"What is the Best Way to Manage Intractable Epilepsy?"

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Who Are We
Bronx Lebanon Hospital Center: Doctor to the Community

With more than 100 year history, Bronx-Lebanon Hospital Center has provided quality and compassionate health care. Bronx-Lebanon is the largest voluntary, not-for-profit health care system serving the South and Central Bronx, with 972 beds at two major hospital divisions; a major psychiatric facility; two specialized long term care facilities; and an extensive “BronxCare” Network of medical practices, including the Dr. Martin Luther King, Jr. Health Center; as well as a 51-unit housing facility for seniors and low income residents.
Epilepsy Management—What is the Role of Managed Care Organizations?

- Cost effective care
- Best outcomes
- Reduce unnecessary hospitalization
- Decisive management of intractable epilepsy
- Epilepsy rehabilitation
Incidence

- Epilepsy: 0.5-1%
- Seizures: 5-10%
US Population – 310,000,000

- People with epilepsy: 2,200,000 (0.7%)
- Intractable epilepsy: 660,000 (30%)
HF + NHP members – 1,000,000

- People with epilepsy 7,000
- Intractable epilepsy (30%) 2,100
The Poorly Controlled, Intractable Seizure Patient

- Despite medical management, patient continues to have frequent, debilitating seizures
- Commonly on polytherapy (more than one medication)
Video-EEG Monitoring

- Continuous EEG monitoring along with continuous audio-video taping
- Requires inpatient admission
Goals of Video-EEG Monitoring

- Epilepsy vs. non-epileptic events
- Characterize epilepsy type
- Pre-surgical evaluation
Non-Epileptic Events

- 20 to 30% of patients referred with diagnosis of intractable epilepsy
- Events that do not have electrical source in brain
- May have physical or psychological causes that are not epilepsy
- But CAN also occur in patients who have epilepsy
Non-Epileptic Events

- Physiologic (other medical conditions)
  - Referred to other medical specialist

- Psychological or pseudoseizures
  - Referred to psychiatry and neuropsychologist who work with this type of stress-seizure
  - Psychiatric medication, psychotherapy, education
For Patients that do not Respond to Medication

- Ketogenic diet
- Epilepsy surgery
- Vagus nerve stimulator
Ketogenic Diet (@1920)

- High fat, low carbohydrate/protein diet
- Requires hospitalization to start it
  - NPO until patient in ketosis
  - Parent education
  - Meds to be taken into account
- Recommended mainly for young children due to compliance and efficacy
Epilepsy Surgery

The goals are:

- To determine where the seizures are coming from
- To safely resect/remove epileptogenic lesion
Epilepsy Surgery

- To determine where the seizures are coming from
  - Video-EEG monitoring
  - MRI
  - MRS
  - PET
  - SPECT
Epilepsy Surgery

- To make sure that it is safe
  - Wada test: to study speech and memory
- Neuropsychological testing: mental functions (IQ, memory, attention) and personality assessment
- Psychological evaluation
- Ophthalmologic evaluation
Epilepsy Surgery

- Some cases in which the localization is not clear or where function could be affected will require INVASIVE ELECTRODES
  - Depth electrodes
  - Subdural electrodes
Types of Epilepsy Surgery

- Temporal Lobectomy
- Extratemporal Resections
- Hemispherectomy
- Corpus Callosotomy
Outcome after Epilepsy Surgery

- Anterior temporal lobectomy
  - 70-80% seizure free
- Neocortical resection
  - With lesion: 50-80% seizure free
  - Without lesion: 30-50% seizure free
- Hemispherectomy
  - Significant improvement
- Corpus Callosotomy
  - Significant improvement for drop attacks
Vagus Nerve Stimulator (1997)

- Intractable epilepsy patient without focus or desires interim step before epilepsy surgery
- Goal is to reduce amount/severity of seizures vs. cure
- Device surgically implanted in left chest/axilla area
- Coils around left vagus nerve
- Stimulation is automatic; patient can additionally stimulate device if aura
Summary

- Ways to treat epilepsy
  - Medications
  - Ketogenic Diet
  - Surgery
  - Vagus nerve stimulator
Incidence -- Seizures:

- 300,000 people have a first convulsion each year.
- 120,000 of them are under the age of 18.
- Between 75,000 and 100,000 of them are children under the age of 5 who have experienced a febrile (fever-caused) seizure.
Incidence -- Epilepsy:

- 200,000 new cases of epilepsy are diagnosed each year
- Incidence is highest under the age of 2 and over 65
- 45,000 children under the age of 15 develop epilepsy each year
- Males are slightly more likely to develop epilepsy than females
Incidence -- Epilepsy:

- Incidence is greater in African American and socially disadvantaged populations
- Trends show decreased incidence in children; increased incidence in the elderly
- In 70 percent of new cases, no cause is apparent
- 50 percent of people with new cases of epilepsy will have generalized onset seizures
- Generalized seizures are more common in children under the age of 10; afterwards more than half of all new cases of epilepsy will have partial seizures
Prevalence -- Epilepsy:

- Prevalence of active epilepsy (history of the disorder plus a seizure or use of antiepileptic medicine within the past 5 years) is estimated as nearly 3 million in the United States.
- Prevalence tends to increase with age.
- 326,000 children through age 15 have epilepsy.
- More than 300,000 persons over the age of 65 have epilepsy.
Prevalence -- Epilepsy:

- Higher among racial minorities than among Caucasians
- Cumulative incidence (risk of developing epilepsy):
  - By 20 years of age, one percent of the population can be expected to have developed epilepsy
  - By 75 years of age, three percent of the population can be expected to have been diagnosed with epilepsy, and ten percent will have experienced some type of seizure
Prevalence -- Epilepsy:

- 300,000 people have a first convulsion each year
- 120,000 of them are under the age of 18
- Between 75,000 and 100,000 of them are children under the age of 5 who have experienced a febrile (fever-caused) seizure
Epilepsy Risk in Special Populations:

- 25.8 percent of children with mental retardation
- 13 percent of children with cerebral palsy
- 50 percent of children with both disabilities
- 10 percent of Alzheimer patients
Epilepsy Risk in Special Populations:

- 22 percent of stroke patients
- 8.7 percent of children of mothers with epilepsy
- 2.4 percent of children of fathers with epilepsy
- 33 percent of people who have had a single, unprovoked seizure
Remission:

- 70 percent of people with epilepsy can be expected to enter remission, defined as 5 or more years seizure free on medication
- 35 percent of people with mental retardation, cerebral palsy, or other neurological condition will enter remission
- 75 percent of people who are seizure free on medication for 2 to 5 years can be successfully withdrawn from medication
- 10 percent of new patients fail to gain control of seizures despite optimal medical management
Thank you

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