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RECENT ADVANCES IN EPILEPSY DRUG THERAPY AND MANAGEMENT DISEASE

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ABSTRACT: Epilepsy is a very big problem which leads to draining on the physical, mental, as well as emotional levels. Apart from this, the treatment of this disease is very expensive, which leads to wasting of a lot of money on the expensive medicines. Epilepsy is a serious disease of Central Nervous System and refers to a chronic condition where repeated fits or attacks of unconsciousness occur with violent shivers. Attacks reduce with age. The uncertainty in the time of attack is one major problem. About 0.5% of the population has epilepsy. Approximately 1.5-5.0% of the population may have a seizure in their lifetime. Epilepsy can affect people of any age. Depending on the seizure type, different treatments may be prescribed. This will often include anticonvulsant medication that prevents or stops seizures. Anticonvulsant medications may need frequent adjustments, especially after starting medications. Monitoring of anticonvulsant medications and other laboratory tests may be necessary. Aromatherapy, acupuncture and reflexology may help to reduce stress and anxiety, which can trigger epilepsy in some people. Ask the therapist if the treatment you are considering is suitable for people with epilepsy. If you are taking any epilepsy medicines, check with your GP and pharmacist before taking or using any herbal remedy. You may be offered neurosurgery if your epilepsy is severe and is not controlled after trying several different epilepsy medicines. There is no cure for epilepsy, but epilepsy medicines can control seizures in around seven out of 10 people. When medicines are not working well, surgery or implanted devices such as vagus nerve stimulators may help. Special diets can help some children with epilepsy.
Key words: Epilepsy Drug Therapy.

INTRODUCTION

Epilepsy is a brain disorder that causes people to have recurring seizures. The seizures happen when clusters of nerve cells, or neurons, in the brain send out the wrong signals. People may have strange sensations and emotions or behave strangely. They may have violent muscle spasms or lose consciousness .Drugs may work well for many people with epilepsy, which allows them to lead full and normal life. There is no cure for epilepsy, but medicines can control seizures for most people. Other drugs less easy to find, either because of side effects, or simply because it does not work. Although many drugs have a time to be effective, the truth is that up to 20-30 percent of people with epilepsy do not respond well to drug therapy. If the drugs are proving ineffective, your doctor may try a higher dose, or another drug or a combination of both drugs. Very rare anti-epileptic drugs can result in more frequent Seizures. If this happens your doctor may check the diagnosis. Doctors usually start patients with epilepsy off the lowest anti-epileptic dose and then build it to reduce the side effects. How much you need depends on various factors such as your build and body, to influence how your body processes the medicine and how easy you are to treat epilepsy. Too high a dose can result in intoxication. Symptoms of intoxication vary from medication to medication. If a person receives too many phenytoin, they often become very unsteady and may have more frequent Seizures. Carbamazepine toxicity usually begins with double vision and drowsiness. Another reason why the drug can sometimes seem Seizures will increase if a suitable drug for a type of seizure aggravates other types of seizure. Carbamazepine, for example, are effective against tonic-clonic Seizures, but not against absence Seizures. There was also some confusion about brand vs. generic. Almost all drugs have two names. The first is a generic name, the scientific name given to a drug that is recognized internationally. Branded medicines are those with a name created by an individual who has a pharmaceutical company manufactured them. The real drug is the same, but

problems can arise if you move from one to anoth for example, if you switch from Tegretol (brand) carbamazepine (generic). This is because sometii there are small differences in how the drug manufactured. It is best that you stick to the type epilepsy tablets that were initially planned, regard of brand or generic. Sometimes change can trig seizures or side effects. Conversely occasion someone in seizure control may improve or reduce side effects. Substitution drug treatment Be treatment was changed several questions must considered: 1 Is this epilepsy? The rate misdiagnosis is estimated to be between 10 and 25 cent. 2 If it is epilepsy, what is the type of seizure syndrome? Many people with juvenile myoclo epilepsy (the tonic-clonic seizures and myoclonic jerks early morning) are not diagnosed, as the questi were not asked about myoclonic jerks or early morn the tonic-clonic seizures. This synthesis Dro responds very well to sodium valproate, but carbam pine can make seizures worse. All antiepileptic dr seem equally effective (or ineffective) for pa seizures, but in primary and symptomatic generali epilepsy seizures respond better to sodium valproate with lamotrigine as second-line therapy. 4 Is the drug given in an adequate dose? It's amazing how many people are in more than one drug, all drugs in inadequate doses. Clinical results of an audit conducted in London, suggested that it could be cut in half seizures in approximately one third of the population by reducing the number of medications and that monotherapy with this drug in the correct dose. Epilepsy surgery is an option for patients whose seizures remain resistant to treatment with anticonvulsant medications who also have symptomatic localization-related epilepsy; a focal abnormality that can be located and therefore removed. The goal for these procedures is total control of epileptic seizures, although anticonvulsant medications may still be required.

