

Dealing with epilepsy

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Epilepsy has been shrouded by superstitious beliefs for centuries now, and though the modern times have managed to set this right, there still needs to be better awareness amongst the public, says Dr Suresh Rao Aroor.

Epilepsy is a disorder which has afflicted mankind since ancient times. It is one neurologic disorder that has held mankind in superstitious dread since times immemorial, affecting people of all ages, races, and classes, right from Alexander and Julius Caesar to Charles Dickens and Jonty Rhodes. Previously called as the “falling sickness” or the “sacred disease”, it is one disease that has probably had the maximum number of misconceptions and stigma attached.

However, since the early 20th century, with newer technology and ongoing research into the various aspects of epilepsy, much of these misconceptions have been erased while at the same time newer and more promising drugs and treatment options are becoming available for epilepsy and its various types. But it still remains a major public health concern and worldwide problem with diverse etiology and outcome affecting about 50 million people worldwide.

It is a varied disorder with variable causes. Common causes include perinatal injuries, metabolic causes, and infections. Febrile seizures (FS), head injury, positive family history of epilepsy and developmental delay have been found to be the risk factors for epilepsy. The incidence rate for epilepsy is approximately 49.3 per 100,000.

Based on the total projected population of India, the estimated number of people with epilepsy would be 5.5 million and the number of new cases of epilepsy each year would be close to half a million.

Epileptic seizure is defined as a transient occurrence of signs and symptoms due to abnormal excessive or synchronous neuronal activity in the brain. This neuronal activity can arise from any part of the brain and the type of seizure also differs depending on the location of the

activity.

There are various mechanisms in the brain that produce seizures, like abnormal ion channels (sodium and calcium channels) and abnormal neuro-transmitters (excitatory versus inhibitory). One of the manifestations is sudden onset loss of consciousness followed by violent jerky movements of limbs for a few minutes or longer. It is also important that a good number of patients also present with recurrent transient symptoms like sudden blankness, repetitive motor movements, recurrent blinking of eyelids, and the like.

Epilepsy is a condition that is characterized by recurrent seizures of single or multiple types, but a single seizure cannot be classified as epilepsy as there could be common underlying conditions (usually electrolyte and metabolic imbalance) that could have caused it. Thus it is important to appropriately and thoroughly investigate the person before deciding on the treatment modality.

A detailed history is obtained on the number of seizure attacks, nature of attacks, possible triggers and underlying etiology. The person is made to undergo specific blood tests, electroencephalography (EEG, which is a recording of electrical activity in the brain. The recording is made through wires pasted on the person's head. It does not hurt the person in any way) and brain imaging (preferably MRI) to determine the type and location of epilepsy and any causes that may predispose to epilepsy.

Once a person is diagnosed with epilepsy, pharmacological therapy is the mainstay of treatment. There are over 20 anti-epileptic drugs currently available. Based on the type of epilepsy, appropriate anti-epileptic drug is started (single mechanism of action like carbamazepine, broad spectrum of action like sodium valproate, topiramate etc). Long term seizure control is the primary goal in the treatment of epilepsy and once the patient is seizure free for at least 2 years, antiepileptic drugs can be slowly discontinued based on the type of epilepsy and investigative findings. Non-pharmacological treatment options include epilepsy surgery, ketogenic diet, and vagal nerve stimulation. These are currently offered at a few tertiary care centers.

Children with epilepsy usually have multidisability like academic difficulties, and behavioural problems. Hence this requires a multidisciplinary team approach consisting of pediatric neurologist, physiotherapist, child psychologist, occupational therapist and speech therapist.

Early recognition and treatment is important because a person who is not treated may have to face additional problems later on especially in children such as:

- * Learning disabilities — because those brief blanking out seizures make it difficult to follow instructions and understand the lessons at school.
- * Safety risks — because sudden loss of awareness in certain situations (like while climbing or in water) can lead to injury.
- * Behaviour problems — because of recurrent seizures the world seems disorderly. The child keeps missing things others have understood, and doesn't know why.
- * Social problems — because the child, his family, and others may not understand the cause

or nature of unusual actions or behaviour.

Though there have been significant advances in the understanding and treatment of epilepsy over the ages, there are still a number of misconceptions, social stigma and taboos associated with epilepsy which cause obstacles caring for a person with epilepsy.

This has to be rooted out and for this to happen, the general public needs to be sensitized, and educated about epilepsy and the presentation of its varied forms. They must understand the need to seek out treatment at the earliest and also the most appropriate treatment depending on the type of seizure. The key to success of curing epilepsy depends on early recognition and prompt appropriate treatment.

(The writer is a paediatric neurologist)