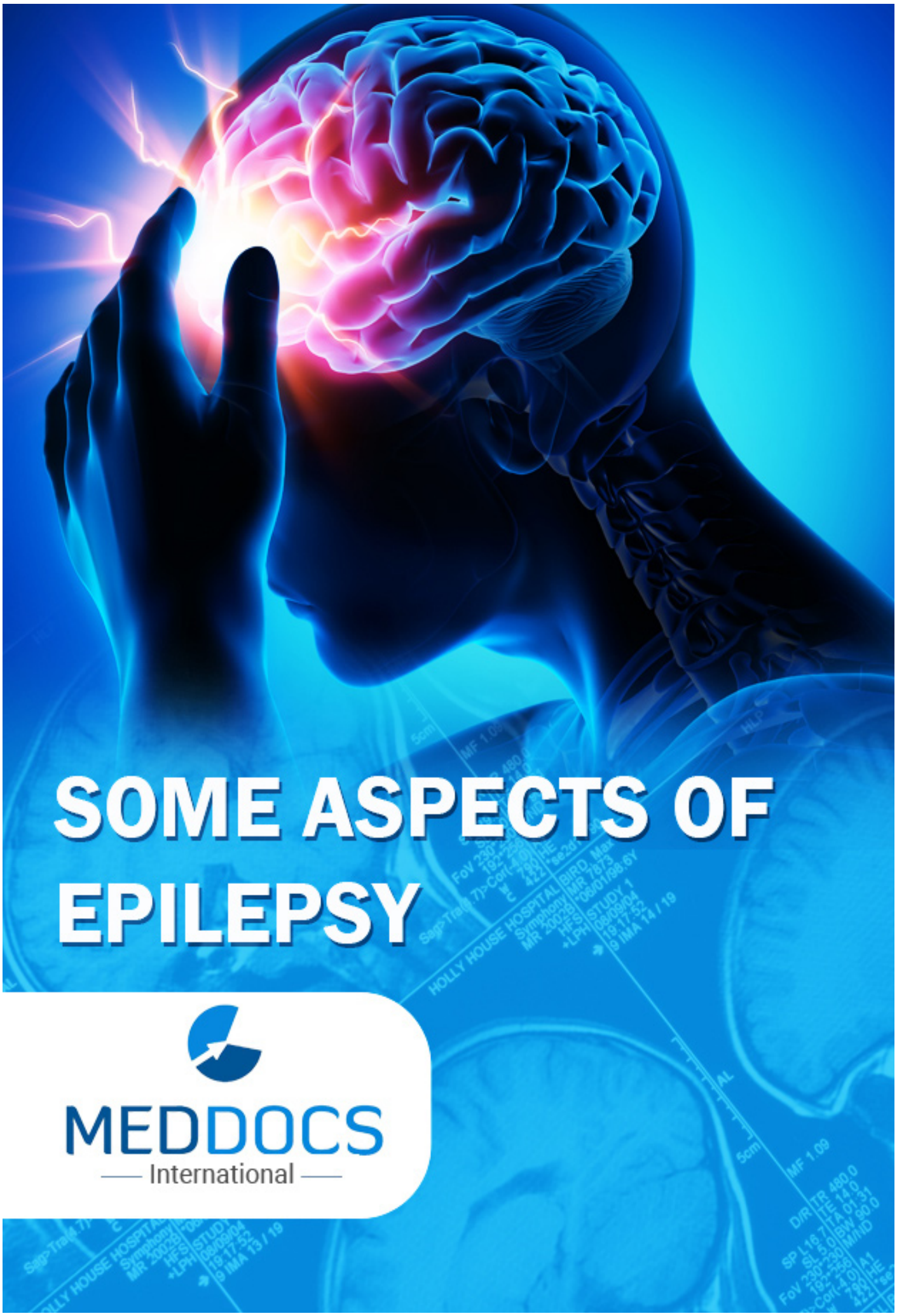

SOME ASPECTS OF EPILEPSY

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The Clinical Method in Epilepsy

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Published Online: Apr 25, 2018

eBook: Alzheimer's Disease & Treatment

Publisher: MedDocs Publishers LLC

Online edition: http://meddocsonline.org/

Introduction

The clinical method was founded by Hippocrates (460-376 BC), who was one of the first eminently clinical doctors of the School of Cos, in ancient Ionian Greece of Asia Minor. The Greeks were the first to use the clinical word, which derives from the Greek klinikos, which means bed; hence, the clinic is related to the medical art that prescribed rules for the healing of the sick at the head of the bed [1].

Hippocrates and the members of his School gave great importance to observation by his patient's doctor; they interrogated the sick person and their relatives, very carefully and acutely; they inspected him, proceeded to feel him and touch any part of his body and even examined the thorax directly if necessary; they visited it at different times of the day and made a record of what they were finding and doing [2].

At that time, the clinical method consisted of: formulation (the patient said his health complaints), information (the doctor interrogated and examined), hypothesis (the doctor gave his diagnosis) and in some cases a debatable and nebulous, checking, for means of treatment. Hippocrates himself said: "The observation, the anamnesis, the examination, the analysis, is therefore necessary, it is essential, all of which must be done with a strict regime of scrupulous examination, in order to strengthen your growing experience." Thus the method was maintained for more than 17 centuries.

