



Properly Utilizing the World of Diverse Epilepsy Therapies to Treat a World with Diverse Epilepsy Patients

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Epilepsy is a well-known and relatively common condition worldwide and has been described across many civilizations and countries since ancient times. The WHO estimates that about 50-65 million people worldwide have epilepsy, with the majority of these patients in developing nations with limited access to effective treatments [1]. Public awareness of epilepsy is often limited and misconceptions abound, especially in the developing nations and regions where literacy rates remain low; although there is a substantial amount of misinformation in the developed nations as well, in regards to epilepsy, its effects and available treatments.

Treatments for epilepsy vary from medications to dietary therapies to surgical interventions and the relatively newer field of neuromodulation and these treatments are often used in combination or conjunction to achieve the best results for the patient. While such a diverse variety of treatments are actually available, it is often other factors like awareness, cost, availability and awareness of the condition or its treatments that determine the therapy offered to the patient. It is surprising and unfortunate that, in this day and age, patients with such a well-known condition may not have access or even knowledge of the options available to them.

Medications form the 1st line of treatment for epilepsy. Unfortunately, while developed nations have a large variety of medications to choose from (more than 30 meds), most of the world is still receiving epilepsy therapy with the same 3-5 medications that have been around for more than 30 years. Most of these older medications cause painful and uncomfortable side effects but are unfortunately the only available option due to their low cost. Better drug development, competitive drug pricing, generic drug use

and governmental support are essential to ensure that some of the newer medications are available to the public in most parts of the world. Some of these interventions would also help patients in the developed nations, where cost of medications can be a limiting factor in availability of therapy.

While medications work well for most patients, about a third of them will need additional therapy due to insufficient seizure control on 2 or more medications [2]. Epilepsy surgery remains a wonderful choice. However, availability and cost are always limiting factors. Research has shown that epilepsy surgery is cost saving for patients and health systems and enables greater productivity and better quality of life as well [3]. Research has also shown that timeliness of epilepsy surgery is poor worldwide, often due to factors like lack of awareness about epilepsy surgery, patients' fears of surgery and limited resources [4]. Improved government and private investment, increasing awareness about epilepsy surgery and improved processes in health systems will contribute heavily towards improving knowledge and availability of epilepsy surgery and reducing the burden of epilepsy on society as a whole.

Neuromodulation, while a newer therapy, has seen an explosion of interest in recent years. While the use of bioengineering techniques and devices can be restricted by cost and infrastructural availability, their efficient use can work well to help chronic management of epilepsy and possibly help patients with remote access by offering another treatment option besides medications. Vagal nerve stimulators have been used for many years with good results and expanding availability to more people would improve seizure burden and quality of life for patients worldwide. Dietary therapies

like ketogenic diets and their variations have shown to have good effect and remarkable results in some cases and must continue to be utilized worldwide with increasing efficiency.

Finally, cost, availability, awareness and timeliness are often the limiting factors worldwide in the management of epilepsy. Increasing public awareness about epilepsy and its treatments along with improving public and private investment of finance and resources into this field will help improve our efficiency in combating the scourge of epilepsy.

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