Women with Epilepsy

Denise Riley, ANP-BC, CNRN
Epilepsy Center of Excellence (ECOE)
Malcom Randall VAMC-Gainesville, FL
August 1, 2013
Introduction

- Epilepsy is one of the top three common neurological disorders.
- Approximately half are women of childbearing age.
- Special needs in management.
Hormones and Seizures

- Puberty – functionally capable of reproduction
  - May correlate with first seizure
Hormones and Seizures

- **Menstrual Cycle**
  - Catamenial seizures: a two-fold increase of seizures during any phase of menses
Antiepileptic Drugs (AED)

- Enzyme inducing
  - phenytoin
  - carbamazepine
  - oxcarbazepine
  - topiramate
  - phenobarbital
  - felbamate

- Nonenzyme inducing
  - valproate
  - gabapentin
  - levetiracetam
  - zonisamide
  - pregabalin
  - lacosamide
Women of Childbearing Age

- Folic acid: 0.4 mg to 4 mg/day
- Metabolism increased in presence of enzyme inducing AEDs
- High fetal demand during pregnancy
Contraception

- Hormonal contraceptives
  - Pills
  - Implants
  - Injections
  - Patches
Contraception

- Hormonal contraceptives
  - No adverse impact
  - Pre-gabalin
  - Keppra
  - Gabapentin
  - Lacosamide
  - Valproate
  - Zonisamide
  - Levetiracetam
  - Lamotrigine*
Contraception

- Hormonal contraceptives
  - Accelerated metabolism with hepatic enzyme inducers
    - Phenytoin
    - Felbamate
    - Phenobarbital
    - Primidone
    - Carbamazepine
    - Oxcarbazepine
    - Topamax*
Contraception

- Hormonal contraceptives
  - Depo Provera injections

Alternatives:
- Estradiol or mestranol (50 mcg)
- IUD with progesterone
Reproductive Functioning

Menstrual irregularities
Decreased libido
Decreased fertility

- Conception rates ~ 25-33%
  - Lack of data
  - Marriage
  - HPO axis dysfunction
Reproductive Functioning

- Endocrine disorders
  - Polycystic ovarian syndrome
    - Prevalence: 12% general female population vs. 25% of WWE
    - Pathologic metabolic disorder
Bone Health

- Problem: Decreased serum Vitamin D
  - Important in metabolism of calcium and phosphorus
    - Calcium 1200 mg/day
    - Vitamin D 400 IU/day
  - DEXA gold standard
AEDs: Other Implications

- Topiramate
- Valproate
- Lamotrigine
- Pre-gabalin
- Gabapentin
Pregnancy

- Genetic vs Inherited

*Figure: Autosomal dominant heredity of genetic traits*
Pregnancy Planning

- Avoid valproate, carbamazepine, phenobarbital
- Register with AED Pregnancy Register at 888/233-2334
Birth Defects

- **Etiology**

  Older AEDS
  - Neuronal suppression
  - Apoptosis
  - Free radicals
  - Decreased folate

  Polytherapy and high doses
Birth Defects

- Etiology
- Prevalence
- Minimizing birth defects
  - Major organ formation by end of 1st trimester
  - Changing AED
Pregnancy

- **Planned pregnancy**
  - AAN Practice Parameters:
    - Taper if seizure free 2-5 years
    - One type of seizure
    - Normal neuro exam and IQ
    - Normal EEG
    - Risk first 6 months
    - Folic Acid
Pregnancy

- Other options:
  - Establish ideal therapeutic concentration before conception
  - Monotherapy at lowest dose
  - ER formulation or divided doses
Pregnancy

- Seizures
  - 25% have increase
  - Reasons:
    - Sleep deprivation
    - Hyperemesis
    - Change in metabolism
    - Noncompliance
  - Adverse outcomes
Pregnancy

- **Management**
  - 1\(^{st}\) post conception visit - AED level, RBC folate, U/S, determine date
  - Week 12: AED level, US
  - Week 16: AED level, CMP, CBC, MAFP
  - Week 18-22: U/S, amnio
  - Weeks 20, 24, 28, 32, 36: AED level
  - Week 36: Vit K 10 mg/d to delivery
  - Post-partum week 2, 4, 6, 8: AED level
Pregnancy

- Insufficient evidence to determine risk of neonatal hemorrhagic complications
- Inadequate evidence to support/refute benefit of prenatal Vit K supplementation
Parenting Concerns

- **Breastfeeding**
  - Highly recommended
  - Concentration of AED in breast milk
  - Term infant exposure
  - Side effects
Parenting Concerns

- Breastfeeding
- Infant safety
  - Dressing and diapering
  - Baths
  - Stroller
Hormones and Seizures

- Menopause
  - Earlier presentation
  - Increase in seizures
  - Hormone replacement therapy
Summary

- Epilepsy is common in women of childbearing age.
- Counseling should begin with the pediatric neurologist.
- With proper management, more than 90% of WWE can have healthy babies.