



OBSTETRICS AND GYNAECOLOGY
CLINICAL PRACTICE GUIDELINE

Epilepsy in pregnancy

(includes intra / post partum)

[NEW 2023]

Scope (Staff):	WNHS Obstetrics and Gynaecology Directorate medical staff
Scope (Area):	Obstetrics and Gynaecology Directorate clinical areas at KEMH
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Key points

1. Refer for appropriate obstetric-led antenatal care and birth at King Edward Memorial Hospital. Ideally, all women should have shared care with an appropriate neurology service.
2. Epilepsy is a heterogenous disease and hence management should be through a specialised neurology service. A proper assessment of the duration, severity, frequency and type of seizures must be made for good pregnancy outcomes.
3. Women who have been seizure free for 10 years off medications are deemed low risk and may be managed in liaison with the neurology service.
4. Women who present in the second half of pregnancy with a seizure (which cannot clearly be attributed to epilepsy) should be managed as eclampsia and proper protocols should be followed. An obstetric medicine or neurology referral should be sought if there is uncertainty of the diagnosis. The patient can be commenced on a Magnesium Sulphate infusion until clarified.¹

Background¹

Epilepsy is a common medical comorbidity in pregnancy with a prevalence of 0.5-1%. One third of women with epilepsy are in the childbearing age group. The risk of death is tenfold in women with epilepsy in pregnancy compared to non-pregnant women. MBRRACE-UK data reveal that majority of deaths are in the form of sudden unexpected death in epilepsy (SUDEP) with poorly controlled seizures being the main contributory risk factor.



Contraception

Most oral contraceptives are metabolized by cytochrome P450 enzymes. These enzymes are induced by some antiepileptics (e.g. phenytoin, phenobarbital and carbamazepine). This may decrease the efficacy of the oral contraceptive. It is recommended that women with epilepsy taking CYP3A4 enzyme inducing anticonvulsants who are using oral contraceptives for contraception use those containing at least 50mcg of ethinyl estradiol and use additional contraception such as condoms or an IUD. Levonorgestrel IUDs are effective in these women.

Seizures during pregnancy

Good epilepsy control is important because of the risk of seizure-related trauma as well as potential harm to the fetus from hypoxemia and acidosis resulting from prolonged seizures. Close monitoring of antiepileptic medication serum levels during pregnancy is important because of the increased clearance of these during pregnancy and frequent requirement for dose adjustments² especially with lamotrigine and levetiracetam.

