Clinical Practice Guidelines
Epilepsy

Diagnosis of Epilepsy

Obtain detailed history from the patient and from the eye-witness(es) to the attack.

Epilepsy should be suspected when there is an episodic disturbance to the level of consciousness or an episodic motor, sensory or psychic disturbance.

Presence of more than one of the following positive features associated with the episode will support the diagnosis of epilepsy.

- Abnormal sensation of taste or smell, rising epigastric discomfort or Déjà vu or Jamais vu phenomena
- Tonic clonic movements
- Tongue biting or any external injury
- Involuntary passage of urine or stools
- Headache, confusion and amnesia following the episode
- Episodes occurring during sleep

Do not base the diagnosis on the presence or absence of a single feature.

Differential diagnosis of a seizure include

- Vasovagal syncope
- Cardiac arrhythmia
- Transient cerebral ischaemic attack
- Hypoglycaemic attack
- Panic attack
- Non-epileptic attack disorder (NEAD)
- Cataplexy

Aetiology of epilepsy

- Cerebrovascular diseases
- Primary cerebral degenerative disorder
- Alcohol, drugs and metabolic disturbances
- Cerebral infection
- Cerebral tumour
- Congenital or perinatal causes
- Genetic causes
- Post traumatic
- Post neurosurgery
- Reflex epilepsy
- Cryptogenic epilepsy

Classification of epilepsy

1. Partial seizures

A. Simple partial seizures (consciousness is not impaired during the episode)
B. Complex partial seizures (consciousness is impaired during the episode)
C. Partial seizures evolving to secondarily generalized seizures

2. Generalized seizures

A. Typical absence seizures (petit mal seizures)
B. Atypical absence
C. Myoclonic seizures
D. Clonic seizures
E. Tonic seizures
F. Tonic-clonic seizures (grand mal seizures)
G. Atonic seizures

3. Unclassified seizures

Investigations

Electroencephalography (EEG)

Used to support a diagnosis of epilepsy in adults in whom the clinical history suggests it C
Used to help determine seizure type and epilepsy syndrome
Used to assess the risk of seizure recurrence after a first unprovoked seizure
Do not use EEG to exclude a diagnosis of epilepsy C
Do not use EEG in the case of a syncope (risk of false-positive result)C
Do not use EEG in isolation to diagnose epilepsy.

Neuroimaging

Use neuroimaging (MRI/CT) to identify structural abnormalities that cause certain epilepsies. C
Not routinely request when a diagnosis of idiopathic generalised epilepsy has been made. C

MRI is the imaging investigation of choice for people with epilepsy. The use of MRI is particularly important for people:

·who have developed epilepsy as adults (over 25 years)
·who have a suggestion of a focal onset from history, examination or EEG
·in whom seizures continue in spite of first-line medication.

CT is an alternative to MRIC

·if MRI is contraindicated or unavailable C
·in an acute situation to determine if the seizure was caused by an acute neurological disorder.

Other tests

- A serum biochemical profile (including plasma electrolytes, renal and liver function, glucose, calcium, magnesium) is essential.
- A 12 lead ECG or 24 hour ambulatory ECG may be helpful.

Management of epilepsy

- A comprehensive management plan should be drawn up by the specialist once the diagnosis of epilepsy is confirmed.

- Therapy should be commenced after the second seizure, but may be considered after the first seizure if the patient has a neurological deficit, EEG shows unequivocal epileptic activity, patient and family consider the risk of having a further seizure unacceptable, and brain imaging shows a structural abnormality.

- Selection of AED therapy will depend on the seizure type

For partial seizures, the drug of first choice is carbamazepine. Valproate and phenytoin followed by topiramate, lamotrigine and clobazam may be used as second choice and add on therapy.

For generalised seizures, valproate should be the drug of choice. The second choice will depend on the seizure type.

Absence seizure – ethosuximide, lamotrigine, clonazepam
Myoclonc seizure - lamotrigine, clonazepam, phenobarbitone
Generalised tonic clonic seizure – phenytoin, carbamazepine, phenobarbitone, clonazepam, clobazam, lamotrigine

For unclassified seizures in patients less than 25 years ageuse valproate, and for those over 25 years age use carbamazepine.

