

The topics related to the role of gluten triggering inflammatory bowel disease (IBD), including ulcerative colitis and Crohn's disease, as well as the role of a gluten-free diet in the therapy and management of IBD are still quite controversial. In this brief review, we will discuss some recent key publications related to this issue.

Prevalence of celiac disease among newly diagnosed patients with IBD

An observational, retrospective study was performed in patients with newly diagnosed IBD who were screened for celiac disease by anti-tissue transglutaminase antibodies (anti-tTG) measurements and an endoscopic duodenal biopsy. No patients had received corticosteroids, immunosuppressants, or biologic drugs within the three months prior to gastroscopy. Celiac disease was diagnosed in patients positive for anti-tTG, compatible duodenal biopsy findings, and a good response to a gluten-free diet.

A total of 163 patients were screened for celiac disease. Of these, six (3.7 percent) were positive for anti-tTG and four were diagnosed with celiac disease (three had ulcerative colitis, one had Crohn's disease). All patients with both celiac disease and IBD had normal IgA levels, positive anti-tTG, and celiac disease genetic markers.

The conclusion of the study indicates the prevalence of celiac disease in the studied cohort of patients with IBD was higher than those reported in the literature for other series of patients with IBD. Another conclusion was that the combination of anti-tTG testing and celiac disease genetics may be useful to identify celiac disease in patients with IBD.

Reference:

"The association between de novo inflammatory bowel disease and celiac disease." Revista Espanola de Enfermedades Digestivas, 2020 Jan;112(1):7-11. Manceñido Marcos, N., Pajares Villarroya, R., et al.

The benefits of gluten-free or low-gluten-containing diets in the therapy of patients with IBD

This review examines the clinical associations of celiac disease, non-celiac gluten sensitivity (NCGS), and IBD with a focus on available data of the therapeutic efficacy of a glutenfree diet or low-gluten-containing diet in the therapy of IBD.

There is a strong association between celiac disease and microscopic colitis, but the prevalence of celiac disease among IBD patients is similar to that of the general population.





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Interestingly, in cross-sectional studies, nearly one-third of IBD patients report a diagnosis of non-celiac gluten sensitivity, and many follow a gluten-free diet. Although animal studies have shown that gluten ingestion may promote intestinal inflammation and increase intestinal permeability, there have been no prospective studies evaluating the role of a gluten-free diet in the induction and maintenance of Crohn's disease and ulcerative colitis.

Several cross-sectional reports suggest that a gluten-free diet may improve symptoms in IBD patients, but due to a lack of high-quality prospective clinical studies, current data do not support the universal use of a gluten-free diet in IBD.

Reference:

"Gluten-Free Diet in IBD: Time for a Recommendation?" Molecular Nutritrion & Food Research, 2020 Jun 19; e1901274. Weaver, K., Herfarth, H.

The role of wheat gluten foods in the development and progression of experimental colitis in mice

To analyze the role of a particular dietary component in the induction of human disease, we often utilize animal models. A group of researchers analyzed the role of wheat gluten foods in the development and progression of experimental colitis in mice.

Few studies address the role of diet with gluten in the development of colitis. Therefore, to investigate the effects of a wheat gluten-containing diet on the evolution of sodium dextran sulphate (DSS)-induced colitis, mice were fed a standard diet without wheat gluten (colitis group) or with wheat gluten (colitis + gluten) for 15 days and received a DSS (anticoagulant) solution instead of water during the last 7 days.

Compared with the colitis group, colitis + gluten mice presented a worse clinical score, a larger extension of colonic injury area, and increased mucosal inflammation. Both intestinal permeability and bacterial translocation were increased, propitiating bacteria migration for peripheral organs.

The mechanism by which diet with gluten exacerbates colitis appears to be related to changes in protein production and organization of adhesion junctions (desmosomes) between cells. The protein α -E-catenin was especially reduced in mice fed gluten, which compromised the localization of E-cadherin and β -catenin proteins, weakening the structure of desmosomes. The epithelial damage caused by gluten included shortening of microvilli, a high number of digestive vacuoles, and changes in the endosome/lysosome system.

