The Prevalence of *Helicobacter pylori* Infection in Patients Undergoing Upper Gastrointestinal Endoscopy in the Turks and Caicos Islands

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ABSTRACT

Background: Helicobacter pylori *infection remains a common problem and previous studies in the Caribbean revealed infection in over 50% of patients undergoing upper endoscopy.*
Objective: *The present study determined the prevalence of* H pylori *infection in patients undergoing upper gastrointestinal endoscopy in the Turks and Caicos Islands over a two- year interval.*
Methods: *All patients with upper gastrointestinal symptoms requiring endoscopy were evaluated clinically and* H pylori *testing performed histologically.*
Results: *There were 57 patients (21 males, 36 females) with a mean age of 43 years. Twenty-six patients presented with gastroesophageal reflux, 17 with upper abdominal pain, 10 with dyspepsia and 4 with upper gastrointestinal bleeding.* H pylori *infection was present in 24 patients (42%) and negative in 33 (58%). Upper gastrointestinal endoscopy was normal in 27 patients, 13 (54%) were* H pylori *positive and 14 (43%) negative. Antral gastritis was present in 13 patients, 7 (54%) were* H pylori *positive and 6 (46%) negative. Duodenal ulcer was present in 6 (33%* H pylori *positive) and gastric ulcer in 5 patients (40%* H pylori *positive). Distal oesophagitis was present in 5 patients (all negative for H pylori) and gastric carcinoma in 1* (H pylori *positive).*
Conclusion: *In patients with dyspepsia, 60% were positive for* H pylori. H pylori *infection was common in the patients in this study with gastrointestinal symptoms. However, the prevalence in endoscopic patients and peptic ulcer disease is lower than in other reports from the Caribbean.*

Keywords: Endoscopy, *Helicobacter pylori*

Prevalencia de la Infección por *Helicobacter pylori* en Pacientes Sometidos a Endoscopía Gastrointestinal Superior en las Islas Turcas y Caicos

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RESUMEN

Antecedentes: *La infección por* Helicobacter pylori *sigue siendo un problema común y los estudios previos en el Caribe revelaron infección en más del 50% de los pacientes sometidos a endoscopía superior.*
Objetivo*: El objetivo del presente estudio fue determinar la prevalencia de la infección por* H pylori *en pacientes sometidos a endoscopía gastrointestinal superior en las Islas Turcas y Caicos por un período de dos años.*
Métodos: *Los sujetos fueron 57 pacientes (21 varones, 36 hembras) con una edad promedio de 43 años. Veintiséis pacientes se presentaron con reflujo gastroesofágico, 17 con dolor abdominal superior, 10 con dispepsia y 4 con sangramiento gastrointestinal superior. La infección por* H pylori *estuvo presente en 24 pacientes (42%) y fue negativa en 33 (58%).*
Resultados: *El endoscopía gastrointestinal superior fue normal en 27 pacientes, 13 (54%) fueron positivos al* H pylori *y 14 (43%) fueron negativos. La gastritis antral estuvo presente en 13 pacientes, 7 (54%) dieron positivo al* H pylori *y y 6 (46%) dieron negativo. La úlcera duodenal estuvo presente en 6 (33% positivos a* H pylori) *y la úlcera gástrica en 5 pacientes (40% positivos a* H pylori*). Se halló*

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esofaguitis distal en 5 pacientes (todos negativos a H pylori) y carcinoma gástrico en 1 (positivo a H pylori).

Conclusión: *Entre los pacientes con dispepsia, 60% dieron positivo positivos a* H pylori. *En este estudio, la infección por* H pylori *fue común en pacientes con síntomas gastrointestinales. Sin embargo, la prevalencia en los pacientes sometidos a endoscopía y con úlcera péptica, fue menor en relación con los otros reportes del Caribe.*

Palabras claves: Endoscopía, *Helicobacter pylori*

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INTRODUCTION

Helicobacter pylori (H pylori) is a gram negative bacilli that is found between the mucus layer and the mucosa of the stomach (1). *H pylori* is one of the commonest chronic infections wordwide and is associated with several important gastrointestinal diseases including, gastric ulcer, duodenal ulcer, chronic gastritis, mucosa associated lymphoid tumours (MALT) and gastric cancer (2). It is also associated with dyspepsia (3, 4).

The prevalence of *H pylori* infection varies between developed and developing countries (5). The number of studies on the prevalence of *H pylori* infection has expanded to nearly every area of the world with developed countries typically having a lower prevalence at all ages (6). In the Caribbean, studies have revealed that over 50% of patients undergoing upper gastrointestinal endoscopy had *H pylori* infection on gastric biopsies (7, 8).

The Turks and Caicos Islands (TCI) are a group of 5 small islands south east of Florida, in the northern Caribbean. The TCI has a combined population of 36 605 (9). The population comprises of mainly persons of African descent. There are no previous studies on the prevalence of *H pylori* infection in the Turks and Caicos Islands (TCI). The present study determined the prevalence of *H pylori* infection in patients undergoing upper gastrointestinal endoscopy in the TCI.

SUBJECTS AND METHODS

Between June 2007 and June 2009, all patients with upper gastrointestinal symptoms who were referred to the Gastroenterology clinic in the TCI were assessed by a consultant Gastroenterologist.

Patients requiring upper gastrointestinal endoscopy were eligible for study. The procedure was explained to the patient and the need to check for *H pylori* infection was detailed. Informed consent was obtained from all patients.