In the second half of the 19th century, the century of the clinic, we witnessed the birth and development of the first complementary examinations. The era of the clinical laboratory began, which lasted for more than a century, where analyzes were made by doctors and technicians and aggravated the possibilities of diagnosis.

The clinical method would follow integrated by the five steps: Formulation; Information; Presumptive diagnostic hypotheses; Testing and finally, Verification or not of presumptive hypotheses. However, in recent decades, many of these steps have been overshadowed by the imaging embodied in the medical work and therefore, the clinical diagnosis is obviated, which is never replaced by the development of technology.

It is currently considered the scientific method of clinical science, which aims to study the health disease process. Any medical practice that is not based on the clinical method will be alien to clinical science and, in large part, responsible for "medical malpractice" [3]. For some, the clinical method is nothing more than the scientific method applied to work with patients.

When considering these considerations, we must emphasize that if in any specialty it is important the application of the clinical method is in Epilepsy, which is considered by many, the second neurological disease and one of the most difficult of the medical specialties, for the complexity of the nervous system, through the relationship with neuroanatomy, neurophysiology and neuropathology [4].

In this way, the second neurological disease constitutes a challenge for the physician and is one of the aspects in which the clinical method must be met, since the symptomatology of the patient predominates, without underestimating the support of the complementary investigations.

Epilepsy is a global public health problem that requires an adequate response. It is a clinical condition with self-remission in up to 50% of cases. According to reports from the World Health Organization (WHO), more than 50 million people suffer from this disease, the majority living in developing countries, where the quality of life is worse and the incidence of infections of the Central Nervous System (CNS) is higher. Many more people, however, - an estimated 200,000,000 - are also affected by this disorder, as they are the family members and friends who live with these patients. It can be asserted that epilepsy affects 1-2% of the population [5].

Up to 70% of people with this disease could lead a normal life if treated properly, but for the vast majority of patients this is not the case.

There are two million new cases that occur in the world each year. The annual incidence of unprovoked epileptic seizures is 33-198 per 100,000 population per year, and the incidence of epilepsy is 23 to 190 per 100,000 population per year.

The global incidence of epilepsy in the European and North American ranges is from 24 to 53 per 100 000 people/year, respectively, which coincides with the Hauser reports. The incidence in children is higher and even more variable, from 25 to 840 per 100,000 per year, most of the differences are explained by the diverse populations at risk and by the design of the study [6].

The overall prevalence of epilepsy varies from 2.7 to 41 per 1000 inhabitants, although in most reports the rate of active epilepsy is in the range of 4-8 per 1000 inhabitants [7,8].

There are studies in the world population that show that the prevalence of epilepsy is between 1.5 and 30 cases per thousand inhabitants.

One of the most difficult dilemmas that the doctor faces, in medical practice, is trying to discern before a patient, the presence or not of this disease.

The International League Against Epilepsy (ILAE) and the World Health Organization (WHO) since 1973 defined Epilepsy as a chronic and recurrent condition of paroxysmal crises (epileptic seizures), triggered by abnormal electrical discharges that have varied clinical manifestations of multifactorial origin and that are associated with paraclinical disorders (electroencephalographic abnormalities) that occur in an unprovoked manner [9].

Thirty years later, the conceptual definition of crisis and epilepsy according to the report of the working group of the International League Against Epilepsy (ILAE) of 2005, specifies that it is called «epileptic crisis» to the transient appearance of signs and/or symptoms caused by an excessive or simultaneous abnormal neuronal activity in the brain and that epilepsy is a brain disorder characterized by a continuous predisposition to the appearance of epileptic seizures and the neurobiological, cognitive, psychological and social consequences of this disease. The definition of epilepsy requires the presence of at least one epileptic seizure.

Recently has been published by a group of experts from the ILAE, with the consensus of the epileptologists of the different chapters, the operational (practical) clinical definition of epilepsy:

It is considered by consensus that epilepsy is a brain disease that is defined by any of the following circumstances:

1. At least two unprovoked (or reflex) crises with> 24 hours of separation.

2. An unprovoked (or reflected) crisis and a probability of presenting new crises during the next 10 years similar to the general risk of recurrence (at least 60%) after the appearance of two unprovoked crises.

3. Diagnosis of an epilepsy syndrome [10].

According to these criteria, a patient who has suffered a crisis presents epilepsy and whose brain, for whatever reason, shows a pathological and continuous tendency to suffer recurrent seizures. This trend can be imagined as a pathological reduction of the crisis threshold compared to people who do not have the disease.

If we take into account the definitions described, the differentiation of epileptic crises and pseudo-crises is of significant importance because:

• Recognition may fail and therefore treatment of the true pathology can not be established.

• The diagnostic error of epilepsy can lead to: consequent social stigma.

• and the unnecessary risk of using antiepileptic drugs can lead to various unnecessary adverse reactions.

