Celiac disease and irritable bowel syndrome (IBS) can share similar symptoms, including abdominal pain, bloating, and diarrhea. Patients who present with these symptoms may be difficult to diagnose, leading to either delayed or ineffective treatment. Laboratory testing can often aid in the diagnosis of celiac disease and the different subtypes of IBS.

This newsletter will discuss the unique features of celiac disease and certain subtypes of IBS, as well as the symptom overlap of these conditions. It will also discuss how testing for both conditions can help guide an accurate diagnosis.

Celiac Disease
Celiac disease is an autoimmune disorder that affects 3 million Americans.\(^1\) Symptoms include abdominal pain, bloating, and diarrhea. Symptoms are caused by a patient’s inability to tolerate gluten, the protein component found in many grains and derivative food products. Consuming gluten causes inflammation in the small intestine. This inflammation damages the intestinal villi, the surface area where nutrients are absorbed. The resulting malabsorption may be associated with other conditions in these patients, such as anemia and osteoporosis.\(^2\)

Patients with celiac disease have a genetic predisposition: about 90% to 95% of celiac disease patients carry the HLA-DQ2 allele, and about 5% carry the HLA-DQ8 allele.\(^2\) These alleles are also common in the general population, so detection does not equal diagnosis. However, the absence of these markers can be helpful in excluding celiac disease.

Irritable Bowel Syndrome
IBS affects 35 million Americans.\(^3\) Similar to celiac disease, symptoms include abdominal pain, bloating, and diarrhea—but IBS mainly involves the large intestine. Patients may also experience constipation, or a mix of diarrhea and constipation at different times. The exact cause of IBS is not known. Conditions that may be associated with IBS include anxiety and stress, and abnormal contractions of the colon. IBS can be broken into several subtypes based on bowel function:

- IBS-D: IBS with diarrhea
- IBS-C: IBS with constipation
- IBS-M: IBS mixed; diarrhea and constipation at different times
- IBS-U: IBS unclassified; inconsistent or varied bowel functions

Of these, IBS-D is the most likely to be confused with celiac disease based on a patient’s description of their symptoms.

Celiac Disease vs IBS-D
Celiac disease and IBS-D have similar symptoms but different causes and treatments.

Celiac Disease
- Symptoms: Bloating, abdominal pain, diarrhea
- Cause: Consuming gluten
- Diagnosis: Laboratory testing for antibodies and of genes; endoscopy and biopsy
- Treatment: Gluten-free diet

IBS-D
- Symptoms: Bloating, abdominal pain, diarrhea
- Cause: Unknown or infection
- Diagnosis: Exclusion of other conditions; laboratory testing for antibodies or Rome Criteria
- Treatment: Medication
Differential Diagnosis

Correct diagnosis is important, because celiac disease and IBS-D both have effective treatment options—but the treatments are distinctly different. Celiac disease symptoms typically resolve with a gluten-free diet. IBS-D can be treated with medications such as rifaximin, eluxadoline, and alosetron. Psychotherapy may reduce symptoms in these patients as well. Celiac disease is a more straightforward condition. It can be identified through medical history and serologic testing, and substantiated with an endoscopy and biopsy of the small intestine. Celiac disease is estimated to be up to 5 times more prevalent in IBS-D patients compared to the general population. Because of this potential, the American College of Gastroenterology recommends celiac disease testing for all patients suspected of having IBS-D or IBS-M.

IBS is a complex syndrome that is traditionally identified by eliminating other potential causes of symptoms. IBS-D is one of the most common subtypes of IBS, and its symptoms are the most similar to those of celiac disease. Because of the similarities, celiac disease is sometimes initially misdiagnosed as IBS-D.

One cause of IBS-D is bacterial infection, often caused by contaminated food. Approximately 1 in 9 patients who get a foodborne infection develop post-infectious IBS (PI-IBS). Estimates for PI-IBS among IBS patients vary widely, ranging from 4% to 36%. Patients with PI-IBS are a subgroup of patients with IBS-M and IBS-D. PI-IBS symptoms can last anywhere from 3 months to over 10 years. Fortunately, serologic testing is now available to support the diagnosis of IBS-D associated with PI-IBS.

How Healthcare Practitioners Can Help

Being on the front lines of patient care, healthcare practitioners are well-positioned to help differentiate celiac disease and IBS-D. You can be alert to common features of both conditions when you see them. One study in the primary care setting found a 43-fold increase in diagnosis of celiac disease with active screening. Active screening may therefore help ensure that patients are getting appropriate treatment and the best possible outcomes.

How the Laboratory Can Help

Quest Diagnostics offers serologic testing for both celiac disease and IBS-D. Celiac disease tests include a variety of individual tests and panels for the antibody markers tissue transaminase (tTG) IgA, tTG IgG, and endomysial antibody. In addition, total IgA is often tested to assist in evaluating tTG IgA, as celiac disease patients may be IgA-deficient. Other tests used in evaluating the likelihood of celiac disease include assays for HLA-DQ2 and HLA-DQ8; absence of both of these two HLA markers makes a diagnosis of celiac disease highly unlikely.

For IBS-D and IBS-M, Quest offers the IBSDetex™. This test detects elevated levels of anti-cytotoxic distending toxin B (CdtB) and anti-vinculin antibodies, markers identified to be associated with PI-IBS.