

Title:

Neurological manifestations of celiac disease. Importance of searching and understanding the spectrum. Potential novel markers for the diagnosis

Authors:

Andrés Castañeda Agredo, Juan Carlos Porres Cubero

DOI: 10.17235/reed.2023.9747/2023

Link: [PubMed \(Epub ahead of print\)](#)

Please cite this article as:

Castañeda Agredo Andrés, Porres Cubero Juan Carlos. Neurological manifestations of celiac disease. Importance of searching and understanding the spectrum. Potential novel markers for the diagnosis. Rev Esp Enferm Dig 2023. doi: 10.17235/reed.2023.9747/2023.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Neurological manifestations of celiac disease. Importance of searching and understanding the spectrum. Potential novel markers for the diagnosis

Castañeda Agredo Andrés¹, Porres Cubero Juan Carlos¹

Department of Gastroenterology and Hepatology¹. Hospital Universitario Fundación Jiménez Díaz. Madrid, Spain

Correspondence: Andrés Castañeda. E-mail: andres.castaneda@quironsalud.es

Keywords: Celiac. Neurology. Ataxia.

Dear Editor,

The diagnosis of celiac disease (CeD) is usually made through tests that together with symptomatology—which may be absent on occasion—lead practitioners to establish the presence of this condition. Manifestations are usually gastrointestinal in nature but, given the multisystemic character of CeD, the whole range of disease expressions must be understood and recognized, as is the case with neurological manifestations, present in up to 40% of patients (3,4), occasionally in the absence of enteral disease (4).

The spectrum of neurological manifestations in CeD includes gluten ataxia, peripheral neuropathy, gluten encephalopathy and psychiatric disorders, with the first manifestation cited being most prevalent (5).

Gluten ataxia is defined as an idiopathic sporadic ataxia associated with positive serology for CeD with or without enteropathy (2). This type of patients is characterized by gait impairment, which may be initially mild and hardly noticeable by the patient or their physician. In turn, bearing in mind the different conditions that may develop within this spectrum, the presence of repetitive abnormal movements (5), nistagmus, paresthesia, or sensitivity changes should be actively sought during physical examination.

In order to diagnose neurological disease in CeD it is necessary that gastroenterologists seeing celiac patients in their practices carry out a sound neurological examination; however, since many of these patients have no gastrointestinal complaints, their diagnosis

remains unknown and they will only visit their general practitioners, who must suspect CeD from mild neurological symptoms and then order appropriate antibody testing.

No specific antibodies are presently available to establish neurological involvement in CeD with or without enteropathy. Antibodies against serum transglutaminase 6 have been put forth as a potential marker for diagnosing gluten ataxia (1) because of their high central levels, although further studies are needed to definitively confirm this.

To conclude, in the presence of neurological manifestations associated with CeD in patients not diagnosed with CeD, CeD antibody testing should be ordered after other, more common conditions have been ruled out. In contrast, in patients already diagnosed with CeD, presenting with neurological complaints, who had other, more common conditions ruled out, the diagnosis is clinically maintained without immunological confirmation until validation of specific antibodies takes place.

References

1. Hadjivassiliou M, Aeschlimann P, Strigun A, Sanders DS, Woodroffe N, Aeschlimann D. Autoantibodies in gluten ataxia recognize a novel neuronal transglutaminase. *Ann Neurol*. 2008 Sep;64(3):332-43
2. Al-toma A, Volta U. European Society for the Study of Coeliac Disease (ESsCD) guideline for coeliac disease and other gluten-related disorders. *United European Gastroenterology journal* 2019, Vol. 7 (5) 583-613
3. Mearns E, Taylor A. Neurological Manifestations of neuropathy and Ataxia in Celiac disease: A Systematic Review. *Nutrients* 2019 feb 12; 11(2):380
4. Hadjivassiliou M, Croall L. Neurologic Deficits in patients with newly diagnosed celiac disease are frequent and linked with autoimmunity to transglutaminase 6. *Clinical gastroenterology and Hepatology* 2019; 17:2678-2686
5. González S, Rodrigo L. Ataxia mioclónica progresiva asociada con anticuerpos frente a las células de Purkinje en paciente con enfermedad celiaca. *Rev. Esp. enferm. dig.* 2005; 97 (12): 918-921