Epilepsy – Maternity - Full Clinical Guideline

Reference No: UHDB/Maternity/07:23/E2

Contents

1. Introduction

Epilepsy is one of the commonest neurological conditions in pregnancy affecting 1 in 200 (0.5 -1%) women. Women with Epilepsy are at a tenfold increased risk of mortality in pregnancy compared to those without the condition. The MBRRACE-UK report (2016-18) reported 22 maternal deaths attributed to epilepsy, 18 of whom died from Sudden Unexpected Death in Epilepsy (SUDEP).

The risk of major congenital malformation in the fetus is increased in women with epilepsy taking antiepileptic drugs.

2. Aim and Purpose

To ensure that staff are aware of the management of women with epilepsy in the antenatal, intra-partum and postnatal period.

To maintain a multidisciplinary approach to care between the obstetric and neurology team.

To reduce the complications associated with the pregnant patient with epilepsy.

3. Abbreviations

ASM	-	Anti seizure medication (current terminology for Anti epileptic medication)
WWE	-	Women with epilepsy
ANC	-	Antenatal Clinic
COC	-	Combined Oral Contraceptive
POCP	-	Progesterone only contraceptive
CuIUD	-	Copper intrauterine device
LNG IUS	-	Levonorgestrel intrauterine system
SUDEP	-	Sudden Unexpected Death in Epilepsy
IGE	-	Idiopathic Generalised Epilepsy

4. Management of Women with Epilepsy in the Prenatal Period and in Pregnancy

4.1. Prenatal

Women with epilepsy should ideally have their treatment reviewed before becoming pregnant.

Women can be referred to the consultant with an interest in Epilepsy for preconception counselling. This will provide opportunity to give women counselling on contraception, pregnancy, breastfeeding.

Increased risk of epilepsy if first degree relative affected
- Consider genetic counselling if one partner has idiopathic generalised epilepsy (IGE) and a positive family history of epilepsy
- Risk to child:
  - 5-20% one first degree relative affected with IGE
  - 25% two first degree relatives affected with IGE
  - 3% if one parent has focal seizures.

All anti-epileptic drugs (ASM)s should be regarded as potentially teratogenic. However, seizure control in pregnancy is important - therefore **do not** discontinue medication in pregnancy. Patients taking valproate will require prompt referral to a neurologist as per table in appendix C. [Note: Valproate containing medicines include: Sodium Valproate; Valproic Acid; Valproate semi-sodium]

Monotherapy is preferred at the lowest therapeutic dose. The risk with newer ASMs is more difficult to quantify as limited data.

Major malformations caused by ASMs:
- Neural Tube defects (NTD) (particularly carbamazepine and valproate)
- Orofacial clefts (particularly Phenytoin, carbamazepine, Lamotrigine)
- Congenital heart defects (particularly Phenytoin, Phenobarbital, Valproate)

Minor abnormalities include:
- Dysmorphic features
- Hypertelorism

In addition, there is a risk of learning difficulties. Valproate (valproic acid, sodium valproate, or valproate semi sodium) carries the highest risk impacting up to 40% of babies born to mothers exposed to valproate during pregnancy. Additional information and safety resources for valproate are available via the MHRA.

All women on ASMs should be offered **Folic acid supplementation 5mg/day** prior to conception – to be continued up to 12 weeks gestation. It can be continued till the end of pregnancy.
If unplanned, then commence folic acid as soon as pregnancy is diagnosed.

4.2. Pregnancy

Women with epilepsy should be referred for consultant led care to the ANC as early as possible in the pregnancy. (To book under the Consultant with Specialist interest)

Women with epilepsy (WWE) who are seizure free for at least 10 years and unmedicated for at least 5 years can be managed as low risk.

Following assessment in the ANC, referral to neurologist for shared care in the Pregnancy

All pregnant women will be registered with UK epilepsy and pregnancy register.

Health professional at booking to register if patient accepts. (www.epilepsyandpregnancy.co.uk).

