ANTIEPILEPTIC Medicines

Treatment with antiepileptic medicines currently enables over 70% of people with epilepsy to live free of seizures. In the last few days years several new medicines have become available and more at an advanced stage of research.

Why are medicines prescribed?

The purpose of medical treatment is to control (not cure) epilepsy by preventing seizures without producing undesirable side-effects. Reaching this balance may take several months or even longer. During this period you may experience adverse symptoms that can make you lose heart and sometimes control of seizures will never be fully gained. It is important for you to continue with treatment and to keep a careful note of seizure numbers and side-effects. This record will help you and your doctor make the best decision regarding treatment.

Are medicines the only treatment for epilepsy?

Antiepileptic medicines are the mainstay of treatment for epilepsy. For some people surgery will be advised. Occasionally (for instance, in young children with very severe epilepsy) a special diet may be helpful.

What are the most common antiepileptic medication?

There are a number of established medicines that are commonly prescribed. These can be referred to by their chemical (generic) name or by the manufacturer's trade name (in brackets below) and are listed here in alphabetical order.

Chemical Name:	Brand Name:
Carbamazepine	(Tegretol)
Clobazam	(Frisium)
Clonazepam	(Rivotril)
Ethosuximide	(Zarontin)
Gabapentin	(Neurontin)
Lamaotrigine	(Lamictal)
Levetiracetam	(Keppra)
Phenobarbitone	(Luminal)
Phenytoin	(Epanutin)
Piracetam	(Nootrpil)
Primidone	(Mysoline)
Sodium Valproate	(Epilim)
Tiagabine	(Gabitril)
Topiramate	(Topamax)
Vigabatrin	(Sabril)

Rectal diazepam may be prescribed to prevent a series of seizures or as an intervention measure in the case of status epilepticus. (an unusually long seizure). Parents and other carers can use rectal diazepam for a child having a febrile convulsion.

How about new medicines?

When new medicines are introduced, they are initially only licensed as add-on to existing therapy. This means that they are taken in conjunction with other anti-epileptic medicines by people who are still experiencing seizures. Because they are new, it is likely that all the side-effects are still not known but the hope is that they may have fewer unwanted side-effects than the older medicines. In time, the newer medicines, if they prove to be well tolerated, will be granted a license to be used on their own (montherapy).

How do antiepileptic medicines work?

Antiepileptic medicines are absorbed into your body and carried in the blood to your brain where they work to prevent the abnormal bursts of electrical activity that causes seizures. Control is help by maintaining a roughly constant amount of medication in the bloodstream throughout the day and night. Missed doses reduced the medication level in the blood and can result in more seizures. Too much medication can also produce an increase in seizures. It is important, therefore, that the same amount of the medication such as Tegretol Retard and Epilim Chrono are controlled release formulations allowing the medication to be absorbed more slowly into the bloodstream over time thus giving a more even concentration throughout the day. These medicines have the advantage of only being taken once a day.

What about side-effects?

Antiepileptic medicines are not addictive, but like other medications they sometimes cause side-effects. Most people tolerate their medicines very well, but it is important to be aware of adverse effects associated with treatment and report them to your doctor. Side effects can include tiredness, double vision, nausea, headache, weight gain, weight loss, temporary hair loss, skin rash, swollen gums, tremor of the fingers, and unsteadiness. These can often be minimised by adjusting the dose of the medication. Good dental hygiene can prevent swollen gums. Watching your diet will help to avoid a gain in weight. The appearance of a skin rash should enable more people to have control of seizures without unacceptable side effects.

Women who take antiepileptic medication and wish to use some form of oral contraception should seek medical advice, as many antiepileptic medicines can reduce the effectiveness of the contraceptive pill. These carbamazepine, phenytoin, primidone, phenobarbitone, and the newer medication topiramate. Women on antiepileptic medication, who want to have a baby, should ideally consult their doctor before becoming pregnant as there may be a small risk to the baby from their treatment.

Changing or reducing the antiepileptic medication prior to pregnancy may be advised. In addition, folic acid should be taken by all women planning a pregnancy, as this can have a protective effect on the baby. A woman who is already pregnant should discuss with her doctor the best course of action to minimise the risks to herself and to her baby. (Further information relating to women, epilepsy and pregnancy is available from the Epilepsy Association of Scotland).

