Association of Helicobacter Pylori Antibodies with cases having non-Ulcer Dyspepsia Diagnosed on Endoscope

M A AZHAR A MAHMOOD* M U GHANI
*Department of Medicine, Bahawal Victoria Hospital Bahawalpur, *Army Field Hospital, Forward Kahuta, Azad Kashmir*
Correspondence to Dr Munir Azhar

To find out an association between *Helicobacter pylori* antibodies and non-ulcer dyspepsia diagnosed on endoscopy, a study was conducted at the Department of Medicine, Bahawal Victoria Hospital, Bahawalpur during a period extending from July 2000 to June 2001. A total of 200 patients between the ages of 20-50 years, presenting with more than three years of dyspeptic symptoms were subjected to upper gastrointestinal endoscopy. Serum specimens from all these cases having non-ulcer dyspepsia were also sent to Agha Khan University Hospital Laboratory for the quantitative detection of *H. pylori* antibodies. Out of the total patients endoscopied (n=200), 116(58%) had positive findings on endoscopy. Out of these endoscopy positive cases, 71(61.20%) had gastritis alone, 15(12.93%) had gastritis, duodenitis and oesophagitis, 9(7.75%) had gastric ulcers and 21(18.10%) had lower end oesophagitis alone. These cases with positive findings (other than ulcers) were evaluated for association with *H. pylori* antibodies. Majority of these patients was female (n=60) while rest were male (n=47).. *H. pylori* antibodies were detected in 78.87% of gastritis cases, 53.33% of gastritis, duodenitis and oesophagitis cases, and 61.90% of lower end oesophagitis. The study shows that majority of the cases had *H. pylori* related problem and could be put on therapy for *H. pylori* without doing endoscopy.

Key words: Helicobacter pylori, IgG antibodies, Dyspepsia

Dyspepsia is one of the commonest ailments of the upper gastrointestinal tract with which the patients present to a physician in our country. Gastritis is reported to be the most common cause of dyspepsia in Pakistan[1]. There is now sufficient evidence that gastric *Helicobacter pylori* infection is an aetiological factor in dyspepsia caused by gastritis, peptic ulcer disease, gastric carcinoma and lymphoma[2]. The diagnostic tests for *Helicobacter pylori* infection include both invasive and non-invasive methods. The invasive methods are rapid urease test, brush cytology, histopathology, culture and polymerase chain reaction on biopsy specimen. The non-invasive tests are urea breath test and serology[3,4]. Serological methods are based on the detection of *H. pylori* specific antibodies in serum, saliva or urine. The diagnostic performance of properly evaluated serological assays is comparable to that of biopsy based methods and urea breath test[5]. In this way endoscopies can be avoided in a significant proportion of the patients coming with history of chronic symptoms. The same was the aim of this study conducted at the Department of Medicine, Bahawal Vicoria Hospital, Bahawalpur to find any association of *H. pylori* antibodies with non-ulcer dyspepsia diagnosed on endoscopy so that chronic symptomatic patients can be put on therapy for *H. pylori* infection without doing endoscopy.

Material and methods

This study was conducted during a period extending from July 2000 to June 2001. Two hundred patients between the ages of 20-50 years presenting with more than three years dyspeptic symptoms were selected for upper gastrointestinal endoscopy. The cases were selected from Medical Outpatient Department of Bahawal Victoria Hospital, Bahawalpur. These patients were only partial responders to either H_2 antagonists or proton pump inhibitors. These used to become symptomatic on withdrawal of therapy. Following exclusion criteria were used for selection of the cases.

1. Patients above the age of 50 years.
2. Dyspepsia of recent onset.
3. Patients on steroids or immunosuppressive agents
4. Patients of chronic liver disease, renal disease or patients on non-steroidal anti-inflammatory drugs.
5. Smokers
6. Alcoholics

Endoscopies were performed after keeping patients NPO from mid night prior to the day of procedure. Patients were given local anaesthetic spray in the oropharyngeal cavity for 5 minutes before the procedure and intravenous sedation with diazepam was also given if required.

Serum specimens from all those cases having findings other than ulcers on endoscopy were also sent to Agha Khan University Hospital Laboratory for the detection of Anti-*H. pylori* antibodies. These antibodies were detected there by ELISA (HEL- p TEST II, Silenus Labs Pty Ltd, Australia). This is a quantitative assay and an antibody level of more than 30 U/ml was labeled as positive as recommended in the manufacturer instructions.

Results

Out of the total patients endoscopied (n=200), 116(58%) had positive findings on upper gastrointestinal endoscopy. Out of these endoscopy positive cases, 71(61.20%) had gastritis alone, 15(12.93%) had gastritis, duodenitis and oesophagitis, 9(7.75%) had gastric ulcers and 21(18.10%) had lower end oesophagitis alone. The cases with positive findings, other than ulcers (n=107) were only analysed for studying association with *H. pylori* antibodies. Majority of

these patients was female (n=60) and the rest (n=47) were male. The age range was between 20-50 years. *H. pylori* antibodies were detected in 78.87% of gastritis cases, 53.33% of gastritis, duodenitis and oesophagitis cases, and 61.90% of lower end oesophagitis cases (Table 1).

