Celiac Disease Diagnosis and Treatment

Celiac disease is easily diagnosed with a plethora of biopsy and serological findings. On biopsy patients will display blunting of the intestinal villi, and increased lymphocyte infiltration of the lamina propria. Serology will show an immune response, which produces anti-endomysial antibodies, anti-gliadin antibodies, and anti-tissue transglutaminase antibodies. Treatment of celiac disease begins with lifestyle modifications. Patients should adhere to a gluten-free diet, and in cases that do not resolve, glucocorticoids can be added. Refractory cases of skin manifestations, known as dermatitis herpetiformis can be treated with Dapsone.



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Diagnosis

Blunting of Intestinal Villi
Blunt-hoof blunting Intestinal Villi
Patients with celiac disease have damage to the intestinal mucosa due to chronic inflammation and auto-immune attack. This is known as villous atrophy, and is a common finding on intestinal biopsy of those with celiac disease.

Lymphocytes in Lamina Propria
Lime-lymphocytes in Layer of Purple
Another biopsy finding in patients with celiac disease is increased epithelial lympocytes in the lamina propria of the gut. This morphological change is what causes the increased inflammatory response seen in this disorder.

Anti-gliadin Antibodies (IgA)
Gluten-dinner Ant-tie-body
Gliadin is a component of wheat. In patients with celiac disease, there is an immunological response to gliadin, leading to the production of IgA anti-gliadin antibodies. The presence of IgA anti-gliadin antibodies in the serum is a diagnostic indicator of celiac disease in a patient.

Anti-endomysial Antibodies (IgA)
Ant-tie-body In-muscle
The endomysium is a layer of connective tissue that surrounds a muscle fiber, and contains a transglutaminase called "tissue transglutaminase." Serum findings of antibodies that bind to this form of transglutaminase are called anti-endomysial autoantibodies, and these IgA immunoglobulins are highly specific for celiac disease.

Anti-tissue Transglutaminase Antibodies (IgA)
Ant-tie-body with Tissue Transmitting-glue
Transglutaminase is an enzyme found in various tissues of the body, and helps aid in proteolytic breakdown. In celiac disease, there is an immunological reaction leading to the production of IgA anti-tissue transglutaminase antibodies (ATA). There is an extremely high correlation between this serological finding and celiac disease, making it a good diagnostic marker.

Treatment

Gluten-Free Diet
No Gluten
Initial therapy begins with lifestyle modifications, where patients are advised to avoid gluten in their diet.

Corticosteroids
Quarter-on-steroids
Often, there are patients who are unresponsive to diet modification. This can occur because the disease has been present for so long that the intestines are no longer able to heal on diet alone. In these instances, corticosteroids are indicated to suppress the symptoms of celiac disease.

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Dapsone

Diaper-sun

Dapsone is used to control the uncomfortable symptoms of dermatitis herpetiformis, which is an associated skin manifestation of celiac disease. This treatment is not prescribed initially, but can be used in patients whose dermatitis herpetiformis does not respond to diet changes.

Complications

Intestinal Lymphoma

Lime-foam

Patients with celiac disease have an increased risk of developing lymphomas of the small bowel. These include enteropathy-associated T-cell lymphomas (EATL), and non-Hodgkin lymphomas in the small intestines. There is also a higher risk of developing small bowel adenocarcinoma in patients with celiac disease.

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