

Helicobacter pylori Infection in Patients with Functional Dyspepsia in Jamaica

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Citation

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Abstract

Functional dyspepsia (FD) is a common clinical problem associated with substantial health care cost. *H. pylori* infection may be an etiological factor in some patients. This study determined the prevalence of *H. pylori* infection in Jamaican patients with FD. Thirty patients with FD seen between 2005–2007 were studied. All patients had dyspepsia and normal endoscopy of the upper gastrointestinal tract. The prevalence of *H. pylori* infection was 33%. The mean age was 47 years. 70% were female and resided mainly in urban areas. The most frequent presenting symptom was epigastric pain. All patients had access to piped water and refrigeration. Forty percent of infected patients had a history of alcohol consumption compared to 15% in non-infected patients. In *H. pylori* positive patients, 20% were cigarette smokers, compared to 5% in negative patients.

INTRODUCTION

Dyspepsia is a common clinical problem with an estimated annual prevalence of 25 – 29% and accounts for 2 – 7% of primary care visits and 20 – 40% of gastroenterology consults in western countries.^{1,23} Functional dyspepsia (FD) is defined as chronic or recurrent upper abdominal discomfort or pain which is thought to arise from the upper gastrointestinal tract in the absence of structural or biochemical abnormalities.⁴ Functional dyspepsia accounts for up to 60% of patients presenting with dyspepsia and results in substantial health care cost which include, directly for doctors visits, expensive tests and medications, and indirectly from absence from work and low productivity at the workplace.¹⁵⁶

The pathophysiology of functional dyspepsia is poorly understood. However, research has focused on abnormal gastric motor function, increased visceral sensitivity, psychosocial factors and recently, *H. pylori* infection of the stomach. Abnormalities of gastro-intestinal motility has been implicated in some patients and delayed gastric emptying may also occur.³⁷

Enhanced visceral sensitivity refers to a lower threshold for induction of pain by gastric distension in the presence of normal gastric compliance. In one study, 87% of patients with functional dyspepsia had altered visceral afferent function.⁸

H. pylori is a gram-negative bacillus which is transmitted via the faeco-oral route. Chronic infection is common worldwide and is directly associated with peptic ulcer disease, chronic antral gastritis, gastric carcinoma, and B cell lymphoma of the stomach^{[[.9]]} In Jamaica, two endoscopic studies found 55% and 60% of patients to have *H. pylori* infection.¹⁰¹¹ In another study, 69% of the population in an urban community had the infection.¹²

Recently *H. pylori* infection has been associated with dyspepsia. The exact mechanism leading to dyspeptic symptoms is not known but alteration of neuro-humoral function due to chronic inflammatory processes and an increased gastrointestinal sensitivity may be contributory factors.³

In view of the high prevalence of *H. pylori* infection in Jamaica and the Caribbean, and the probable association in some patient with dyspepsia, it is important to determine the prevalence of infection in functional dyspeptic patients. The results of this study will also help to guide the initial management in patients with dyspepsia.

PATIENTS AND METHODS

Patients presenting to University Hospital of the West Indies (UHWI), Jamaica, between January 2005 – January 2007 with dyspepsia and undergoing upper gastrointestinal endoscopy for diagnostic evaluation were eligible for study.

All patients referred with dyspepsia were seen by a gastroenterologist. A clinical history and physical examination was performed. Patients requiring an upper gastrointestinal endoscopy for further evaluation had the procedure explained to them and an initial verbal consent obtained.

Inclusion criteria for patients in the study were the following; (a) adults, 18 – 65 years with dyspepsia – recurrent upper abdominal pain or discomfort; b) no anti-inflammatory, analgesic or acid suppressing medications for at least one month, c) negative previous investigations for dyspepsia and (d) normal upper gastrointestinal endoscopy. Patients were excluded with the following; (a) moderate to severe cardio-pulmonary disease, b) abnormal upper endoscopy; c) upper GI bleeding.

Informed consent for the endoscopy was obtained by the endoscopist and the endoscopy nurse. In addition, a separate informed consent was obtained from all patients prior to inclusion in the study by another physician, who also completed the questionnaire.

Endoscopy was performed by a gastroenterologist or gastroenterology resident supervised by a gastroenterologist, using a thin Olympus (GIF V; GIF-100) forward viewing endoscope. Local pharyngeal anaesthesia with 10% lignocaine spray was used in all patients and when necessary sedation with 5 – 10 mg intravenous midazolam. Routine evaluation of the oesophagus, stomach and proximal duodenum was performed and any abnormalities noted.

