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Review Article

CIENT PERIODIQUE

Some Aspects to Consider in Epilepsy Mortality

Juan Bender del Busto, E.[1*] & Liuba Hernández Toledo[2]

[1]*Philosopher Doctor, Second Degree Specialist in Neurology, Full Professor and Researcher, International Center of Neurological Restoration (CIREN), Havana, Cuba*

[2]*Bachelor's Degree in Nursing, International Center of Neurological Restoration (CIREN), Havana, Cuba*

[*]**Correspondence to:** Dr. Juan Bender del Busto, E., Philosopher Doctor, Second Degree Specialist in Neurology, Full Professor and Researcher, International Center of Neurological Restoration (CIREN), Havana, Cuba.

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Abstract

Introduction

Epilepsy represents a global health problem and is considered as old as humanity itself and one of the most frequent disorders of the Central Nervous System. Patients suffering from this disease have a higher mortality than the population, so it is necessary for health professionals to know the possible causes of death, which is the main objective of this article.

Objective

To identify early factors that may be related to mortality in the patient suffering from epilepsy, in order to direct actions that can prevent it.

Material and Methods

A review of the national and international literature was made, selecting the appointments of the last 10 years related to mortality in the patient with epilepsy.

Results

The epidemiological aspects related to mortality in the patient suffering from epilepsy are described, as well as the possible etiologies described so far and preventive actions in this regard.

Conclusions

Mortality in epilepsy is frequent and a knowledge of the medical professional that takes care of these patients is needed, in order to carry out preventive actions to minimize the devastating effects of this disease.

Introduction

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 [1].

According to reports from the World Health Organization (WHO), an estimated 50 to 69 million people suffer from this disease, most of them living in developing countries [2].

It can be asserted that epilepsy affects 1-2% of the population [3].

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

It is significant that around 45 million (65%) of people suffering from epilepsy live in rural areas of developing countries and of these, 17 million reside in urban areas. However, seven million patients (10%) live in countries considered developed. All this, relates the high incidence, prevalence and mortality of epilepsy in the lower socioeconomic classes.

Prevalence has been estimated at approximately 0.5-1.0% of the general population [4-7].

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.

The overall prevalence of active epilepsy (a person with epilepsy who has had at least one attack of epilepsy in the previous 5 years, regardless of antiepileptic treatment), ranges from 2.7 to 41 per 1000 inhabitants, although in most the reports the rate of active epilepsy is in the variation of 4-8 per 1000 inhabitants [6].

This disease, in turn, can be a cause of death, a danger that is not taken into account and could be avoidable. It can reduce the life expectancy in 10 years, in patients with symptomatic epilepsy and in two, those who suffer from idiopathic epilepsy [8].

International statistics show annual mortality rates of 2.1 per 100,000 populations per year, varying from 1 to 8 in different countries [5].

The epidemiology of epilepsy, and in particular its mortality, requires in-depth investigation using uniform definitions that do not include the use of antiepileptic drugs. The causes of death, therefore, must be identified and actions must be taken, including treatment and education, to avoid preventable deaths [1,9].

Objectives

Taking into account that mortality in the epileptic patient is higher than the rest of the population, it is necessary to identify early on the factors that may be related to it, in order to direct actions that can avoid it, for which the professionals manage these patients, they should know the subject.

Material and Methods

A literature review was made in several online bibliographic databases, including PubMed, Cochrane Library, EBSCO, Clinical Key, Springer, Medscape and Scielo, among others, related to mortality in patients with epilepsy. To review the literature, the key words, mortality and epilepsy were used.

Included in the search of the information were the original prospective or retrospective research reports and review works, as well as articles published in the Spanish and English languages. The period reviewed was 16 years and extended from 2001 to 2017.

Results

Based on a meta-analysis of research studies of mortality over the last 100 years, the standardized mortality ratio (SMR) for epilepsy, which is the relationship between deaths observed in patients with epilepsy and the expected deaths in a reference population with a similar age distribution was found in a range of 1.3-9.3. The SMR for epilepsy varies from 1.6 to 5.3 in children and adults, and is inversely correlated with age. The higher legal management requirements can be explained in part by the inclusion of provoked epileptic seizures [6].

It is extremely difficult to analyze the mortality rate of epilepsy in the general population of a developing country, because studies of the incidence of epilepsy are difficult to perform. Death certificates are unreliable and often are not available, and therefore, the cause of death is difficult to determine. This document does not reflect the diagnosis of epilepsy in most cases, which is why it is not useful for mortality studies [7].

