Epilepsy in Pregnancy

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• Seizure frequency does not change in pregnancy.

• ↑ seizure frequency → nausea and vomiting → missed doses, decreased GI motility, expanded intravascular volume lowering serum drug levels, induction of enzymes increasing drug metabolism, and increased glomerular filtration and drug clearance.
Management & Treatment

- Preconception counseling.
- In patients who have had no seizure activity for at least 2 years, AED therapy can be discontinued before conception.
- Monotherapy should be attempted.
- No ideal anticonvulsant.
- The lowest dose of the AED.
AED

First-generation
Phenytoin
Phenobarbital
Trimethadione
Clonazepam
Valproic acid
Carbamazepine.

Second-generation
Lamotrigine
Topiramate
Levetiracetam.
Valproic acid & teratogenicity

• **Valproic acid** should not be used in a woman planning a pregnancy, unless other drugs have proven ineffective.

• → neural tube defects and neurodevelopmental disorders, is unacceptably high compared with AED.
Importance of Folic acid

- 0.4 to 0.8 mg of folic acid daily to protect against neural tube defects pre-pregnancy
- Those taking AED esp. valproic acid or carbamazepine should be prescribed 4 mg/day of folic acid for 1 to 3 months preconception and through the first trimester.
Management & Treatment

• seizures are well controlled during pregnancy, no change in therapy should be attempted.
Management & Treatment

- The maternal serum AFP measured at 15 to 19 weeks’ gestation to screen for open neural tube defects.
- Obstetric ultrasound should be done at 18 to 22 weeks to look for fetal anatomic anomalies, especially neural tube defects, cardiac anomalies, cleft lip, and cleft palate.
AED and Vit K

- AEDs increase the rate of vitamin K degradation.
- Supplemental vitamin K (10 to 20 mg/day) is usually advised after 35 weeks’ gestation to prevent neonatal hemorrhage.
Antacids and antihistamines should be avoided in patients receiving phenytoin, because they lower plasma levels of phenytoin and may precipitate a seizure attack.
Status epilepticus

- Immediate hospitalization is required.
- Management is similar to that in the non-pregnant adult.
- Patency of the airway and adequate oxygenation should be ensured.
Obstetric management

• The management of labor and delivery follows obstetric indications.
• During labor and in the immediate postpartum period, anticonvulsant drugs must be continued.
• The dose of the anticonvulsant drug may be lowered postpartum, provided that a therapeutic level is maintained.
Breast feeding with AED

Although anticonvulsants are excreted in breast milk in small amounts, breast feeding is not contraindicated.
Complications

• Pregnant patients with epilepsy have a twofold increase in maternal complications → Pre-eclampsia, abruption, hyperemesis, and premature labor.

• Fetal hypoxia is a potential consequence of maternal seizures, and there is a high incidence of intrauterine fetal demise.
Complications

• In the neonate, higher rates of coagulopathy, drug withdrawal symptoms, and morbidity and mortality are reported.

• Congenital anomalies are more common in neonates exposed to AEDs in utero.

• The overall risk of major malformations is 4-6%.
Anticonvulsants

**DIPHENYLHYDANTOIN (DILANTIN)**

- Fetal hydantoin syndrome
- → craniofacial abnormalities, limb reduction defects, prenatal-onset growth restriction, mental deficiency, and cardiovascular anomalies.
- Approximately 10% of exposed fetuses demonstrate fetal hydantoin syndrome, whereas an additional 30% may have isolated features of the syndrome.
Trimethadione (Tridione) and paramethadione (Paradione)

- Cranio-facial abnormalities, prenatal-onset growth restriction, an increased frequency of mental retardation, and car-diovascular abnormalities.

- **Contraindicated during pregnancy.**
VALPROIC ACID

• Associated with a 1-2% risk of open spina bifida.
• cardiac defects, skeletal defects, and craniofacial malformations.
CARBAMAZEPINE

- Increased risk for fetal spina bifida
- Minor craniofacial defects, fingernail hypoplasia, and developmental delay.
PHENOBARBITAL

- Potential complications of phenobarbital include neonatal withdrawal symptoms and neonatal hemorrhage.