SYMPTOMS OF EPILEPSY[1,2]

Almost any type of behavior that happens repetitively may represent a seizure.

Generalized seizures:

All areas of the brain (the cortex) are involved in a generalized seizure. Sometimes these are referred to as grand mal seizures. To the observer, the person experiencing such a seizure may cry out or make some sound, stiffen for some seconds, then have rhythmic movements of the arms and legs. Often the rhythmic movements slow before stopping. Eyes are generally open. The person may not appear to be breathing. The person is often breathing deeply after an episode. The return to consciousness is gradual and should occur within a few moments. Loss of urine is common. Often people will be confused briefly after a generalized seizure.

Partial or focal seizures:

Only part of the brain is involved, so only part of the body is affected. Depending on the part of the brain having abnormal electrical activity, symptoms may vary. If the part of the brain controlling movement of the hand is involved, for example, then perhaps only the hand may show rhythmic movements or jerking. If other areas of the brain are involved, symptoms might include strange sensations or small repetitive movements such as picking at clothes or lip smacking. Sometimes the person with a partial seizure appears dazed or confused. This may represent a partial complex seizure. The term *complex* is used by doctors to describe a person who is between being fully alert and unconscious.

Absence or petit mal seizures:

These are most common in childhood. Impairment of consciousness is present with the person often staring blankly. Repetitive blinking or other small movements may be present. Typically, these seizures are brief, lasting only seconds. Some people may have many of these in a day. Other seizure types exist particularly in very small children.

The following symptoms may indicate someone has epilepsy. A medical exam is advised if one or more of these symptoms are present. The symptoms include:

- A convulsion with or without a fever
- Short periods of blackout or confused memory
- Occasional "fainting spells" in which bladder or bowel control is lost, followed by extreme fatigue
- Episodes of blank staring
- Brief periods of no response to questions or instructions
- Sudden stiffening or falls for no apparent reason
- Episodes of blinking or chewing at inappropriate times
- Dazed behavior; being unable to talk or communicate for a short time
- Repeated movements that look out of place or unnatural
- Sudden fear, anger or panic for no reason
- Odd changes in the way things look, sound, smell or feel
- Muscle jerks of arms, legs or body
- Clusters of swift jerking movements in babies

Conditions that may be mistaken for epilepsy:

- Seizures associated with high fever
- Fainting
- Sleep disorders: nightmares, narcolepsy, cataplexy
- Psychiatric disorders: panic attacks, fugue states, psychogenic seizures
- Transient ischemic attacks (TIAs): brief interruptions of blood flow to the brain
- Migraine headaches

CAUSES OF EPILEPSY

- Electrical malfunctioning within the brain due to damage of brain cells or inherited abnormality.

- Main causes of petit mal are strained nervous condition, intestinal toxemia and digestive disturbances.
- Grand mal is caused by serious shock or injury to the brain.
- Heredity influences, typhoid and meningitis.

Circulatory disorders, allergic reaction to certain foods, cocaine habits, lead poisoning, alcoholism, low B.P., deficiency in minerals like Magnesium and calcium and mental conflict are other factors.

Type 1: Idiopathic Generalized Epilepsy

In idiopathic generalized epilepsy, there is often, but not always, a family history of epilepsy. Idiopathic generalized epilepsy tends to appear during childhood or adolescence, although it may not be diagnosed until adulthood. In this type of epilepsy, no nervous system (brain or spinal cord) abnormalities other than the seizures have been identified as of yet. The brain is structurally normal on brain magnetic resonance imaging (MRI) scan.

People with idiopathic generalized epilepsy have normal intelligence and the results of the neurological examination and brain scan (MRI) are usually normal. The results of the electroencephalogram (EEG - a test which measures electrical impulses in the brain) may show epileptic discharges affecting the entire brain (so called generalized discharges).

The types of seizures affecting patients with idiopathic generalized epilepsy may include:

- Myoclonic seizures (sudden and very short duration jerking of the extremities
- Absence seizures (staring spells)
- Generalized tonic-clonic seizures (grand mal seizures)

Idiopathic generalized epilepsy is usually treated with medications. Some forms of this condition that may be outgrown, as is the case with childhood absence epilepsy and a large number of patients with juvenile myoclonic epilepsy.

