



An endoscopy study of analysis of helicobacter pylori infection in chronic dyspepsia patient with rapid urease test in a tertiary care hospital, Jamnagar

KEYWORDS

endoscopy study, helicobacter pylori, chronic dyspepsia

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ABSTRACT

Our aim was to identify H.pylori infection in patients presenting with peptic ulcer like symptoms by endoscopy and to eradicate Helicobacter pylori infection with anti Helicobacter pylori treatment in chronic dyspepsia patients and to see whether resolution of symptoms occur or not. Fifty cases presenting with complaints of dyspepsia between March 2012 to March 2013 were selected. A thorough history, examination of the patient, basic necessary blood investigations, USG abdomen, to rule out other causes of dyspepsia and Endoscopy was done on patients. Biopsy material taken and sent for urease test to diagnose H. pylori infection in these patients. Anti H. pylori treatment given for all dyspepsia patients, follow up was done whether improvement or relief of symptoms occurred. The study consists of 50 patients i.e., 35 males and 15 females. More than 70% of the chronic dyspepsia patients have associated with H.pylori infection and out of them more than 75% was relieved of symptoms with treatment.

Introduction:

Dyspepsia is defined as pain or discomfort centered in the upper abdomen associated with bloating, early satiety, post-prandial fullness, nausea, anorexia, heartburn, regurgitation and burning or belching¹ with or without water brash. Most patients with indigestion have symptoms of a functional nature that results from gastro esophageal acid reflux or from gastric abnormalities including dysfunctional motor activity and afferent hypersensitivity these symptoms compromise the syndrome functional dyspepsia. Some cases are consequence of a more serious organic illness. Dyspepsia accounts for up to 40-70% of gastrointestinal complaints in general practice.^{2,3} Dyspepsia affects to have a significant impact upon quality of life and enormous social costs both direct medical costs of physicians visit, diagnostic tests, medication and indirectly by absenteeism from work.⁴ Gastro esophageal reflux disease is one of the most prevalent of gastrointestinal disorders. Symptoms are caused by backflow of gastric acid and other gastric contents into esophagus due to incompetent barriers at the gastro esophageal junction. GERD have diverse clinical manifestation in patients after investigation showed evidence of oesophageal mucosal damage with or without evidence of quantifiable pathologic acid reflux. Other patients may have oesophageal mucosal damage and complication of reflux with or without symptoms. *Helicobacter pylori* (*H. Pylori*) is a gram negative bacterium (germ). It can infect the lining of the stomach and duodenum.⁵ *H. pylori* is the main cause of peptic ulcers not associated with nonsteroidal anti-inflammatory drugs (NSAIDs) and also causes functional dyspepsia in a small proportion of cases.⁶ and its frequency also inversely related to socio economic status. The current international definition of dyspepsia is 'persistent or recurrent pain or discomfort centered in the upper abdomen'; it excludes those with heartburn alone.⁷

Objective:

Our aim was to identify H.pylori infection in patients presenting with peptic ulcer like symptoms by endoscopy and to eradicate Helicobacter pylori infection with anti Helicobacter pylori treatment in chronic dyspepsia patients and to see whether resolution of symptoms occur or not.

Materials and methods

This study was conducted at G.G.Hospital, Jamnagar on 50 cases admitted or on OPD basis. Patient with various dyspeptic symptoms. A thorough history, examination of the patient,

basic necessary blood investigations, USG(UltraSonoGraphy) abdomen ,to rule out other causes of dyspepsia and EGD (EosinophagoGastroDuodenoscopy) was done on patients. Biopsy material taken and sent for urease test to diagnose H. pylori infection in these patients. Anti H.pylori treatment was given to these patients, follow up was done whether improvement or relief of symptoms occurred.

• McCarthy Dyspepsia Severity Score

In our study the severity of dyspepsia was measured by the score proposed by McCarthy. The symptoms evaluated consisted of a questionnaire including the frequency and severity of six dyspeptic symptoms.

The symptoms elicited were:

- Epigastric pain during day time
- Epigastric pain during night time
- Nausea and vomiting
- Anorexia
- Early satiety
- Regurgitation

These symptoms were scored for severity and frequency from 0 to 4 as follows :

• Frequency scoring

Frequency grade	Score allotted
Absent	0
One per week	1
Several times per week	2

• Severity Scoring

Severity grade	Score allotted
Absent	0
Present but not interfering with daily work of life	1
Present but interfering with daily work of life	2

So one can expect a maximum dyspepsia severity score of $6 \times 4 = 24$ and a minimum of $6 \times 0 = 0$.

