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## **Epilepsy uncovered: a comprehensive insight on epilepsy and its medications**

*Dr. Ashutosh Badola, Shipra Omar, Kumari Sanjana, Vinit Kumar\**,

School of Pharmaceutical Science, Shri Guru Ram Rai University, Dehradun, Uttarakhand, India

**Email Id:** [serviceheb@gmail.com](mailto:serviceheb@gmail.com), [vinitk8245@gmail.com](mailto:vinitk8245@gmail.com)

**Abstract:** Epilepsy is a chronic neurological disorder characterized by recurrent, unprovoked seizures resulting from abnormal electrical activity in the brain. It affects people of all ages and is one of the most common neurological conditions worldwide. The disorder presents with diverse clinical manifestations, including generalized seizures, focal seizures, and behavioural or cognitive disturbances, depending on the area of the brain involved. Epilepsy may arise from genetic factors, structural brain abnormalities, infections, metabolic disorders, trauma, or may remain idiopathic with no identifiable cause. Early diagnosis is essential and relies on clinical evaluation supported by electroencephalography (EEG), neuroimaging, and laboratory investigations. Treatment strategies aim to achieve complete seizure control with minimal side effects. Pharmacological therapy is the mainstay of management, with antiepileptic drugs such as valproate, carbamazepine, levetiracetam, and lamotrigine being commonly used. Over the past two decades, newly developed antiseizure medications and personalized treatment approaches have improved outcomes, especially for drug-resistant epilepsy. In patients who fail to respond to medication, non-pharmacological options including ketogenic diet, vagus nerve stimulation, deep brain stimulation provide additional therapeutic benefits. Recent research focusing on gene therapy, neurostimulation technologies, precision medicine, and identification of genetic biomarkers holds promise for more effective and individualized management in the future. Despite advancements, epilepsy remains associated with social stigma, psychological challenges, and reduced quality of life. Comprehensive care, patient education, and community awareness are crucial to improving long-term outcomes. This review highlights the epidemiology, pathophysiology, diagnosis, and modern therapeutic approaches in epilepsy, emphasizing the importance of early intervention and continuous research.

**Keywords-** Epilepsy, Seizures, Antiseizure drugs, Neurology, Brain disorder, Abnormal electrical activity.

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