Type 2: Idiopathic Partial Epilepsies

Idiopathic partial epilepsy begins in childhood (between ages 5 and 8) and may have a family history. Also known as benign focal epilepsy of childhood (BFEC), this is considered one of the mildest types of epilepsy. It is almost always outgrown by puberty and is never diagnosed in adults.

Seizures tend to occur during sleep and are most often simple partial motor seizures that involve the face and secondarily generalized (grand mal) seizures. The results of the EEG are typically diagnostic, as patients with BFEC exhibit very specific EEG brain wave patterns.

Type 3: Symptomatic Generalized Epilepsy

Symptomatic generalized epilepsy is caused by widespread brain damage. Injury during birth is the most common cause of symptomatic generalized epilepsy. In addition to seizures, these patients often have other neurological problems, such as mental retardation or cerebral palsy. Specific, inherited brain diseases, such as adrenoleukodystrophy (ADL, which was featured in the movie *Lorenzo's Oil*) or brain infections (such as meningitis and encephalitis) can also cause symptomatic generalized epilepsy. When the cause of symptomatic general epilepsy cannot be identified, the disorder may be referred to as cryptogenic epilepsy. These epilepsies include different subtypes -- the most commonly known type is the Lennox-Gastaut syndrome.

Multiple types of seizures (generalized tonic-clonic, tonic, myoclonic, tonic, atonic and absence seizures) are common in these patients and can be difficult to control. Learn more about these seizure types.

TYPES OF EPILEPSY[2,3,4]

Major Types of Epilepsy

Types of Epilepsy	Generalized Epilepsy	Partial Epilepsy
Idiopathic (genetic causes)	- Childhood absence epilepsy - Juvenile myoclonic epilepsy - Epilepsy with grand-mal seizures on awakening Others	- Benign focal epilepsy of childhood
Symptomatic (cause unknown) or cryptogenic (cause unknown)	- West syndrome - Lennox-Gastaut syndrome - Others	- Temporal lobe epilepsy - Frontal lobe epilepsy Others

Type 4: Symptomatic Partial Epilepsy

Symptomatic partial (or focal) epilepsy is the most common type of epilepsy that begins in adulthood, but it does occur frequently in children. This type of epilepsy is caused by a localized abnormality of the brain, which can result from strokes, tumors, trauma, congenital (present at birth) brain abnormality, scarring or "sclerosis" of brain tissue, cysts or infections.

Sometimes these brain abnormalities can be seen on magnetic resonance imaging (MRI) scans, but often they cannot be identified, despite repeated attempts, because they are microscopic.

This type of epilepsy may be successfully treated with surgery that is aimed to remove the abnormal brain area without compromising the function of the rest of the brain. Epilepsy surgery is very successful in a large number of epilepsy patients who failed multiple anticonvulsant medications (at least 2 or 3 medications) and who have identifiable lesions. These patients undergo a presurgical comprehensive epilepsy evaluation in dedicated and specialized epilepsy centers.

There are many types of epilepsy. All types cause seizures. It can be difficult to determine what type of epilepsy you have because of the numerous possible causes, because different types of seizures can occur in the same person, and because the types may affect each person differently.

Some specific types of epilepsy are:

- Benign focal childhood epilepsy, which causes muscles all over the body to stiffen and jerk. These usually occur at night.
- Childhood and juvenile absence epilepsy, which causes staring into space, eye fluttering, and slight muscle jerks.
- Infantile spasms (West syndrome), which causes muscle spasms that affect a child's head, torso, and limbs. Infantile spasms usually begin before the age of 6 months.
- Juvenile myoclonic epilepsy, which causes jerking in the shoulders or arms.
- Lennox-Gastaut syndrome, which causes frequent and several different types of seizures to occur at the same time. This syndrome can lead to falls during a seizure, which can cause an injury.
- Temporal lobe epilepsy (the most common type of epilepsy in adults), which causes smacking of the lips or rubbing the hands together, emotional or thought disturbances, and hallucinations of sounds, smells, or tastes.

