Healthcare Improvement Scotland

SIGN

SIGN 143 • Diagnosis and management of epilepsy in adults

Quick Reference Guide

May 2015

Evidence

Key to evidence statements and recommendations

Recommendations are graded **A B C D** to indicate the strength of the supporting evidence. Good practice points ✓ are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice. Details of the evidence supporting these recommendations can be found in the full guideline, available on the SIGN website: www.sign.ac.uk.

This Quick Reference Guide is also available as part of the SIGN Guidelines app.

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DIAGNOSIS AND MANAGEMENT OF EPILEPSY IN ADULTS

This Quick Reference Guide provides a summary of the main recommendations in **SIGN 143: Diagnosis and management of epilepsy in adults**. For a full list of recommendations refer to the main guideline.

Models of care

The care of people with epilepsy is provided in primary, secondary and tertiary settings. Co-operative evidence-based care shared between epilepsy-care providers is likely to enhance patient care.

D **A structured management system for epilepsy should be established in primary care. As with other chronic diseases, an annual review is desirable.**

D **The shared care management system adopted should seek to:**

- **identify all patients with epilepsy, register/record basic demographic data, validate the classification of seizures and syndromes**
- **make the provisional diagnosis in new patients, provide appropriate information and refer to a specialist centre**
- **monitor seizures, aiming to improve control by adjustment of medication or re-referral to hospital services**
- **minimise adverse effects of medications and their interactions**
- **facilitate structured withdrawal from medication where appropriate, and if agreed by the patient**
- **introduce non-clinical interventions, and disseminate information to help improve quality of life for patients with epilepsy**
- **address specific women's issues, and**
- **address the needs of patients with learning disabilities.**

Diagnosis, classification and investigation

Epilepsy may be difficult to diagnose in the early stages, especially in the absence of a witnessed account. It is important to make the distinction between genetic generalised epilepsies and focal epilepsies, as this affects treatment choices, investigation, prognosis and counselling. EEG can aid classification of epileptic seizures and epilepsy syndromes.

Diagnosis

C **The diagnosis of epilepsy should be made by an epilepsy specialist.**

✓ The diagnosis of epilepsy is most appropriately delivered in the setting of a dedicated first-seizure or epilepsy clinic.

C **A clear history from the patient and an eyewitness to the attack give the most important diagnostic information, and should be the mainstay of diagnosis.**

Classification

C **The seizure type(s) and epilepsy syndrome should be identified.**

C **The distinction should be made between a focal epilepsy and a genetic generalised epilepsy.**

Electroencephalography (EEG)

C **EEG is not routinely indicated and cannot exclude a diagnosis of epilepsy.**

C **EEG should be used to support the classification of epileptic seizures and epilepsy syndromes when there is clinical doubt.**

C **EEG should be performed in young people with generalised seizures to aid classification and to detect a photoparoxysmal response.**

C **Inpatient video EEG and other specialist investigations** (including polysomnography with full EEG montages) **should be available for patients who present diagnostic difficulties.**

Brain imaging

C **MRI is the modality of choice for brain imaging in patients with epilepsy.**

C **Brain imaging is not routinely required when there is a confident diagnosis of a genetic generalised epilepsy.**

D **CT has a role in the urgent assessment of seizures, or when MRI is contraindicated.**

Treatment

Starting antiepileptic drug (AED) treatment

B **The decision to start AEDs should be made by the patient and an epilepsy specialist.**

AEDs should be offered after a first tonic-clonic seizure if:

B • **the patient has had previous myoclonic, absence or focal seizures**

B • **the EEG shows unequivocal epileptic discharges**

B • **the patient has a structural cerebral disorder**

D • **the patient considers the risk of recurrence unacceptable.**

Choice of AED monotherapy

A **In patients wtih focal onset seizures, lamotrigine is the drug of choice. Where lamotrigine is poorly tolerated, carbamazepine and levetiracetam may be reasonable alternatives.**

A **In genetic generalised epilepsy or unclassified epilepsy, sodium valproate is the most effective antiepileptic drug.**

A • **Where sodium valproate is poorly tolerated or contraindicated, lamotrigine and topiramate are suitable alternatives.**

D • **In women of childbearing age, levetiracetam or lamotrigine may be a reasonable alternative.**

C **Routine switching between different manufacturers of antiepileptic drugs should be avoided.**

✓ The adverse effect and interaction profiles should direct the choice of drug for the individual patient.

