

Women with Epilepsy

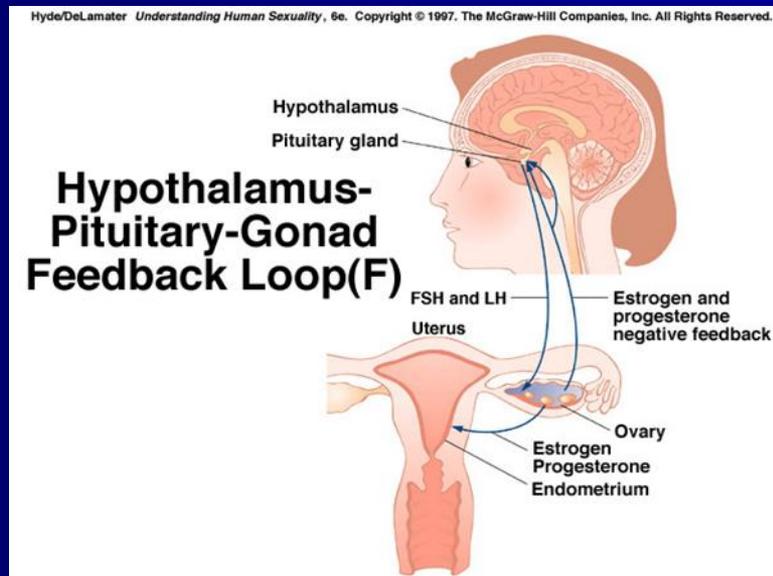
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Introduction

- Epilepsy is one of the top three common neurological disorder
- Approximately half are women of child bearing age
- Special needs in management

Hormones and Seizures

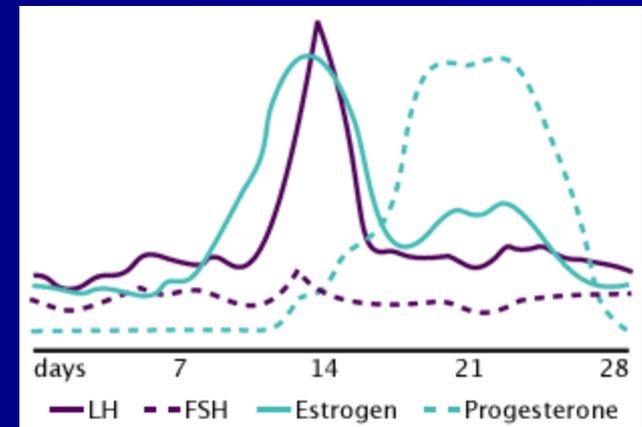
- Puberty – functionally capable of reproduction
 - May correlate with first seizure



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

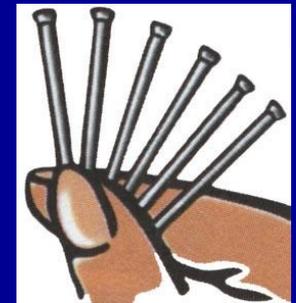
Women of Childbearing Age

- 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*

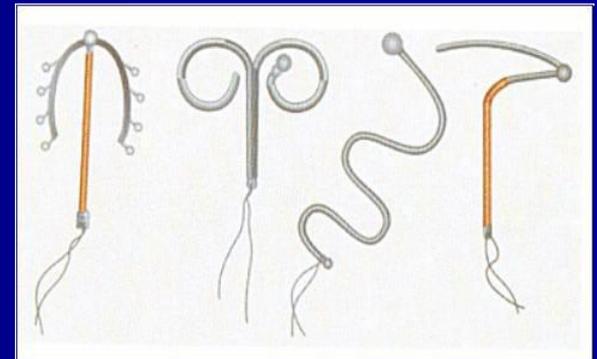
Contraception

- Hormonal contraceptives

- Depo Provera injections

Alternatives:

- Estradiol or mestranol (50 mcg)
- IUD with progesterone



Reproductive Functioning

Menstrual irregularities

Decreased libido

Decreased fertility

- Conception rates \sim 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

PAIN

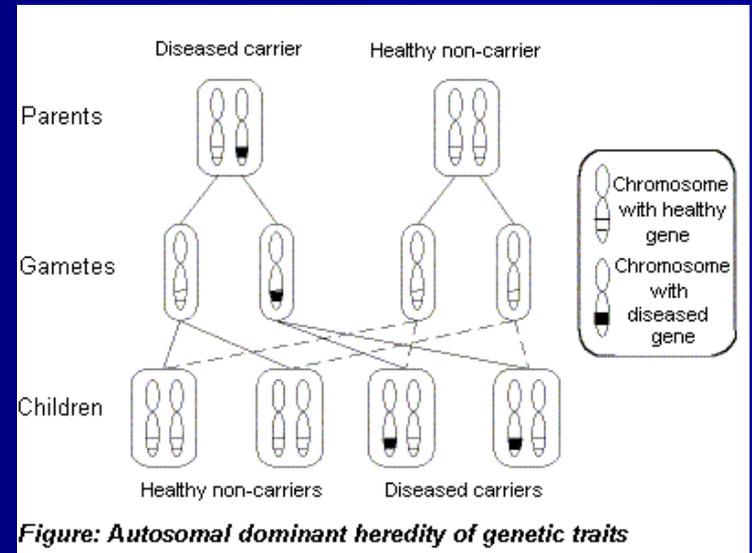
MOOD-STABILIZATION

MIGRAINES

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

Pregnancy

- Genetic vs Inherited



Pregnancy Planning

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

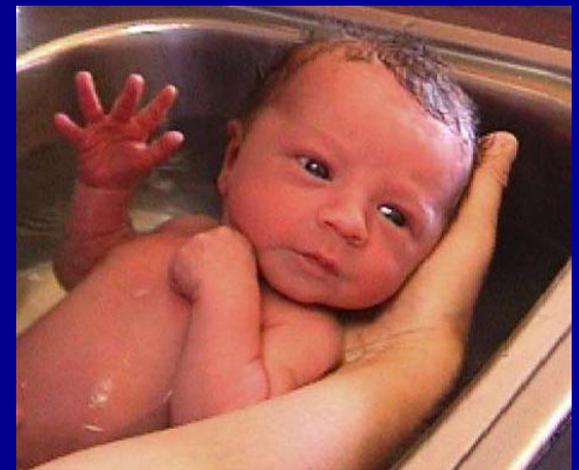
Birth Defects

■ 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

- 1st 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 child bearing age.
- Counseling should begin with the pediatric neurologist.
- With proper management, more than 90% of WWE can have healthy babies.