Table 1. Upper gastrointestinal pathologies diagnosed on endoscopy and associated IgG Anti-H. pylori antibodies

Pathologies diagnosed on endoscopy	Endoscopy positive cases	Cases positive for *H. pylori* serology
Gastritis	71 (61.20%)	56 (78.87%)
Gastritis, duodenitis & oesophagitis	15 (12.93%)	8 (53.33%)
Gastric ulcer	9 (7.75%)	-
Lower end oesophagitis	21 (18.10%)	13 (61.90%)
Total cases	116	77 (71.96%)

Discussion

Helicobacter pylori infection has been proved to be one of the most common infectious diseases in the world[6]. Its relation with different upper gastrointestinal pathologies has been described by various workers[7,8]. Out of the various diagnostic techniques, measurement of IgG serum antibodies is a reliable and inexpensive method for detection of the infection. It has shown a sensitivity of 92% and specificity 97% for detecting *H. pylori* infection in a study conducted in Italy in 2000[9]. In another study this serology alone had a sensitivity 52% and specificity of 60% for identifying peptic ulcer disease[10]. In our study majority (61.85%) of the chronic symptomatic patients had an endoscopic diagnosis of gastritis. A similar high prevalence of gastritis amongst chronic dyspeptic patients has also been reported in a study conducted in Taxila in 1999[1]. In this study, out of these gastritis cases 78.87% were positive for IgG antibodies. Association of *H. pylori* infection with up to 90% cases of gastritis and duodenitis, and 70% gastric and 90% duodenal ulcers has been reported by different workers[11,12]. The test was also positive in 61.90% cases of lower end oesophagitis and more than 50% of the rest of the endoscopically diagnosed cases. This indicates that majority of these cases had *H. pylori* associated problem. The compliance of majority of the patients to endoscopic procedures is very poor and they are reluctant to undergo this technique. Keeping in view this fact and the significant association of IgG antibodies to upper gastrointestinal pathologies as seen in our study, this easily available non-invasive technique seems quite useful in the diagnosis of chronic dyspeptic patients. In this way a number of endoscopies can be avoided and patients can be put on a trial of therapy for *H. pylori* infection. This serological test can also be used for prognostic evaluation of the diagnosed *H. pylori* infected cases. A decline in IgG of more than 40% correlates well with the successful eradication of *H. pylori*. In this way unnecessary multiple biopsies can be avoided by the use of quantitative IgG serology, when long term monitoring is needed[13]. Further studies are required to establish fully the utility of these serological tests among our patients.

Conclusion

As there is a good association of IgG antibodies with non-ulcer dyspepsia proved on endoscopy, this simple serological test can detect *H. pylori* infection easily, rapidly and non-invasively and can prove to be a useful test in general practice for screening patients with chronic dyspeptic symptoms.

References

1. Ali S. Helicobacter pylori associated chronic gastritis and role of one week versus two weeks triple antibiotic therapy. JCPSP 1999 Vol.9 (7): 304-6.
2. Okeefe SJ, Salvador B, Nainkin J, Makiki S, Stevens H, Atherstone A. Empiric treatment based on Helicobacter pylori serology cannot substitute for early endoscopy in the management of dyspeptic rural black Africans. S Afr Med J 2000, 90(11): 29-35.
3. Wildner-Christensen M, Schaffalitzky de Muckadell OB. Diagnosis of Helicobacter pylori infection-how, when and in whom? Ugeskr Laeger 2000;162(26): 43-7.
4. Brown KE, Peura DA. Diagnosis of H. pylori infection. Gasteroenterol Clin N Am 1993;22(1): 105-15.
5. Herbrink P, Doom LJ. Serological methods for diagnosis of Helicobacter pylori infection and monitoring of eradication therapy. Eur J Clin Microbiol Infect Dis 2000;19(3): 239-40.
6. Yamamoto S, Uemura N, Okamoto S, Yamaguchi S, Mashiba H, Tachikawa T. A new and rapid test for detecting anti-Helicobacter pylori antibody excreted into urine. Helicobacter 2000;5(3): 160-4.
7. Hunt RH, Mohammed AH. The current role of Helicobacter pylori eradication in clinical practice. Scand J Gastroenterol Suppl 1995;208:47-52.
8. Humama-Tul-Bushra, Umar M, Khan NY, Latif Z. Helicobacter pylori and chronic gastritis. Pakistan J Gastroenterol 1995;9:18-22.
9. Menegatti M, Figura N, Farinelli S, Landi F, Acciardi C, Ricci C et al. Helicobacter pylori seroconversion in asymptomatic blood donors: a five-year follow-up. Dig Dis Sci 2000;45(8): 1653-9.
10. Xia HH, Kalantar JS, Mitchell HM, Talley NJ. Can Helicobacter pylori serology still be applied as a surrogate marker to identify peptic ulcer disease in dyspepsia? Aliment Pharmacol Ther 2000;14(5): 615-24.
11. Gabrycic wiez A. Role of Helicobacter pylori and peptic ulcer and treatment. J Physiol Pharmacol 1996;47:51-8.
12. Oconner HJ. The role of Helicobacter pylori in peptic ulcer disease. Scand J Gastroenterol 1994;201:11-5.
13. Midolo PD, Dakic B, Nicholson L, Lambert JR, Lin S, Russeli EG. Use of a dry latex agglutination test to measure eradication of Helicobacter pylori infection. J Gastroenterol Hepatol 2000;15(3): 254-6.