Why is a particular medication chosen?

Antiepileptic medicines act on the brain in different ways and some forms of medication are better for certain types of epilepsy than others. After correctly diagnosing the type of epilepsy you have your doctor will advise you about the most appropriate medication. However, as everyone reacts differently to medicines, there may be a certain element of trial and error. The benefits of good seizure control must be balanced against the disadvantages of any side-effects when choosing the correct medication and deciding on the dose. There are many factors that need to be considered - your type of seizure, medical history, any other medication and possibly your occupation and lifestyle.

Medication usually comes in the form of tablets. However, syrups or dispersible tablets can be used for children who have difficulty in swallowing tablets. Changes in the make of the usual tablet or capsule are best avoided as the amount of the medication absorbed from different kinds of pills can vary.

What is the right amount of antiepileptic medication to take?

The most effective amount for controlling seizures varies form person to person. However, the correct dose of the right medication(or in some cases, the right combination of two or more medicines) will completely control seizures in more than 70% of people with epilepsy without any side-effects. As children grow up and their body weight rises their dose may need to be increased. A bigger dose may also be advised if seizures are not fully abolished and also sometimes late in pregnancy. If seizures increase in frequency or severity, or if side-effects become a problem it is advisable to consult your doctor.

Should the medication level be measured?

Occasionally, measuring the medication level in the blood can be helpful. This depends on which medication is being taken, how effective it is and whether there are side-effects. Your medical history and the number of other medicines being taken are also relevant factors in making this decision. Because some people metabolise antiepileptic medicines more quickly than others, a blood test may be recommended to ensure that the best dose is being prescribed. A few drops of blood can reveal whether the dose is too low to be effective or to high to and likely to cause unpleasant side-effects. This is particularly the case of more established medicines such as phenytoin and carbamazepine. If your seizures are fully controlled without any side-effect it is not necessary to measure the medication level. During levels of sodium valproate and newer medicines such as

vigabatrin, lamotrigine, gabapentin topiramate and tiagabine are not usually helpful because the levels associated with good control or side-effects vary so substantially among individuals.

How can missed doses be avoided?

The importance of taking medicines at regular intervals cannot be over emphasised. However, it is not easy for everyone to remember to take the correct dose at the same time each day, but linking to a regular activity such as a meal time can help. The answer may be to set aside the tablets each morning, so you can check in the evening that the full amount has been taken. You may choose to use the Dosett which is a small box divided into seven sections -one for every day of the week. Each section is subdivided in to four compartments such allowing up to four daily doses to be held. You can also use an alarm wrist watch. Extra medication should not be taken after a seizure. If medication has been missed, it is unwise to take part in potentially dangerous activities such as driving, swimming or diving.

If occasional nights are spent away from home, you can avoid missed doses by carrying a spare dose or two to cover unexpected circumstances. When holidaying abroad, it is important to take a supply of your medicines with you sufficient to cover the period away from home, as it may not always be possible to get the same medication, tablets or capsules in a foreign country. It is also advisable to carry with you a letter from your doctor and a prescription in case of emergencies. A list of available medicines and their different trade names in other parts of the world can be obtained from the Epilepsy Association of Scotland. Always carry your medicines in their original container.

For how long will treatment be necessary?

There is no easy answer to this question. Each individual case of epilepsy will be different. Some people will need to take medication throughout their lives while others may only require it for a limited period. If a seizure free for several years you may wish to discuss with your doctor the possibility of withdrawing your medication and its implications for driving, employment etc.

What other precautions need to be taken?

Too much alcohol interferes with the effectiveness of antiepileptic medicines and so it may be best to avoid it altogether or limit yourself to what you know you can tolerate. Most children like to mimic the activities of adults and may be tempted to copy a parent who takes tablets every day. It is therefore safest to keep all medication out of the reach of children.

Hope for the future?

With the introduction of a range of new antiepileptic medicines over the past few years, we have many more choices for the treatment of people with epilepsy than ever before.

Advances in the understanding of the neurochemical basis of epilepsy and research into the development of new antiepileptic medicines will contribute further to better seizure control for even more people with epilepsy!