Epilepsy resistant to monotherapy

C **Failure to respond to appropriate AEDs should prompt a review of the diagnosis of epilepsy and adherence to medication.**

D **Combination therapy should be considered when treatment with two first-line AEDs has failed or improved control occurs during the process of phased substitution.**

B **The choice of drugs in combination should be matched to the patient's seizure type(s) and should, where possible, be limited to two or at most three AEDs.**

Adjunctive treatment

A **Carbamazepine, gabapentin, lacosamide, lamotrigine, levetiracetam, oxcarbazepine, perampanel, pregabalin, topiramate, sodium valproate and zonisamide may be used in the adjunctive treatment of focal epilepsy.**

A **Lamotrigine, levetiracetam, ethosuximide, sodium valproate and topiramate may be used in the adjunctive treatment of generalised epilepsy.**

Surgical referral

B **Referral for assessment for neurosurgical treatment should be considered if the epilepsy is drug resistant.**

C **Vagus nerve stimulation may be considered in adult patients who have been found to be unsuitable for resective surgery.**

AED blood levels

D **Routine monitoring of AED concentrations is not indicated. Measurement can sometimes be useful in the following circumstances:**

- **adjustment of phenytoin dose**
- **assessment of adherence**
- **assessment of toxicity**
- **situations where drug metabolism is likely to change, eg pregnancy**
- **otherwise unexplained loss of seizure control.**

Provoked seizures

Metabolic disturbances/drugs	✓	Correct or withdraw the provocative factor.
Alcohol or substance misuse	✓	Patients may benefit from referral to addiction services or other support agencies.
Acute brain insult/neurosurgery	B	**Long-term prophylactic AED treatment is not indicated.**
	C	**Following an acute brain insult, withdraw AEDs used to treat provoked seizures** (unless unprovoked seizures occur later).
Concussive convulsions	D	**AED treatment is not indicated.**

Adverse effects of AEDs

✓ AEDs should be commenced in a dose no higher than recommended by the manufacturer.

C **Patients should be warned of common potential adverse effects and given clear instructions to seek medical attention urgently for symptoms including rash, bruising or somnolence with vomiting especially in the first weeks of treatment.**

D **Liver function and full blood count should not be monitored routinely.**

C **Patients taking AEDs should receive dietary and other lifestyle advice to minimise the risk of osteoporosis.**

B **The potential negative psychotropic effects of AEDs should be borne in mind when deciding on the most appropriate AED for an individual patient.**

✓ AED treatment should be used with caution in those with pre-existing behavioural or psychiatric conditions and epilepsy.

AED withdrawal

A **Prognostic index indicators can be used to give an estimate of the risks of seizure recurrence following AED withdrawal.**

✓ The question of AED withdrawal should be discussed with people who have been seizure free for at least two years.

- Factors to be discussed include: driving, employment, risks and fear of further seizures, concerns about prolonged AED treatment.

✓ Withdraw drugs slowly, usually over a few months.

Status epilepticus

Most seizures remit spontaneously without intervention. If spontaneous cessation does not occur, then management should be escalated. Emergency treatment should be sought or given once a seizure has persisted, or there are serial seizures, for five minutes or more. Generalised tonic-clonic *status epilepticus* is a medical emergency with significant morbidity and mortality which can be exacerbated by inadequate or delayed treatment.

Diagnosis and monitoring

D **EEG should be used for confirming diagnosis of and monitoring treatment effect in patients with *status epilepticus*. EEG should be available as an emergency intervention for all patients with treated or suspected *status epilepticus***

Immediate measures

✓
- secure airway
- give oxygen
- assess cardiac and respiratory function
- secure intravenous (IV) access in large veins

B **Patients with prolonged tonic-clonic seizures that have lasted five minutes or more should be given:**

- **midazolam 10 mg buccally or intranasally, or**
- **lorazepam 4 mg IV if midazolam is unavailable, or**
- **diazepam 10 mg IV or rectally if midazolam and lorazepam are unavailable.**

In-hospital treatment (following failure of initial benzodiazepine)

D **Administer a repeat dose of benzodiazepine in hospital after 10 minutes if there is no response.**

✓
- Collect blood for a full blood count, urea and electrolytes, liver function tests, calcium, glucose, clotting, AED levels and storage for later analyses.
- Measure blood gases to assess extent of acidosis.

✓ Establish aetiology:

- any suggestion of hypoglycaemia: give 50 ml of 50% glucose IV
- any suggestion of alcohol abuse or impaired nutritional status: give thiamine IV (as Pabrinex, 2 pairs of ampoules).

✓ For sustained control in patients with established epilepsy give the usual AED treatment orally or by nasogastric tube (or IV if necessary for phenytoin, sodium valproate, phenobarbital, levetiracetam or lacosamide).

Within 30 minutes if seizures continue:

D **Give sodium valproate 20–30 mg/kg IV 40 mg/min or phenytoin 18 mg/kg IV 50 mg/min with ECG monitoring. Rates of phenytoin infusion may need to be reduced if hypotension or arrhythmia occur in older people or where there is renal/hepatic impairment.**

Within 60 minutes if *status* persists:

D
- **admit the patient to an ITU and administer general anaesthesia**
- **refer for specialist advice.**

Epilepsy and women's health

Women with epilepsy of childbearing potential need advice about contraception and pregnancy as well as information about epilepsy management. Those who have received such advice are likely to have more reliable contraception, better health during pregnancy and improved pregnancy outcomes. Seizure type and syndrome, potential teratogenicity and interactions with hormonal methods of contraception may all influence choice of AED.

