Epilepsy for pharmacists

What is epilepsy?

Epilepsy is the tendency to have recurrent seizures that start in the brain. These seizures are caused by abnormal electrical activity in the brain. Epilepsy is usually diagnosed after a person has had two or more unprovoked seizures. It is also associated with other cognitive problems including memory issues. In the UK, epilepsy affects over 600,000 people.

There are a number of different seizure types and people's experience of seizures may vary widely.

Focal seizures

Around 35% of people with epilepsy experience focal seizures (previously called partial seizures). Focal seizures start in one part of the brain, the 'focus'. Where in the brain the focus is and how far the seizure activity spreads from the focus, determines the nature of the seizures that occur.

During focal seizures, a person may be fully conscious (aware and responsive). These are referred to now as focal seizures with preserved consciousness.

If the abnormal activity spreads out then awareness and responsiveness may become impaired to some degree. These seizures are referred to now as focal seizures with impaired consciousness.

In some cases, the seizure may spread to involve the whole brain and the focal seizure will evolve to a generalised tonic clonic seizure (focal to bilateral tonic clonic seizure).

Generalised seizures

In generalised seizures both halves of the brain are affected from the start. The person will not have a warning that a seizure is starting. There are a number of generalised seizure types, including the following:

Tonic clonic seizures

- The muscles contract and the body goes stiff, the person may cry out, then lose consciousness and fall to the floor, cyanosed.
- They may bite their tongue, or cheek.
- The clonic phase follows, and muscles alternate
- between contraction and relaxation, resulting in
- jerky movements. They may be incontinent at this stage.
- After a few minutes they will go limp, then start to come round, often feeling groggy, with aching head and limbs. Some people may then want to sleep.

Tonic seizures

- There is a prolonged loss of consciousness.
- The person goes stiff and may fall backwards.
- The person may sustain significant injuries due to falling.

Atonic seizures (drop attacks)

- There is a prolonged loss of consciousness.
- The person goes limp from the start and may flop forward if seated.
- The person may sustain significant injuries as a result of falling.

Myoclonic seizures

- The loss of consciousness is brief.
- People have sudden short-lasting jerks which can affect some or all of the body.
- Seizures of this type often happen in clusters and are most common in the morning.

Negative myoclonic seizures

- The person briefly loses muscle tone and may lose their balance and fall, or struggle to regain their balance.

This guide has been co-produced by the Epilepsy Society and Medway School of Pharmacy.

Helpline 0300 102 0024
Confidential, information, and emotional support.
Visit epilepsysociety.org.uk/helpline for opening hours.

- They may lose their grip on objects and drop them.
- Negative myoclonic seizures can sometimes be a symptom of an epilepsy syndrome.

Visit epilepsysociety.org.uk/epilepsy-syndromes

Absence seizures

- These seizures are more common in children than in adults.
- The child may appear to be daydreaming, look blank and stare, or their eyelids might flutter.
- The seizures and loss of consciousness are very brief, lasting only a few seconds.
- The child may be having hundreds of absence seizures a day meaning they miss key points in lessons. They may find following instructions difficult, creating an impression of bad behaviour.

Visit epilepsysociety.org.uk/epileptic-seizures

Treating epilepsy

Complete seizure control is possible for up to 70% of patients with the right anti-seizure medication (ASM). For about 30% of people with epilepsy, ASM does not control seizures satisfactorily. Non pharmacological treatment options may include the following:

- epilepsy surgery (neurosurgery);
- vagus nerve stimulation (VNS) therapy (implantable device);
- EASEE® (Epicranial Application of Stimulation Electrodes for Epilepsy). This is a new device to reduce the number of seizures for people with drug-resistant focal seizures; or
- the ketogenic diet – a specialist diet that helps to control seizures.

Visit epilepsysociety.org.uk/treatment

Anti-seizure medication (ASM)

NICE states that the specialist should 'develop an individualised anti-seizure medication treatment strategy with the person, and their family and carers if appropriate, taking into account:

- sex and age;
- seizure type;
- epilepsy syndrome;
- whether treatment is needed;
- risks and benefits of anti-seizure medications, including their importance in reducing the risk of epilepsy-related death;
- possible interactions with other medicines taken;
- any co-morbidities;
- the preferences of the person, and their family or carers if appropriate;
- personal circumstances, such as education, employment, likelihood of pregnancy, planning a family, driving, alcohol use and travel; and
- how and when anti-seizure medicines need to be taken.'

