

Therapy

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EPILEPSY

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REFERENCE



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Epilepsy has been a persistent enigma of medicine since the time of ancient civilisations. The physicians had no clue of its cause and naturally no focussed treatment was available. Epilepsy was also relegated to the realms of the supernatural, as the 'scared disease'. Hippocrates referred to it as 'the falling sickness'. In India an epileptic seizure was viewed as a visitation by evil spirits and witch doctors or faith healers were called in to drive the spirits away. Even today various practices such as making the patient smell leather slippers exist in rural areas.

Ignorance generates irrational fear, prejudices and misconceptions. Epilepsy is so poorly understood that even in advanced countries epileptic patients are subjected to social stigma, isolation and even legal discrimination. Consequently the patient and his family tend to conceal the fact, as far as they can, often at the cost of receiving no treatment or help. Treatment of epilepsy has seen many and important changes over the past few years. Now, fortunately, this once dreaded condition is amenable to control, at least in the majority of cases. More and more people are realising that epilepsy is a medical problem which can be kept under control and seek immediate professional help.



The extent of the problem and increasing awareness is evident from increased information dissemination in the country. For example, a series of seminars conducted by a pharmaceutical company in Pune during the past two years received an overwhelming response, with over five hundreds delegates, doctors and paramedical staff actively participating. This showed that persons who had hitherto been ashamed of the fact and had been shying away from society simply due to a medical condition, took courage to come out in the open and discuss their problems with professionals and shared experiences with those with a common problem.

Epilepsy can be focal, limited to a small part of the brain or generalised, involving large segments of or even, the entire brain. Epilepsy is marked by sudden attacks in which the patient loses concentration or consciousness for a long or short period and may display violent movements of parts of the body (e.g. legs and arms). These attacks occur with little or no warning and during any activity of the patient.

Prevalence *Due to the stigma attached to epilepsy, no reliable statistics are available. However, between one and one and a half percent of the total population is believed to suffer from epilepsy. Incidence of epilepsy is reported to be highest in the first year after birth and after the age of fifty-five.*

Etiology A wide range of causes, varying with the age of onset, lead to the malfunctioning of the normal brain activity, resulting in epilepsy. In infancy it may be caused by hypoxia or trauma during birth, congenital malformation, infections or metabolic disorders. In childhood and adolescence, 'brain fever', CNS infection, head injury, lead toxicity and drug abuse can be the causative agents. Head injury, brain tumours and vascular disease are the some of the reported causes of epilepsy in adulthood. Heredity is a contributory, or at times a sole, cause of epilepsy, in combination with physiological or emotional stress.

TYPES OF EPILEPSY SEIZURES

Severity of an epilepsy seizure may vary from just a fraction of a seconds's impairment in the power of attention (or a minor mood change) to a total loss of consciousness for many minutes. The seizures are broadly classified on this basis as follows :

Petit mal (or minor fits) - characterised by a very short spell of unconsciousness often without motor involvement. It may even go unrecognised.

Grand mal (or major fits) - involves total loss of consciousness for up to a few minutes, generally accompanied by muscular spasms of arms and/or legs.

Status epilepticus - in which a patient suffers a series of major fits without recovery of consciousness in between the

fits.

Prognosis *With rapid advances in the field of medicine in the past four or five decades, the future of an epileptic patient is much brighter than it used to be.*

After regular drug therapy, approximately sixty percent of patients become seizure-free and about twenty-five percent can achieve sufficient control over seizures to lead normal, functional lives. The remaining fifteen percent do not achieve any consistent relief of symptoms. Unfortunately for these individuals, larger doses of anti-convulsant drugs (ACD), proves ineffective in controlling the seizures and complicates their lives through various side-effects. They find it extremely difficult to be able to carry on with normal activities because of the interference of attacks and the side-effects of the drugs being administered.

TREATMENT OF EPILEPSY

The objective in treating an epileptic person is to achieve consistent control over the occurrence and severity of the seizures. Epilepsy is treated mainly with anti-convulsant drugs. There is a wide range of ACD's available. In the U.S., a special diet, low in proteins known as the Ketogenic Diet is sometimes used for treatment of epilepsy. Although no systematic recording of the effects of this special diet is available, patients report that they find the diet 'effective'. There is no quantitative data available to support the argument.

Surgery is sometimes resorted to when a focal injury or scar on the brain is thought to be the cause of the condition. American medical journals report a fifty percent success rate of these surgical procedures. Similar data in India is not available.

