Epileptic seizures and Syndromes

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Advocates for Epilepsy workshop

Epileptic Seizures

- A clinical manifestation, usually self-limited, presumed to result from an abnormal, excessive and or hyper synchronous discharge of the neurones or set of neurones in the brain

- The clinical manifestations are variable and consists of sudden and transitory abnormal phenomena relative to the activated area (s) of the brain e.g. alterations of consciousness, motor, sensory, autonomic, and psychic events

The epileptic seizure is a diagnostic entity with aetiologic, therapeutic and prognostic implications

Non-epileptic seizures are paroxysmal events of diverse aetiology that mimic or look like, but are not epileptic seizures. May be

- **physiological or organic non-epileptic seizures and**
- **psychogenic non-epileptic seizures**

Modes of presentation includes

- **staring, alter responsiveness**
- **loss of consciousness, collapse**
- **limb movements and nocturnal events**

In Childhood and Adolescence a variety of different paroxysmal events, are easily confused with seizures, and can be provoked by

- Anger, frustration, stress
- Sleep deprivation or sleep, arousal, hyperventilation, flashing lights or patterns
- Standing, bathing, menstruation
- Fever, chronic fatigue
- The use of illicit drugs and alcohol in adolescence

- **Misdiagnosis occurs in 19-30%, mainly by misinterpreting clinical and non – epileptogenic or paroxysmal interictal EEG activity either by the doctor reporting or by the physician who reads the report.**

- **The incorrect label of epilepsy in a child will influence**
  - **development**
  - **personality**
  - **independence**
  - **quality of life**

Epileptic seizure or **Non-epileptic event**

Advocates should direct people with history of seizures or suspicion of seizures to an epileptologist or a specialized epilepsy center for the correct diagnosis and management

Epileptic Syndromes

- **Epileptic Syndrome is defined by a cluster of signs and symptoms (age of onset, type of seizure, mode of seizure recurrence, FH of seizures, neurological findings, EEG, neurologic imaging findings) customarily occurring together**

The diagnosis

The correct diagnosis is based on the

- History
- EEG using correct methodology
- Experience of the doctor to analyze and compose all relevant information

The cornerstone for the diagnosis is a detail history

Sleep- awake video polygraphic records with correct HV and IPS technique are needed

Additional evidence maybe needed such as

- Psychiatric and personality examination,
- Using different suggestive techniques and
- Determining serum prolactin levels

Interesting diagnostic steps

- Provoked versus unprovoked events
- Is the phenomenon an epileptic?
- What is the cause?
- What is the type of seizure?
- What is the epilepsy or the epileptic syndrome?

- Classification of nonepileptic events
- Classification of epileptic seizures
- Classification of epileptic Syndromes

- **Classification of nonepileptic events**

- **Physiological or organic nonepileptic seizures**
- **Psychogenic nonepileptic seizures**

- Classification of nonepileptic events

- **Classification of epileptic seizures**

Generalized Seizures [absences (typical, atypical, myoclonic), myoclonic (myoclonic, myoclonic atonic, eyelid), atonic, tonic, clonic, tonic-clonic, spasms, SE (absence, myoclonic, tonic-clonic)]

Focal Seizures [localised, with homolateral spread, with contralateral spread, Secondary generalized (tonic-clonic, absences, spasms)]

Neonatal

Status Epilepticus [Epilepsia partialis continua, Supplementary motor area SE, Aura continua, Dyscognitive focal SE(psychomotor, complex partial), Tonic-clonic SE, Absence SE (typical AS, atypical AS, myoclonic AS), Myoclonic SE , Tonic SE, Subtle SE, Autonomic SE]

- Classification of nonepileptic events
- Classification of epileptic seizures
- **Classification of epileptic Syndromes**

Epileptic Syndromes in Neonates
Epileptic Syndromes in Infancy
Epileptic Encephalopathies in Infancy and Childhood
Severe Neocortical Epileptic Syndromes in Infancy and Childhood
Benign Childhood Focal Syndromes
Idiopathic Generalized Epilepsy Syndromes
Familial (autosomal dominant) Focal Epilepsies
Symptomatic or Probably Symptomatic Focal Epilepsies
Reflex Epilepsies

- Classification of nonepileptic events
- Classification of epileptic seizures
- Classification of epileptic Syndromes

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Child Neurologist

Child and adult Neurologist

There are epileptic syndromes that

- Start in childhood and vanish during adolescence
- Start in childhood and may continue or persist in adolescence
- Start in adolescence and continue in adult life

With the correct diagnosis of a seizure, epilepsy or syndrome

- We choose the correct anti-seizure drug, at optimum daily dose, specific for the seizures /syndrome and the patient
- We avoid unnecessary and expensive investigations
- We avoid unnecessary therapies
- We avoid the effect of wrong drugs

Treatment

Short term aims

- Free of seizures clinical- subclinical with no adverse effects: with appropriate treatment and dose this occurs in 60-75% of cases

An additional 10-15% is achieved with new anti-epileptic drugs, and or alternative therapies
A correct pre-surgical evaluation and Intervention is needed for the rest

Long term aims

- Chronic therapy (most IGE and the symptomatic focal epilepsies which are not good candidates for surgery)
- Good developmental evolution: motor, social, cognitive
- Good quality of life for the patient and family

Failing to offer state-of-the-art treatment, increases the burden of epilepsy on the people with epilepsy and their families

Therapeutic principles

- **Involve parents / child / patients in decision making.**
  Listen feelings and experiences of the family

- **Remember that special groups need particular attention and management (children, elderly, women especially in childbearing age, people with mental and physical disabilities).**

- **Cost should no be an issue in medicine**

What the treating doctor should know

- All the facts regarding epilepsy
- The feelings and needs of the family
- The educational necessities
- The legislation for epilepsy
- Special issues regarding employment

Epilepsy the future; no seizures, no epilepsy

However, until that time we need

- **To develop anti-seizure drugs appropriate for all the existing seizures**
- **To predict pharmacoresistance or better understand and treat pharmacoresistance**
- **To reduce the risk of cognitive dysfunctions or SUDEP**
- **To know better at which point we use alternative treatments**

Thank you for your attention