

DANBURY HOSPITAL

Technically Speaking

C.S. Guidess, Editor

Department of Pathology
& Laboratory Medicine

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Hemoglobin S Screen

Per the National Collegiate Athletic Association, NCAA, confirmation of sickle cell status will be required of all incoming student athletes in the 2013-2014 school year and for all athletes by 2014-2015. Mandatory sickle cell screening is already required by the NCAA in Division I and Division II athletes. In order to meet the demands of this testing, Hemoglobin S Screen is added to the test menu as of July 1, 2013 and will be performed daily. Note: A positive result will be followed by hemoglobin electrophoresis to confirm the presence and concentration of hemoglobin S.

Laboratory Testing for *Helicobacter pylori*

Jessica Dodge, M.D.

Helicobacter pylori is currently recognized as one of the most common and medically important pathogens worldwide. *H. pylori* is strongly associated with peptic ulcer disease (duodenal and gastric) and chronic active gastritis. *H. pylori* is also an independent risk factor for gastric cancer and primary malignant lymphoma of the stomach.

Methods for diagnosing *H. pylori* infection including invasive testing using mucosal biopsies obtained during endoscopy (culture, histology and rapid urease test) and non-invasive procedures (serologic tests, urea breath tests and stool antigen tests).

The serologic test is the least accurate.¹ According to the 2007 American College of Gastroenterologists guidelines, serology should be avoided in low prevalence populations or positive serology results should be confirmed with a test that identifies an active infection such as the urea breath test or stool antigen test.² For these reasons, the Danbury Hospital Laboratory does not offer serologic testing for *H. pylori* in-house. As a preferred method, we offer *H. pylori* stool antigen testing. The Meridian Bioscience Immunocard STAT! HpSA is a rapid lateral flow immunoassay that utilizes a monoclonal anti-*H. pylori* antibody to detect *H. pylori* antigen in stool specimens. The sensitivity of Immunocard STAT! HpSA is 90.6% with a specificity of 91.5% for diagnosis of *H. pylori*. Tests performed on samples obtained four weeks post eradication therapy had a sensitivity of 95.4% and specificity of 100%.

Stool specimens should be submitted in a clean, dry container without preservatives or transport media. Rectal swabs are not acceptable. The stool specimen may be refrigerated (4-8° C) for up to 72 hours if immediate transport is not feasible.

We are also pleased to offer PCR testing for detection of *H. pylori* (HP) and Clarithromycin resistant strains on paraffin embedded gastric biopsies. On gastric biopsy, if any acute inflammation is seen or there is at least moderate chronic inflammation and HP is not seen on H&E stain, the Pathologist will order immunohistochemical stain to detect possible HP organisms. If HP immunohistochemical stain is negative and histology is highly suspicious of HP

gastritis, the Pathologist may order HP by PCR. In addition, if the patient's HP symptoms persist after being treated for HP gastritis, the Clinician may order Clarithromycin resistant HP by PCR if gastric biopsy is positive for HP.

