IATP Statewide Conference 2019
Discover the Possibilities
Epilepsy and Mood Disorders

Presented by Kimberly Janssen
Epilepsy Foundation of Greater Chicago
Goals for Today

- Define seizure, seizure types and first aid
- Define epilepsy and causes
- Discuss comorbidity of epilepsy and mood disorders
- Discuss current treatment options - a team approach
- Next Steps: Managing Epilepsy Well
What is a Seizure?

- A brief, excessive discharge of electrical activity in the brain that alters one or more of the following:
  - Movement
  - Sensation
  - Behavior
  - Awareness
- Temporary, spontaneous, and unpredictable
- More than 20 different types
Some Causes of Seizure

- Traumatic brain injury
- Very high fever
- Alcohol withdrawal
- Cocaine or other drug abuse
- Lack of oxygen
- Diabetes
- Complications of pregnancy

- Severe infection of the brain
- Tumors
- Stroke
- Other neurological illnesses
What is Epilepsy?

• *Chronic* neurological disorder characterized by a tendency to have *recurrent* (2+), *unprovoked* seizures

• Seizure disorder is another name for epilepsy
Causes of Epilepsy

• For 30% of people with epilepsy common identifiable causes include:
  • Traumatic brain injury
  • Genetics (100+ genes)
  • Brain trauma
  • Brain tumors
  • Infections of the brain (e.g. meningitis, measles)
  • Brain injury at birth
  • Abnormal brain development

• For the remaining 70% the cause is unknown
Burden of Disease

• Prevalence
  • Worldwide: 65 million worldwide live with active epilepsy
  • US:
    • 3.7 million individuals 470,000 are children
  • 1 in 26 will develop epilepsy in their lifetime*

• Chicago-metro area: **136,000** people

• Can occur at any age & affects people of all races and ethnic backgrounds

• The risk is higher in children with co-morbidities

*(CDC, August 2017)
Seizure Types

• Generalized onset seizures
  – Involve whole brain
  – Lose awareness
  – Symptoms may include convulsions, staring, muscle spasms, and falls

• Focal-onset seizures
  – Involve only part of the brain
  – Awake, but awareness impaired
  – Symptoms relate to part of the brain affected (temporal, frontal, parietal, occipital)
Common Generalized Onset Seizures

Motor, Previously called Tonic Clonic:

Symptoms:
- A hoarse cry followed by loss of consciousness and a fall
- Muscle tension followed by convulsions
- Can be preceded by an aura
- Shallow breathing and drooling may occur
- Possible loss of bowel/bladder control
- Skin, nails, lips may turn blue

Timeframe:
- Generally lasts 1 to 3 minutes
- Person will need to rest for period of time; may have headache, confusion
Common Generalized Onset Seizures

Non-motor, previously called Absence:

Symptoms:
• Pause in activity w/ a blank stare
• Brief lapse of awareness
• Possible chewing or blinking motion
• Quick seizure with quick recovery

Timeframe:
• Usually lasts 1 to 10 seconds
• May occur many times a day
• Person will pick up where he/she left off and resume normal activities
Focal Onset Seizures

- **Frontal Lobe**: Concentration, planning, problem solving skills, orientation, motor control of voluntary muscles.
- **Parietal Lobe**: Sensations of touch, temperature, pressure, pain from skin, use of words, understanding language, speech.
- **Temporal Lobe**: Memory of visual and auditory patterns, hearing.
- **Occipital Lobe**: Visual capabilities, recognition, combining visual images.
- **Cerebellum**: Coordination of voluntary muscular movements, balance.

**Left Hemisphere - Outside View**
Focal Aware Seizures

Symptoms:
- Person is awake and alert; awareness is maintained
- Focal, motor:
  - Rhythmic movements (Isolated twitching of the arms, face, legs)
- Focal non-motor:
  - Altered sense of smell, taste, hearing, feeling, seeing
  - Psychic symptoms (Déjà vu, hallucinations, feeling of fear or anxiety)

Timeframe:
- Very brief - usually lasts < 1 minute
- May be confused with acting out
- Can be easily missed or undetected!
Focal Impaired Awareness Seizures

Symptoms:
• Awareness:
  – Awareness is impaired /Consciousness can be affected
• Often begins with a blank dazed stare
• Motor symptoms:
  – Repetitive purposeless movements
  – Clumsy or disoriented movements, aimless walking, picking things up, nonsensical speech or lip smacking

Timeframe:
• Often lasts 1 – 3 minutes
• May be confused with drunkenness, drug abuse or aggressive behavior
First Aid

• Generalized Onset
  – Stay calm and track time
  – Protect person from possible hazards
  – Turn student on his/her side
  – Cushion head
  – After the seizure, remain with him/her until awareness is regained

• Focal Motor Onset
  – Stay calm and track time
  – Do not restrain
  – Gently direct away from hazards
  – Don’t expect him/her to obey to verbal instructions
  – After the seizure, remain with him/her until awareness is regained
What Triggers a Seizure?

• Factors that **MIGHT** increase the likelihood of a seizure in people with epilepsy include:
  • Missed or late medication (#1 reason)
  • Overheating/overexertion
  • Stress/anxiety
  • Lack of sleep/fatigue
  • Poor diet/missed meals
  • Hormonal changes
  • Alcohol use, drug interactions
  • Hyperventilation/Flashing lights

• *In many cases there is no identifiable trigger*
Medical Emergencies

When should you call EMS?