- Start with a single drug at a low dose. Gradual dose increments (to prevent adverse effects) should be made up to the optimal dose for seizure control.

- If seizures continue despite optimal dosage, it should be built up to a maximum tolerated dose unless side effects occur.

- Patients should be reviewed regularly and investigations (eg liver profile) done if side effects are suspected.

- If seizures continue despite the maximally tolerated dose of the first AED, review the diagnosis, the seizure type / syndrome, dosage and frequency of administration and compliance.

- If the initial AED has failed or has to be withdrawn due to adverse effects, then monotherapy using the second choice AED may be tried.

- The second drug should be built up to an optimal dose and then the initial drug should be tapered off slowly.

- All attempts should be made to control the epilepsy on monotherapy. At least two attempts at monotherapy should be tried before considering a combination.

- If symptoms are not adequately controlled on monotherapy, an appropriate second choice AED should be combined.
- If the added second drug is unhelpful, it should be gradually withdrawn, and another AED should be tried.
- If the second drug is also only partially helpful, either the first or second drug may be tailed off, depending on the relative efficacy, side effects and tolerance, and another drug tried.
- If symptoms are not adequately controlled on several attempts with two drug combinations, a third AED may be added.
- The aim of treatment is to maintain the patient on the minimum number of drugs required to achieve adequate symptom control.
- If trials of combination therapy do not bring about worthwhile benefit, treatment should revert to the regimen (monotherapy or combination therapy) that has proved most acceptable to the patient (considering seizure frequency and tolerability of side effects).
- Withdrawal of AED therapy should be considered in patients who have been seizure free for at least 3 years.
- Decision to continue or withdraw medication should be made after a full discussion of the risks and benefits of withdrawal.
- When AED treatment is being discontinued, it should be done slowly (at least over 2-3 months) and one drug should be withdrawn at a time. Care should be taken when withdrawing benzodiazepines and barbiturates.
- In the event of seizure recurrence following withdrawal of AEDs the patient should be referred to a specialist.
- All individuals with epilepsy should have access via their specialist to a tertiary service when circumstances require.

Referral to tertiary care

Referral should be considered when one or more of the following are present:

- epilepsy is not controlled with appropriate medication within 2 years
- management is unsuccessful after combination of two AEDs
- presence of unacceptable drug side effects
- presence of a structural brain lesion
- when there is doubt as to the seizures type and/or seizure syndrome
- presence of behavioral or psychiatric co-morbidity
- presence of specific conditions like Sturge–Weber syndrome, Rasmussen's encephalitis

Every patient with refractory temporal lobe epilepsy should be referred to a tertiary centre for evaluation for surgery.

Women with epilepsy

Contraception

- Consider drug interactions if prescribing combined oral contraceptive pill.

Preconception

- Advise at the very first visit, about the need for a planned pregnancy.
- Evaluate for the possibility of withdrawal of AEDs before conception.
- If AED therapy is required, modify the drug so as to use the least teratogenic drug e.g. carbamazepine. Sodium valproate carries a more teratogenic risk and should be withdrawn, where possible.
- Attempt to decrease AEDs from polytherapy to monotherapy and use the lowest possible dose to control seizures. Polytherapy should be avoided.
- Discourage to alter or stop medication without medical advice when found to be pregnant.
- Supplemental folic acid (0.5mg per day) is advised from before conception as it results in a significant reduction in the risk of neural tube defects.

Pregnancy

- All women with epilepsy planning a pregnancy should be seen by a specialist and the care should be shared with the obstetrician.
- Delivery should take place in an obstetric unit with facilities for maternal and neonatal resuscitation and in treating maternal seizures.

Breast Feeding

- Breastfeeding for most women taking AEDs is generally safe and should be encouraged. The benefits of breast-feeding usually outweigh any hazard to the baby.

Psychosocial aspects of Epilepsy

The following issues should be discussed with patients during clinic visits

- epilepsy in general
- diagnosis and treatment options
- medication and side effects
- seizure type(s), triggers and seizure control
- first aid, safety and injury prevention at home and work
- road safety and driving regulations
- prognosis
- sudden death in epilepsy (SUDEP)
- status epilepticus

MANAGEMENT GUIDELINES FOR AN ACUTE TONIC CLONIC CONVULSION INCLUDING ESTABLISHED CONVULSIVE STATUS