Visit nice.org.uk/guidance/ng217

There are around 30 ASMs available. ASM is not a 'cure' for epilepsy as it does not affect the underlying cause.

ASM is introduced gradually and increased until seizures are controlled or adverse effects are unacceptable. Ideally individuals should be treated with a single ASM (monotherapy) wherever possible.

If initial treatment is unsuccessful, monotherapy using another drug may be tried. The changeover period needs to be monitored, so the replacement drug is built up to an adequate, or maximum tolerated, dose before the first drug is tapered off slowly.

Polytherapy (using two or more ASMs) may be necessary for some individuals.

For more about indications for use, dosing, and side effects visit the British National Formulary and British National Formulary for Children – bnf.nice.org.uk

Factors affecting adherence to ASM

For ASM to be effective it is important that it is taken regularly and as prescribed. However there are some factors that can affect a patient's ability to do this.

Memory problems

Because epilepsy is caused by a problem in the brain, other cognitive issues, especially memory problems, commonly occur. The effect of seizures and, in some cases, the effect of ASM, can also interfere with memory. Medication reminders, alarms, or other compliance aids may help some people.

Consistency of supply

Differences in bioavailability between products can be an issue for some ASM and may result in an adverse drug reaction and/or changes in effectiveness.

The Medicines and Healthcare products Regulatory Agency (MHRA) has issued guidance on when epilepsy medication should be prescribed by brand. Receiving different forms of their usual ASM can confuse some patients or make them feel anxious about taking medication. This may affect seizure control and result in a lack of adherence.

Ideally patients are given exactly the same formulation of ASM with every prescription. Some people also prefer to avoid parallel imports for the same reason.

Visit epilepsysociety.org.uk/generic-and-branded-ASMs or gov.uk/drug-safety-update/antiepileptic-drugs-new-advice-on-switching-between-different-manufacturers-products-for-a-particular-drug

Monitoring ASM

Routine blood monitoring is not usually required if the dose is stable, seizure control is good, and the patient is side effect free. However monitoring is recommended:

- where toxicity is suspected;
- where pharmacokinetic interactions are suspected;
- where other conditions may affect drug levels, e.g. pregnancy or concomitant illness;
- where an adjustment to the dose of phenytoin is required; or
- to confirm potential non-adherence.

Monitoring can be useful where the dose is stable to establish a benchmark.

Visit epilepsysociety.org.uk/therapeutic-drug-monitoring

Points to cover with patients taking ASM

ASM is taken as an ongoing preventative treatment. It does not 'cure' epilepsy and it is not a 'course of treatment'. ASM aims to stop seizures happening, so it needs to be taken every day, continuously. ASM is usually taken for a few years, and for many people, for life.

If someone has been seizure free for a few years, they might talk to their specialist about slowly withdrawing their medication.

It is beneficial to take ASM at about the same time each day. This helps to keep the level of drugs in the body constant, and establishes a routine to remember to take them. Stopping or changing ASM can result in seizures happening.

Side effects won't necessarily happen, and don't have to be 'put up with'. However, many patients with epilepsy do live with serious side effects because they have been able to improve seizure control. If someone is having side effects that are intolerable, their prescriber (usually their neurologist) may suggest that they change to a different ASM.

This can be a reason why patients are reluctant to mention side effects, for fear of a change to their medication and worsening of seizure control. You can tell them that their specialist may suggest a different ASM which may work just as well and that any changeover will be carefully managed to try to avoid seizure re-emergence.

Risks in pregnancy

The MHRA have introduced restrictions on the prescribing of Sodium valproate and topiramate.

Sodium valproate

In January 2024 the MHRA introduced new restrictions on the prescribing of valproate. Valproate is also known as sodium valproate, valproate semisodium, or valproic acid. Brand names include Epilim, Depakote, Convulex, Episenta, Epival, Kentlim, Orlept, Sodium Valproate, Syonell, Valpal, Belvo and Dyzantil.

- Men and women under the age of 55 should not be started on valproate without two specialists independently determining the need for valproate is appropriate.
- No-one should stop taking their ASM without consulting their doctor.

Sodium valproate and women and girls

Girls and women under 55 of child bearing potential and already taking valproate will need sign off from two specialists to continue as part of their annual review for a year following the introduction of these changes. After this they will continue to have an annual review with one specialist.

