

# The Development of Chronic Temporal Lobe Epilepsy in Autoimmune Encephalitis

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## Description

Amnesic syndrome, psychiatric signs, and seizures are all symptoms of limbic encephalitis an autoimmune condition. To avoid long-term sequelae, such as psycho-cognitive deficits and persistent seizures, prompt diagnosis and treatment are crucial. Subacute amnesia, which typically develops over several weeks to months, focal seizures, and psychiatric features are typical of LE. At the onset of the disease, epileptic seizures, whose semiology typically suggests involvement of temporo-mesial structures, are frequently regarded as the primary symptom. It is possible that the immune-mediated mechanisms underlying epileptic phenomena in LE not only contribute to the ongoing epileptogenic process that leads to the development of chronic epilepsy but also induce ictogenesis during the acute phase of the disease. Seizures typically respond well to immunotherapy, though in some instances they may persist over time. In this scenario, seizure recurrence could be the result of a persistent inflammatory insult, which is not responsive to treatment, or of a chronic epileptic disorder. Due to the complexity of LE pathogenesis and its phenotypical spectrum, the causes of chronic epilepsy have not been fully identified.

## Amnesic Syndrome

Cerebrovascular disease, head trauma, degenerative disorders, and tumors of the central nervous system are frequently the causes of epilepsy in adults. However, the underlying cause is still unknown in one third of cases. The most common autoimmune epilepsies are in this category: Rasmussen encephalitis, adult patients with *epilepsia partialis continua*, and limbic encephalitis that is both para-neoplastic and non-para-neoplastic additionally, the following antibodies have been linked to focal epilepsy: antibodies against glutamic acid decarboxylase and antibodies to the voltage-gated potassium channel complex. The severe epileptic encephalopathy known as febrile infection-related epilepsy syndrome mostly affects healthy children and adolescents. Seizures are typically resistant to conventional antiepileptic medications, necessitating pharmacologically induced coma. It is characterized by an abrupt onset of refractory status epilepticus which is typically preceded by a non-specific febrile illness without evidence of CNS infection. However, anesthetic therapy is frequently insufficient, and in the majority of cases, Super-Refractory Status Epilepticus

has been described. SE can last for weeks or months, and during the remission, a chronic phase characterized by drug-resistant epilepsy and significant neuropsychological impairment is frequently observed.

Immune alterations may be the cause of some of the epilepsies that have been deemed cryptogenic to date, and they typically respond to A personal or family history of autoimmune or neoplastic disease, subacute onset with high seizure frequency, multiple seizure foci, early resistance to antiepileptic drugs, neuropsychiatric symptoms, and in some cases rapidly progressive cognitive impairment are some of the clinical features of this type of epilepsy. The presence of signs of inflammation in magnetic resonance imaging and cerebrospinal fluid studies, as well as the detection of anti-neuronal antibodies, three cases of adult-onset focal epilepsy is discussed. Antibody tests confirmed the diagnosis of autoimmune aetiology based on psychotic symptoms and dysautonomia. Patients with chronic epilepsy of unknown cause have been reported to have neuronal autoantibodies and a favorable response to immunosuppressive treatment, pointing to an autoimmune etiology. Our goal was to discover novel autoantibodies that react with neuronal surface antigens in epilepsy.

## Super-Refractory Status

The extreme age ranges have the highest incidence of epilepsy: adolescence and old age it is anticipated that the most prevalent syndromes in these demographics, including focal epilepsy with structural etiology in older people and self-limited epilepsies of childhood and idiopathic generalized epilepsies in pediatric age, will respond to medication. This study examines these types of epilepsy and the complicated clinical history of unexpected drug resistance. For childhood self-limited epilepsies and idiopathic generalized epilepsy, we explain the influence of inappropriate treatments, reason about possible unexpected course of epilepsy, and illustrate drug resistance as a result of syndrome misinterpretation. For elderly-onset epilepsy, we discuss how drug-resistant epilepsy can develop in stroke, neurocognitive disorders, brain tumors, and autoimmune encephalitis, as well as the difficulties in differential diagnosis that may result in pseudo resistance. Drug resistance can be interpreted as an indication to reconsider the diagnosis or

investigate alternative therapeutic options in children and the elderly. In syndromes that are typically thought to be drug-responsive, refractory seizures are not only challenging therapeutic challenges but also a crucial sign that should not be overlooked. Epilepsy incidence has a bimodal U-shaped distribution, with a peak in childhood and a late surge in the elderly. In these extremes of age, the type of epilepsy varies. The majority of pediatric cases fall under the broad category of Genetic Generalized Epilepsies, which can manifest as self-limited focal epilepsies of childhood or idiopathic generalized epilepsies.

Refractory seizures affect about one-third of epileptic patients, but the pooled prevalence of drug-resistant epilepsy ranged from 11 percent in community-based studies to 51 percent in subspecialty epilepsy clinics. Epileptic and

developmental encephalopathy patients, as well as those with early seizure onset, multiple seizure types, brain structural abnormalities, intellectual disability, neurological and somatic comorbidities, are likely to develop drug resistance in children. The classification of various epilepsy syndromes according to age has also evolved over time, as have the definitions of status epilepticus, febrile seizures, and neonatal seizures. The next thing that should be taken into account when categorizing focal seizures is whether awareness is retained or impaired. Even if the patient was aware at the beginning of the seizure, if they have no knowledge of the events, their awareness is impaired. This would be considered retained awareness if a patient is unable to respond during a seizure but recalls the events of the seizure afterwards.