SESSION OBJECTIVES

- Discuss the prevalence of epilepsy and seizures in long-term care settings
- Identify the unique clinical issues involved with managing residents with epilepsy in long-term care settings
- Define the role of the interdisciplinary team in effectively managing epilepsy in long-term care settings
- Discuss the role of pharmacologic management in managing the resident with epilepsy or those with seizures

SEIZURE

- Abnormal electrical activity in the brain that causes an involuntary change in body movement or function, sensation, awareness or behavior.

EPILEPSY

- Two unprovoked seizures is used in epidemiologic studies, texts, and often in practice.
2.3 Million Adults with Epilepsy in the United States (CDC, 2012)

4th most common neurological disorder after migraine, stroke, Alzheimer’s disease.

150,000 new cases are diagnosed annually (England, Liverman, Schultz, & Strasbridge, 2012)

Elders in Nursing Homes

- 1 in 20 residents in US nursing homes have indications of Epilepsy
- Elderly more likely to suffer severe consequences from seizures

MDS Data

- Supporting evidence not available for Dx
- No Neurology Consultation while in NH
- Less than 5% had EEG mentioned prior to Admit NH
- Likely many had AED initiated prior to 2 Seizures
MDS Data

- Rich source of Data for Research
- Understudied Seizure and Epilepsy in NH (Hardie et al., 2007)

2.3 Million Adults affected by Epilepsy (CDC, 2012)

1 in 26 people will be diagnosed with epilepsy at some point in their lives (IOM, 2012)

- Variable Pathophysiologic findings
- Clinical manifestations
- Treatments
- Prognosis
Epidemiology

Persons with certain conditions:

- stroke
- brain tumor

High probability of experiencing additional seizures after an initial ictal event.

Cause of Epilepsy

- May be Unknown 60% (Epilepsy Action 2009) Vary with Age
- Inherited syndromes
- Congenital brain malformations, infections, head trauma
- Stokes/Cerebrovascular 48% (Abdullaeva, 2011)
- Tumors
- Genetic-Angelman, Rett, Pitt-Hopkins, Prader-Willi syndrome
- Tuberous Sclerosis
Most Acute Seizures occur within 24 hours of stroke onset.

Other Causes
- Trauma - 10.2%
- Neoplasm - 8.8%
- Infection - 2%
- Metabolic abnormalities - 10-15%

(WATERHOUSE & TOWNE, 2005)

Causes Continued
- Metabolic Disorders - Hypoglycemia or Acidosis
- Infections
- Head trauma
- Medication or Drug Induced

Drug Induced
Psychogenic (Non-epileptic Seizures)

- Among the most common and serious of all psychogenic neurological disorders
- Account for 20% of seizures referred to comprehensive seizure centers
- Poor Quality of Life

Seizure versus TIA

- Major clinical differential between TIA and a Simple Partial Seizure is length of the event.
- Partial rarely last more than a few minutes
- TIA last much longer, usually hours
Autonomic Symptoms (Pre-seizure)
- Pallor
- Diaphoresis
- Olfactory or gustatory sensations
- Urge to defecate
- Dizziness
- Involvement of lateral temporal or occipital cortex
- Vertigo
- Nausea
- Salivation Excessive (Riddle, 2013)

International Classification of Epileptic Seizures (ICES)

Partial Seizures
Start Localized and Spread

Simple Partial
- Typically brief, < 1 min
- Abnormalities of movement: Twitching, Emotions, Fear, Sensations
  i.e., Visual Disturbance corresponds to the affected region of the brain
Simple Partial
- Consciousness is preserved
- Communication may be impaired.
- Aura
- Twitching
- Emotions, Fear,
- Sensations i.e., Visual Disturbance corresponds to the affected region of the brain

Complex Partial Seizure
- Larger area of the brain
- Consciousness altered
- 1-3 Min
- Blank Stare
- Automatisms(picking, fumbling with objects, chewing)
- /Non-purposeful movements
- Fall Risk as still ambulatory
- Partial seizures can lead to Generalized Tonic Clonic seizures, Grand Mal
- Cry-Abrupt movement of air across the glottis from sudden tonic muscle contraction
- Continuous seizure activity or multiple seizures without a return of consciousness.

Status Epilepticus
- Continuous seizure activity or multiple seizures without a return of consciousness.
- Twice as common in the elderly
- Associated with significant morbidity and mortality.

Status Epilepticus
- Prolactin elevation
- Dermatologic injuries-Sutures
- Anticonvulsant agents to determine baselines, toxicity
- CSF determine meningitis or encephalitis
- Body becomes diffusely stiff, often with arching of the back
Breathing is suspended, sometimes with cyanosis
Urinary incontinence is common
After 15 – 60 seconds tonic activity gives way to clonic rhythmic jerking of all 4 extremities
Stridorous breathing takes over with foaming and gasping
Postictal stupor lasting 2 to 8 hours

Status Epilepticus
Continuous seizure activity (30 min) or multiple seizures without a return of consciousness.
Twice as common in the elderly associated with significant morbidity and mortality.

