

Medication Resistant Epilepsy in Children

Children living with medication-resistant epilepsy urgently need more effective medical therapy. Medication-resistant epilepsy, also known as refractory or intractable epilepsy, is the failure of two or more antiepileptic drugs (AEDs), used individually or in combination, to achieve sustained seizure freedom. Patients who have developed medication-resistant epilepsy often do not adequately benefit from FDA approved AEDs. Among children with medication-resistant epilepsy, those suffering from early-onset and high seizure burden epilepsies suffer the greatest potential for neurodevelopmental problems, including intellectual disability, autism, psychological abnormalities, and even death. Continuing to pursue all options available for epilepsy treatment may lead to seizure freedom and can improve patients' quality of life over time.

Epilepsy in Children

- Each year 45,000 children ages 15 and under develop epilepsy in the US.
- More than 300,000 children under 15 years old live with epilepsy in the US.
- 15% of these children have identifiable epilepsy syndromes.
- 40% of people with epilepsy, including children, do not find seizure freedom with antiepileptic drug therapy.

Parents of children with drug-resistant epilepsy often turn to alternative treatment options out of desperation to gain some control over their children's health. Some parents in States that allow the use of medical marijuana are using a variety of artisanal cannabidiol (CBD) preparations to treat their children's seizures. CBD is a non-psychoactive component of the cannabis plant that has low toxicity and may help reduce the severity and frequency of epileptic episodes. There is hope that CBD may provide a viable alternative epilepsy treatment that may improve seizure control and quality of life in these patients. GW Pharma issued a press release in June 2014 from an open label study of 27 children and adults with difficult to control epilepsies who received GW's CBD product, as well as several small studies of CBD that were conducted in the past. The study results proved promising and has spurred additional CBD studies in epileptic children.

Analyses of Data from Twenty-Seven Patients Showed:

- The average overall reduction in seizure frequency from baseline was 44%.
- 48% of all patients obtained at least a 50% reduction in seizure frequency from baseline seizure frequency.
- 41% of all patients obtained at least a 70% reduction in seizure frequency from baseline seizure frequency.
- 22% of all patients obtained at least a 90% reduction in seizure frequency from baseline seizure frequency.
- At the end of 12 weeks, 15% of all patients were seizure-free.

Currently, a Georgia initiative to help children with epilepsy is coming to fruition. Drs. Yong Park and Michael Diamond are working in collaboration with Governor Nathan Deal and other care providers in Georgia to initiate a clinical trial to determine the efficacy of CBD in children with intractable epilepsy syndromes. Deal's commitment to the project has helped foster an agreement between the State of



Georgia, GRU, and GW Pharmaceuticals, a UK-based pharmaceutical company that currently manufactures CBD.