PATHOPHYSIOLOGY[4]

Mutations in several genes have been linked to some types of epilepsy. Several genes that code for protein subunits of voltage-gated and ligand-gated ion channels have been associated with forms of generalized epilepsy and infantile seizure syndromes.[46] Several ligand-gated ion channels have been linked to some types of frontal and generalized epilepsies. Epilepsy-related mutations in some non-ion channel genes have also been identified. Epileptogenesis is the process by which a normal brain develops epilepsy after an insult. One interesting finding in animals is that repeated low-level electrical stimulation to some brain sites can lead to permanent increases in seizure susceptibility: in other words, a permanent decrease in seizure "threshold." This phenomenon, known as kindling (by analogy with the use of burning twigs to start a larger fire) was discovered by Dr. Graham Goddard in 1967. Chemical stimulation can also induce seizures; repeated exposures to some pesticides have been shown to induce seizures in both humans and animals. One mechanism proposed for this is called excitotoxicity. The roles of kindling and excitotoxicity, if any, in human epilepsy are currently hotly debated. Other causes of epilepsy are brain lesions, where there is scar tissue or another abnormal mass of tissue in an area of the brain.

PROGNOSIS

Some people with certain types of seizures may be able to reduce or completely stop their seizure medicines after having no seizures for several years. Certain types of childhood epilepsy goes away or improves with age -- usually in the late teens or 20s.For some people, epilepsy may be lifelong condition. In these cases, the seizure drugs need to be continued. Death or permanent brain damage from seizures is rare, but can occur if the seizure is prolonged or two or more seizures occur close together (status epilepticus). Death or brain damage are most often caused by prolonged lack of breathing, which causes brain tissue to die from lack of oxygen. There are some cases of sudden, unexplained death in patients with epilepsy. Serious injury can occur if a seizure occurs during driving or when operating dangerous equipment. For this reason, people with epilepsy whose seizures are not under good control may not be able to do these activities. People who have infrequent seizures may not have any severe restrictions on their lifestyle.

EXAMS AND TESTS[2,3]

The first task facing the doctor is to decide if the event was a seizure or some other condition, such as fainting, that may mimic a seizure.

1. The doctor will take a history about the facts that surrounded the event. Any eyewitness accounts will be very helpful. Family history, social history, and past medical history are important as well.
2. Bring any medicine containers, including prescription drugs, to the hospital to help the doctor make the diagnosis.
3. A neurological examination will be performed. This may include some tests not usually performed

in other physical examinations, such as strength and reflex testing.

4. Depending on the history and physical examination, laboratory work may be ordered. This might include blood or urine testing.
5. Special testing such as MRI, CT scans, or EEG (brain wave patterns) may be performed.

TREATMENT OF EPILEPSY[7,8,9]

Treatment can reduce or prevent seizures in most people who have epilepsy, which can improve the quality of your life. Controlling your epilepsy also lowers the risk of falling and other complications that can happen when you have a seizure. First your doctor will determine what type of epilepsy and what kinds of seizures you have. Treatment that controls one kind of seizure may have no effect on other kinds. Your doctor will also consider your age, health, and lifestyle when planning your treatment. It may take time for you and your doctor to find the right combination, schedule, and dosage of medicines to manage your epilepsy. The goal is to prevent seizures while causing as few unwanted side effects as possible. With the help of your doctor, you can weigh the benefits of a particular treatment against its drawbacks, including side effects, health risks, and cost. After you and your doctor figure out the most effective treatment for you, it is important that you follow your treatment exactly as prescribed.

Initial treatment

Initial treatment for epilepsy depends on the severity, frequency, and type of seizures and whether a cause for your condition has been identified. Medicine is the first and most common approach. Antiepileptic medicines do not cure epilepsy, but they help prevent seizures in well over half of the people who take them.
Medicines that may be used first to treat epileptic seizures include:

- Carbamazepine (Tegretol, Carbatrol).
- Ethosuximide (Zarontin), for absence seizures only.
- Topiramate (Topamax).
- Oxcarbazepine (Trileptal).
- Phenytoin (Dilantin, Phenytek) or fosphenytoin (Cerebyx).
- Valproic acid or divalproex sodium (Depakene, Depakote).
- Phenobarbital (Luminal Sodium, Solfoton). Phenobarbital is a first-line medicine for newborns.
- Primidone (Mysoline). The body converts primidone into phenobarbital.

Other types of treatment may be used along with medicines to better control seizures, such as:

- Ketogenic diet, which is a high-fat diet that has been used with some success to treat people, especially children, who have severe, uncontrolled seizures. Some doctors may not support its use.
- Vagus nerve stimulation. The stimulator device is used with medicine or surgery to reduce seizures.

