

Seizures and epilepsy

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Epilepsy is one of the most common and disabling neurological diseases. However, we do not fully understand the detailed pathophysiology and the basic principles of treating most epilepsy. This article reviews the clinical aspects of epileptic seizures and epilepsy, with the goal of introducing neuroscientists to areas where scientific research can be conducted. Defining epileptic seizures and epilepsy, reviewing diagnostic methods, discussing various clinical syndromes, and considering various aspects of differential diagnosis, treatment, and prognosis, enabling neuroscientists to raise basic and translational research questions.

"Epilepsy" is a paroxysmal disorder of nerve function caused by excessive and supersynchronous firing of neurons in the brain. "Epilepsy" is used to distinguish seizures caused by abnormal neuron firing from non-epilepsy events, such as psychogenic seizures. "Epilepsy" is a condition of recurrent and unprovoked seizures. There are many causes of epilepsy, each of which reflects an underlying brain dysfunction. Epilepsy caused by a reversible lesion (such as fever, hypoglycemia) is not included in the definition of epilepsy, because it is a transient secondary disease rather than a chronic state.

"Epilepsy syndrome" refers to a constant set of clinical features with similar types of seizures, age of onset, EEG results, triggers, genetics, natural course, prognosis, and response to antiepileptic drugs (AEDs). Specific "Epilepsy" should be avoided.

The latest International Anti-Epilepsy Alliance (ILAE) Classification of

Seizures and Epilepsy (Epilepsy Syndrome) was published in 2010 and reviewed the past classifications using terms and concepts appropriate for the modern era. There are three types of seizures: generalized, focal (previously called partial), and epileptic seizures. Focal epileptic seizures originate in a neural network confined to one part of the cerebral hemisphere. Generalized seizures begin with a bilaterally distributed neural network. Seizures can start focally and then become common. Seizures can originate in the cortex or subcortical structures. Using detailed medical history, EEG results, and auxiliary information, clinicians can generally classify seizure / epilepsy types and then perform.

The clinical manifestations of focal seizures depend on the cortical area involved. For example, focal seizures caused by the occipital lobe can have visual phenomena; from the central anterior gyrus, accompanied by rhythmic clonus or tonic motor activity; from the central posterior gyrus, accompanied by sensory symptoms such as paresthesia. When consciousness deteriorates during a focal seizure, that is, when the patient cannot respond normally to speech or tactile stimuli, the seizure is classified as a cognitive disorder (previously called the complex part); seizures caused by the temporal lobe are generally cognitive impairment. Some seizures precede an aura, which is a focal seizure in which the patient remains conscious and describes motor, sensory, autonomic, or psychiatric symptoms. The aura occurs seconds to minutes before focal cognitive impairment or generalized seizures, and is more common.

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