4.2.1. Drug monitoring

Currently, routine drug level monitoring of serum ASM levels in pregnancy is not recommended. However, there may be some benefit in measuring levels in certain instances:

- Increase in seizure activity.
- Adjustment of phenytoin or lamotrigine dose
- Changes to bioavailability/elimination/drug interactions / side effects
- Increasing seizure activity
- Suspected non-compliance.

4.2.2. Scans during pregnancy

First and second trimester scans are to be offered and carried out as per routine AN care pathway.

Routine growth scans are not warranted in all women. Consider growth scans if on multiple ASMs, unstable seizures.

4.2.3. Vitamin K

The evidence does not support the routine use of Vitamin K routinely in women on enzyme inducing ASM as the risk of haemolytic disease is low. An exception being in the case of preterm labouring women.

However, all neonates born to women on ASMs should be recommended Vitamin K (Konakion or **Phytomenadione) intramuscularly (1mg IM at birth).**

4.3. Labour

- All women with epilepsy should be advised to deliver in the obstetric unit.
- The risk of intrapartum seizures is low (3.5%) - however women should not be left unattended.
- Water births not recommended.
- Vaginal delivery should be encouraged. Epilepsy is not an indication for Caesarean section or induction of labour.
- Cannulate in labour, as allows prompt action in case of seizures.

.1. Continuous fetal monitoring in patients at a high risk of intrapartum seizures or following an intrapartum seizure.

- All ASMs should be continued in labour and postnatally.
- Avoid exhaustion and dehydration and sleep deprivation.
- Maintain adequate analgesia.
- Most methods of analgesia can be used. Low threshold for epidural analgesia
- Avoid pethidine if possible as it can precipitate seizures.

4.3.1. Preterm labour

In the event of preterm labour, patients taking enzyme inducing ASMs should have an increased dose of **Betamethasone 24mg, 2 doses, 12 hours apart IM**

If steroids are used as above in a perceived risk of preterm labour then consider commencing Vitamin K 20mg PO od to women who are on enzyme inducing ASMs due to the risk of haemorrhagic diseases in preterm infants. (See appendix A)

5. Seizure management

A single generalised self-limiting seizure does not require treatment.

- Place the woman in recovery position.
- Administer oxygen.
- Monitor maternal condition (BP, Pulse, Temp)
- Monitor fetal condition (FH /CTG)
- ASM level

5.1. Status epilepticus (Please use the link below to view guideline)

Details for: Status Epilepticus in Adults - Clinical Guidelines › Trust Policies Procedures & Guidelines catalog (koha-ptfs.co.uk)

Action: (management as for epileptic seizures only!)

REMEMBER OTHER CAUSES OF FITS IN PREGNANCY INCLUDING ECLAMPSIA

- Call for help – senior midwife, senior obstetrician, anaesthetist.
- Assess respiratory and cardiac function (MEOWS)
- Maintain airways patency.
- Insert venflon – check FBC, Blood glucose, UE, and AED levels.
- Drugs:

  Lorazepam IV 4mg bolus over 2 minutes, repeated once after 10 – 20 minutes.

OR

- Diazepam 10mg IV (repeated after 10 minutes) if Lorazepam is unavailable.
- If there is a delay in gaining IV access: give Diazepam 10 – 20mg rectally.
- Further management in discussion with anaesthetist /acute team

6. Postnatal care

Recommend **Vitamin K 1mg IM** to all babies delivered to mothers with epilepsy on enzyme inducing AEDs.

Breastfeeding should be encouraged; it is acceptable with all antiepileptic drugs taken in normal doses. Liaise with infant feeding advisors / pharmacy for advice if unsure.

Increase risks of seizures in the post natal period – therefore continue medication.