According to the current data, it seems that the mortality rate of epilepsy in developing countries is generally higher than that registered in developed countries. These data can´t be generalized, however, they have been obtained from selected populations [2].

We, in a study carried out over a decade, found that the most frequent complications and direct causes of death were bronchopneumonia, epileptic status and intracranial hypertension [9,10].

Much of the variability of epidemiological indices arises from differences in the methodology of study, definitions and risk factors [3].

Premature mortality is a problem in low-income countries, where the treatment gap, brain infections, and traumatic brain injuries are more common than in high-income countries. The lack of compliance with the indicated antiepileptic drugs has been associated with an increased risk of death or an increase in admissions in the hospital [3].

Death associated with epilepsy can be classified into three categories:

• The one caused directly by epileptic seizures. It is the most frequent and occurs due to respiratory arrest or cardiac arrhythmias, being very frequent accidents (drowning, falls from a height, traffic accidents and domestic) [11,12].

• Associated indirectly or in part with epilepsy, such as suicide, which is associated with 5 percent of all deaths due to epilepsy. It is necessary to take into account that psychiatric comorbidity, and especially depression, plays an important role in the causes of premature mortality in the patient with epilepsy [13,14].

• The one that obeys other factors, for example, the causes of the disease or its complications [15].

Several aspects, however, of the patient with epilepsy may be related to mortality and should be mentioned [3]:

• Seizures by themselves can be a cause of death, either directly as in the prolonged status epilepticus or indirectly due to the increased risk of death by accident, especially drowning [16].

• Some of the risk factors for epilepsy (brain tumors, cerebrovascular disease and traumatic brain injury) are associated with mortality increased if epilepsy is present. Post-stroke epilepsy is associated with high mortality in young patients [15].

• An increase in mortality has been reported in patients with intellectual disabilities [4].

• There is an increased risk of unexplained sudden death in epilepsy (SUDEP), with an estimated incidence of 1.8 per 1000 patients / year. This is the biggest cause of premature mortality in patients with epilepsy and even more if it is difficult to control. It is defined as a sudden, inexplicable, non-traumatic death, neither in relation to drowning, in a patient with epilepsy, with or without a witness, in which the postmortem examination does not reveal an anatomical or toxicological cause. Several mechanisms have been invoked, but until now, there is no satisfactory explanation. The most important risk factor is the history of a generalized clonic tonic crisis. The risk has been estimated 24 times higher in young people than in people of the same age.

It is estimated that it is responsible for approximately 7,000 deaths each year in the United States and Europe and is considered the second neurological cause of the total potential losses after stroke [8,17-20].

• The long-term use of antiepileptic drugs (AEDs) has been linked to an increase in the incidence of malignant and osteoporosis, potentially affecting the long-term mortality rates in people with epilepsy, especially in younger adults (ages 15 to 49 years).

Pharmacological resistance.

Most authors agree that between 70-80% of all epileptics are controlled with medical treatment and 20-30% are chronic refractory, considered as chronic medically uncontrollable epilepsy. In 5-10% these patients are candidates for surgery [1].

Drug resistance is an important problem for the patient, with devastating consequences, including persistence of seizures and morbidity derived from epilepsy, medication, social isolation, unemployment and decreased quality of life.

Chronic intractable epilepsy, in turn, by antiepileptic medication carries a poor prognosis, with a mortality rate of 1/200 inhabitants / year as a direct consequence of the crisis.

Some authors point out that mortality rates in refractory cases to medical treatment for all causes are lower in children 1-14 years of age (4.1 deaths / 1000 inhabitants / year) and increases with age (32.1 deaths per 1000 inhabitants / years between 55-72 years) [21].

In patients with refractory epilepsy, it is also described an increase in the risk of sudden death, as well as an important health cost that is derived from the use of new and multiple medications and a greater need for health care.

Conclusions

Mortality in the patient suffering from epilepsy is frequent and a deep knowledge of the medical professional who attends them is needed, in order to take preventive actions to minimize the devastating effects of this disease, including death.

For all these reasons, the integral management of the patient with this disease and the need to take into account the possible prevention measures, such as the adequate control of the crisis, especially the generalized clonic tonic, avoiding the possibility of drowning, epileptic status and accidents. Changes in lifestyles, the appropriate use of antiepileptic medication and the appropriate use of surgery to patients with criteria should be taken into account. Psychiatric disorders should also be adequately managed, including possible suicides, depression, psychosis and impulsivity [20].

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