Arriving at the optimum programme for seizure management is a complex task involving more than just the CNS system. The physician has first to classify the disorder, taking into account the clinical description, etiology and the results of the Electro Encephalograph (EEG).

Therapy through ACD is a critical component of seizure management. The aim is to control seizures and reduce their frequency while minimising side-effects. It requires maintenance of a delicate balance between the benefits and the risks. Regular monitoring is vital to the success of drug therapy, the frequency of monitoring being determined partly by the level of seizure control achieved and partly by the toxicity of the drug being used.

ADMINISTRATION OF ANTI-CONVULSANT DRUGS

Gardinal, Tegratol, Dilantin and Sodium Valproate are the most commonly used drugs in the treatment of epilepsy. They are reported to achieve their effects by diminishing the excitability of cerebral (neural) pathways involved in the epileptic disturbance. After considering general health, age, weight and other related factors the physician prescribes appropriate doses.

UNWANTED SIDE-EFFECTS OF ACD'S

ACD's tend to produce certain unwanted side effects in the patient. While some adverse effects are common to many drugs, others are quite characteristic of a particular drug. Again, the severity of some adverse effects appears proportional to drug concentration whereas it is the low concentration of some other drugs that causes the ill-effects. The prescription patterns of ACD's are therefore conditioned by the fact of these side effects, some of which are given below:

- *Psychomotor slowing, intellectual impairment and personality alterations leading to decline in a child's school performance.*
- *Large doses of sodium valproate are reported to make children irritable and hyperkinetic, with decreased attention and concentration spans.*
- *Double vision and ataxia result from barbiturates.*
- *Overdosage of any of the anti-convulsants may produce drowsiness, confusion, delirium and stupor. In extreme cases this may lead to coma and even death.*
- *Overdosage of some drugs, especially Gardinal, can result in an increase in seizure frequency, as well as a range of psychiatric disorders.*

- *All these drugs are known to slow down liver function. Related side-effects like poor digestion, 'heartburn' and acidity are also reported.*
- *All these drugs are sodium salts. They have a tendency to cause water retention. Weight-gain is a common side-effect, especially for patients who are on sodium valproate.*

*Drug treatment for epilepsy is a prolonged procedure. The drugs have to be taken very regularly, without missing even a single dose. They should not be stopped even if the patient has other illnesses and never without the doctor's guidance. Patients (and parents) tend to stop taking (or giving) the prescribed dose, if a seizure does not occur for sometime. Absence of seizures **does not** automatically mean that there should be a reduction in the dose. The ACD must be taken under strict medical supervision. Hence, it is very important that the prescription of medicines and their dosages are meticulously adhered to and any adverse effects brought to the physician's attention promptly. Generally, the drug treatment has to be continued for a minimum period of five years after the last attack and then, according to the physician's advice, reduced gradually. If the drugs are stopped suddenly, it can lead to a highly dangerous and sometimes fatal condition called status epilepticus.*

Despite the numerous unwanted side-effects the anti-convulsants remain, in the majority of cases, comparatively

safe and reasonably effective, with the advantages considerably outweighing the disadvantages.

Epilepsy causes varied problems and secondary effects for the patient and the family. It is emotionally very upsetting for the parents when their child is diagnosed as being epileptic. Besides affecting their coping patterns, it generates irrational fears regarding the child. They fear the child may die or come to physical harm during a seizure. They are also afraid that the child may suffer brain damage, mental retardation and/or psychological disorders. As a consequence, they tend to have very low expectations from the child. Their attitude towards the child is very often overprotective and/or over permissive. Healthy parental attitudes will greatly aid the child/adolescent in coming to terms with the illness and its implications. In addition to learning about the disease, its causes, treatment etc. parents must also develop a positive, accepting attitude towards the child. Parents' self-help groups, professional counselling, meetings and discussions help in attitudinal changes. In the USA and throughout Europe there are many groups of this type. Regular meetings are held. The groups help each other in identifying placement opportunities, share experiences with each other and even organise seminars. Booklets, pamphlets and case-studies are published regularly. In India, unfortunately, no such organised efforts have been made at the national level. In Bombay, Dr. Pravina Shah has taken the initiative to organise one such group. She has a large number of patients and parents coming together regularly. The group, primarily consisting of able-bodied patients, exchanges

information regarding new drugs, their availability, reported side-effects etc. Psychological strength, faith in the medicine and a will-power to overcome the problems seem to go a very long way in seizure control.

