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Epilepsy in Pregnancy

Introduction and Aim

Provide guidance on the management of women with epilepsy in pregnancy, including preconceptual advice, antenatal care, and intrapartum considerations.

Objectives

Care of women with Epilepsy, before pregnancy during pregnancy and childbirth.

Scope

This policy applies to all healthcare professionals in all locations including those with honorary contracts

Equality Health Impact Assessment	*An Equality Health Impact Assessment (EHIA) has not been completed.*
Documents to read alongside this Procedure	
Approved by	*Maternity Professional Forum and Obstetrics & Gynaecology*

Accountable Executive or Clinical Board Director	*Mrs Abigail Holmes, Director of Midwifery and Neonatal Services*
Author(s)	*Neha Uddin, Pina Amin, Malisa Pierri, Rhian Evans*

Summary of reviews/amendments

Version Number	Date of Review Approved	Date Published	Summary of Amendments
1		*2010*	Pina Amin
2		November 2013	Pina Amin
3		November 2016	Pina Amin, Malisa Pierri, Sarah Harries
4	6/12/2019	10/12/2019	Pina Amin, Malisa Pierri, Rhian Evans
5	April 2026	April 2026	Neha Uddin, Pina Amin, Ann Lloyd

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The words woman and women have been used throughout this document as this is the way that the majority of those who are pregnant and having a baby will identify. We recognise maternity and gynaecological services will be accessed by women, gender diverse individuals, and those whose gender identity does not align with the sex they were assigned at birth or have a non-binary identity. Therefore, we believe delivery of care must at all times be appropriate, inclusive, and sensitive to the needs of everyone.

1 Introduction

In order to enable informed decisions and choice, to reduce risk of harm, risk of SUDEP and misunderstandings, women with epilepsy and their partners, as appropriate, must be given accurate information and counselling about contraception, conception, pregnancy, caring for children and breastfeeding, and menopause. All women with epilepsy who are considering pregnancy should be referred to an epilepsy specialist. All healthcare professionals who treat, care for, or support women with epilepsy should be familiar with relevant information and the availability of counselling (NICE, 2022, RCOG GTG No: 68, 2016).

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2 Pre-conceptual Care

2.1 Contraceptive advice

Women need regular and accurate **contraceptive** advice to ensure that all pregnancies are planned. The hepatic enzyme inducing drugs can affect the efficacy of the combined oral contraceptive pill (OCP):

- Carbamazepine.
- Eslicarbazepine acetate.
- Oxcarbazepine.
- Perampanel (at a dose of 12 mg daily or more).
- Phenobarbital.
- Phenytoin.
- Primidone.

- Rufinamide.
- Topiramate (at a dose of 200 mg daily or more)

There is some evidence that lamotrigine can interact with the OCP and caution should be used and advice sought where necessary.

It is recommended that women taking any of the above take at least 50 micrograms of oestrogen, which equates to two normal 30 microgram tablets. It is also recommended that women take their pills for three cycles consecutively with a shorter four-day break.

The progesterone implant is not recommended in women taking hepatic enzyme inducing ASD's Ds (NICE, 2022).

Women taking enzyme inducing ASDs who choose to use depot injections of progesterone no longer need to shorten the injection interval (FSRH 2017) (Guilleband 7th Ed 2017).

If emergency contraception is required for women taking enzyme-inducing AEDs, the dose of levonorgestrel should be increased to two 1500 mcg tablets (3mg) taken together. (NICE 2017) (Guilleband 7th Ed 2017).

Further information can be found at: NICE Clinical Knowledge Summary (2025)

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2.2 Pre-conception counselling

Refer women and girls with epilepsy who are planning pregnancy or are pregnant to an epilepsy specialist team for a review of their antiseizure medication options. (NICE 2022)

All women taking anti-seizure medication should receive pre-conceptual counselling to discuss the risks of teratogenicity. Wherever possible, seizure freedom before, during pregnancy should be sought to reduce the risks to the mum and baby. The clinician should discuss the relative benefits and risks, including SUDEP, of adjusting medication to enable an informed decision.

Women should be made aware that if antiseizure medication is withdrawn, they should inform the DVLA and refrain from driving for 6 months, if they remain seizure free.

Folic acid

All women with epilepsy of childbearing potential and at potential risk of pregnancy should be offered low-dose folic acid supplementation of 400 micrograms daily.

If actively trying to become pregnant, or already pregnant, women with epilepsy should be offered high-dose folic acid (5mg daily) whilst trying to conceive and for the first trimester of pregnancy, before reducing back to 400 micrograms daily for the second and third trimesters.

Women with epilepsy at high risk of having a pregnancy with adverse outcomes (major congenital malformations or neurodevelopmental, see Point 3a-d), should be offered high dose folic acid supplementation (5mg daily) at all times.

