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"Gluten Ataxia and their Relationships with Celiac Disease and Non-Celiac Gluten Sensitivity"

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Definition:

The word "ataxia" means etymologically, incoordination or clumsiness. It is a symptom, not a diagnosis in itself, or a clinical entity. The diseases that present it, have as a common denominator, the permanent presence of a progressive alteration of the balance, more evident when standing and walking, together with a lack of coordination of the extremities with movement, all accompanied by disorders of the language, consisting of a difficulty in pronouncing well, having to work much harder than usual, to achieve an understanding, especially with difficult words, or in prolonged conversations. The underlying lesion is located mainly at the level of the cerebellum, which is the part of the brain responsible for coordinating movements and the center of postural balance, as well as the language.His clinic is very characteristic and is recognized by the presence of frequent disturbances of the balance movements, very evident during the walking, which is very unstable (it is compared graphically to the way used by the people very drunk or simply "drunked"), along with several language disorders, consisting of difficulty in pronouncing some words and phrases, known as "dysarthria". There may also be a disorder of hands mobility, with difficulty making fine movements, which along with a generalized decrease in strength, is accompanied by increased physical exhaustion, after doing small efforts.

Gluten Ataxia (GA):

This entity was originally defined as "sporadic idiopathic ataxia", which was characterized by the presence in serum, of positive markers of gluten sensitization, mainly anti-gliadin antibodies (AGA) [1]. It is a disease of autoimmune nature, as occurs in celiac disease (CD), which appears as a consequence of the presence of lesions of the cerebellum, which is the origin of ataxia.

Epidemiology:

In a series of 800 patients with progressive ataxia, studied by Dr. Hadjivassiliou et al. at the University of Sheffield in England, over a period of 15 years, they found that out of 635 cases analyzed, a total of 148 representing 23% of the population studied, all of them had positive anti-gliadin antibodies in blood (related to gluten intolerance) and abbreviated as gluten ataxia (GA).
Subsequent to these findings, similar cases have been found in several series of studies carried out in patients with ataxia.

The common denominator of all these studies is that the prevalence of AGA was always significantly higher in ataxic patients, than in the general population of healthy controls [2-5].

Pathogenesis:

There are some data that suggest the existence of a cross-reactivity between antigens located at the level of Purkinje cells of the cerebellum and various gluten proteins. [6-8]. The presence of anti-transglutaminase antibodies, also called TGT (which, like AGA, are also related to gluten intolerance) has been shown to be located around the blood vessels of the brain, in patients with gluten ataxia. Its distribution is more important and marked, at the level of the cerebellum, protuberance and spinal cord. Recently, the presence of a subtype of them, has been described, specifically the so-called TGt-6, which is the one most often present in patients with gluten ataxia [9-11].

GA and Non-Celiac Gluten Sensitivity (NCGS):

In recent years, more cases of patients with gluten ataxia have been described in patients who do not strictly comply with celiac disease criteria and are better classified as non-celiac gluten sensitivity (NCGS). This clinical entity was first described in 1980, but was not recognized as an individual characteriozed disease until 2010, and was then classified within the spectrum of gluten-related disorders, which also include the celiac disease (CD) and the wheat allergy (WA). The NCGS is the most frequent of them. Its prevalence is high, since it is estimated that it can affect up to 13% of the general population [12-14].

The clinical presentations of the NCGS are very broad and practically identical to those of related to celiac disease (CD). Its diagnosis is made by prior exclusion of a CD, because the serological and histological markers against gluten are usually negative, showing, like celiac patients, a positive response to the withdrawal of the gluten from the diet (GFD) [15,16] Extra-intestinal symptoms are usually the only manifestations of NCGS, with the skin, musculoskeletal and nervous system, usually being the most affected. All symptoms improve with a GFD in similar way, to what occurs in celiac patients [17].

Our group conducted a comparative clinical study that included 31 patients with gluten ataxia, comparing them with 48 celiac patients and 37 patients with SGNC, comparing among them the frequency of celiac serological markers (AGA and transglutaminase antibodies),

genetic susceptibility markers (HLA- DQ2 and DQ8) and duodenal biopsies, finding greater similarity of patients with GA in NCGS patients, than with those of CD [18]. Cases of GA with involvement of several siblings within the same family have also been described, whose inheritance is probably determined by the presence of one associated CD [19].The early recognition of a CD or NCGS in patients with GA, facilitates the quicker onset of a gluten-free diet and by consequence the pront recovery of the neurological symptoms, until its complete dissapearance in a great proportion of cases.

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