

Original

**PREVALENCE OF HELICOBACTER PYLORI AMONG DYSPEPTIC
PATIENTS IN BAHRAIN**

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One hundred patients with dyspepsia undergoing upper gastrointestinal endoscopy were examined for the presence of Helicobacter pylori (HP) using cultures from duodenal, antral and proximal gastric biopsies and also by serology. Antral biopsies showed the highest prevalence of HP (75%) compared to proximal gastric (72%) and duodenal biopsies (28%). Cultures revealed more positive (75%) than serology (54%). Patients with chronic duodenal ulcer (31 patients) showed similar differences (87.1% positive for culture vs 45.16% for serology) as did those with normal endoscopy (72.4% positive for culture vs 51.7% for serology). HP positivity by culture tended to increase with the duration of dyspepsia but not with age. Patients with dyspepsia and normal endoscopic findings were less likely to have HP.

These findings demonstrate a high prevalence of HP in Bahraini dyspeptic patients and suggest a positive association of HP with the duration of dyspepsia and with abnormal endoscopic findings.

Warren and Marshall's original article in 1983¹ of curved gram negative bacilli in the gastric mucosa of patients with gastritis has resulted in extensive literature over the past decade linking Helicobacter pylori (HP) to a spectrum of acid peptic diseases including antral gastritis, chronic duodenal ulcer, gastric ulcer², non-ulcer dyspepsia³ and more recently with the aetiology of gastric cancer^{8,9}. Population based seropositivity rates of H. pylori infection were studied across 17 countries and showed a prevalence ranging from 55-90% in Japan to 8-49% in the United Kingdom,

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depending upon age of the patient and the geographic location of the study⁹. Several studies have shown the high prevalence of H. pylori in dyspeptic populations undergoing endoscopy^{4,6}. Several studies have also been devised for the diagnosis and isolation of H. pylori. These include culture, staining techniques, urease test, C13 or C14 breath tests and serology⁷. While most tests have been found to be of high specificity and sensitivity, direct evidence of H. pylori by biopsy culture or by C13/C14 breath tests remain the most reliable diagnostic procedures. The aim of this study was to determine the prevalence of H. pylori in Bahraini dyspeptic patients and compare the diagnostic rates for H. pylori serology with biopsy culture.

METHODS

One hundred patients referred to the Salmaniya Medical Centre, Bahrain during the period from January to August 1993 for endoscopic evaluation of dyspepsia were investigated. The study was approved by the Hospital ethics committee.

A short questionnaire containing information about the duration and other details of their dyspepsia and previous diagnosis were obtained from patient. The age, sex and other demographic details were also recorded.

All patients were examined clinically prior to the endoscopy procedure. Upper gastrointestinal endoscopy was performed using Olympus XQ-20 GIF Panendoscope. Endoscopic details were recorded for each patient as well as the diagnosis at endoscopy. Two biopsies each were taken from the duodenum, antrum and proximal parts of the stomach using separate sterile biopsy forceps for each biopsy. Biopsies were sent to the pathology laboratory within one hour of collection in normal saline and were appropriately cultured anaerobically on blood and chocolate agar. A sample of 5 ml of blood was also drawn from each patient before the endoscopic procedure for serological examination of *H. pylori* using ELISA technique (Helico G-Portion, Cambridge) which detects IgG antibodies against *H. pylori*.

RESULTS

Of the 100 patients studied, 75 were men and 25 were women. The ages ranged from 11 to 82 years old. Seventy five patients were found to have a positive *H. pylori* infection by biopsy culture and 54 by serology (Fig 1). Antral biopsies showed the highest prevalence of *H. pylori* (75/100 patients) compared to 72/100 patients in the proximal part of the stomach and 28/100 patients in the duodenum. Of the 75 patients who tested positive by culture, 31 (41.35%) were negative by serology. On the other hand, of the 54 patients who had positive serology, 11 (20.37%) were negative by culture. There was no difference in the prevalence of *H. pylori* in any of the age groups. However *H. pylori* positivity appears to be related to the duration of dyspepsia, increasing from 65% (13 out of 20 patients) in those with dyspepsia of less than 6 months to 88% (28 out of 32 patients) in patients with dyspepsia of more than 5 years duration. A similar pattern of *H. pylori* positivity was also seen in those patients with chronic duodenal ulcers (31 patients) but not in patients with normal endoscopic findings (Fig 2).

DISCUSSION

There are several reports in the literature confirming the high prevalence rates of *H. pylori* in patients undergoing endoscopic procedures^{4,6}. Our study findings are consistent with most other studies. The increasing frequency of *H. pylori* with age has been demonstrated in the other studies. Graham et al⁵ suggested major differences in the age related frequencies of *H. pylori* in different parts of the world. Our study has shown only a minor increase in the prevalence of *H. pylori* from 80% in the second decade to 87% in the seventh decade. The small numbers in each group of our study did not allow any elaborate statistical analysis.

When serology was compared with culture for the detection of *H. pylori*, this study has shown serology to be of surprising low sensitivity ($p < 0.05$). Scabala et al¹⁰ suggested the use of serology alone in the diagnosis and management of duodenal ulcer disease associated with *H. pylori*. The overall positive rate was 54% by serology and only 45% of patients with chronic duodenal ulcer showed positive serology. Based on our data, serology using ELISA (Helico-G) appears to be a less sensitive in detecting *H. pylori*. It is suggested that the use of a more sensitive test such as the BIORAD test would be more appropriate to detect *H. pylori*.

CONCLUSION

The role of *H. pylori* in the pathogenesis of acid-peptic disease and duodenal ulcer in particular has been accepted worldwide. Our study demonstrates a high prevalence of *H. pylori* in dyspeptic patients and suggests in line with other studies a positive association between the duration of dyspepsia and the prevalence of *H. pylori* infection.

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REFERENCES

1. Warren JR, Marshall B. Unidentified curved bacilli on gastric epithelium in chronic active gastritis. *Lancet* 1983;i:1273-5.
2. Graham DY. *Campylobacter pylori* and peptic ulcer disease. *Gastroenterology* 1989;96[Suppl]:615-26.
3. Patchett S, et al. Eradicating *H pylori* and symptoms of non-ulcer dyspepsia. *Br Med J* 1991;303:1238-40.
4. Robert M, Strauss, Timothy C, et al. Association of *H Pylori* infection with dyspeptic symptom in patients undergoing gastroduodenoscopy. *Am J Med* 1990;89:464-9.
5. Sandiki MU, Duran F, et al. *Helicobacter pylori* prevalence in a routine upper GI endoscopy population. *Br J Clin Pract* 1993;47:187-9.
6. Nader AM, El Bagir M, et al. *Helicobacter pylori* associated dyspepsia in 208 patients from Southern Saudi Arabia. *Ann Saudi Med* 1993;13:340-5.
7. Kyle EB, David AP. Diagnosis of *Helicobacter pylori* infection. *Gastroenterology Clinics of North America*. 1993;22:105-15.
8. Jians SJ, Lui WZ, Zhang DZ, et al. *Campylobacter* like organisms in chronic gastritis, peptic ulcer and gastric carcinoma. *Scand J Gastroenterol* 1987;22:553-8.
9. The Eurogast Study group. An International association between *H pylori* infection and gastric cancer. *Lancet* 8857;347:1359-63.
10. Scabala GM, Crabtree JE, et al. Screening dyspepsia by serology for *H pylori*. *Lancet* 1991;ii:94-6.