Basics of Epilepsy
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Epilepsy Prevalence and Incidence

- 2.2 million Americans and more than 65 million people worldwide have epilepsy

- 300,000 have a first convulsion each year
  - 120,000 under 18 years of age
  - ~ 1 in 26 people will develop epilepsy during their lifetime

- 150,000 new cases of epilepsy diagnosed each year
  - Highest incidence in young children and older adults
  - 65-70% of new cases have no obvious cause
Definitions

- **A seizure** is:
  - A symptom of a disturbance in the brain,
  - Caused by abnormal electrical discharges in the brain.

- Epilepsy means that:
  - A person has had 2 or more seizures greater than 24 hours apart
  - Or 1 seizure with a risk for recurrent seizures
  - The seizures are unprovoked and not caused by any known medical condition
  - A person has a tendency to recurring seizures.
  - The term seizure disorder is the same as epilepsy.
Incidence of Epilepsy by Age

Causes of Epilepsy

- Idiopathic/cryptogenic (65.5%)
- Congenital (8.0%)
- Trauma (5.5%)
- Vascular (10.9%)
- Neoplastic (4.1%)
- Infection (2.5%)
- Degenerative (3.5%)

Causes of Epilepsy by Age

- **Infancy and Childhood**
  - Birth injury
  - Inborn errors of metabolism
  - Congenital malformations

- **Childhood and Adolescence**
  - Idiopathic-Cryptogenic/genetic
  - CNS infection
Causes of Epilepsy by Age

- Adolescence and Young Adult
  - Head trauma
  - Drug intoxication/withdrawal (acute sz)

- Older Adult
  - Stroke
  - Brain tumor
  - Acute metabolic disturbances
Post-Traumatic Epilepsy

- Epilepsy arising as a result of head trauma
- Head trauma may be subtle or severe
- Extent & location of injury may increase likelihood of developing seizures
  - 2 types of seizures - early/acute & delayed onset
- Early treatment with anti-epileptic drugs may not affect the development of seizures later on
Epilepsy Risk Factors

- Intellectual or other developmental disability
- Cerebral Palsy
- Anoxia
- Autism
- Stroke
- Major head trauma
- CNS hemorrhage
- CNS infection, neurocystercosis
- Dementia
- Brain tumor, tubers
- Family history
- Birth injury
Seizure Triggers

- Non-adherence
- Sleep deprivation
- Stress (good or bad)
- Accident/injury
- Concurrent illness (infection or fever)
- Menses or hormonal changes
- Alcohol/drugs
- Specific stimuli (photosensitivity, reflex epilepsy)
Mortality

- Risk of death higher in people with epilepsy
  - 10 years of life lost for people with known cause of seizures
  - 2 years of life lost for those with unknown cause of seizures
- ~42,000 deaths caused by epilepsy each year
- Mortality rate associated with seizures lasting greater than 30 minutes may be as high as 19%
  - Vast majority of deaths occur with seizure in the context of an acute brain insult, hypoxia, trauma, etc.
Causes of Death in Epilepsy

- Life-threatening injuries
- Drowning
- Status epilepticus
- Sudden unexplained death in epilepsy (SUDEP)
- Suicide
Sudden Death in Epilepsy (SUDEP)

- SUDEP applies to a sudden death in someone known to have epilepsy, in the absence of an obvious cause for the death.

- Numbers vary
  - 1 in 10,000 of newly diagnosed
  - 9 of 1,000 candidates for epilepsy surgery
A Spectrum of Severity

Uncomplicated epilepsy, Seizures controlled with medication

Seizures refractory to treatment; Epilepsy is disabling due to frequent seizures and other problems

Seizures not completely controlled by treatment; Epilepsy lowers standard of living due to social, emotional, and educational problems

Increase risk of SUDEP
Epilepsy 101

For Nurses Caring for People with Epilepsy

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