- First time seizure
- Person is injured, has diabetes or is pregnant
- Convulsive seizure lasting more than 5 minutes
- Repeated seizures without regaining consciousness
- If the seizure occurs in water
Epilepsy Spectrum

Lives with family

Needs 2 hours to reset
Struggling in school

Seizures 2 x week
Medication usually effective

Seizures 2 x month and are controlled with medication

Surgery was a cure
Drives

Has a full time job

Epilepsy Spectrum

Lives with family

Needs 2 hours to reset
Struggling in school

Seizures 2 x week
Medication usually effective

Seizures 2 x month and are controlled with medication

Surgery was a cure
Drives

Has a full time job

Epilepsy Spectrum

Lives with family

Needs 2 hours to reset
Struggling in school

Seizures 2 x week
Medication usually effective

Seizures 2 x month and are controlled with medication

Surgery was a cure
Drives

Has a full time job
Epilepsy Comorbidities

• Mental health comorbidities and epilepsy have existed for hundreds of years
• Most common:
  
  – **Depression** – persistent feeling of sadness and loss of interest.
  
  – **Anxiety** – intense, excessive, and persistent worry and fear about everyday situation (fast heart rate, rapid breathing, sweating and feeling tired may occur)
  
  – **ADD/ADHD** – chronic condition including attention difficulty, hyperactivity and impulsiveness.
  
  – **Personality Disorder** – person experiences a rigid and unhealthy pattern of thinking, functioning and behaving.
### Lifetime Prevalence

*Tellez-Zenteno, JF et al., Epilepsia, 2007; 48:2336-2344*

<table>
<thead>
<tr>
<th>Psychiatric Disorder</th>
<th>Controls (%)</th>
<th>Epilepsy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Disorder</td>
<td>10.7 (10.2–11.2)</td>
<td>17.4 (10.0–24.9)</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>11.2 (10.8–11.7)</td>
<td>22.8 (14.8–30.9)</td>
</tr>
<tr>
<td>Mood/Anxiety Disorders</td>
<td>19.6 (19.0–20.2)</td>
<td>34.2 (25.0–43.3)</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>13.3 (12.8–13.8)</td>
<td>25.0 (17.4–32.5)</td>
</tr>
<tr>
<td>Any Psychiatric Disorder</td>
<td>20.7 (19.5–20.7)</td>
<td>35.5 (25.9–44.0)</td>
</tr>
</tbody>
</table>
Mood Disorders

• Greatly impact a person’s:
  – daily activities
  – quality of life
  – employment
  – level of physical activity
  – self-esteem, self-efficacy
  – social life
Current Treatment Options

1. Anti-Seizure Medication
   - Rescue Medication (Diastat)
   - Intranasal Midazolam
2. Palliative Care (devices)
3. Dietary Therapy
4. Surgery
5. Epidiolex
6. Mood Disorder Treatment
Anti-Seizure Medication

What you need to know:

• More than 20 different types of medication
• 1st course of action
• Side effects:
  – Double vision, sedation, dizziness, weight gain, irritability, inattention, or other motor function impairment, depression, hyperactivity, personality changes and reduced intellectual functioning
  – Forgetfulness
  – Numbness / tingling sensation
  – Potential interactions with other prescribed medications.
Rescue Rx

• Diastat (Diazepam; rectal gel)
  – FDA-approved form of valium
  – Caregiver approved
  – Can help avoid a trip to the emergency room
  – Good Samaritan Act of Illinois

• Midazolam (nasal)
  – FDA approved in May 2019

• Lorazepam (Ativan)
Palliative Therapies

Vagus Nerve Stimulation (VNS)
- Generator sends an electrical pulse at the programmed rate automatically, continuously, 24 hours a day

Responsive Neurostimulation Therapy (RNS)
- Monitors, detects and responds to sz activity

Surgery/Laser Ablation
- Can be a cure

Dietary Therapy (Keto)
- Special high-fat diet that is used for difficult to treat seizures
- Diet eliminates sweets such as candy, cookies, and desserts
Epidiolex

• FDA approved

• A marijuana strain rich in cannabidiol (CBD), a non-psychoactive compound of cannabis

• Delivered in an oil suspension and ingested

• No set dosing schedule/contraindications is wholly available. CBD can be dosed with medication (in some patients)

• Not one size fits all
Mood Disorder Treatments

• Medication - antidepressant medication is the most common type of treatment

• Different types of counseling that can be very helpful. A few examples include:
  – Family therapy
  – Traditional psychotherapy
  – Cognitive behavior
  – Psychoeducational therapy
Epilepsy Self-Management

Take steps to improve quality of life:

• Take medications on a regular basis, and on time
• Identify possible triggers
• Self-management strategies to manage triggers of seizures.
• Regular sleep pattern.
• Limit alcohol consumption
• Find an outlet to help deal with anger, frustration, and worries.
  • Exercise
  • Music
  • Conversation works for many people.
How can you help a loved one?

In order to improve the quality of life with people with epilepsy, it is important for people with epilepsy, their families and care providers to be familiar with the commonly encountered mood disorders.

Thank you.
Seizure Management Tools

- My Seizure Response Plan (English, fillable)
- My Health Care Team
- My Medicine Schedule
- Tips Seizure Observation Recording
- Instructions Using Seizure Calendar
- Seizure Calendar
- Seizure Action Plan (School, English)
EFGC Services

- Education/First Aid Training
- HOBSCOTCH – memory enhancing program
- Case Management
- Camp Blackhawk (ages 6-17)
- Support Groups
- Visit: www.epilepsychicago.org
Questions
Contact Information

Kimberly Janssen
Epilepsy Foundation of Greater Chicago
260.580.6817
kjanssen@epilepsychicago.org
www.epilepsychicago.org