For patients fulfilling the criteria for inclusion in the study, testing for *H. pylori* was performed at upper GI endoscopy. Two biopsies from the stomach; one from the antrum within two to three centimeters of the pylorus and another taken from the body of the stomach were obtained and tested for *H. pylori* by the rapid urease test (CLO Test). The result of the rapid urease test (CLO Test, Trimed Laboratories, Draper, Utah) was read by the gastrointestinal nurse, who was blinded to the patient's history and findings and confirmed by a physician (gastroenterology resident or consultant).

Post-endoscopy all patients were interviewed regarding the use of alcohol, tobacco, marijuana and recent drug intake. Several social and home environmental factors including diet, availability of in-house piped water, electricity, and refrigeration were documented.

Following the endoscopy, the findings were discussed with

the patient and further management recommended by the gastroenterologist. On subsequent follow-up, the result of the *H. pylori* test was discussed and treatment initiated for *H. pylori* infection as appropriate.

RESULTS

There were thirty (30) patients enrolled in the study. The majority were females (73%). The mean age was 47 years with a range of 24 to 76 years. Most of the patients were from urban areas in the parishes of Kingston and St. Andrew (43%) and St Catherine (36%). Twenty one percent (21%) of patients were from rural areas.

The most common presenting symptom was epigastric pain which was present in 76%. Only a minority of patients presented with bloating, nausea, early satiety, vomiting or excessive belching. 23% of patients consumed alcohol regularly while 10% were cigarette smokers. All patients had piped water and refrigeration.

Ten (33%) of thirty (30) patients, tested positive for *H. pylori*. In patients who tested positive for *H. pylori*, 70% were females compared with 75% of those negative for infection. In infected patients, the mean age was 49 years with a range of 24 to 75 years. 80% were from urban areas in Kingston and St Catherine. The most common presenting symptom was epigastric pain (80%). The next most common symptom was nausea (20%). Forty percent 40% of these patients had a history of regular alcohol consumption compared to 15% in non-infected patients. In *H. pylori* positive patients, 20% were cigarette smokers, compared to 5% in negative patients.

In the subgroup of patients negative for *H. pylori*, the mean age was 45 years with a range of 24 to 75 years. 80% were from urban areas in Kingston and St Catherine. The most common presenting symptom was epigastric pain (90%). Bloating was present in 15% and 10% complained of early satiety.

DISCUSSION

H. pylori infection can be confirmed by endoscopic and non-endoscopic methods. In patients with a clinical indication for upper gastrointestinal endoscopy, biopsy specimens are obtained for testing. A characteristic feature of *H. pylori* is its marked production of urease and this is utilized in the urease test.¹⁰ The rapid urease test (CLO test) is simple, accurate and relatively inexpensive with specificity of 100% and sensitivity of 90%.¹³

In patients presenting with dyspepsia, peptic ulcer disease is found in approximately 15 – 25% of cases, gastroesophageal reflux disease in 5 – 15% and malignancy (esophageal or gastric) in less than 2%.⁵ Upper endoscopy is the investigation of choice in patients with dyspepsia. Patients without obvious structural lesions are classified as functional dyspepsia. There are no diagnostic tests for functional dyspepsia. As a result, diagnosis is made from a characteristic clinical history and exclusion of other causes of dyspepsia.

There is an association between *H. pylori* infection and dyspepsia. In a meta-analysis of 23 studies the rate of infection in patients with functional dyspepsia was 55%. There was also an increased risk (1.5 – 2) of dyspepsia in people infected with *H. pylori* compared to controls without infection.¹⁴ In the present study 33% of patients with functional dyspepsia had *H. pylori* infection.

The association of alcohol consumption and cigarette smoking in this study is of interest. However, the number of patients was small and thus a definitive conclusion cannot be made. In a prior endoscopic study on *H. pylori* in Jamaica, there was no association between these factors and infection.¹⁰ These associations require further study in functional dyspepsia in this population. In the present study, 79% of patients were from urban areas and 21% from rural areas. This finding is similar to a previous endoscopic study.¹⁰

Eradication of *H. pylori* in infected patients with functional dyspepsia is associated with significant long term improvement of symptoms compared to placebo in most studies.¹⁵¹⁶ A meta-analysis of *H. pylori* eradication in functional dyspepsia showed a significant reduction in symptoms.¹⁷ Guidelines have endorsed a test and treat approach as a safe, efficient and cost effective strategy in patients under 50 years with functional dyspepsia without alarm symptoms.²¹⁸¹⁹ Treatment of positive cases is also associated with other long term benefits including prevention of peptic ulcer disease and its complications and possible prevention of gastric carcinoma. It has been recommended in developed countries that testing for *H. pylori* and treating positive cases is cost effective.¹⁷

The management of patients with dyspepsia should be individualized. Endoscopy is indicated in patients over 50 years, in those with alarm features and those who have failed previous therapy. In young patients testing and treating for *H. pylori* may be cost effective with short term and long

term benefits.

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