C **To minimise the risk of contraceptive failure, a woman using any combined hormonal contraception, or a combined oral contraceptive pill, or a progesterone-only pill should be prescribed an AED that does not induce hepatic enzymes.**

Women with epilepsy should:

B • **receive prepregnancy counselling at the time of diagnosis and at regular intervals during their management, especially if they are taking AED treatment**

D • **be reassured that most will have a normal pregnancy and delivery**

C • **have their diagnosis and treatment, if appropriate, reviewed by specialist services before conception; a concerted effort should be made to optimise seizure control and rationalise AED therapy prior to conception**

D • **be well informed about pregnancy and epilepsy-related issues, including smoking cessation, before conception.**

D **Women with epilepsy should be informed that sodium valproate is associated with a higher rate of teratogenicity compared to other AEDs.**

Epilepsy in older people

Diagnosis of epilepsy in older people presents unique difficulties and characteristics of presentation can vary from those in younger people. Common risk factors for developing epilepsy include dementia, neurodegenerative disorders, cerebrovascular disease and stroke. Antiepileptic drug treatment can be complicated by the frequent coexistence of epilepsy and dementia, comedication, and the increased likelihood of dose-related and idiosyncratic adverse effects.

✓ Any older person developing new-onset seizures should undergo cognitive function screening and assessment for the presence of cerebrovascular risk factors, with appropriate management thereafter.

B **Lamotrigine or possibly levetiracetam should be considered when starting AED treatment in older people with focal-onset seizures.**

C **Gabapentin is an alternative mono- or adjunctive therapy.**

Epilepsy in people with learning disability

D **People with learning disability should be treated with the same range of AEDs as the general population.**

✓ In the management of people with learning disability and epilepsy:

- allow adequate time for the consultation
- ensure the patient is accompanied by a carer familiar with the seizure type, frequency, possible adverse effects of medication, general health and behaviour
- provide information in an accessible form
- ensure a multidisciplinary approach to treatment.

Psychiatric comorbidity

Psychiatric comorbidities in people with epilepsy are common but may go undiagnosed and untreated. Depression is the main psychiatric comorbidity.

D **Screening for depression and suicidality should be considered in all patients with epilepsy.**

✓ When screening identifies the presence of possible psychiatric comorbidity, people with epilepsy should be referred to an appropriately trained mental healthcare professional for further assessment and, where relevant, treatment.

D **Treatment with antidepressants should be considered in patients with epilepsy and comorbid depression.**

Mortality in epilepsy

Standardised mortality rates in people with epilepsy are higher than in the general population and premature death in epilepsy has many causes including alcohol misuse, drowning, falls, drug poisoning, motor vehicle accidents and suicide. Sudden unexpected death in epilepsy (SUDEP), although rare, commands attention because of its sudden appearance and devastating aftermath.

B **Healthcare professionals and patients should aim for complete seizure freedom to reduce the risk of sudden unexpected death in epilepsy.**

D **Adherence to the prescribed AED regime should be strongly encouraged and the patient asked to report any adverse effects that might compromise adherence in order to reduce the risk of increased mortality and morbidity.**

D **Counselling about the risks of SUDEP should be considered for patients with epilepsy at an appropriate time for the patient and by an appropriate healthcare professional** (consultant neurologist, physician with an interest in epilepsy, specialist registrar, or epilepsy nurse specialist)**.**

Information for patients and carers

A checklist to help healthcare providers to give patients and carers information they may find helpful at the key stages of the patient journey is included in the full guideline. The checklist includes specific information requirements relating to:

- General epilepsy information
- Antiepileptic drugs (AEDs)
- Seizure triggers
- First Aid
- Issues for women
- Lifestyle
- Possible psychosocial consequences
- Sources of support

✓ Information should be given in an appropriate manner with sufficient time to answer questions.

✓ Information should be repeated over time and reinforced to ensure understanding.

Sources of further information

Epilepsy Scotland
Helpline: 0808 800 2200
www.epilepsyscotland.org.uk

Epilepsy Society
Helpline: 01494 601400
www.epilepsynse.org.uk

Quarriers Epilepsy Services
Tel: 0141 445 7750
www.scottishepilepsycentre.org.uk

SUDEP Action
Bereavement support contact line: 01235 772852
www.sudep.org

www.sign.ac.uk

Healthcare Improvement Scotland

www.healthcareimprovementscotland.org

Edinburgh Office | Gyle Square | 1 South Gyle Crescent | Edinburgh EH12 9E
Telephone 0131 623 4300 Fax 0131 623 4299

Glasgow Office | Delta House | 50 West Nile Street | Glasgow | G1 2NP
Telephone 0141 225 6999 Fax 0141 248 3776

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