In conclusion, the results of the study showed that a wheatgluten-diet in mice exacerbates mucosal damage caused by colitis, reduces intestinal barrier function, and increases bacterial translocation similar to 'leaky gut' in humans.

Reference:

"Wheat gluten intake increases the severity of experimental colitis and bacterial translocation by weakening of the proteins of the junctional **complex.**" The British Journal of Nutrition, 2019 Feb; 121(4):361-373. Menta, P., Andrade, M., Leocádio, P., et al.

Prevalence of gluten sensitivity and factors associated with gluten sensitivity in Scandinavian patients with IBD

Adult IBD patients at a tertiary-care medical center completed a survey of their demographics, medical history, family history, social history, and symptoms. Data on IBD characteristics were abstracted from the medical records.

Out of 102 IBD patients (55 Crohn's disease, 46 ulcerative colitis and 3 IBD-unclassified), gluten sensitivity was reported in 23.6 percent of Crohn's disease patients and 27.3 percent of ulcerative colitis patients. Common symptoms included fatigue, abdominal pain, diarrhea, bloating and hematochezia (blood in stool). There was no difference in these symptoms when comparing patients with and without gluten sensitivity.

When evaluating IBD-related factors, gluten sensitivity was associated with having had a recent flare, stenotic disease in Crohn's disease, and dermatologic manifestations.

The study concluded that gluten sensitivity was common in IBD and associated with having had a recent flare. Gluten sensitivity may be transient for some patients, prompting the avoidance of specific food triggers during and after a flare, with possible reintroduction of these foods over time.

Reference:

"Prevalence and factors associated with gluten sensitivity in inflammatory bowel disease." Scandinavian Journal of Gastroenterology, 2018 Feb;53(2):147-151. Limketkai, B., Sepulveda, R., et al.

Prevalence of vegetarian and gluten-free diets and whether nutrition has an impact on disease activity and microbiota composition

Many IBD patients follow a restrictive diet due to perceived positive effects on their symptoms. Swiss researchers have assessed the prevalence of vegetarian and gluten-free diets in a large cohort of IBD patients, the reasons for following such a diet, and whether nutrition has an impact on disease activity and microbiota composition.



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The Swiss Inflammatory Bowel Disease Cohort Study included 1,254 patients in the study with prospective acquisition of clinical data and psychosocial, disease-related and lifestyle factors between 2006 and 2015. Dietary habits were assessed through a self-report questionnaire.

Overall, 4.1 percent (n=52) of the patients reported following a vegetarian diet and 4.7 percent (n=54) a gluten-free diet. No differences regarding disease activity, fistula, hospitalization, or surgery rates were observed. Patients on a vegetarian diet or gluten-free diet had significantly higher levels of post-traumatic stress symptoms. Furthermore, gluten-free diet patients had significantly higher anxiety and depression symptom levels. The gut microbiota composition in IBD patients following a vegetarian or gluten-free diet was significantly different compared to that of omnivores.

In conclusion, although a relevant impact of a specific diet on the course of the disease has not been identified, there was a significant association with lower psychological well-being in vegetarian and gluten-free diet patients.

Reference:

"Vegetarian or gluten-free diets in patients with inflammatory bowel disease are associated with lower psychological well-being and a different gut microbiota, but no beneficial effects on the course of the disease." United European Gastroenterology Journal, 2019 Jul;7(6):767-781. Swiss IBD Cohort Study Group. Schreiner, P., Yilmaz, B., et al.

Gluten sensitivity may be transient for some patients, prompting the avoidance of specific food triggers during and after a flare, with possible reintroduction of these foods over time.

As always, consult a medical professional before beginning any new protocol.



ABOUT THE AUTHOR:

Dr. Alexander Shikhman, founder of the Institute for Specialized Medicine, is board certified in internal medicine and rheumatology. Dr. Shikhman also launched Gluten-Free RemediesTM, a line of

all natural supplements which help treat the complications that can arise from celiac disease. Find Dr. Shikhman at **ifsmed.com** and **glutenfreeremedies.com**.

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