Antiepileptics

Antiepileptics (or anticonvulsants) are a wide group of medications that are used in treatment of epilepsy, more specifically in prevention of epileptic seizures.

Principle

The exact mechanism of action is different for each epileptic, depending on the type of its active substance. Generally speaking, the antiepileptic drugs help to stabilize the membranes of nerve cells, enhance (or at least modify) the effect of a "buffering" neurotransmitter GABA (gamma-aminobutyric acid) in the brain and block effects of an “activating” neurotransmitter known as glutamate.

Note: The neurotransmitters are chemical substances normally present in our body that affect the transmission of neuroelectric signals among neurons.

Indications

Antiepileptic drugs have major importance in suppression of epileptic seizures. They are usually not prescribed after one attack of epileptic seizure, but rather after its repetition. In addition, certain anticonvulsants may be used in the treatment of pain (typically neuropathic pain in shingles) and in treatment of certain psychiatric disorders, particularly depression and bipolar disorder.

Used substances

There are many used substances. Usually, these compounds also belong into other groups of drugs depending on their effect (for example benzodiazepines). These substances include phenobarbital, primidone, phenytoin, carbamazepine, clonazepam, valproate, lamotrigine, gabapentin, levetiracetam, pregabalin and topiramate.

Disadvantages

Anticonvulsants may have many side-effects from banal to relatively serious. Their occurrence and type is largely dependent on the specific antiepileptic drug. Quite often, symptoms are reported such as fatigue, depression, nervousness and anxiety. Some people complain about mood swings, dizziness, headache, numbness, tingling sensations of the extremities, various visual disturbances (e.g. disorders of the visual field, double vision), local swelling and digestive problems (abdominal pain, bloating, constipation, diarrhea). Some antiepileptics such as phenytoin, are teratogenic, i.e. they damage fetuses in pregnant women.

When using lamotrigine and valproate, skin reactions were described. These reactions may have a serious course of Lyell's syndrome. Very serious and rare side effects include severe liver damage (with elevated liver tests and eventually even liver failure) and disruption of hematopoiesis (formation of red or white
blood cells).