The current regulatory measures also mean that no woman or girl of childbearing potential should be prescribed valproate, unless there is no other effective treatment available, in which case there should be a pregnancy prevention programme in place.

The MHRA states that 'In women who take valproate while pregnant, around 1 in 9 babies (11%) will have a birth defect' and 'about 3 or 4 children in every 10 may have problems with early childhood development'.

Visit epilepsysociety.org.uk/about-epilepsy/sodium-valproate
Visit gov.uk/guidance/valproate-reproductive-risks

Sodium valproate and men
The MHRA has also introduced some recommendations for men taking valproate who might potentially father a child. These include:

- Men should discuss plans for pregnancy with their epilepsy specialist;
- Men under 55 should use condoms;
- Their female partner should use effective contraception; and
- They should not donate sperm.

Topiramate
New safety measures have also been introduced for the epilepsy medication, topiramate, also known by the brand name Topamax.

These measures follow a major safety review triggered by a European study which showed that children born to mothers who take topiramate during pregnancy face a two to three times higher risk of intellectual disabilities, autism spectrum disorders, and attention deficit hyperactivity disorder (ADHD).
The MHRA states that:

- Topiramate should no longer be prescribed for epilepsy during pregnancy unless there is no suitable alternative treatment.
- Any woman or girl of childbearing potential newly started on topiramate would be required to take a pregnancy test before it is started to rule out pregnancy.
- Those already taking the medication will need to be using highly effective birth control during treatment.
- Healthcare professionals should discuss the risks associated with the medication with patients and ensure that a risk awareness form is signed.

Some contraceptive methods are potentially less effective than others when using topiramate due to its enzyme inducing potential.

A patient's GP or sexual healthcare practitioner will be able to help advise which form of birth control is right for them.

Regular medication reviews, at least once annually, with a specialist are also required for patients taking it for epilepsy.

The introduction of the Pregnancy Prevention Programme further strengthens these safety measures and aims to reduce the number of topiramate exposed pregnancies.

The regulations for women taking topiramate for migraine are slightly different.
Visit gov.uk/drug-safety-update/topiramate-topamax-introduction-of-new-safety-measures-including-a-pregnancy-prevention-programme

Sodium valproate and topiramate safety measures
Anyone thinking of starting a family who currently takes valproate or females on topiramate for epilepsy, should **not** stop taking the medication but should seek the advice of a specialist. Stopping medication without supervision may cause their seizures to start again, happen more often, or last longer.

Safety and educational materials have been introduced for patients and healthcare professionals to support these measures.

Dispensing pharmacists should also provide a patient card for all females prescribed topiramate, and males and females prescribed valproate, and provide advice. Both valproate and topiramate should be dispensed in its original packaging ideally or, if this isn't possible, add a copy of the package leaflet.

Suspected adverse drug reactions associated with either of these ASMs, should continue to be reported to the Yellow Card scheme.
Visit yellowcard.mhra.gov.uk/

Specific issues for girls and women

Hormone changes can affect the management of epilepsy. This includes at puberty, during and after pregnancy, and the menopause. Consideration of the person's epilepsy and their ASM also has to be taken when, for example, women (who are not planning a pregnancy) need to be using a contraceptive, to ensure it does not interact with their ASM.

Contraception
It is recommended that topiramate is treated as an enzyme inducer which can restrict the choices of highly effective contraception for women taking it.

In addition, the ASM lamotrigine can be affected by the oestrogen in the combined hormonal contraceptive pill and other contraceptives containing oestrogen, leading to possible lowering of lamotrigine levels and loss of seizure control.

It is also possible that lamotrigine may affect the efficacy of progestogen containing pills.

Contraceptive injections, such as Depo-Provera are recommended for women with epilepsy as they have good efficacy (if replaced regularly) and do not interact with ASM.

Women of child bearing potential taking valproate or topiramate are advised to use a 'highly effective' method of contraception which is defined as a method that is user independent. For this group of patients, Depo-Provera is only considered 'highly effective' if the woman has the injection without fail every 12 weeks.

Intrauterine devices (IUDs) or Intrauterine systems (IUSs) are effective for women taking ASM, including enzyme-inducers, and are considered 'highly effective' for women taking valproate or topiramate.

Women taking enzyme-inducing ASM need to have higher doses of emergency hormonal contraception. Only levonorgestrel is recommended for this group.
Visit epilepsysociety.org.uk/women-and-girls

Planning a pregnancy

For women planning a pregnancy, preconception care from a specialist is essential. Most ASM has teratogenic potential, but strengthened guidance has been issued on sodium valproate and, more recently, on Topiramate (see pages 3 and 4).