Endoscopy was carried out with a Pentax forward-viewing flexible endoscope by a consultant gastroenterologist. Local pharyngeal anaesthesia with 10% lignocaine spray was used in all patients as well as sedation with midazolam intravenously. All patients had evaluation of the oesophagus, stomach and proximal duodenum and abnormalities were documented. Gastric biopsies for histological examination and for the presence of *H pylori* organisms were performed on all patients. Five samples were taken from the stomach: two from the antrum, two from the body and one from the *incisura angularis.* Gastric samples for histological evaluation were sent to Quest Laboratories, Florida, USA, for analysis.

All patients having upper gastrointestinal endoscopy in the two-year interval, June 2007 to June 2009, were reviewed. Data obtained included age, gender, presenting complaints, findings on endoscopy and results of gastric biopsies.

RESULTS

Fifty-seven patients were studied (21 males and 36 females) with a mean age of 43 years. Twenty-six patients presented with symptoms of gastroesophageal reflux. Seventeen patients had upper abdominal pain and 10 were assessed to have dyspepsia. Upper gastrointestinal bleeding was the presenting problem in four patients (Table).

Table: Clinical data

	***H pylori* positive n = 24 (42%)**	***H pylori* negative n = 33 (58%)**
Males	9 (37.5)	12 (36)
Females	15 (62.5)	21 (64)
Clinical presentation		
GE reflux	10 (42)	16 (49)
Abdominal pain	7 (29)	10 (30)
Dyspepsia	6 (25)	4 (12)
Haematemesis	1 (4)	3 (9)
Endoscopic findings		
Normal	13 (54)	14 (42)
Antral gastritis	7 (29)	6 (18)
Duodenal ulcer	2 (8)	4 (12)
Gastric ulcer	2 (8)	3 (9)
Gastric carcinoma	1 (3)	0 (0)
Oesophagitis		5 (15)

H pylori infection was present in 24 patients (42%) and negative in 33 (58%). Upper gastrointestinal endoscopy was normal in 27 patients, 13 (54%) of these were *H pylori* positive and 14 (42%) negative. Antral gastritis was present in 13 patients, of these 7 (54%) were *H pylori* positive and 6 (46%) negative. Duodenal ulcer was present in 6 (33% *H pylori* positive) and gastric ulcer in 5 patients (40% *H pylori* positive).

Distal oesophagitis was present in 5 patients (all negative for *H pylori*) and gastric carcinoma in 1 (*H pylori* positive). In patients presenting with dyspepsia six patients (60%) were positive for *H pylori.*

DISCUSSION

Helicobacter pylori infection is a healthcare issue with increased morbidity and mortality associated with peptic ulcer disease, upper gastrointestinal bleeding and cancer (10). The prevalence of *H pylori* infection varies among countries and within a country it is dependent on socio-economic conditions especially poverty, overcrowding, poor sanitation and hygiene (11). Also, within countries, there may be considerable variation in prevalence by ethnic group (6). For the Caribbean area, in Jamaica, two endoscopic biopsy studies similar to the present study found *H pylori* infection in 55% and 60% of patients (7, 12). In Barbados, 50% of patients undergoing endoscopy were positive for infection (8). Therefore, the prevalence of *H pylori* in patients undergoing upper endoscopy in the TCI of 42% is slightly lower than previous studies in the Caribbean. Studies in Latin American countries have revealed a high prevalence of infection ranging from 30%–90%, being about 60% overall (11). The prevalence of *H pylori* infection has decreased over the past decades especially in developed countries, and this may reflect a birth cohort effect, with more recent studies showing lower prevalence (6, 13). Improved living conditions, especially sanitation, in developed countries have reduced the rate of infection in recent decades (14). The lower prevalence in the present study may indicate this trend in the Caribbean.

Serological studies in the Caribbean have shown a higher prevalence of *H pylori* infection than in endoscopic studies. The prevalence was 69.9% in an urban community in Jamaica and 72% in blood donors in Barbados (8, 15). However, positive serology indicates past exposure to *H pylori* and not necessarily active infection as antibody levels fall slowly over months to years with successful eradication of the organism (2). In contrast, direct methods of diagnosis, as in this study, indicate active infection.

Although the number of patients are small in the present study, only about one-third of patients with peptic ulcer disease had *H pylori* infection. In the Jamaican study, 65% of patients with duodenal ulcer and 60% of patients with gastric ulcer had infection (7).

A recent endoscopic study in Jamaica revealed *H pylori* infection in 33% of patients with dyspepsia, which is lower than the 60% found in the present study (4).

In this study, histology was used for diagnosis of *H pylori*, in patients undergoing upper gastrointestinal endoscopy. Although histology has been considered by some to be the gold standard for detecting *H pylori* infection it can only be utilized in patients requiring endoscopy and detection of the organism relies on the site, number and staining of the samples (3). In the present study, five samples were obtained which exceed the usual recommendations for detection of *H pylori*, and all samples were evaluated by a single laboratory. A significant advantage of biopsy diagnosis is the ability to evaluate for histological abnormalities such as inflammation, gastric mucosal atrophy, intestinal metaplasia and malignancy.

The main limitation of the present study is the small number of patients studied from a referral clinic. This precludes generalization of the findings to the population of TCI.

H pylori infection was common in patients with gastrointestinal symptoms in this study from TCI. However, the prevalence of infection in patients undergoing endoscopy and in peptic ulcer disease is lower than other reports from the Caribbean. Further studies are required to determine the trend of this infection in the TCI and the Caribbean. The burden of *H prlori* infection may guide policies and programmes in the Caribbean geared at anticipating, treating and monitoring for complications related to *H pylori* infection.

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