High risk features might include but are not limited to:

- Women taking sodium valproate or carbamazepine
- Women with previous children with neural tube defects or other congenital malformations or developmental problems
- Women with a family history of neural tube defects or other congenital malformations or developmental problems
- Women with clinical folate deficiency, or with genetic or gastrointestinal conditions associated with folate deficiency.

(All-Wales Clinical Advisory Group for Epilepsy 2024)

In women with epilepsy, seizure frequency during pregnancy for most is the same as the 12-month period before pregnancy. However, epilepsy is the second commonest indirect cause of maternal death in the UK and seizures should be monitored and treated appropriately.

NICE 2022 recommend considering more frequent monitoring in cases where women with epilepsy and prescribed antiseizure medication, if they:

- Have a learning disability
- Are aged under 16 years

- Have active epilepsy (a seizure within the past 12 months)
- Have bilateral tonic-clonic seizures
- Have modifiable risk factors for SUDEP which are:
    - non-adherence to medication
    - alcohol and drug misuse
    - having focal to bilateral tonic-clonic seizures or generalised tonic-clonic seizures
    - having uncontrolled seizures
    - living alone
    - sleeping alone without supervision

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2.3 Teratogenicity of anti-epileptic medication

Women should not cease taking antiepileptic drugs without discussing it with their doctor.

All Epilepsy medications are teratogenic (any substance that cause structural or functional birth defects in a developing fetus).

A review of the risks of major congenital malformations and of adverse neurodevelopmental outcomes for antiepileptic drugs by the Commission on Human Medicines has confirmed that lamotrigine (Lamictal) and levetiracetam (Keppra) are the safer of the medicines reviewed during pregnancy.
See MHRA Safety Advice on Antiepileptic Drugs in Pregnancy (2021)

Lamotrigine

Studies involving more than 12,000 pregnancies exposed to lamotrigine monotherapy consistently show that lamotrigine at maintenance doses is not associated with an increased risk of major congenital malformations.

Levetiracetam

Studies involving more than 1,800 pregnancies exposed to levetiracetam do not suggest an increased risk of major congenital malformations

For both lamotrigine and levetiracetam, the data on neurodevelopmental outcomes are more limited than those for congenital malformations. The

available studies do not suggest an increased risk of neurodevelopmental disorders or delay associated with in-utero exposure to either lamotrigine or levetiracetam; however, the data is inadequate to rule out definitively the possibility of an increased risk.

For the other key antiepileptic drugs, data show:

An increased risk of major congenital malformations associated with carbamazepine, phenobarbital, phenytoin, and topiramate use during pregnancy

- the possibility of adverse effects on neurodevelopment of children exposed in utero to phenobarbital and phenytoin
- an increased risk of fetal growth restriction associated with phenobarbital, topiramate, and zonisamide use during pregnancy

Sodium Valproate and Topiramate

Sodium Valproate and Topiramate (Topamax) are **contraindicated** in pregnancy and in women of childbearing potential unless the conditions of a Pregnancy Prevention Programme are fulfilled as listed below. This follows a review by MHRA (UK Govt. 2021 Epilepsy and pregnancy-drug advice).

Pregnancy prevention programme:

- Be using highly effective contraception throughout treatment (and beyond, where specified).
- Have a negative pregnancy test before starting therapy. Be fully counselled about teratogenic and developmental risks.
- Complete a signed risk awareness/acknowledgement form with their clinician at initiation and typically annually.
- Attend specialist follow-up reviews at least once a year.

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2.4 Risk of Baby having epilepsy

The genetic risk of passing epilepsy to a child is generally low, but it can be higher if a parent has epilepsy, particularly if both parents are affected or if the epilepsy has a strong genetic component. The risk can vary based on the type of epilepsy, the number of affected family members, and other factors.

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3 Antenatal Management

Continue Folic acid throughout pregnancy as described in Point 2.2

Therapeutic drug monitoring

Serum concentrations of antiseizure medications are known to change during pregnancy.

Monitoring should typically be conducted three months prior to actively trying to conceive. Where preconception levels were not possible, levels should be recorded as early as possible in pregnancy.

An additional appointment would then be required once a person has conceived. Subsequent monitoring is then dependent on how the concentration compares to pre-conception dosing.

If the concentration has not changed, monitoring may only be undertaken once per trimester. However, if the antiseizure medication concentration has dropped substantially, therapeutic drug monitoring is required more frequently (NICE 2022).

Antenatal screening should include serum screening at 16 weeks if requested and a detailed anomaly scan at 18 to 20 weeks. Also consider a fetal echo in women with concerns on anomaly scan, exposure to high risk AED or family history of CHD/DM. All women with history of epilepsy should have fetal growth monitored with serial USS from 28/40.

There is no need to change anticonvulsant therapy in pregnancy if the Epilepsy is well controlled. Phenobarbital and Sodium Valproate may be weaned or changed due to potential risk of neonatal withdrawal convulsions and teratogenicity.

Relatives or friends should be given instructions on seizure management and safety. Women should be advised to shower or bath in shallow water and not to bathe alone in the house or with the door locked.