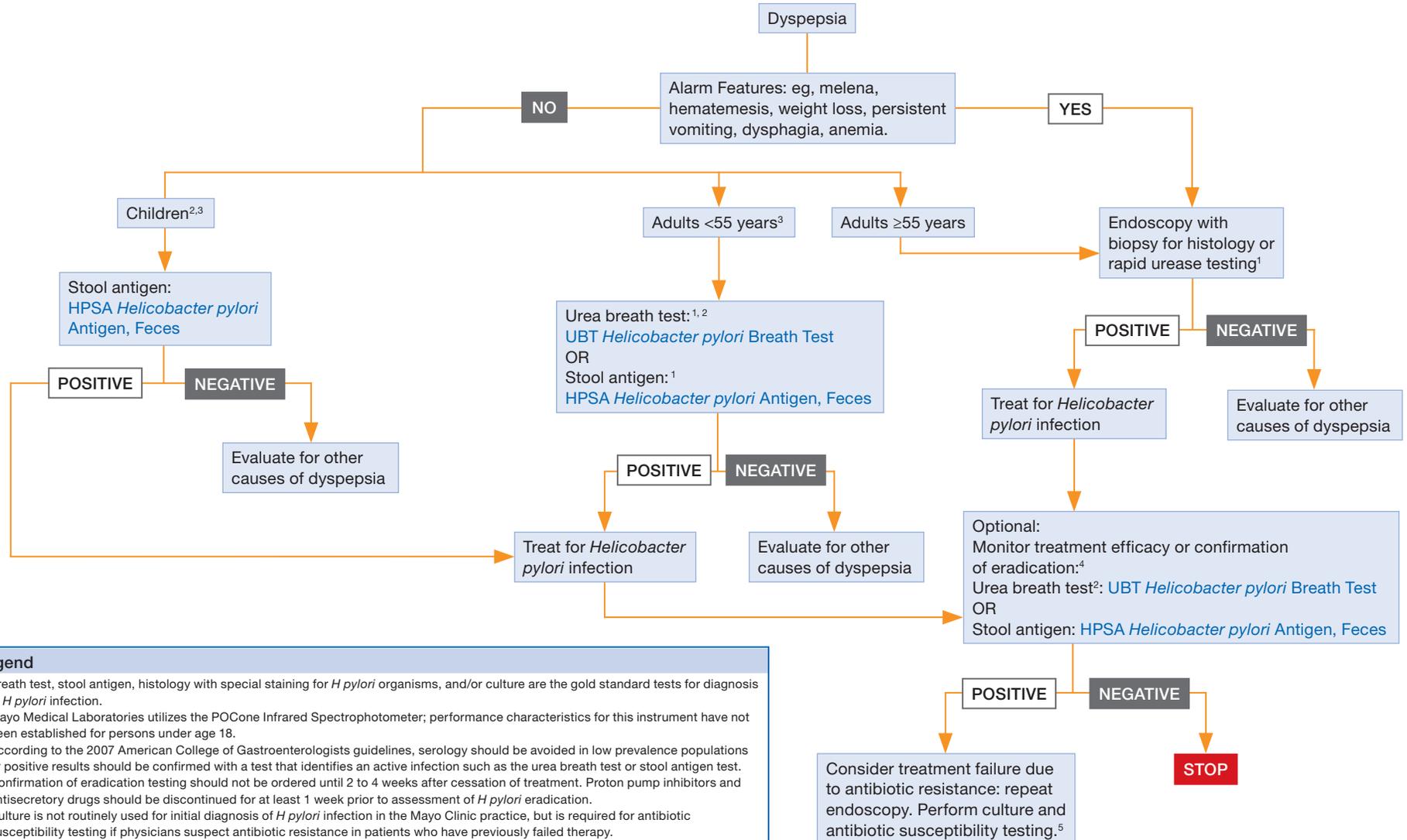
Please direct any questions to Dr. Jessica Dodge, Medical Director of Microbiology at 203-739-7034.

References:

1. McColl K. *Helicobacter pylori* Infection. N Engl J Med 2010;362:1597-1604.
2. Chey WD, Wong B. and the Practice Parameters Committee of the American College of Gastroenterology. American College of Gastroenterology Guideline on the Management of *Helicobacter pylori* Infection. Am J Gastroenterol 2007;102:1808-1825

Patient Service Center Phone & Address Pads are available for office use for distribution to their patients. Please contact, Sandi Smith at 203-739-7800 or E-mail: Sandra.smith@wchn.org

Helicobacter pylori Diagnostic Algorithm



Legend

- Breath test, stool antigen, histology with special staining for *H. pylori* organisms, and/or culture are the gold standard tests for diagnosis of *H. pylori* infection.
- Mayo Medical Laboratories utilizes the POcone Infrared Spectrophotometer; performance characteristics for this instrument have not been established for persons under age 18.
- According to the 2007 American College of Gastroenterologists guidelines, serology should be avoided in low prevalence populations or positive results should be confirmed with a test that identifies an active infection such as the urea breath test or stool antigen test.
- Confirmation of eradication testing should not be ordered until 2 to 4 weeks after cessation of treatment. Proton pump inhibitors and antisecretory drugs should be discontinued for at least 1 week prior to assessment of *H. pylori* eradication.
- Culture is not routinely used for initial diagnosis of *H. pylori* infection in the Mayo Clinic practice, but is required for antibiotic susceptibility testing if physicians suspect antibiotic resistance in patients who have previously failed therapy.