Cosmetic and Sexual Side Effects of Anti-Seizure Medications
Adriana Bermeo-Ovalle, MD
Rush University Medical Center
Chicago, IL
Southern Epilepsy and EEG Society Meeting
March 2018

Let’s talk about:
• Weight management
• Hair loss
• Other cosmetic side effects
• Sexuality and Libido

Epilepsy
• Disclosures: None

Cosmetic Issues in Epilepsy
• Columbia and Yale AED Database Project
• 1903 Patients (>16 years old) 2000-2013
• Compared old and New AEDs
• Reports of:
  – Acne
  – Gum thickening
  – Hair loss 1.9%
  – Undesired hair
  – Weight gain 3.6%
• 110 (5.8%) reported these SE, 70 (3.7%) were intolerable
• More in female and tend to be recurrent
• Pregabaline (9.8%) and Valproic acid (21.9%)

Chen B, Epilepsy and Behavior, 2015

Cosmetic side effects
• Third reason for discontinuing AEDs
  1. General health
  2. Cognitive and behavior
  3. Cosmetic
• Seen by others
• Affect social functioning
• Negatively impact quality of life
• Not dose dependent
• No difference between Mono and Poly therapy

De Kinderen, et al. Seizure 2013
Weight Management

• Global obesity epidemic
• Weight gain and central fat distribution are common among women in midlife.
• Factors include:
  – Decreased estrogen levels
  – Lifestyle
  – Diet
• Central obesity increases risk for:
  – Dysglycemia
  – Dyslipidemia
  – Hypertension
  – Cardiovascular disease
• Weight gain in midlife increases risk of:
  – Cancer
  – Arthritis
  – Mood disorders
  – Sexual dysfunction

Kapoor E. Mayo Clin Proc 2017

Weight Management WVE

• Anti-seizure meds associated with Weight gain:
  – Valproic acid
    – 1.5kg in 1 year avg.
  – Pregabalin
  – Vigabatrin
  – Carbamazepine
• Anti-seizure meds associated with weight loss:
  – Felbamate
  – Topiramate
  – Zonisamide

Ben-MenCHEM, Epilepsia, 2007

Weight Management in WWE

• Anti-seizure medications may have an effect on weight
• Women 2x more likely to report
• Mechanism: Multiple factors
  – Appetite
  – Genetic underpinning
  – Metabolism
  – Hormonal metabolism
• Influence adherence o treatment
• Limits in physical activity in some but not all populations


Yale-Columbia study

• Weight gain 3.6% of pts
• Was the most common CSE 61.8%
• Intolerable in 3.3%
• Higher incidence in women than men
• Average gain 7.68 Kg or 10.4% weight
• Average time for discontinuation 327 days
• 20% had also other CSE

Hair loss

• Average growth 6in per year
• Average loss 50 to 250 strands per day
• Strong familiar influence
• Most hair loss with age 50s-60s
• In women new hair may be finer and thinner

Medical causes
  – Pregnancy-postpartum
  – Thyroid disorders
  – Anemia
  – Polycystic Ovary Syndrome
  – Skin conditions
  – Dramatic weight loss
  – Too much Vitamin A
  – Stress

This presentation is the intellectual property of the author. Contact them for permission to reprint and/or distribute.
Hair growth

- Hair grows in cycles
  - Anagen, Catagen, Telogen
  - Growth, transition and rest
- Medication effect on hair growth
  - Increase in resting phase (Telogen)
  - Dystrophic hair at the expense of growing (Anagen)
- Anti seizure medication changes tend to be reversible

Morgan B. CSH Perspectives in Medicine 2014

Hair loss in WWE

- Second most common reported cosmetic side effect
- Women 4x more likely to report
- When reported almost always intolerable 92%

Reported association with hair loss

<table>
<thead>
<tr>
<th>Medication</th>
<th>CR</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valproic acid</td>
<td>8.9%</td>
<td>CR</td>
</tr>
</tbody>
</table>
| Lamotrigine  | 0.4%| 2 months|R
| Topiramate   | 1.7%|       |
| Lamotrigine  | 0.8%| CR    |
| Pregabalin   | 0.7%|       |
| Carbamazepine| 0.3%| CR    |

Harden C, Seizure 2008

Sexuality

- Men and Women with Epilepsy have higher rate of sexual dysfunction
  - Hypothalamic dysfunction related to seizures
  - Increased sex hormone-binding globulin level
  - P-450 enzyme inducers and VPA
  - Lower bioactive testosterone level
  - Alteration of serotonin
  - Sexual dysfunction after surgery (may also improve)
    - Temporal
    - Limbic
    - Frontal cortex

Harden C. Seizure 2008

Other Cosmetic side effects

- Gum Thickening
  - Phenytoin 2.5% (reported up to 50%)
  - All intolerable
  - 51 days
- Acne
  - Felbamate (1.9%) and Lamotrigine (0.6%)
  - All intolerable
  - 34-50 days
- Hirsutism
  - Reported with PHT
  - 68 days

Yogarajah, Curr Pharm Des 2017

Sexuality

- 20-30% WWE have sexual dysfunction
  - Libido/desire
  - Arousal
  - Orgasm
- Contributing factors
  - Medications (serotoninergic transmission)
    - PHT, PBT, LTG, TPM
  - Social fear
  - Depression and anxiety
  - Reduced genital blood flow
  - Right sided epilepsy?

Harden C, Epilepsy and Behavior 2005

Sexuality

- Treatment
  - Multidisciplinary evaluation
  - Tight seizure control
  - Modify AEDs
    - Lamotrigine
    - Oxcarbazepine
  - Monotherapy
  - Androgen therapy
  - Genital vasodilators (Sildenafil)
  - Psychotherapy

Yogarajah, Curr Pharm Des 2017

This presentation is the intellectual property of the author. Contact them for permission to reprint and/or distribute.
PCOS

- Reproductive dysfunction in WWE
  - Menstrual disorder
  - Hirsutism
  - Polycystic ovaries
  - Hormonal abnormalities related to Hypothalamic-Pituitary axis dysfunction
  - Anti-seizure medications
    - P-450 enzyme-inducing med
    - Valproic acid

Thank you!