It is not always clear whether to begin treatment after a first seizure. It is difficult to predict whether you will have additional seizures. Antiepileptic medicines are not usually prescribed unless you have risk factors for having another seizure, such as brain injury, abnormal test results, or a family history of epilepsy.

Ongoing treatment

If epileptic seizures continue even though you are being treated, additional or other antiepileptic medicines may be tried, including:

- Felbamate (Felbatol).
- Gabapentin (Neurontin).
- Lamotrigine (Lamictal).
- Levetiracetam (Keppra).
- Tiagabine (Gabitril).
- Topiramate (Topamax).
- Zonisamide (Zonegran).
- Benzodiazepines (for example, Diastat, Tranxene, Valium).
- Phenobarbital (Luminal Sodium, Solfoton). Phenobarbital is a first-line medicine for newborns.
- Primidone (Mysoline). The body converts primidone into phenobarbital.
- Pregabalin (Lyrica). This medicine is intended to be used along with other antiseizure medicine.

In addition to medicines, other treatments may be added to help reduce the frequency and severity of epileptic seizures, including:

- Ketogenic diet, which is a high-fat diet that has been used with some success to treat people, especially children, who have severe, uncontrolled seizures. Some doctors may not support its use.
- Vagus nerve stimulation. The stimulator device is used with medicine or surgery to reduce seizures.
- Brain surgery. Some people with epileptic seizures do not respond to medicine but have great success with surgery.
  - Anterior temporal lobectomy is the most common brain surgery for epilepsy in adults. It involves removing part of one of the brain's temporal lobes to reduce seizures.
  - Hemispherectomy is a common surgery for severe epilepsy in children. This technique involves removing the damaged side of the brain.
  - Corpus callosotomy is another common surgery for epilepsy in children. This technique involves surgically disconnecting the two sides (hemispheres) of the brain to prevent generalized seizures. It does not help with partial seizures.

Treatment if the condition gets worse

If you have epilepsy with seizures that have not been controlled with medicines or other treatments, you may want to consider having surgery to reduce the frequency and severity of the seizures. While brain

surgery may sound frightening, it can be effective in reducing epileptic seizures and can greatly improve the quality of your life. Surgery for epilepsy may involve removing an area of abnormal tissue in the brain (such as a tumor or scar tissue) or the specific area of brain tissue where seizures begin. Anterior is the most common brain surgery for epilepsy in adults. It is the removal of part of one of the brain's temporal lobes to reduce seizures. Hemispherectomy is a commonly used surgical technique in children with severe epilepsy. In this procedure, the damaged side of the brain is removed. Corpus callosotomy, another common surgery, disconnects the two sides (hemispheres) of the brain to prevent generalized seizures in children. This surgery does not help with partial seizures.

Treating prolonged seizures.

Status epilepticus is a prolonged seizure or cluster of seizures that requires emergency treatment. It can happen in people who don't have a history of epilepsy and in those who do. A seizure or cluster of seizures that goes on for more than 20 to 30 minutes during which you or the person seizing does not wake up may cause brain damage. Emergency treatment should be started as soon as possible in these cases. Medicine used to stop the seizure is given in a vein (intravenously, or IV) so that it takes effect more quickly. If IV medicine is not available, medicine may be given rectally or as a shot in the muscle.Vital signs, such as blood pressure and pulse rate, will be checked. A physical exam and various lab tests are done to rule out or identify any life-threatening medical conditions (such as meningitis, stroke, or failure of the heart, liver, or kidneys) that may have caused the prolonged seizure.

SIDE EFFECT

Common side effects include:

- nausea,
- abdominal pain,
- drowsiness,
- dizziness,
- irritability, and
- mood changes.

Some side effects, which produce symptoms that are similar to being drunk, occur when the dose of Drug you are taking is too high. They include:

- unsteadiness,
- poor concentration,
- drowsiness,
- vomiting, and double vision

EPILEPSY AND WOMEN [6]

Management of epilepsy during pregnancy:

Pregnant women with epilepsy need close monitoring of the disease and of fetal health. More frequent prenatal visits are often needed. Most women are treated with anticonvulsant medications. Monitoring of these medications is important for the continued control of seizures and reduction of side effects. Using as few medications as possible and at the lowest dose needed to control seizures is the goal of treatment.Women with epilepsy can usually labor and deliver as other women. Because stress may increase the risk of seizures, a calm environment and epidural anesthesia are often recommended.Women with epilepsy can increase their chances for a healthy pregnancy by getting early prenatal care and working with their healthcare providers in the management of their disease. Always consult your physician for more information regarding treatment for epilepsy and pregnancy.

