduces the risk of possible fetal defects. The dose of AED should be as low as possible, but such that generalized seizures do not occur. Changing the drug to an analog can lead to an increase in the frequency of seizures. It is recommended that you continue to take the same drug from the same manufacturer.

An important safety factor is the use of drugs with controlled release of the active substance, which can be used 2 times/day. This allows you to exclude concentration peaks, especially adversely affecting the fetus.

Nausea and vomiting with toxicosis can significantly complicate the intake of AED. To avoid a decrease in the concentration of drugs in the blood, you can use intravenous or rectal forms. With frequent vomiting (up to 20 or more times a day), hospitalization is indicated.

Unfortunately, in Russia, none of the drugs "first aid for seizures" is registered. The only available way to prevent an attack in Russian conditions is the use of diazepam tablets under the tongue in anticipation of attacks. Taking additional doses of AED, as a rule, does not make sense, because the period of absorption is quite long.

Pregnant women are not allowed to take psychotropic drugs and strong hypnotics. Sleep disorders should be treated with non-drug methods: herbal medicine (decoction of calamus, Ivan tea, oregano, chamomile, mint, linden, peony, etc.); psychotherapy (listening to quiet relaxing music before going to bed); aromatherapy; compliance with sleep hygiene, as well as work and rest.

Fluoroquinolones are contraindicated in epilepsy. The use of some other groups of antibiotics and antimicrobial drugs: macrolides, high doses of penicillins should also be avoided if possible. However, if inflammation is present, the benefits of antibiotic therapy may outweigh the risks.

For pregnant women with epilepsy, physiotherapy in the head and neck area is contraindicated.

Taking valproate is associated with weight gain. However, weight gain also occurs during pregnancy. It is impossible to say unequivocally what explains the weight gain - taking valproates or the wrong course of pregnancy - in most cases it is impossible. To correct bodyweight, an observation by a gynecologist-endocrinologist and adherence to a diet is indicated. Replacing valproate with another AED during pregnancy is not justified, it can lead to the appearance/increase in seizures and is permissible only if absolutely necessary.

In 15–20% of women, the number of seizures may increase, more often in the first or third trimester of pregnancy. An increase in seizure frequency cannot be predicted based on the type of seizures, the duration of epilepsy, or the increase in seizure frequency during a previous pregnancy. Even the presence of hormone-dependent epilepsy is not a predictor of increased frequency of epileptic seizures during pregnancy. The recurrence of seizures may be due to the characteristics of the pharmacokinetics of AED during pregnancy.

The most common triggers of seizures during pregnancy are emotional stress and sleep deprivation. An increase in body temperature can provoke seizures and accelerate the elimination of AED. Hypoglycemia (low blood glucose) and alcohol consumption can also lead to seizures/seizures. Seizures may become more frequent after traumatic brain injury. Therefore, you need to lead a correct lifestyle, carefully monitor your health, observe the regime of work, and rest. However, seizures are often quite unpredictable, and a “healthy lifestyle” does not allow them to be prevented. Therefore, it is necessary to take a sufficient dose of AED, and not only exclude provoking factors.

Severe and moderate forms of ARVI or influenza aggravate the course of epilepsy and can provoke the onset/increase in seizures. Despite this, specific prophylaxis (vaccination) is not recommended, because, firstly, the effect of a number of vaccines on the fetus has not been adequately studied, which means that they are potentially dangerous to the fetus, and secondly, an adverse reaction to their administration is the rise in temperature. For the prevention of influenza in pregnant women, natural immunomodulators ("folk remedies") are used, as well as hygiene measures (avoid crowded places, wash hands and face, wash nose and eyes after returning from the street).

Generalized seizures are considered the most dangerous for both the mother and the baby. During their development, many factors have a negative impact on the body of the mother and child. Focal seizures can be conventionally considered non-influencing, but it is important to remember that they can take a generalized form.

The study of the concentration of AED in the blood during pregnancy should be carried out repeatedly, at least 1 time in 2 months, and in the case of repeated attacks - monthly. This must be done not only because, during the course of pregnancy, it is possible to change the AED metabolism or drug concentration due to weight gain, but also to control compliance.

The plasma concentration of lamotrigine can be significantly reduced during pregnancy. Also, at the end of the first trimester, due to an increase in clearance, it may be necessary to increase the daily dosage of levetiracetam.

To assess the usefulness of the functioning of the placenta and early diagnosis of placental insufficiency, it is advisable to study the hormones of the fetoplacental complex (placental lactogen, progesterone, estriol, cortisol) monthly from the end of the first trimester of pregnancy.

Particular attention is paid to the study of alpha-fetoprotein. At the end of the last century, it was found that with defects in the neural tube in the fetus (anencephaly and vertebral cleft) in the mother's blood serum, the content of alpha-fetoprotein, a protein that is synthesized in the fetal liver, increases. With defects in the neural tube, alpha-fetoprotein penetrates the capillary wall in the area of the defect into the amniotic fluid, and from there into the mother's bloodstream. With the introduction into clinical practice of the method for determining the level of alpha-fetoprotein in the mother's blood serum, it was possible to increase the accuracy of diagnosing fetal neural tube defects. So, using this method, up to 97–98% of cases of anencephaly are detected. Determination of serum alpha-fetoprotein is also used to diagnose multiple pregnancies, abdominal wall defects, and other fetal malformations. It was found that with Down syndrome in the fetus, the content of alpha-fetoprotein in the mother's blood serum decreases. The determination of the level of alpha-fetoprotein is carried out at 15–20 weeks. pregnancy, the most informative study at 16-18 weeks. It is repeated when changes are detected during ultrasound.