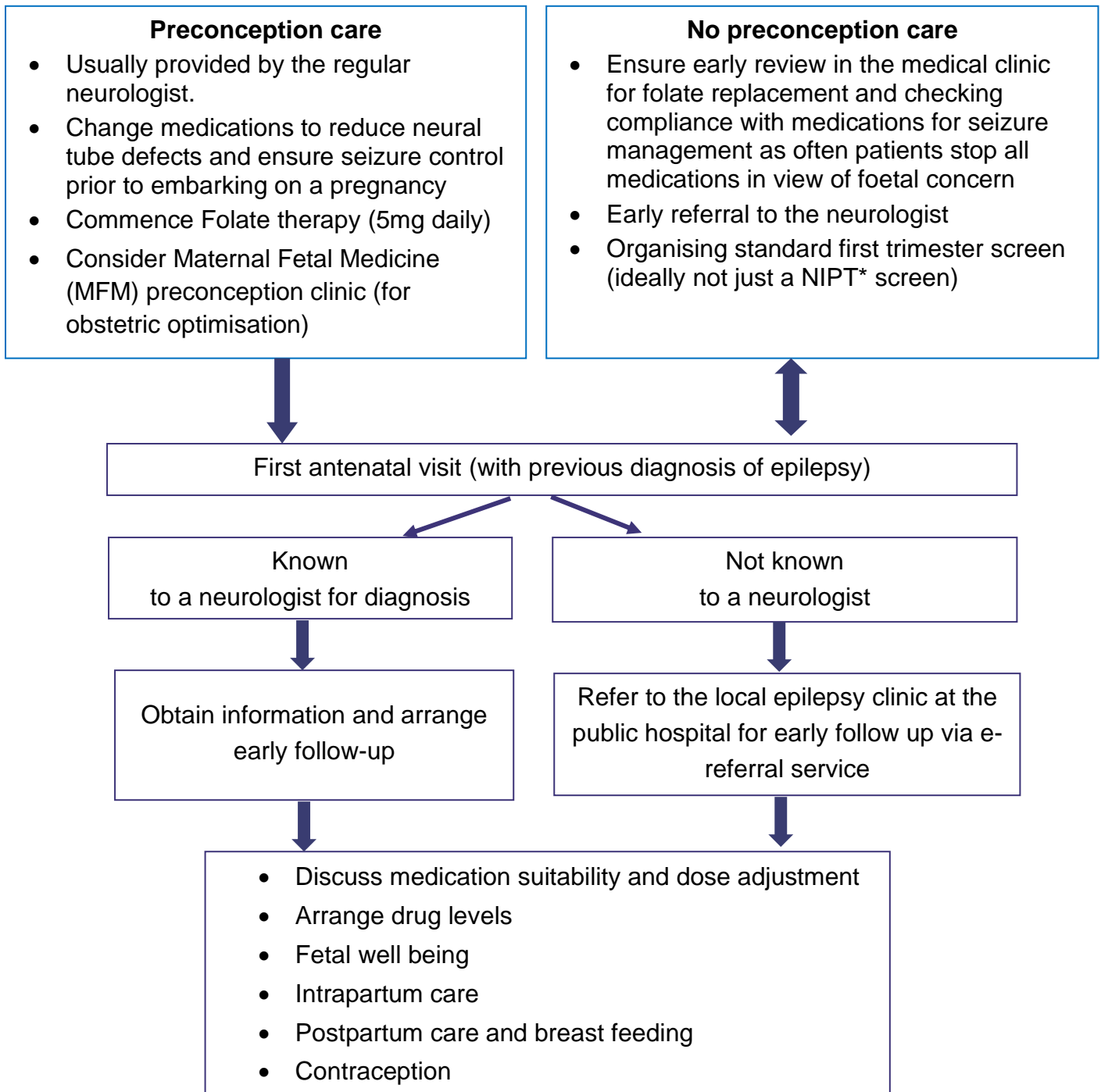
Antiseizure medication during pregnancy

Women with epilepsy have an approximately threefold increase in congenital malformations in their children.³ The lowest effective dose of medication, ideally using monotherapy should be used. The lowest risk of major congenital malformations is seen in patients using lamotrigine and levetiracetam with the highest risk with valproate.⁴ Valproate should be avoided if there is an alternative effective antiepileptic as it is associated with an increased risk of congenital malformations, lower IQ in the offspring and an increased risk of autism spectrum disorder especially at high doses.⁵⁻⁷ Polytherapy including valproate is associated with the highest risk of malformations.

Other differentials include

- Encephalitis- viral including herpes simplex
- Cerebral venous sinus thrombosis, posterior reversible leukoencephalopathy syndrome (PRESS), space occupying lesions like meningioma, or reversible cerebral vasoconstriction (RCVS)
- Other causes may include metabolic anomalies such as hypoglycaemia, hyponatraemia
- Convulsive syncope
- Non epileptic seizures or pseudo seizures which can co-exist with epilepsy can also confound the diagnosis

Clinical pathway for women with epilepsy in pregnancy



*NIPT is acceptable, with better sensitivity and specificity than FTS, but needs to be done with an early anatomy scan at 14 weeks gestation. IF that window is missed, then a scan at 16 weeks can still look for cleft lip/palate and cardiac anomalies.

Antepartum care

- Pregnant women with epilepsy should have regular access to a neurology service for shared care.
 - This may be by their usual neurologist or through an epilepsy clinic in the local tertiary hospital
 - Shared care with neurology service for medication monitoring, assessing seizure control
- All pregnant women with epilepsy should be offered information to access the Australian Epilepsy in Pregnancy Registry (toll free service) for ongoing support and information.
- Regular monitoring of drug levels from the second trimester onwards in the setting of altered drug kinetics and clearance. There is paucity of evidence and this varies depending on clinician.
 - Adjustment of dosing in liaison with neurology service
- Provide advice on how to manage breakthrough seizures
- Provide other lifestyle advice like driving ability if poor seizure control
- Consider referral to WNHS Occupational Therapist for additional assessment and advice on safe care of the newborn.

Intrapartum care

- Correct medication use in and around delivery
- Assessing risk of seizure in labour
- Management plan for seizures if they were to occur

Postpartum care

- Ensure / encourage adequate sleep
- Reduce the dose of medications slowly to pre pregnancy dosing as per neurology advice
- Breastfeeding should be encouraged and has positive effects on the baby cognitively⁸
- Early follow up with neurology service
- Provide advice regarding contraception to reduce interaction with antiepileptic medications
- Provide advice regarding the woman not swimming alone or bathing the baby alone









References

1. Royal College of Obstetricians and Gynaecologists. Epilepsy in pregnancy: Green-top guideline No. 68. **RCOG**. 2016.
2. Pennell PB, French JA, May RC, et al. Changes in seizure frequency and antiepileptic therapy during pregnancy. **NEJM**. 2020;383(26):2547-56.
3. Meador K, Reynolds MW, Crean S, et al. Pregnancy outcomes in women with epilepsy: a systematic review and meta-analysis of published pregnancy registries and cohorts. 2008;81(1):1-13.
4. Weston J, Bromley R, Jackson CF, et al. Monotherapy treatment of epilepsy in pregnancy: congenital malformation outcomes in the child. **Cochrane Database Syst Rev**. 2016;11(11).
5. Wyszynski DF, Nambisan M, Surve T, et al. Increased rate of major malformations in offspring exposed to valproate during pregnancy. **Neurology**. 2005;64(6):961-5.
6. Bromley RL, Calderbank R, Cheyene CP, et al. Cognition in school-age children exposed to levetiracetam, topiramate or sodium valproate. **Neurology** 2016;87(18):1943-53.
7. Christensen J, Gronborg TK, Sorensen MJ, et al. Prenatal valproate exposure and risk of autism spectrum disorders and childhood autism. **JAMA** 2013;309(16):1696-703.
8. Meador KJ, Baker GA, Browning N, et al. Breastfeeding in children of women taking antiepileptic drugs: Cognitive outcomes at age 6 years **JAMA Pediatr**. 2014;168(8):729-36.

Useful resources and related forms

[Epilepsy Clinics - Perron Institute](#) (external website)

Epilepsy Action Australia: [Fact Sheets and Brochures: Epilepsy and Pregnancy](#) and [Pregnancy Checklist](#) (external websites)

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Version history

Version number	Date	Summary
1	Apr 2023	First version

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