



## Research Newsletter Vol. 6 (2): May – August 2017

Lata Mangeshkar Medical Foundation's Deenanath Mangeshkar Hospital & Research Centre  
Erandawane, Pune – 411004. Tel.: 66023000 / 40151000 Email: [jpmt@vsnl.com](mailto:jpmt@vsnl.com) Website: [www.dmhospital.org](http://www.dmhospital.org)

---

### Medical Management of Epilepsy

*Dr. Sandeep Patil*

*Consultant Epileptologist and Pediatric Neurologist, Bajaj Allianz Comprehensive Center for Epilepsy, DMHRC, Pune.*

---

#### Introduction

Epilepsy is the fourth most common neurological disorder which cripples many people around the globe and has a huge social stigma associated with it. In general, epilepsy affects 1% of the population. In Pune district alone almost 1,00,000 people are suffering from epilepsy. These people lose many privileges of life such as driving, sports, family, education and employment and become dependent on others for even routine activities. The problem is severe in children due to effect of ongoing seizures on the immature brain. Unfortunately, proper advice and diagnosis facilities are not enough to cater to this huge population and people seem to be not aware of recent advances and available treatment options.

Most people with epilepsy can become seizure-free by taking one anti-seizure medication, called anti-epileptic medication. Others may be able to decrease the frequency and intensity of their seizures by taking a combination of medications. More than half of the children with epilepsy who aren't experiencing epilepsy symptoms can eventually discontinue medications and live a seizure-free life. Many adults also can discontinue medications after two or more years without seizures.

Finding the right medication and dosage can be complex. Sometimes combination of anti-epileptic drugs is needed to control the seizures. Valproic acid, Carbamazepine, Levetiracetam, Lamotrigine, Topirimate, Clobazam are the few common anti-epileptic drugs used for seizure control.

#### Managing Epilepsy

The medical management of epilepsy can seem unnecessarily complicated for a non-specialist. The process can be thought of taking place in 7 steps:

1. Assessing the need for medications;
2. Defining the seizures and classifying the epilepsy syndrome;
3. Knowing which medications are best used in which syndromes;
4. Taking into account patient priorities when choosing a medication, such as co-treatment or avoidance of neurobehavioral issues and weight loss or gain;
5. Considering other life issues, such as planning a pregnancy and breastfeeding;
6. Choosing a maintenance dose and deciding when to consider a change to another medication or to use dual therapy; and

7. If seizure-free, which patients to consider anti-epileptic drugs (AEDs) reduction or withdrawal.

The goal is simply, no seizures and no side-effects. Seizure freedom is an important goal to reduce injury, mortality and improve quality of life. Improving tolerability is equally as important, as both acute and chronic side-effects of AEDs can be as disabling as the seizures themselves. The following part of this article further highlights a few important points listed above.

### **1. Assessing the need for medications**

Before assessing the need for medication in epilepsy patients it is important to confirm the diagnosis of epilepsy. According to the definition of Epilepsy, a person is considered to have epilepsy if they meet any of the following conditions.

1. At least two unprovoked (or reflex) seizures occurring greater than 24 hours apart.
2. One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 years.
3. Diagnosis of an epilepsy syndrome

If the diagnosis of epilepsy is confirmed, then the patient can be put on anti-epileptic drugs.

### **2. Defining seizures and classifying the epilepsy syndrome**

Broadly seizures can be classified into two categories, focal and generalized. Knowing seizure semiology is essential in choosing appropriate anti-epileptic drug. For example, for focal seizures carbamazepine is used as a first line of treatment while for generalized seizures sodium valproate is preferred.

Knowing the seizure syndrome is particularly important while dealing with paediatric patients. There are many syndromes which are a constellation of various seizure types and EEG findings. For example, in case of Infantile Spasm one would consider hormonal therapy such as ACTH or oral prednisolone as the first line of treatment.

### **3. Knowing which medications are best used in which syndromes**

As mentioned above the knowledge of syndrome is essential for choosing anti-epileptic drugs. This is also helpful in deciding which drugs should be avoided in particular syndrome. In cases of Juvenile myoclonic epilepsy use of phenytoin and carbamazepine should be avoided as it can aggravate myoclonic seizures.

### **4. Taking into account patient priorities**

Before starting an anti-epileptic drug, knowing the patient's co-morbidities and priorities helps to ensure compliance of the patient. For example, in cases of an obese patient, medications such as carbamazepine can be avoided as it causes excess weight gain. Instead one can choose Topiramate which causes weight loss along with seizure control. Similarly, patients will be happy to take once a daily preparation over twice or thrice per day preparations.

In cases of pregnant women, medicines which can cause birth defects should be avoided or its dose should be decreased below harmful level. This is most commonly noted with use of valproate in pregnant women and this patient should consult their neurologist before pregnancy.

Some newer anti-epileptic drugs such as Levetiracetam and Clobazam have hyperactivity and behavioural issues as significant side effects and they preferably are avoided in children with Attention Deficit Hyperactivity Disorder (ADHD).

## **5. Choosing a maintenance dose and deciding when to consider a change**

Once an anti-epileptic drug is started it is increased to average effective dose according to the age and weight of the patient. Further this dose can be increased to maximum tolerable dose if the patient has breakthrough seizures. Whenever possible continuing the patient on Monotherapy is preferred. However, some patients may need add-on drugs as seizures do not respond to a single drug.

In case of the second anti-epileptic drug, their choice depends on underlying seizures, epilepsy syndrome, patient characteristics and priorities. Some combinations for example, Valproate and Lamotrigine are synergistic and can be used effectively in small dosage to increase effectiveness and decrease side effects from individual drugs. Drugs which act through different modes of action are preferred when giving combination of drugs.

Some paediatric patients remain refractory on anti-epileptic drugs and they can be given an option of ketogenic diet or Modified Atkins Diet. Some children with epilepsy have been able to reduce their seizures by following a strict diet that's high in fats and low in carbohydrates. In this diet, called ketogenic diet, the body breaks down fats instead of carbohydrates for energy. After few years, some children may be able to stop the ketogenic diet and remain seizure-free.

## **Resolution of Epilepsy**

Almost 70-80% patients can be successfully treated with anti-epileptic drugs. If the patient is seizure free as mentioned below, trial of withdrawal of anti-epileptic drug can be given. Though, in some cases such as Juvenile myoclonic epilepsy one may have to take the anti-epileptic drugs lifelong.

Epilepsy is considered to be resolved for individuals who had an age-dependent epilepsy syndrome, but are now past the applicable age or those who have remained seizure-free for the last 10 years, with no seizure medicines for the last 5 years.

---

*Patron and support: Dr. D. S. Kelkar*

*Theme selection and initial draft editing: Dr. V. V. Pethe*

*Layout and editorial inputs: Dr. N. D. Khambete*

---