

Challenges with Pharmacotherapy of Epilepsy in India

Arun Swaminathan**Assistant Professor of Neurology, University of Nebraska Medical Center, Nebraska, USA****Corresponding Author:** Arun Swaminathan, Assistant Professor of Neurology, University of Nebraska Medical Center, Nebraska, USA.**Received:** February 21, 2020**Published:** February 24, 2020© All rights are reserved by **Arun Swaminathan.**

Epilepsy is estimated to afflict around 12 million people in India. Medications are the first line of therapy for this condition. Surgery would be a great choice of therapy for such patients but given the limited availability of resources and surgical centers, medical therapy remains the mainstay for most of these patients.

Cost remains the major limiting factor for medication use. Studies worldwide show that most of the developing countries have patients that are able to spend less than 1\$ / 50-70 Rs. Per day for their seizure medications. Rural parts of India certainly face this problem more acutely, although urban India is not spared from financial restrictions either. Newer medications offer greater difficulties with cost, although easy availability of generic options does offset some of these difficulties. Additional problems are faced due to the presence of sub-standard quality generic medications and spurious or fake products, which make it difficult to know if failure of therapy is true or not. Costs are especially limiting when the patient is forced to use multiple medications or higher doses of therapy for seizure control. Many patients show limited or poor compliance with the use of fewer doses often limiting their seizure control and quality of life. Increasing availability and maintenance of costs do make things relatively easier for patients but more needs to be done in this regard to improve availability and affordability of pharmacotherapy for epilepsy.

Prevalence of side effects or adverse drug reactions forms an important facet of pharmacotherapy, often representing the greatest challenges that patients face. Most patients are being treated with older generation seizure medications; which while effective, cheap and easily available; do certainly have a higher incidence of

side effects from systemic and hepatic involvement as well. Many of these side effects are temporary, but chronic therapy produces permanent and irreversible side effects. Multivitamin replacement and mineral supplementation help offset some of these side effects but permanent damage can be disabling, especially if liver or nerve damage is present. Special mention must be made of the Steven-Johnson's Syndrome, a severe allergic reaction seen with some seizure medications, and is more prevalent in the Indian sub-continent due to prevalence of certain genetic markers, especially in middle and southern India. This side effect can often limit the available treatment options, as many of the older seizure medications share a propensity for it and its occurrence on one of them would limit the use of others as well.

Availability of medications is a common problem as well, with many patients unable to access a regular supply of medication. Non-compliance is often the commonest reason for the occurrence of seizures in patients. Studies estimate that about 30% of refractory epilepsy patients may be falsely refractory due to the difficulties with medication compliance and this number may be an underestimation in India. Ensuring regular supply to pharmacies would help overcome this problem.

Monitoring of therapy represents another challenge in treatment of epilepsy. Laboratory testing is expensive and limited and often leaves clinical monitoring as the only available method of surveillance. Patient reporting is mistaken at best, and dangerous at worse, especially for those patients with uncontrolled or refractory epilepsy. Increased availability of lab testing may help alleviate some of this problem.

Epilepsy remains a prevalent condition in India and many challenges persist in its management. Pharmacotherapy remains the first line of therapy with its own share of roadblocks, many of these can be overcome with planning, and financial and infrastructural investment, both of which remain deficient. Increasing social awareness and infrastructural support for diagnosis and surgical and medical therapy remain the mainstays of combating epilepsy nationwide and while efforts to improve these are ongoing, facilities need to be improved exponentially to effectively manage this menace to society.

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