



MEDICAL MANAGEMENT OF EPILEPSY

MEDICATION FOR EPILEPSY

The standard modern treatment for epileptic seizures is the regular use of one or more chemical substances called anti-convulsant or anti-epileptic drugs (AED).

Treatment with AEDs has dramatically changed the kind of life that people with epilepsy can expect to live. For many people these drugs have meant the difference between a fearful, isolated existence and a confident life with successful employment because the chances of having a seizure are small.

There are a number of different AEDs available. None of them can cure epilepsy, but they are more successful in preventing seizures as long as they are taken regularly.

An AED may be prescribed as a single drug or in combination. If a person has more than one kind of seizure, they may have to take more than one AED to maintain control. This is because drugs that prevent one type of seizure may not be effective for another type. However, physicians try, wherever possible, to limit the number of drugs prescribed and to use a single drug

FINDING THE RIGHT DRUG

People react individually to drugs just as they do to food or other substances. One person may experience side effects from an AED, while another person may not. Some drugs reach an effective level in the person's blood more quickly than

other drugs do (3 - 14 days). That is why it may take some time to "customise" the dosage and/or strike a balance to achieve the greatest degree of seizure control in the patient with the smallest number of side effects.

NEW TESTS HELP

In the old days it might have taken many weeks, even months, to achieve the right drug, or combination of drugs, and dose for an individual patient. Now doctors treating epilepsy have a tool which shows them what is happening to the medication after it enters the patient's body.

This technique is called AED level monitoring. It examines a sample of the patient's blood to find out how much of the medication is present. If the level of the drug in the blood is too low, seizures may occur and the doctor will increase the amount the patient takes. If the drug level is too high, the patient may also experience an increase in seizures as well as undesirable side effects, such as feelings of drowsiness, confusion or unsteadiness (sedation is a common side effect). In such cases the dose will be reduced to arrive at an optimum level.

Medical experts suggest that drug level tests are performed as a treatment programme progresses, when clinical changes take place or are contemplated, or if seizure begin again after a period of good control. Blood samples are obtained before the early morning dose. The quantity of enzymes which the liver will produce to break down medicines varies from individual to individual and within each individual as his circumstances change.



DRUG INTERACTIONS

Once a person is stabilised on an AED, the addition of other medication may either increase or decrease the concentration of the original AED in the blood stream. If an additional AED is given to a stabilised patient, he may show symptoms of medicine toxicity or of altered seizure activity. Some examples of interactions include:

Anti-convulsant	Medication which may affect blood level concentration of certain anti-epilepsy drugs
<u>Phenytoin</u>	Phenobarbitone, valproic acid, diazepam, aspirin, some oral contraceptives, propranolol
Carbamazepine	phenytoin/ phenobarbitone, propoxyphene, erythromycin
Phenobarbitone	Valproic acid, phenytoin, carbamazepine
Valproic acid	phenytoin. Phenobarbitone, Carbamazepine

Apart from AED blood level interactions, it should be remembered that several medicines can themselves precipitate seizures. Sometimes another drug, prescribed for an unrelated medical problem, will intensify the effect of an AED. On the other hand, the AED may intensify the effect of a drug not being taken to control seizures. This phenomenon is called drug interaction and it is the reason that patients are urged to tell their doctors what other medications

they are taking whenever a new drug is prescribed. When purchasing an over-the-counter product, a person taking AEDs should check with the pharmacist as to the nature of possible drug interactions.

You should also consult with your doctor or pharmacist before taking any other medication e.g.: anti-depressants, anti-nausea, oral contraceptives and anti-motion sickness drugs, cough and cold preparations.

SIDE EFFECTS

Like all drugs, AEDs may have side effects. This depends on individual response to the drug as well as how much is taken. With only a few exceptions, side-effects associated with AEDs are mild and occur at the beginning of therapy and disappears as the person becomes used to the drug.

Depending on the type of drug, the most frequent side effects are drowsiness, irritability, nausea, rash, thickening of facial features, increase in body hair, physical clumsiness, overgrowth of gum tissue, and hyperactivity in children. Some drugs produce emotional changes; occasionally a drug will increase rather than decrease the number of seizures. Many people are able to take the medication for years without experiencing any of these effects. If side effects do occur, they should be reported.

DRUGS AND PREGNANCY

While there is a slightly higher than normal risk of birth defects in the babies of women who have epilepsy, the great majority of mothers (92%) on AEDs give birth to normal, healthy babies.