Support patients to minimise triggers (sleep deprivation, dehydration, stress, pain)

Postpartum safety advice and strategies include for example. (See Appendix B)

avoiding co-sleeping,
minimising excessive tiredness
placing the baby in a cot/playpen if mother feels unwell,
feeding/changing/bathing baby on the floor
not bathing baby alone

6.1. Contraception

There **are no Contraindications** for any hormonal or non-hormonal contraceptive in women **taking non hepatic enzyme inducing ASM**
EXCEPTION:
Lamotrigine -

- **Caution with combined oral contraceptive (COCP) - as reduced seizure control**
- **Caution with Progesterone only pill (POP) - as potential interaction - advise Lamotrigine levels.**
- **No interaction with LNG- IUS, Progesterone subdermal implant, Cu IUD, Depo progesterone contraceptive injection (DMPA)**

Women on **hepatic inducing ASMs:**

- **Do not** recommend.:
    - Progesterone – only pill (POP)
    - Combined oral contraceptive (COCP)
    - Progesterone subdermal implant

- If taking the combined oral contraceptive pill (COC), a minimum dose of 50 micrograms oestrogen is recommended. Recommend tricycling packs. Increase dose to 75micrograms or 100 micrograms / day if breakthrough bleeding occurs.
- Depo Provera contraceptive injections (DMPA)– recommend 10 weekly cycles instead of 12
- Cu IUD and LNG- IUS recommended.
- Discuss additional barrier methods of contraception.
- Emergency contraception: - double the dose.

7. SUDEP (Sudden Unexpected Death in Epilepsy)

SUDEP is defined 'sudden, unexpected, witnessed or unwitnessed, non-traumatic and non-drowning death in patients with epilepsy with or without evidence for a seizure and excluding documented status epilepticus, in which post-mortem examination does not reveal a toxicologic or anatomic cause for death'.
SUDEP is more common in pregnancy and occurs more frequently in chronic epileptics with poorly controlled seizures.

Safety precautions that may significantly reduce the risk includes minimising time spent alone, ASM compliance, first aid training for family remembers, avoiding sleeping alone.
Individuals with unwitnessed seizures are at high risk of SUDEP, with nocturnal seizures being an independent risk factor.

(EpSMon app information available at http://www.sudep.org/epsmonv
Epilepsy Action: Epilepsy and pregnancy https://www.epilepsysociety.org.uk/pregnancy-and-epilepsy

8. Monitoring Compliance and Effectiveness

As per Business Unit Audit forward programme

9. References (including any links to NICE Guidance etc.)

GMEC Management of Epilepsy in Pregnancy Guideline April 2022

Epilepsy in pregnancy. Royal College of Obstetrics and Gynaecologists. Green top guideline No.68, June 2016

Knight, M., Bunch, K., Tuffnell,. D, Shakespeare, J., Kotnis, R., Kenyon, S., & Kurinczuk, J. J. (Eds.). (2019). Saving lives, improving mothers' care: Lessons learned to inform maternity care from the UK and Ireland confidential enquiries into maternal deaths and morbidity 2016- 18.

SUDEP Action (2021). SUDEP resources for professionals. Available at https://sudep.org/sudep-resources-professionals

Bhatia, M., Adcock, J. and Mackillop, L (2017). 'The management of pregnant women with epilepsy a multidisciplinary collaborative approach to care'. The Obstetrician and Gyanecologist, 19 pp 279-88

Appendix A

Commonly used ASMs

ASMs Which induce Hepatic enzymes	**Non-Enzyme inducing ASMs**
Carbamazepine (Tegretol)	Acetazolamide (Diamox)
Oxcarbazepine (Triepiltal)	Benzodiazepines
Phenobarbital	Ethosuximide(Zarontin)
Primidone (Mysoline)	Gabapentin (Neurontin)
Phenytoin (Epanutin)	Lamotrigine (Lamictal)
Topiramate (Topamax)	Levetiracetum (Keppra)
	Tiagabine (Gabitril)
	Sodium valproate (Epilim)
	Vigabatrin (Sabril)

Simple safety precautions for an epileptic mother to take when caring for baby:

- Avoid excessive tiredness.
- Identify a safe environment for baby (e.g.: playpen, cot) in case mother should feel unwell
- Feed sitting on the floor, supported by cushions or against the wall to reduce risk of dropping baby
- Dress and change baby on the floor.
- Maybe safer to use padded carrycot to carry the baby.
- Bathe the baby only when someone else present for support - sponge the baby on a mat on the floor if no one else is available.

