

Drug Therapy

It is known that persons predisposed to epilepsy have seizures when their basal level of neuronal excitability exceeds a critical point; no event occurs if the excitability is inhibited and remains below this seizure threshold. The administration of antiepileptic drugs serves to raise this threshold and prevent seizures.

Consequently, the primary therapy for seizure disorders is the administration of the appropriate antiepileptic drug or combination of drugs in a dosage that provides the desired effect without causing adverse side effects or toxicity. Antiepileptic drugs are believed to exert their effect primarily by reducing the responsiveness of neurons to the sudden, high-frequency nerve impulses that arise in the epileptogenic focus. Thus, the seizure is effectively suppressed; however, the abnormal brain waves may or may not be altered. The chance of total control of seizures depends on the underlying cause of the seizures.

The initiation of anticonvulsant therapy is based on several factors, including the child's age, type of seizure, risk of recurrence, and other comorbid or predisposing medical issues. For children who develop recurrent seizures or epilepsy, treatment is begun with a single drug known to be effective for the child's seizure type and have the lowest risk of adverse side effects. The dosage is gradually increased until the seizures are controlled or the maximum recommended dose has been reached and seizures are still not controlled. If a child develops intolerable side effects, the medication is stopped and another one tried. If the drug reduces but does not stop all seizures, a second drug is added in gradually increasing doses. When seizures are controlled, the first drug may be tapered to reduce the potential adverse effects and drug interactions of polytherapy. Monotherapy remains the treatment method of choice for epilepsy, but a combination of medications may be a viable alternative for children who cannot attain seizure control with only one medication ([Mikati and Hani, 2016](#)).

A serious potential adverse side effect of antiepileptic medication is allergic drug rash. The rash can start with hives and is usually very itchy. Allergic drug rashes from antiepileptic drugs can spread quickly and become severe, life-threatening events. The drug should be stopped with any rash. A physician or nurse practitioner should evaluate the child within 24 hours or sooner if the child