In the positive diagnosis, the following elements are taken into account:

• History of the crisis

• General and neurological physical examination

• complementary research

Interrogation with an adequate chronopathogram of the crises referred by the patient and the family member is important, and is the greatest bulwark available to the physician to discern between an epileptic seizure and one of another type. In addition to the semiological characteristics of the seizures, which include the perceptual symptoms at the beginning and, if possible, during the episodes, the possibility of behavioral changes and associated diseases should be included in the questioning; such as the loss of muscle tone, alterations in the state of consciousness and breathing [5].

The appropriate questioning depends on what can be defined, which neurological and non-neurological alterations can be confused with epilepsy.

The correct diagnosis is important, since these do not require antiepileptic treatment, and they may also be due to another etiology that, if not identified, does not receive adequate therapy. It becomes more difficult to define the type of crisis, because these events can also be associated with epileptic seizures and coincide in the same patient both etiologies and be a cause attributable to the failure in antiepileptic treatment.

General and neurological physical examination.

In the neurological examination, the time interval between the last epileptic seizure should be taken into account, specifying elements such as Todd's hemiparesis, transient aphasic symptoms, which should be separated from the postictal confusion. The main objective is to determine if the symptoms or signs are permanent. In the intercritical period, the examination may be normal, in most patients.

The general examination should include the examination of the skin, vision and eyes, as well as the visceral (cardiovascular: arrhythmias) examination, in addition to a brief Cognitive, Social Assessment and behavioral functioning [5].

Complementary research

Laboratory procedures [blood and urine, Electrocardiogram (ECG), Electroencephalogram (EEG), imaging and others such as metabolic studies or toxicological investigations, serum monitoring of Antiepileptic Drugs (DAE), Cerebrospinal Fluid (CSF) analysis and molecular genetic tests] should be conveniently prioritized and adapted to the patient's clinic.

The Electroencephalogram (EEG), is the most significant research in the diagnosis of epilepsies, and is often misinterpreted and indicated. It is an instrument of value for the epileptologist, in the topography of the different epileptic syndromes and has precise indication in the different affections in which grafoelements can be presented, of great semiological and prognostic value. Sleep studies can be carried out, with deprivation and induction, napping and with video-EEG monitoring, the latter being very useful in the accuracy of the semiology of the crises and the diagnostic disquisition of non-epileptic cerebral crises.

Imaging is another invaluable diagnostic procedure, which provides in vivo visualization of the structural causes of epilepsy such as hippocampal sclerosis, development of malformations and brain tumors, as well as other brain diseases [Computed Tomography and Magnetic Resonance Imaging (MRI) , MRI with spectroscopy and functional, Positron emission tomography, Single photon emission tomography].

Genetic testing has become an available means for an increasing number of inherited disorders associated with epileptic seizures. Its use in the indicated cases, are of inestimable diagnostic value and therefore prognosis.

Differential diagnosis.

In the differential diagnosis of transient events, it is not only necessary to specify that it is epileptic seizures, but also to distinguish between epileptic seizures provoked and a chronic epileptic condition [5].

The misdiagnosis in epilepsy is a colossal medical problem, considering its dimensions and consequences. Common disorders and even normal phenomena can mimic epileptic seizures and, conversely, certain types of epileptic seizures can mimic the symptoms of other diseases.

An erroneous diagnosis has serious repercussions. Patients with non-epileptic disorders incorrectly diagnosed as carriers of epileptic seizures are susceptible to being treated with Anti-Epileptic Drugs (AEDs). In the same way, patients with epileptic seizures mistakenly diagnosed as psychogenic crises [11], migraine, encephalitis or other pathologies, are likely to be managed with inadequate treatments and also deprived of specific therapies.

The differential diagnosis includes all causes of episodic deterioration of consciousness, aberrations of mental function, falls, sensory/motor phenomena and generalized convulsive movements, which are common presentation symptoms of epileptic seizures.

Febrile seizures in infants and young children and seizures in alcoholics due to abstinence are common examples of seizures that do not require a diagnosis of epilepsy. If the crises are recurrent, it is necessary to look for an underlying treatable cause.

An inadequate history is the most frequent cause of misdiagnosis.

In the thinking of the physician who interrogates the patient, the differential diagnosis that may include the following conditions must prevail: simple crisis, syncope, drop attacks, cerebrovascular disease, migraine, cardiac arrhythmia, sleep disorders, encephalopathy/dementia, acute elevation of the Intracranial pressure, Vestibular disorders, Toxic and metabolic disorders, Involuntary movements, Pdiatric disorders, Sensory disorders, Visual and auditory symptoms, Autonomic disorders, Neonatal disorders, Multiple sclerosis tonic crisis, Parasitism and Digestive Disorders. All these causes can be included in the diagnosis of recurrent cerebral crises. Nevertheless, we must bear in mind that epileptic seizures can, in turn, cause syncopal attacks: anoxic epileptic seizures and epileptic seizures imitating syncopes [12].

All of the above shows that the differential diagnosis of brain crisis is very diverse and the importance of questioning must be kept in mind, in order to try to define the nature of the event we are analyzing.

It is necessary neither to consider an epileptic seizure as a paroxysmal non-epileptic event, nor this as a seizure event, but for this, the clinical method must be taken into account as in no pathology.

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