About 50 patients admitted or on OPD basis between march 2012 to march 2013 from Department of Surgery who fit in our criteria.

Patients with dyspeptic symptoms having score more than 5, Duration of symptoms more than 6 month, Age between 15-75 years, both males and females were included in the study.

Age below 15 and above 75 years, Patients with history of jaundice, Patients with history of alcohol abuse and smoking, Patients with cholelithiasis, irritable bowel syndrome, chronic pancreatitis, hiatus hernia, gastric and duodenal ulcer, gastric and pancreatic cancer, Patients on any medications like NSAIDs theophylline and antibacterial were excluded from the study.

• Method of collection of data

1. Patients having history of dyspeptic symptoms and who fit to the above criteria were taken for the study.
2. Those patients willing for EGD were taken.
3. Biopsy taken by EGD was subjected to detect H.pylori through this test.
4. USG abdomen was done to rule out other causes of dyspepsia.
5. Blood investigations Hb gm%, blood sugar, urine albumin, sugar and microscopy, liver function test, blood urea and serum creatinine were done.

• Rapid urease test method:

Biopsy specimens from duodenum, antrum, body, fundus and cardia, esophagus from the patients were taken. These specimens were introduced immediately into five separate Urease kit and the kit were labeled. The kits were observed for two hours for any colour changes and colour of the kit after two hours was recorded. A change of colour from yellow to pink was recorded as the positive urease test whereas all the other hues from yellow to pink, but not pink was taken as negative result.



Rapid Urease Test

• Treatment Regimen:

Treatment consisting of Clarithromycin (500mg BD), Metronidazole (500mg BD) or Amoxicillin (1gm BD), Omeprazole(20mg BD) was given to the patients who were positive for H. Pylori for 14 days.

Observation:

Association of Dyspepsia with H.pylori:

Chronic Dyspepsia	H.pylori +ve	H.pylori -ve	Total
Yes	30	10	40
No	5	5	10
Total	35	15	50

P value < 0.001, (Highly significant) As It is highly significant, it suggests that infection with H.pylori has high association with causing chronic dyspepsia.

Distribution of the sample by sex:

Sex	Frequency	Percent
Male	35	70
Female	15	30
Total	50	100

Chi-square for sex=8.000; P<.005 (Highly significant)

Significantly more number of male cases were present in the study as compared to female patients. Chi-square value of 8.0 was found to be highly significant (P<.005) further confirming that males outnumbered females. All H.pylori positive patients were given above mentioned anti H.pylori treatment regimen. Out of 35 patients, 22 patients were totally cured and 5 patients were improved of symptoms and 8 patients were not improved of symptoms. 77.14% patients from all H.pylori positive cases got symptomatic relief.

Discussion:

Our study was based on dyspeptic patients presenting to us with various symptoms due to different etiologies, both male and female in age group of 15-75 years. A study done by Talley NJ, 1992,⁷ shows that 50% and 20-70% of patients were with functional dyspepsia respectively there is no apparent cause and the dyspepsia is considered idiopathic or functional. The diagnosis of H.pylori infection was made using rapid urease test. The histopathological test kit was used. Brig N. Ray (1995)⁸ reported the sensitivity and specificity of this test was 88.6% and 83.4% respectively. In our dyspeptic patients 76% are belonged to low socioeconomic status. Jean Graftie and Micheal Fredrick Dixen⁹ also studied and showed 80% of the dyspeptic patients are of low socioeconomic status. Kachintorn U, Luengrojanakul P, Atisook K, Theerabutra C, Trawandee T,¹⁰ in their study showed patients with upper gastrointestinal symptoms to determine the prevalence of H.pylori infection and to investigate their association with histological gastritis. The overall prevalence of H.pylori was 63.3 percent. Duodenal ulcer has the highest prevalence rate of H.pylori infection(66%), Gastric ulcer was less frequently associated with H.pylori infection(55%). In our study, among chronic dyspeptic patients, 62.85% cured, 14.28% improved of symptoms and 22.85% have no change of symptoms after treatment with anti H.pylori regimen. After endoscopy, and H pylori eradication therapy if positive, treatment should be targeted at the underlying diagnosis. Most patients will have functional dyspepsia and can be offered acid suppression therapy.¹¹ Patients of any age who continue to have symptoms despite appropriate investigations, therapy, and reassurance are a difficult group to manage. Symptoms should be reassessed and prokinetic agents, antidepressant therapy, or psychological treatments considered, although the benefits of these approaches are not established.¹²⁻¹⁴

Conclusion:

More than 70% of the chronic dyspepsia patients have associated with H.pylori infection and out of them more than 75% was relieved of symptoms with treatment.

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