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Helicobacter pylori and Celiac Disease

Two stomach conditions that should not go undiagnosed

Helicobacter pylori infection and celiac disease can have some of the same symptoms. These include abdominal pain, bloating, gas, and weight loss. A lot of other things can cause these symptoms too. But if the cause is not found, the person may get serious problems. For example, *H pylori* infection can cause a bleeding ulcer or stomach cancer. Celiac disease can result in anemia and osteoporosis. It can also result in cancer of the stomach, intestine, or lymph glands.

When patients are not diagnosed, they don't get the treatment they need. Or they may be given a treatment that doesn't address the problem. This is costly and doesn't help the patient feel better. So when these symptoms persist, it's worth a closer look.

H pylori

Who's at risk?

People who live in crowded, unclean conditions are more likely to be infected. Those who live with an infected person are at greater risk of getting it too. This is because *H pylori* is spread by contact with contaminated food, water, saliva, vomit, and stool. People who are infected most often get it during childhood.

Who should be tested?

Most infected people never get symptoms. They don't need to be tested.

People who have symptoms should usually be tested.[1] Symptoms may include a gnawing or burning stomach pain that gets better after eating, drinking, or taking an antacid. Other symptoms may include nausea, a bloated stomach, burping, and loss of appetite. More serious symptoms include dark or black stool, weight loss, severe stomach pains, and presence of blood in vomit.

H pylori testing can also be used for people who have 1) had peptic ulcer and no *H pylori* treatment, 2) a gastric mucosa-associated lymphoid tissue (MALT) lymphoma, and 3) had surgery for early gastric cancer.[1] Children with functional abdominal pain should not be tested unless an endoscopy is performed.[2] Children may be tested if they have a first degree relative with gastric cancer.[2] They can also be tested if they have iron-deficiency anemia that doesn't go away after therapy, once other causes have been ruled out.[2]

Did you know...

Proton pump inhibitors (PPI) do a good job reducing acid. They also ease the gnawing, burning pain caused by *H pylori* infection. But PPI do not cure the infection. So unless the infection is diagnosed and treated, the patient keeps taking PPI. This is one of the reasons over $11 billion is spent on PPI each year in the U.S.[3] Even worse, it puts the patient at risk of osteoporosis-related fractures and other side-effects of long-term PPI use.

...and that...

One in 141 people in the U.S. have celiac disease.[4] About 83% of them don't even know it.[4] These data come from a study of children and adults across the country.* They were tested for TTG IgA and EMA IgA. If both tests were positive, they were said to have celiac disease.

*Study subjects were part of the 2009-2010 National Health and Nutrition Examination Survey (NHANES).

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Which tests should be used?

Experts recommend the urea breath test (UBT) and the stool antigen test.[1,5] They are for people with uninvestigated dyspepsia and low risk of gastric cancer.* Both can detect active infection. Both can be used before and after therapy. False-negative results can occur when the amount of bacteria is low, though. This may happen when there is a bleeding ulcer or stomach cancer. It can also happen when the patient is taking antibiotics or antisecretory drugs.

Antibody tests, on the other hand, cannot tell apart active infection and past infection. They can't be used after treatment to see if the patient is cured. Also, they have a poor positive predictive value in populations with a low *H pylori* prevalence. Sensitivity is lower in children. Thus, experts don't recommend antibody tests for use in children.[2] They might be helpful for patients with stomach changes that decrease the amount of *H pylori* bacteria.[1,5] This includes bleeding ulcers.

Experts recommend 3 tests for adults with dyspepsia and an increased risk of stomach cancer. These tests are endoscopy, culture, and antibiotic susceptibility testing.[5] The rapid urease test is another biopsy-based method that can be used.[1]

For children, the recommended tests for diagnosis include histopathology and either rapid urease test or culture.[2] A UBT or stool antigen test can be used to document cure.[2]

*Risk of gastric cancer is low in adults <55 years of age who have none of the following: bleeding, anemia, early satiety, unexplained weight loss, progressive dysphagia, odynophagia, recurrent vomiting, family history of GI cancer, and previous esophagogastric malignancy.[1]

Celiac disease (CD)

Who's at risk?

First-degree relatives of those with CD are at greatest risk. Patients with HLA-DQ2 or HLA-DQ8 have a genetic risk for CD. People with these conditions may also have CD:

- Type 1 diabetes
- Autoimmune thyroid disease
- Down syndrome
- Low levels of IgA
- Iron-deficiency anemia with no known cause
- Osteoporosis that presents at an early age

Who should be tested?

People who have symptoms should be tested.[6,7] These include people with chronic diarrhea, abdominal bloating, gas, or unexplained weight loss. Consider testing children who fail to thrive or are shorter than expected for their age. People with unexplained iron-deficiency anemia or unexplained increases in liver enzymes (ALT, AST) should be tested too.

Additional information

You can find more information about *H pylori* infection and celiac disease at these websites:

- American College of Gastroenterology http://gi.org//
- American Gastroenterological Association http://www.gastro.org/
- American Celiac Disease Alliance http://americanceliac.org
- Celiac Disease Foundation www.celiac.org

Asymptomatic people can be tested if they are at high risk.[6,7] These include first-degree relatives of those with CD. Some experts think children with type 1 diabetes should be tested every year or 2. But they don't need to be tested if they are HLA-DQ2 and HLA-DQ8 negative.[6]

Which tests should be used?

Antibody tests are often used first. They can help find out if an intestinal biopsy is needed. They can also help support a CD diagnosis. The tissue transglutaminase (TTG) IgA test is the preferred test.[6,7] If the TTG IgA test is negative, a total IgA test should be done. This is because IgA deficiency is relatively common in people with CD. If the total IgA is low, a TTG IgG test should be done.

The TTG test can be confirmed by an endomysial antibody (EMA) test. The EMA test uses a different method. It confirms that the EMA antibody targets TTG in tissue. A deaminated gliadin peptide (DGP) antibody test can be used for confirmation too. DGP antibody can also be used when the TTG antibody is negative and suspicion of CD is high. Note that the native gliadin antibody (AGA) test has been replaced by the DGP antibody test.

For children, an EMA IgA or IgG test can also be used.[7] If the child is <2 years old, test with TTG IgA and DPG IgA and IgG.[6] Some recommend using these 3 tests for those <4 years.

Antibody testing is best done when the patient has gluten in his/her diet. Antibody titers decrease when gluten is not in the diet. Sometimes they even become negative. Other times, they are still positive, because it is very hard to completely exclude gluten from the diet.

None of the 3 antibody tests (TTG, DGP, and EMA) is 100% accurate. Testing with more than one of them can increase sensitivity.[6] If a result is positive, an intestinal biopsy should be done.[6] It can help find out how much damage has been done to the intestine. A biopsy should also be done if the antibody tests are negative and suspicion of CD is very high.[6]

HLA-DQ2/DQ8 testing is used to rule out CD when[6]:

- The small-bowel biopsy results are uncertain.
- The patient stopped eating gluten before CD testing was done.
- Serology and histology results don't match.
- A patient diagnosed with CD is not responding to treatment.
- The patient has Down syndrome.
- A child has type 1 diabetes.

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