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Review Article

Celiac Disease or Gluten Sensitivity? A Mini Update Review

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Abstract

Celiac disease is described when some people have with foods that contain gluten. Gluten is a type of protein. It's found in the grains wheat, barley and rye. It has antigenic properties and usually triggers an immune response. On the other hand, gluten sensitivity or intolerance is a similar condition that causes a person to react to gluten found in the above food items described. Even though the clinical symptoms are similar to both conditions, the pathology, diagnosis and treatment is different, thus it is very important to get the correct diagnosis. The purpose of this mini review is to compare the main aspects of these two conditions.

Keywords: gluten sensitivity, non celiac gluten sensitivity, celiac disease, gluten free diet

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1. Introduction

The human gastrointestinal track is a very sophisticated organ that its purpose is to tolerate any antigens are coming from the external food we eat. Celiac Disease (CD) has been known for more that 2,500 years and after the half of the 20th century was linked to gluten intake. Gluten is a protein that is found in wheat, barley and rye (UC, Disease Center, 2007).

The definition of CD includes a systemic autoimmune response by the ingestion of gluten. People that are genetically susceptible to this response basically present many clinical symptoms, genetic problems with specific genes (HLA DQ2 and DQ8), increase of antigliadins (antibodies) and enteropathy [7].

In the last 20 years, the prevalence of CD has been double to almost 1% of the population [1, 6]. An explanation of this increase has been attributed to environmental factors, infections and increase consumption of wheat [15]. Predisposing factors are: age of gluten introduction, method of preparation, amount of gluten, infections in the begging of life as well as the intestinal microbiota [9]. A necessary condition to develop the disease is the presence of HLA DQ2 or DQ8 haplotype which represents about the 40% of the genetic risk [6].

Gluten is partially digested and converted to peptides rich in gliadin that when they enter the gastrointestinal cells they cause a specific immune response in the intestinal mucosa that it can lead to flattening of villi [11]. This inflammation usually spreads out to other organs such as skin and joints causing other problems not related to digestive symptoms [6].

The clinical symptoms include almost 90% in the digestive track such as diarrhea, bloating, pain, vomiting, weight loss and malnutrition [4]. Other serious symptoms include anemia, fatique, osteoporosis, headache, panic attacks, epilepsy, thyroiditis Hashimoto, type 1 Diabetes Mellitus and GI cancers [10].

The diagnosis of CD includes the presence of anti-tTG and EMA antibodies as well as the deaminated gliadin peptide antibodies (DGPs). Confirmation always requires a biopsy of the duodenum to examine and verify for any atrophy of the villi [5].

The treatment is a strict exclusion of gluten for the rest of the patient's life. A lifelong diet completely free of gluten can be very costly and challenging. Many patients' intestines don't heal completely, most often due to a failure to adhere to the gluten-free diet strictly enough.

2. Gluten Sensitivity

Non-celiac gluten sensitivity (NCGS) characterized by similar symptoms found in patients with CD. The major trigger is gluten and its pathology is still controversial, since there are a series of digestive and non-digestive symptoms (Tonnuti and Bizzaro, 2014). There are no clear number as far as concern its prevalence; however, in general population in USA, a 6% was found among 6,000 patients [14].

Except gluten other proteins such as alpha-amylase/trypsin inhibitors, and some carbohydrates (FODMAPs) may also contribute to the onset of NCGS [8]. Patients with NCGS would not activate the acquired immunity as it happens in patients with CD but innate immunity can be activated [13].

The clinical picture in NCGS patients include abdominal pain, diarrhea, fatigue, eczema, anemia, joint pain and many others and are similar to those seen in CD [3].

Differentiation with only clinical symptoms cannot be made, thus the diagnosis is made only in the absence of immune allergy response, and negative biopsy. In addition to that a gluten free diet for 3 weeks may be necessary for the resolution of the symptoms [1].

The treatment for NCGS include a gluten free diet but it does not require a strict adherence as it seen with CD patients, because there not long-term complications at this point.

3. Conclusions

Celiac Disease and gluten sensitivity share a lot of common symptoms. GD triggers the immune system while on NCGS the immune system is not activated. High levels of antibodies and positive biopsy results are common in CD and not in NCGS. Finally, both situations require a gluten free diet, CD patients need to follow that strictly for their rest of their lives while NCGS patients do not require to do that.

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