Ultrasound of the fetus is performed at 19–21 weeks. pregnancy to exclude developmental anomalies. A high level of alpha-fetoprotein in the mother's blood serum is an absolute indication for an ultrasound scan of the fetus.

An important diagnostic method is cardiotocography. This method allows you to obtain more objective information about the state of the cardiovascular system of the fetus in comparison

with auscultation of heartbeats. Cardiotocography evaluates the fetal heart rate, its variability, the presence of accelerations (increased heart rate by 15-25 beats per minute with fetal movements), and decelerations (decreased heart rate by no more than 30 seconds during contractions). The normal state of the fetus corresponds to a heart rate of 120–160 per minute, good heart rate variability (mainly due to accelerations), and the absence of high-amplitude decelerations. The value of this research method lies in the simultaneous determination of fetal heartbeats and uterine motility. The method allows diagnosing intrauterine fetal hypoxia due to placental insufficiency.

The patient should warn the obstetrician that a number of medications are contraindicated for her: nootropics, analeptics, psychotropic drugs (with the exception of fractional administration of small doses of benzodiazepines in order to potentiate pain relief during labor).

In connection with the potential for vitamin K deficiency when taking enzyme-inducing AEDs (carbamazepine) in the last weeks of pregnancy, it is advisable to prescribe vitamin K to a woman using these AEDs at a dose of 10-15 mg/day.

4. CONCLUSION

Bleeding, weakness of labor, and preeclampsia, placental abruption, premature birth, obstetrics are 2 times more likely to be carried out by vacuum extraction of the fetus or cesarean section is frequently seen in women with epilepsy. To reduce the risk of complications, it is essential to establish complete control over the seizures.

The likelihood of an epileptic seizure during labor and within 24 hours after birth is much more higher comparing to the likelihood of an epileptic seizure during other periods of pregnancy. First of all, this is due to the omission of AED reception.

Epilepsy is not a contraindication for vaginal delivery, and medical management of labor and pain relief does not distinguish from generally accepted standards. Prolonged epidural analgesia is possible.

Indications for cesarean section are increased frequency of epileptic seizures, convulsive seizures more often than 1 r. / Week. in the last trimester of pregnancy, serial or status epilepsy in the prenatal period, fetal hypoxia, weakness of labor, convulsive seizure during childbirth.

Acknowledgment

The patient should be warned about the need to carefully observe the AED intake during this period since there is a risk of epilepsy decompensation in the postpartum period due to physical overstrain, stress, increased drug load, and increased estrogen activity.

Also, after delivery, symptoms of AED overdose may appear due to a decrease in the bodyweight of the woman in labor, blood loss during childbirth, and metabolic changes. If symptoms of neurotoxicity appear - drowsiness, diplopia, nystagmus, ataxia, an urgent study of the concentration of AED in the blood is necessary. If the dosage of the drug was increased during pregnancy, then it is advisable to return to the daily dose used before the pregnancy. If the mother has no seizures, and the child has side effects of AED, changing the dose is inappropriate. Another danger lies in the increased frequency of seizures due to caring for the child, night awakenings.

Breastfeeding of a newborn is quite possible since the dose of AED entering the child's body with milk is incomparable with the amount of the drug entering the fetus through the placenta. An exception should be made for phenobarbital and lamotrigine. The mechanisms of their excretion from the newborn's body are unformed, which can lead to the accumulation of the drug [1].

AEDs acted on the fetus throughout pregnancy, and their content in breast milk is much lower than in the blood of a pregnant woman. In addition, it is possible to reduce the amount of drug in milk by taking AED after feeding.

The most common complication in newborns is skin manifestations in the form of allergic reactions. Cases of hemorrhagic complications (increased bleeding) have been described. The use of phenobarbital during pregnancy can lead to both sedative manifestations (drowsiness, poor sucking, muscle weakness, lethargy, lethargy) and withdrawal symptoms (motor agitation, restless sleep, frequent unreasonable crying) if, for any reason, breastfeeding milk stops.

If a newborn has low activity, lethargy during feeding, gastrointestinal disturbances, and other symptoms suspicious of intoxication, then it is better to switch to artificial feeding.

Determining the concentration of a drug in breast milk has no practical meaning. It is much more important that the child has clinical manifestations of the effects of AED. The dose of the drug that a child gets in breast milk depends on the amount of milk being sucked out. In children over 6 months of age who have already been introduced to complementary foods, the dose of the drug obtained decreases as the child grows.

For children at high risk of seizures, there is a diversion from preventive vaccinations. Vaccination is undesirable in the acute phase of infectious diseases, accompanied by an increase in body temperature. Routine vaccination is postponed until the end of the acute manifestations of the disease. Possible withdrawal from DPT vaccination or its replacement with ADSM.

For women with epilepsy, breastfeeding should be done while lying on a bed or sitting on the floor, preferably in the presence of relatives. This will minimize the risk of injury to the mother and/or baby during the attack.

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