Discussion with parents, guardians and patients also reveal that fatigue, infections, fever, sleeplessness, excitement, travel etc. tend to bring about fits. Although there is no medical basis to suggest significant association between dust, pollution, environment and convulsions, higher altitudes are reported to reduce their frequency. Faith healers in India work on this aspect and the building of psychological strength when they organise camps for epilepsy patients in the foothills of the Himalayas. Although a spiritual and supernatural slant is given to the treatment, if the growing response is any indication of success, the programme should be given a high rating.

Of course, no doctor, thinker, professional or well-informed patient or parent will resort to such an unscientific procedure alone. Observant parents, however, emphasize proper rest and fatigue control as contributing to lower seizure frequency.

Epilepsy is unique in that it has at least as many secondary disabilities as it has primary effects. These secondary effects have less to do with the seizure disorder than with maladaptation to a social environment that is ignorant and prejudiced about the disease. Prejudice against epilepsy seems to be widespread. The sudden loss of control of the

movements of the body in a seizure seems to instil an unconscious fear in the minds of people and this fear generates a feeling of rejection and hostility towards the patient. Till a few decades ago, even physicians and criminologists were guilty of this prejudice. Thus the patient is left to face the double handicap of the complex effects associated with the seizures as well as the social stigma.

PSYCHOLOGICAL ISSUES ASSOCIATED WITH EPILEPSY

Children and adolescents with epilepsy show a marked increase in psychiatric disorders as compared with the general population. Very often the families themselves isolate, overprotect or ignore the condition. The patient naturally feels frustrated and unable to communicate with others. This could be one of the contributing factors for psychological problems. The association of learning problems and the presence of epilepsy is well-established. Children with epilepsy are rated by teachers as being more inattentive and overactive or lethargic and unresponsive. Their academic performance is significantly poorer than the normal class. Doctors feel that drug therapy, the neurological dysfunction underlying the disease, seizure control and attitudinal factors are the more relevant explanations for behaviour and learning problems than the mere effect of seizures. Long term memory loss, drowsiness and lack of attention are other issues commonly related to epilepsy.

EPILEPSY IN PERSONS WITH CEREBRAL PALSY

The incidence of epilepsy is much higher among persons with cerebral palsy than in the general population. This is understandable as the underlying cause behind both the conditions is a neurological dysfunction.

Epilepsy poses some peculiar problems for persons with cerebral palsy. The psychomotor seizures of epilepsy produce exaggerated effects in the patient because of the already existing neuro-muscular problems such as postural imbalance, drooling, contractures, etc. When the seizure comes on suddenly, causing the person to fall, the effect is more serious in a child with cerebral palsy. It has been observed by physiotherapists that the child who is slowly but steadily improving in posture and movement, reverts back to earlier levels after an incidence of epileptic seizure. Thus the child loses out on the benefits of physiotherapy. In a research study carried out at The Spastics Society of India, CT scans of patients were compared with their developmental aspects. It was interesting to note that there is no correlation between the two. Thus, there is no scientific basis to support the base line observation that certain developmental delays are common in epilepsy.

In a child with cerebral palsy, due to muscle inco-ordination, minor seizures, lasting for only seconds, could go unnoticed. Moreover, due to communication problems, the child may not even be able to express clearly his feelings. Thus the problem that needs intervention, treatment and management

is inadvertently ignored. However, other effects like distractibility, poor attention span, irritability, memory loss etc. are obvious. EEG studies and prompt medical intervention is recommended in such cases.

CONCLUSION

Epilepsy involves a malfunction of the normal activity of the brain. It is characterised by sudden seizures in which the patient may lose control of his motor functions and even consciousness. The period may last from a few seconds to several minutes. Epilepsy is mainly treated by administration of one or more anti-convulsant drugs. Careful selection of drugs and control of dosage is necessary, as each drug has its own peculiar combination of beneficial, as well as unwanted, effects on the patient's health. Because of the underlying neurological malfunction and the side-effects of the drugs used, behaviour and learning problems are more prevalent in persons with epilepsy. Epilepsy in persons with cerebral palsy presents additional problems due to the already existing neuromuscular dysfunction. The condition is so poorly understood, that a person with epilepsy suffers as much due to the effects of the illness as due to prejudiced, social attitudes. A positive, healthy attitude adopted by parents in bringing up a child/adolescent with epilepsy helps him in coming to terms with the condition and making the best of his life. In fact, such an attitude can even help to control the frequency of seizure.

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