More than one million women of child-bearing age in the U.S. have seizure disorders. Not only do these women have to cope with seizures, they must also deal with the impact the disorder can have on their reproductive health. Epilepsy and seizure medications may affect contraception, pregnancy, hormone levels and the female reproductive cycle.

Epilepsy and Birth Control

Women with epilepsy who are sexually active should consult with their doctors regarding contraception and pregnancy. Many seizure medications can prevent birth control pills from working effectively, which can lead to an unplanned pregnancy. Other methods of birth control may be more effective in certain cases. Don't wait until it's too late to discuss birth control with your doctor.

In addition, all women of child-bearing age should take a multivitamin containing folic acid daily, to help prevent certain birth defects should pregnancy occur. Women who are taking seizure medications should be especially careful about taking a multivitamin and extra folic acid (check with your doctor about the exact dose) because some epilepsy medications deplete the body of important vitamins, particularly folic acid.

Epilepsy and Pregnancy

Women with seizures can have healthy children, provided they receive good prenatal care. It is very important that women with epilepsy discuss pregnancy with their doctors BEFORE getting pregnant.

Many patients with epilepsy take multiple medications in high doses that may lead to unnecessary drug exposure to unborn babies. In some cases, medications may be reduced before pregnancy, particularly if seizures are well-controlled.

If pregnancy occurs unexpectedly, women should NOT discontinue their seizure medication unless first consulting with their doctors. This commonly leads to more frequent seizures, which can also harm the baby.

Seizures During Pregnancy
The frequency of seizures usually does not change significantly during pregnancy. However, some women have seizures more frequently, while others experience fewer seizures. Blood levels should be checked often. This precaution is taken because medication blood levels gradually decrease during pregnancy and reach their lowest level around the time of delivery, which may result in breakthrough seizures. All seizures occurring during pregnancy should be reported to your doctor.

Delivery
Most pregnant women with epilepsy have normal vaginal deliveries, although cesarean sections (removal of the baby through an incision made in the abdomen) are required in some cases. When seizures occur during labor or delivery, cesarean sections are usually performed immediately.

Breastfeeding
Women taking seizure medications can breastfeed their infants. Some medications can cause babies to become very sleepy and irritable after feedings. If these effects occur, discontinue breastfeeding until you consult with your doctor.

Medications and Birth Defects
Seizure medications can produce birth defects. On the other hand, uncontrolled seizures can pose serious problems to unborn babies. Severe birth defects are rare in infants of women who receive regular prenatal care and whose seizures are managed with medication carefully. Women should NEVER discontinue seizure medications without consulting their doctors.

Epilepsy and Hormones
Hormones influence the function of the brain throughout life. Many women have an increase in seizure frequency just before or during their menstrual periods. This is probably due to changes in estrogen and progesterone levels that normally occur during the female reproductive cycle. Many women with epilepsy have abnormal menstrual cycles, including missed periods. If missed periods occur regularly, consult your doctor.

Treatment of Epilepsy at home
- Strict diet, complete relaxation and optimum exercise is the key factor.
- Adopt an exclusive fruit diet for first few days.
- Sprouted Alfa Alfa seeds, raw goat milk, raw butter and homemade cottage cheese are essential.
- Take frequent small meals than few large ones.
- Apply mud packs to the abdomen twice a day to remove epileptic conditions.
- Alternate application of hot and cold packs at the back of the head for 2-3 minutes about 4 times is beneficial.
- Full Epsom salt baths twice a day are also beneficial.
- Excitements should be avoided and avoid all severe mental and physical stress and remain in good spirits.

CONCLUSION
Epilepsy that does not get better after two or three seizure drugs have been tried is called "medically refractory epilepsy." Some people with this type of epilepsy may benefit from brain surgery to remove the abnormal brain cells that are causing the seizures. Others may be helped by a vagal nerve stimulator. This is a device that is implanted in the chest (similar to a heart pacemaker). This stimulator can help reduce the number of seizures, but rarely stops the seizures completely.Sometimes, children are placed on a special diet to help prevent seizures. The most popular one is the ketogenic diet. A diet low in carbohydrates, such as the Atkin's diet, may also be helpful in some adults. A number of systematic reviews by the Cochrane Collaboration into treatments for epilepsy looked at acupuncture, psychological interventions, vitamins and yoga and found there is no reliable evidence to support the use of these as treatments for epilepsy.

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