3 *Helicobacter pylori* testing: Serology and stool antigen testing

Helicobacter pylori is a carcinogen

As knowledge of *Helicobacter pylori* (*H. pylori*) has grown over the last twenty years, the implications of infection have become more apparent. It is estimated that people who test positive for *H. pylori* have a 10–20% increased lifetime risk of developing peptic ulcer disease and a 1–2% increased risk of developing distal gastric cancer. As a result, *H. pylori* has been declared a Class 1 carcinogen by the World Health Organisation.[1]

H. pylori infection is usually acquired in early childhood, and does not resolve spontaneously. There is a higher rate of infection associated with lower socioeconomic living conditions. As living conditions have improved in New Zealand, *H. pylori* infection rates have decreased. As a result *H. pylori* infection is more common in older people, as a result of acquisition in childhood.[2]

Initial testing for *H. pylori* (first time ever) in the presence of dyspepsia	
Serology (for antibodies)	✓ If local prevalence > 30%
Stool antigen	✓ If local prevalence < 30%

Prevalence of *H. pylori* in New Zealand

There is incomplete data on *H. pylori* infection rates throughout New Zealand, however it is known that rates are significantly higher in Māori and Pacific people compared to those of European descent.

The NZGG Dyspepsia Guidelines contains the following statements about *H. pylori* infection rates:[3]

- Rates in the South Island are well below 30%
- Rates tend to be >30% in adult Māori and Pacific people, and people with lower socio-economic status
- Rates in adults living in Auckland have been generally found to be greater than 30%

Who should be tested for *H. pylori*?

1. Patients from a high prevalence (>30%) group presenting with dyspepsia without "alarm symptoms" (weight loss, dysphagia, signs of anaemia, blood loss). Identifying and treating this patient group may reduce the requirement for endoscopy. A useful rule-of-thumb is to ask where they were born. A place of birth and early life in a high prevalence area is predictive of infection in adulthood.
2. Patients with a past or present history of peptic ulcer disease and no record of treatment of *H. pylori*.
3. Patients with a family history of gastric cancer.

Testing for *H. pylori*[4]

- Serology tests are appropriate where the prevalence of *H. pylori* infection is greater than 30%.
  - A negative *H. pylori* serology test confirms the absence of infection in the majority of cases
  - Patients can test positive for months to years after eradication, making it difficult to discern if it is a current or past infection. For this reason serology testing is unsuitable if a patient represents at a later date with symptoms suggestive of subsequent *H. pylori* infection.

- Stool antigen tests are appropriate where the prevalence of *H. pylori* infection is less than 30%.
  - A positive *H. pylori* stool antigen test is highly predictive of the presence of *H. pylori* infection
  - *H. pylori* disappears quite quickly from the stool after eradication, therefore positive results indicate persisting active infection
  - To avoid false negative results, patients should be off antibiotics for at least four weeks and off PPIs and bismuth for at least two weeks. H2 receptor antagonists and antacid preparations (e.g. mylanta) are allowed.[5]

Confirmation of *H. pylori* eradication

The majority of patients do not require post-eradication testing for *H. pylori*. The eradication rate is over 85% with the "triple therapy" combination of omeprazole, amoxicillin and clarithromycin.

Confirmation of eradication of *H. pylori* is only required in those with a peptic ulcer complication, important comorbidity factors, symptom recurrence or residence in isolated areas.[3]

In these cases, *H. pylori* stool antigen testing may be used for confirmation of eradication at least 4 weeks after stopping treatment. For people taking PPIs, perform at least two weeks after cessation of the PPI.

References:

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4. Health Protection agency (HPA) 2009. *Helicobacter pylori*.

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