

Women and Epilepsy

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Contraception in Epilepsy

- No contraindication to non-hormonal methods
- Enzyme inducing AED's (anti-epileptic drugs)
 - induces hepatic cytochrome P-450 system
 - primary metabolic pathway of sex steroid hormones
 - increased enzymatic activity lead to rapid clearance of steroid hormones

Contraception in Epilepsy

- Enzyme inducing AED's
 - phenytoin (PHT) - Dilantin
 - carbamazepine (CBZ) – Tegretol, Carbatrol
 - oxcarbazepine (OXC) – Trileptal
 - topiramate (TPM) – Topamax (at higher doses >200mg/day)
 - barbiturates
- Use Estradiol concentration of 50mcg or more

Contraception in Epilepsy

- Progesterone only pills also likely effected
- Depo-Provera provides higher dose of progestin but recommend q8-10 weeks

Contraception in Epilepsy

- Non-enzyme inducing AED's show no interaction with OCP
 - valproate (VPA) – Depakote
Depakene
 - zonisamide (ZNS) – Zonegran
 - levetiracetam (LVT) – Keppra
 - ethosuximide (ETX) – Zarontin
 - pregabalin (PGB) – Lyrica
 - gabapentin (GBP) - Neurontin

Contraception in Epilepsy

- Lamotrigine (LTG) – Lamictal
 - OCP decrease LTG levels
 - locally released estrogen (Nuvaring) may also decrease LTG
 - check blood levels before and after and increase LTG dose as needed
 - progesterone by itself may increase LTG level, monitor for toxicity and check levels

Fertility and Epilepsy

- Decrease fertility
 - effect of AED's and/or epilepsy
 - psycho-social issues
- Impact of AED and/or epilepsy
 - increase in polycystic ovarian syndrome (PCOS) - especially VPA but even in women with epilepsy on no AED's
- Difficulty getting pregnant, anovulatory cycles assess for PCOS

Pregnancy and Epilepsy

- Risk of seizure vs risk of AED's
- Sz – miscarriages, still births, early labor, dysmorphism, trauma (falls, injuries), placental rupture, fetal ICH, with status epilepticus high rate of maternal and fetal deaths
- Risk more with generalized (GTC) szs, but fetal bradycardia also occur with complex partial szs (CPSz)
- No risk w/ simple partial szs (SPSz)

Pregnancy and Epilepsy

- Can AED be stopped prior to pregnancy
 - if history of only SPSz can stop AED
 - if no szs for 2-3 years and patient doesn't have juvenile myoclonic epilepsy (JME) consider stopping AED. Obtain EEG and if normal then taper off AED. Sz precautions during decrease and for 3 months after stopping AED

Pregnancy and Epilepsy

- Risk of AED's – malformations
- Use fewest AED's at lowest doses to maintain efficacy
- Minor anomalies – structural abnormalities that are not threat to health
 - 6 – 20% (2.5X increased)

Pregnancy and Epilepsy

- Major malformations – structural abnormalities that interfere w/ function or require major intervention
 - 4 – 7% (general pop 2 – 3%)
 - most common congenital heart disease, cleft lip/palate, urogenital defects, neural tube defects (NTD's)
 - folate supplementation helps to decrease NTD's

Pregnancy and Epilepsy

- Polytherapy – increase risk
- VPA
 - increase risk ~10 – 12%
 - combination w/ VPA even more risk
 - avoid using VPA during pregnancy
if have to use then use the lowest
effective dose
- Risk of newer AED's not fully known

Pregnancy and Epilepsy

- Effect of pregnancy on AED's
 - decrease blood levels for PHT, CBZ, PB, LTG
 - mostly in the second trimester
 - monitor levels monthly and adjust dose as needed to pre-pregnancy dose or early pregnancy dose
 - be pro-active adjust dose based on levels, not wait till they have had a SZ

Pregnancy and Epilepsy

- Effect on seizures
 - can increase, decrease or no change
- Labor – 2 - 3X increase risk toxemia, pre-eclampsia, premature labor
- Sleep deprivation, pain, increase stress - concern for increase szs
 - consider epidural early
 - c-section sooner than later

Pregnancy and Epilepsy

- Vitamin K supplementation
 - decrease risk of hemorrhagic disease of newborn associated w/ enzyme inducing AED's
 - 20mg/day last month of pregnancy
 - 1mg IM to newborn (routinely done in US)

Pregnancy and Epilepsy

- After delivery
 - breast feeding okay except PB very sedating to newborn
 - watch for excess sedation on other AED's as well (not waking to feed)
 - slowly decrease AED's back to pre-pregnancy dose (monitor for toxic AED side effects, check levels)
 - sleep deprivation, stress can increase szs – help from others

Catamenial Epilepsy

- Increase in szs related to menstrual cycles
- Incidence - 10 – 30%
- Ovulatory cycles - two peaks
 - around menses
 - around time of ovulation
- Anovulatory cycles
 - increase szs 2nd half of menstrual cycle

Catamenial Epilepsy

- Etiology – not fully known
- Related to changing hormones
 - estrogen - pro-convulsant
 - progesterone - anti-convulsant
 - around ovulation high estrogen, low progesterone
 - menses progesterone withdrawal
 - anovulation progesterone low
- Changing AED's levels during cycle

Catamenial Epilepsy

- Treatment
 - non-hormonal - acetazolamide, benzodiazepines, increase dose of AED's during sz exacerbation
 - hormonal – progesterone, OCP to regulate cycles, hormone patches, Depo-Lupron in more extreme cases

Other Issues

- Menopause
 - szs - 40% increase , 25% decrease, rest no change
 - HRT during menopause assoc w/ increase szs especially in women w/ catamenial epilepsy
- Bone health – enz inducing AED's
 - vitamin D supplementation
 - bone density studies