NURSING ACTION
A Assess the situation – are they in danger of injuring themselves? Remove any nearby objects that could cause injury
C Cushion their head (with a jumper, for example) to protect them from head injury
T Time - check the time – if the seizure lasts longer than five minutes you should call an ambulance
I Identity - look for a medical bracelet or ID card, information about the person’s seizures and what to do

O Over - Once the seizure is over, put them on their side (in the recovery position). Stay with them and reassure them as they come round

N Never restrain the person, put something in their mouth or try to give them food or drink

Six Types of Generalized Seizures

- Tonic-Clonic-Grand Mal
- Absence
- Tonic
- Atonic
- Clonic
- Myoclonic

Imaging

- MRI
- PET
- EEG 50% will have a normal test (Welsh, 2009)
- CT Scanning
- Video-EEG monitoring critical to classify
GOAL
TREAT TO PREVENT MORBIDITY OR MORTALITY FROM FURTHER SEIZURES.

MAJOR EPILEPTIC DRUGS
POTENTIAL ADVERSE EVENTS AND OTHER EFFECTS/ISSUES

<table>
<thead>
<tr>
<th>Medication</th>
<th>mg/day</th>
<th>mg/L</th>
<th>Range</th>
<th>Prominent Side Effects</th>
<th>Other Effects</th>
<th>Other Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbamazepine</td>
<td>400-1600</td>
<td>4-12</td>
<td>4-12</td>
<td>Diplopia, Fatigue, Hyponatremia</td>
<td>Mood Stabilizer</td>
<td>Enzyme Inducer</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>600-6000</td>
<td>2-12</td>
<td>2-12</td>
<td>Fatigue</td>
<td>Treatment of Pain</td>
<td>No drug interactions</td>
</tr>
<tr>
<td>Lamotrigine</td>
<td>100-600</td>
<td>4-18</td>
<td>4-18</td>
<td>Insomnia, Headache, Tremor, Anxiety</td>
<td>Mood Stabilizer</td>
<td>Risk for Stevens Johnson Syndrome</td>
</tr>
<tr>
<td>Levetiracetam</td>
<td>500-3000</td>
<td>3-63</td>
<td>3-63</td>
<td>Mood Change, Irritability, Lethargy</td>
<td>No drug interactions</td>
<td></td>
</tr>
<tr>
<td>Oxcarbazepine</td>
<td>300-2400</td>
<td>6-40</td>
<td>6-40</td>
<td>Depression, Sedation, Mood Stabilizers</td>
<td>Riddle, 2013</td>
<td></td>
</tr>
</tbody>
</table>

Medications
Topiramate- 3 mechanisms of action:

- Prevents Na from entering the nerve during rapid fire
- Decreases ability of glutamate to excite nerve cells, blocking glutamate receptors
- Enhances GABA in brain (acts as a calming agent to nerve activity)
New Onset of epilepsy is often associated with vague complaints such as:

- Confusion
- Altered Mental Status
- Memory Problems

Challenges for the Geriatric LTC Resident

- Residents/Patients cannot provide a detailed history of their seizures
- Seizures are often not observed by others
- Improper diagnosis because of poor epileptic knowledge
Challenges

- Elderly may not be cooperative if they have cognitive impairment
- Multiple comorbidities contribute to difficulties in diagnosis

- Quality of Life Post Acute Discharge Plan
- Medication Management
- Safety and Assessment during Event
- Driving and post discharge care followup

Vagus Nerve Stimulation

- Prevents seizures by regular impulse to brain via the Vagus Nerve
- Surgical insertion of wire wrapped around the vagus and a device like pacemaker which transmits electrical current
- Regular strength and frequency of stimulation

(Schachter & Sirven, 2013)
Questions for Care Planning
1. Was there any warning? If so what was the warning, describe.
2. What did the patient do? Describe.
3. Was the patient able to relate to the environment during the spell and or does the patient have recollection of the spell?
4. How did the patient feel after the spell?
5. How long did it take the patient to get back to baseline condition?
6. How long did the spell last?
7. How frequent do the spells occur?
8. Are any precipitants associated with the spells?
9. Has the patient shown any response to therapy for the spells?

(Ko & Benbadis, 2014)

Mandatory

- Documentation by all staff
- Monitoring Sheet
- Video recording permission

Remission

Definition: 5 or more years seizure free on medication

- 70% of those with epilepsy can be expected to enter remission.
- 10% of new patients fail to gain control of seizures despite optimum medical management.
- 75% of people who are seizure free on medication for 2 to 5 years can be successfully withdrawn from medication.
Care Planning
82 year old female dining in main room
Noted by CENA to not be eating quite as well today. Not bring food to her mouth and not talking at all.

Care Concerns?
Safety?
What should we monitor?
What type of Seizure?
What Video Recording device can be used?
Permissions?

- Incontinence is noted, Confusion

DIGNITY
- No serious injury but a small laceration is noted over left eye, Skin tears

UNKNOWN INJURIES:Origin?
What are examples of immediate care needs?
- Maintain the airway
- Prevent Injury
- Administer medication as ordered
- 80% of the cases benzodiazepine is effective
- Document carefully
- Support Neurologist referral as indicated.
- Emergency care after 5 minutes

(IDC TEAM RESPONSIBILITY)

- Teach all nursing home employees who is at risk for seizures, maintenance, housekeeping, dietary are huge information sources.
- Maintain records that are descriptive and objective.
- Always consider dignity of the resident

- May need to educate other residents about this illness?
- May not understand why you don’t stop the seizure in a public place.
- Same drug brand (Country, formulation) each time (Epilepsy Action)
- Why you do nothing? Is doing something!
Thank you for caring and helping the resident with Seizures and Epilepsy to achieve the highest Quality of Care possible.

You do make a big difference!

Thank you!!

References
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Riddle, A. (2013). An Update on the Assessment and Management of Seizure Disorder in LTC Settings - Powerpoint presentation NADONA
