



Epilepsy disease and treatment approaches

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Abstract

Epilepsy is a chronic disorder characterized by seizures resulting from disturbances of neural activity in the brain. As a result of sudden and uncontrolled discharges in the neurons in the brain, involuntary contractions, mood changes and changes in consciousness occur in the person with epilepsy. Because epilepsy affects the brain, it can disrupt many functions that the brain manages. The occurrence of abnormal functions in the balance of nerve cells in the brain, other than the normal course of the electrical current, may cause situations such as loss of consciousness and inability to control the body in the person with epilepsy. Conditions that can cause damage to the brain such as a difficult birth, brain traumas, infections in the brain, meningitis, tumors in the brain can cause epilepsy. In some cases, genetic factors may predispose to the disease. In this proceeding we are discussing epilepsy and some of the treatment approaches against it.

Introduction

Epilepsy can occur at any age and in any gender. This disease, which can occur during birth or later for different reasons, manifests itself in the form of sudden crises [1]. Disorders in neurons that affect the whole or a specific part of the brain can cause changes in seizure types, depending on which part of the brain it occurs. In some epileptic seizures, unconsciousness and uncontrolled contractions occur, while in some seizure types, the symptoms are vague, so patients may not be aware of the symptoms. Most seizures last between 30 seconds and 2 minutes. Seizures lasting longer than 5 minutes may require medical attention [2].

Epileptic seizures may differ according to the damaged area of the brain. Epilepsy crises can be examined in 3 categories.

1. Simple partial epileptic seizure
2. Complex partial epileptic seizure
3. Generalized epileptic seizure

Generalized epileptic seizures are the best known of these types of epileptic seizures, but not all epileptic seizures show visible symptoms like generalized seizures [3-4].

Simple partial epileptic seizure

In simple partial seizures, consciousness is open and can be examined under three subheadings. Seizures originating from the temporal lobe; sudden fear is manifested by feeling as if something happened before or as if something has not happened, smelling bad smells and tastes, and an unpleasant internal feeling are among the discomforts that patients go through [5].

In seizures originating from the frontal lobe, problems with movement are seen. In seizures originating from the parietal lobe, temporary drowsiness symptoms and feelings that are difficult to describe are observed [6-7].

Complex partial epileptic seizure

Consciousness gets impaired in some of the complex partial seizures. In complex partial seizures, chewing, licking, swallowing and looking confused may be seen. Sometimes the patient may tug on their clothes and walk around. When he or she wakes up minutes or even hours later, he or she may not remember anything [8].

Generalized epileptic seizure

Generalized seizures spread to the entire brain. It is the seizure known as the epileptic seizure among the people. The person first becomes rigid and falls to the ground. After this, contractions and relaxations occur in all body muscles. Violent movements during the seizure develop out of the person's control [9]. In addition to this, in some generalized seizures called absences or petit mal, the person may lose consciousness even though the body does not lose its shape [10].

Epilepsy disease symptom

- Sudden contractions in the body, uncontrollable shaking of the arms and legs
- Loss of consciousness and focusing on a fixed point
- Fear, anxiety, or déjà vu
- Inability to respond to sounds or speech for a short time [11]

Pre-seizure symptoms (Auras)

If the seizure starts in a small area of the brain, the person may experience some symptoms at the onset of the seizure. These symptoms are called "aura".

- Numbness
- Sudden fear
- Changes in vision or hearing
- Nausea or pressure in the stomach [12]

Results

In some patients, there may be situations that trigger epileptic seizures. For example, prolonged hunger, insomnia, extreme fatigue, discontinuation or change of medications, hormonal changes can cause seizures [13].

The frequency of seizures in epilepsy, how long they last, and at what age they start give important clues to the doctor. For this reason, your doctor will take your detailed medical history and perform a physical examination [14].

EEG is a device that measures the electrical activity of the brain; It helps to diagnose epilepsy and to determine from which part of the brain the uncontrolled electrical discharges start. MRI and Computed Tomography examinations, which show whether there is a structural problem in the brain that may cause seizures, are the methods used in epilepsy [15].

Treatment method

Most people with epilepsy can be treated with epilepsy drugs called anti-epileptics. Medications are intended to stop seizures [16]. Therefore, regular use of drugs is important. Although drug therapy is effective in the majority of patients, it may not provide the expected effect in some patients. In these patients, surgical treatments can be applied according to the underlying condition causing epilepsy.

There are two types of epilepsy surgical methods. The first is the removal of the epileptic focus itself (resective surgery). The second is the surgical method (functional surgery, palliative surgery) that aims to reduce the spread, frequency and severity of seizures by cutting the ways of seizure spread [17].

In some suitable patients, a treatment called vagus nerve stimulator can be applied. The battery placed under the chest stimulates the vagus nerve at certain intervals and can reduce these seizures. Significant improvement can be achieved in patients with this treatment method.

Another treatment option is the ketogenic diet. This diet, which is effective in some types of epilepsy, is based on the principle of eating very rich in fat. However, with the approval of the specialist physician, it should be applied under the control of a dietician [18].

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