All health care professionals should ensure that women planning a pregnancy have received preconception counselling.

Also, Women taking ASM and planning a pregnancy should be taking folic acid 5mg daily. This is usually continued until week 12 of pregnancy.

Emergency medication

Buccal midazolam can be given in status epilepticus. This is a medical emergency where a person has prolonged or repeated seizures that last for five minutes or more without a complete recovery of consciousness. In the UK there are two products containing midazolam for buccal use, Buccolam® and Epistatus®.
Both have a licence for adults and children from 3 months old, and come in pre-filled syringes. Other unlicensed named 'specials' are available.

Pharmacists should note that Buccolam and Epistatus contain different salts of midazolam and that products are available in different strengths. Buccolam is 10mg/2mL and Epistatus and 'specials' are 10mg/1mL. Pharmacists need to ensure that the appropriate product is given.

The prescription should be written by brand and only that brand should be given, as the carer will have been trained to administer that particular product. Substitutions should only be made after consultation with the prescriber.

Other emergency medications include rectal diazepam and rectal paraldehyde.
Visit epilepsysociety.org.uk/emergency-medication

Prognosis and complications

People who have uncontrolled seizures have an increased mortality rate. This relates to an increased risk of accidents, and sudden unexpected death in epilepsy (SUDEP). About 1200 people die each year from epilepsy related causes.

People with uncontrolled epilepsy also have an increased risk of mental health problems, in particular depression and anxiety.

Epilepsy is also associated with significant social problems, including unemployment, problems with relationships, memory, stigma, and isolation.

When to refer a patient with epilepsy

There may be some specific issues that require a patient with epilepsy to be referred to a GP or specialist including:

- if seizures become worse or more frequent, or if a patient is not under current review with a specialist;
- if there are any signs of adverse drug reactions; or
- if a patient is pregnant or planning a pregnancy.

Pharmacy support for people with epilepsy

Aside from the role outlined in the MHRA valproate and topiramate guidance for dispensing pharmacists, the community pharmacist can help patients with epilepsy in lots of other ways.

Many pharmacists think that epilepsy is a very specialist area and believe that the patient will be getting all the medical information they need. If these assumptions are made, there is a real risk that people with epilepsy will miss out on services that other patients get.

Don't underestimate the impact you can have by taking time just to talk to these patients. They will benefit from your input in terms of explaining changes to their medicines and putting a calendar together to help them manage their, often complex, up and down titrations which may be happening simultaneously.

Discussing possible side effects and interactions and advising on over-the-counter medications – things pharmacists do every day, will be very welcome.

In addition, the community pharmacist can help with reminders on when to re-order prescriptions and in trying to ensure consistency of supply where possible.

Pharmacists can also provide an emergency supply, if needed, to avoid the patient going without their ASM, which could lead to dangerous seizure break-through.

Remember a pharmacist can give an emergency supply under the Medicines Act without the patient having to go through the Pharmacy First service.

Patients are encouraged to hold the 'Charlie Card' which they can show to their pharmacist to facilitate an emergency supply. This is named after a young man who died from SUDEP after spending two days trying to get his ASM via NHS 111, his health centre, and local pharmacy.

Visit bnf.nice.org.uk/medicines-guidance/emergency-supply-of-medicines/
Visit sudep.org/charlie-card/

The New Medicine Service (NMS) covers patients with epilepsy as an included group.

Patients with epilepsy who have been in hospital may benefit from referral to their community pharmacist through the Discharge Medication Service. Practice based pharmacists have a role not only in supporting the valproate and topiramate initiatives but also in carrying out Structured Medication Reviews (SMRs) with this patient group.

Sometimes, there may be issues with medication supplies or shortages. Epilepsy Society has up to date information about issues with supply of ASM.

Visit epilepsysociety.org.uk/news/medication-updates

Getting help

Epilepsy Society provides training and support for people with epilepsy, their families, friends, and carers, and provides resources for professionals. The confidential epilepsy helpline provides information and support (see first page for details).

Epilepsy Society also has information about the care and treatment that individuals with epilepsy can expect, including access to specialist services and appropriate treatment options.

Visit epilepsysociety.org.uk

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Trusted Information Creator
Patient Information Forum

For a printed copy of this information contact our helpline.

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