The question for a woman with epilepsy and her doctor is one of balancing the risks



and the benefits. Is the risk of the mother having a seizure and falling, or experiencing an oxygen shortage, greater to a developing child than the risk of some defect developing as the result of AEDs? Is the risk of seizures during pregnancy a greater hazard to the mother than the risk of a defect in the child? At present most medical experts would say that the risk of a baby with a defect is so low, that the possibility of having a seizure offers the greater potential harm. It is not yet certain, when defects occur, that the drug is necessarily the cause and family history may also be involved.

What is certain is that sudden withdrawal of AEDs may cause non-stop, severe seizures, which may injure the mother and interrupt the supply of oxygen to the developing child. Withdrawal of medication after pregnancy is detected would not necessarily prevent a possible defect since by that time any malformations in the foetus would already have occurred. Women with epilepsy are advised to continue their drug therapy during pregnancy, under close supervision by a doctor.

The best solution for a woman who has epilepsy taking AEDs is to discuss AEDs during pregnancy with her doctor before pregnancy. The doctor can then evaluate the need for drugs. If she has been seizure-free for a number of years and other tests show no sign of epilepsy, her doctor may decide - before the pregnancy begins - to try a slow withdrawal. If she still needs medication but is taking a drug, which has been associated with birth defects, he may try a substitute.

ANTI-CONVULSANTS AND CHILDREN

Early recognition of seizures and regular, consistent treatment with AEDs offers the best chance of normal development and a positive future for the child with epilepsy.

Because many physical changes take place as the child grows, it is not unusual for a seizure-free child to suddenly begin having seizures again. This does not mean that medication is not working or that the condition is getting worse; usually a change of dosage by the doctor will take care of the problem.

The differences in the way in which the physical systems of children and adults process drugs, means it takes a relatively larger dose of AEDs to control seizures in the average child than in the average adult. At the onset of adolescence the body chemistry changes and this can happen in a matter of months. This may necessitate a change in dosage.

Children should be encouraged to be responsible for taking their own medication. This will give them a sense of being in control of their condition. This decision should depend on maturity and intelligence level.

If medication is being given in liquid form, the bottle should be shaken well before the dose is poured. If this is not done, the effective part of the medication may sink to the bottom, making the first doses too weak and the last ones too strong.

When medication is prescribed, ask the doctor if it should be taken before, during or after meals. Sometimes medication on an empty stomach can increase the possibility of stomach upset. On the other hand,



taking certain drugs after food may affect the rate at which the drug is absorbed into the blood stream.

ANTI-CONVULSANTS AND DRUG ABUSE

Parents often worry that children who take AEDs may become addicted to them or be more susceptible to drug abuse.

Although it is true that barbiturates, e.g. phenobarbitone, are subject to abuse, the doses in which they are prescribed for epilepsy are not habit-forming. In fact, a more common reaction on the part of the adolescent with epilepsy is to express rebellion against his parents by failing to take drugs rather than by taking more of them.

DRUG THERAPY: A PERSONAL RESPONSIBILITY

Successful drug therapy involves more than care by a skilled physician. It also requires the active co-operation of the patient. Here are some important points to remember if you someone take AEDs:

- Don't take less or more than prescribed. You may have a seizure.
- Don't stop your medication abruptly. This causes a medical emergency of non-stop seizures which could be life threatening.
- Attend all follow-up appointments. AEDs are safe and effective, but careful monitoring is advised.
- Don't try other people's pills. Even if a friend has better control with a different medication, check with your doctor instead.
- Alcohol and medication are a dangerous

combination. Both are depressants and one may affect the other.

Don't drive or operate power tools when starting a new medication until you know how it affects you.

If you've missed a few doses of your medication you can not make them up safely by taking them all at once. You need a certain amount of medication, taken at regular intervals.

If you have trouble remembering to take your medication in sequence, try counting out each day's supply and store them in special containers you can buy from a pharmacy.

Don't let yourself run out of medication. If you are going on a trip, make sure you have enough to last until your return and carry a copy of your prescription with you.

Keep all medication locked up and away from children. If you plan to carry medication in a container other than a pharmacy bottle, make sure your prescription label is fixed to it.

In conclusion, AEDs are successful in preventing seizures in the majority of people who take them as prescribed. It is estimated that at least 50% of all people with epilepsy gain complete control of their seizures.