Women should be informed regarding the need for neonatal requirement for intramuscular Vitamin K injection at birth during the antenatal period (this should be documented in the green high-risk plan). The literature emphasises the need for Vitamin K for the newborn but does not recommend antenatal intake.

If there are any concerns regarding the medication or frequency of seizures refer to Epilepsy team as soon as possible.

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4 Induction of Labour (IOL) and Intrapartum care

Indications for IOL in women with Epilepsy are similar to those in women without Epilepsy. It is important to encourage women with Epilepsy to rest and obtain adequate sleep during the IOL process and continue to take epilepsy medications as prescribed.

Intra-partum care

The risk of seizures can increase around delivery due to sleep deprivation and tiredness. Generally, women may be reassured that the risk of a tonic-clonic seizure during labour and 24 hours after birth is low (1-4%) (NICE 2004).

Women with Epilepsy have the same choices of Intrapartum analgesia, apart from Pethidine which should be avoided. Pethidine should be avoided in women with Epilepsy as **excess Pethidine use can trigger seizures**. Diamorphine IM 5mg (which equates to 100mg of Pethidine) should be offered instead of Pethidine. This dosage can be repeated 6-8 hourly as necessary.

Regional analgesia should be offered early in labour.

Optimum management of epileptic seizures in labour

1. Seizures in labour should be terminated as soon as possible to avoid maternal and fetal hypoxia and fetal acidosis.
2. Continuous fetal monitoring is recommended in women at high risk of a seizure in labour and following an intrapartum seizure.
3. Any seizure lasting more than 5 minutes is unusual and represents a high risk of progressing to convulsive status epilepticus, a life-threatening medical emergency which affects around 1% of pregnancies in women with epilepsy.

4. Treatment should be initiated as soon as reasonably possible before status epilepticus and pharmacoresistance is established
5. Left lateral tilt should be established alongside maintenance of airway and oxygenation at all times.
6. Benzodiazepines are the drug of choice in status epilepticus:
7. In those with intravenous access, lorazepam given as an intravenous dose of 0.1 mg/kg (usually a 4 mg bolus, with a further dose after 10–20 minutes) is preferred
8. Diazepam 5–10 mg administered slowly intravenously is an alternative.
9. If there is no intravenous access, diazepam 10–20 mg rectally repeated once 15 minutes later if there is a continued risk of status epilepticus, or midazolam 10 mg as a buccal preparation are suitable.
10. If seizures are not controlled, consider administration of phenytoin or fosphenytoin. The loading dose of phenytoin is 10–15 mg/kg by intravenous infusion, with the usual dosage for an adult of about 1000 mg. Guidance on the management of seizures is available in the NICE guideline on epilepsy
11. If there is persistent uterine hypertonus, consider administration of tocolytic agents. After the mother is stabilised, continuous electronic fetal monitoring should be commenced.
12. If the fetal heart rate does not begin to recover within 5 minutes or if the seizures are recurrent, expedite delivery.
13. This may require caesarean delivery if vaginal delivery is not imminent.
14. The neonatal team should be informed, as there is a risk of neonatal withdrawal syndrome with the maternal use of benzodiazepines and AEDs.

Parents should be explained the benefits of administration of Vitamin K 1mg IM at birth to their babies.

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5 Post natal Management

5.1 Breastfeeding

Breastfeeding in all women with epilepsy is generally safe and should be encouraged, except in very rare circumstances. However, each mother needs to be advised that sleep deprivation can be a major trigger for seizures and be supported in the choice of feeding method that best suits her and her family (NICE, 2022, RCOG GTG 2016).

The woman and her partner should receive advice regarding caring for the baby at home:

- Changing nappies on the floor, not bathing the baby when alone at home, not carrying the baby down the stairs. When carrying the baby up or down stairs, use a carrycot or a car seat where possible
- Share the care of a baby, especially at night to avoid sleep deprivation which can be a major trigger for seizures.
- Women should be advised when feeding a baby from a bottle or breast, to sit on the floor on a towel or a rug holding the baby. Surround with cushions or use a deep-seated chair.
- Use a low chair where possible or ensure a highchair is secure.
- Prams and carrycots can be purchased with adaptive brakes, using pressure to take the brake off. These are recommended in parents with epilepsy.

Further information can be found at Epilepsy Action

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5.2 Analgesia

For all opioids, the manufacturer advises caution in people with convulsive disorders.

- Tramadol and dihydrocodeine should be avoided in women with epilepsy
- Oramorph can be given to women with epilepsy

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6 References:

- Handbook of obstetric medicine. Catherine Nelson Piercy. Ed.Dunitz 2002.
- Medical disorders in pregnancy. Michael De Swiet, 2002.
- NICE guidance for Epilepsy, 2022, NG217.
- RCOG Green Top Guideline Number 68, 2016.
- MHRA- advice on Epilepsy drugs in pregnancy 2021.

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