Below are links to patient information leaflets for Women with Epilepsy:

1) 'Epilepsy in pregnancy' RCOG patient information leaflet available at https://www.rcog.org.uk/globalassets/documents/patients/patient-information leaflets/pregnancy/pi-epilepsy-in-pregnancy.pdf

2) Epilepsy and having a baby' from Epilepsy Action available at http://www.epilepsy.org.uk/sites/epilepsy/files/P021-BOOKLET-EPILEPSYANDHAVINGABABY.pdf

3) 'Tips for looking after an infant when you have epilepsy' from Epilepsy Action available at https://www.epilepsy.org.uk/info/caring-children

4) SUDEP information leaflets for patients available at https://sudep.org/free-information-downlaoods

Appendix C

Pre pregnancy and Antenatal Discussion points
(ADAPTED FROM TOG)

REASSURE WOMEN	• 96% of pregnancies have a good outcome. • Likely to remain seizure free if > 1yr since last seizure and compliant with medication.
INFORM WOMEN	• May need dos adjustments in medication to maintain seizure control. • Epilepsy alone is not an indication for IOL or CS
EFFECT OF PREGNANCY ON EPILEPSY	• Seizure free: 64% • Increased seizure frequency: 17% • Decreased seizure frequency: 16% • Intrapartum seizures: 3.5% • Status epilepticus: <2%
FACTORS THAT CONTRIBUTE TO DETERIORATING EPILEPSY IN PREGNANCY	• Poorly controlled epilepsy prior to pregnancy • Seizure frequency of >1 per month • Multiple seizure types • Drug-resistant epilepsy • High dose polytherapy • Poor compliance with ASMs • Reduced drug concentration in pregnancy due to increased renal clearance and metabolism. • Pregnancy specific triggers: nausea and vomiting (reduced ASM concentration), sleep deprivation, labour (pain and hyperventilation)
MEDICATION	• 5 mg folic acid should be taken preconceptual to reduce the risk of congenital malformations and long-term cognitive deficits. • Avoid any abrupt withdrawal of ASMs. • Aim for monotherapy. • lowest effective ASM dose, if possible • If taking sodium valproate as an ASM, discuss with a neurologist urgently for consideration of weaning. Continuation during pregnancy requires two specialists (experienced in the management of epilepsy) to document on a risk acknowledgment form that there is no other effective treatment. This is in accordance with regulatory changes introduced via National Patient Safety alert in 2023. [Note that valproate products for other indications, e.g. Valproic acid in bipolar disorder, are fully contraindicated during pregnancy].
EXPLAIN TO PATIENT	• Advise delivery in consultant led unit. • Benefits of controlling seizures outweigh risks of ASM for mother and baby. • Dose adjustments may be indicated in pregnancy to maintain seizure stability. • Counsel about SUDEP • Importance of risk assessment and risk minimisation should be discussed with women and their family at each contact. • Escalation if concerns about low mood due to epilepsy and ASMs increasing the risk of depression.
ENCOURAGE WOMEN	• To register their pregnancy on the pregnancy and epilepsy database**:** UK Epilepsy & Pregnancy (http//www.epilepsyandpregnancy.co.uk)

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	2	Sept 2015	Miss S Rajendran – Consultant Obstetrician	Update
	1	Dec 2019	Miss S Rajendran – Consultant Obstetrician	Review
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	2.1	March 2024	James Hooley - Med Safety	Updated valproate sections to align with national MHRA regulatory changes.
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