



Analysis of Helicobacter Pylori infection in chronic dyspepsia patients with rapid urease Test - An endoscopy study

Dr Nilesh K Goswami Associate professor in General surgery, M.P.Shah Medical College, Jamnagar.

Dr Nirav B Satasia Senior resident in General surgery, M.P.Shah Medical College, Jamnagar.

Dr Kishor Jain Senior resident in General surgery, M.P.Shah Medical College, Jamnagar.

KEYWORDS : endoscopy study, helicobacter pylori, chronic dyspepsia

Introduction

Dyspepsia is defined as pain or discomfort centered in the upper abdomen associated with bloating, early satiety, postprandial 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 gastroesophageal 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 upto 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

Gastroesophageal reflux disease is one of the most prevalent of gastrointestinal disorders. Symptoms are caused by backflow of gastric acid and other gastric contents into oesophagus due to incompetent barriers at the gastroesophageal junction. GERD have diverse clinical manifestation in patients after investigation showed evidence of oesophageal mucosa 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. Yet other patients may have not a few oesophageal symptoms and presents with a variety of extra oesophageal symptoms.

Helicobacter pylori (commonly just called *H. pylori*) is a 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 literature on dyspepsia and *Helicobacter pylori* continues to be inconsistent and confusing. The current international definition of dyspepsia is 'persistent or recurrent pain or discomfort centered in the upper abdomen', and excludes those with heartburn alone.⁷

Materials and Methods

This study was conducted at G.G.Hospital, Jamnagar on 50 cases admitted or on OPD basis. Prior approval from Institutional ethics committee(Human) was obtained for the purpose of this study.

A hospital based study was conducted on patients from surgical OPD with various dyspeptic symptoms. A thorough history, examination of the patient, basic necessary blood investigations, USG abdomen, to rule out other causes of dyspepsia and EGD was done on patients. Urease Breath Test was done for *H.pylori* infection in non ulcer patients. Anti *H.pylori* treatment was given for non ulcer dyspepsia 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 in-

cluding 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 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 July 2011 and June 2012 from Department of Surgery who fit in our criteria.

Patients with dyspeptic symptoms having score more than 5, Duration of symptoms more than 1 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 antibacterials were excluded from the study.

Method of collection of data

- Patients having history of dyspeptic symptoms and who fit to the above criteria are to be taken up for the study.
- Those patients willing for EGD will be taken. Patients consists of both males and females.
- Rapid Urease Breath test (indirect method) – Biopsy taken by EGD is subjected to detect *H.pylori* through this test.
- USG abdomen done to rule out other causes of dyspepsia.
- Blood investigations Hb gm%, blood sugar, urine albumin, sugar and microscopy, liver function test, blood urea and serum creatinine.

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

Results:

Frequency of dyspepsia irrespective of H.pylori infection

Dyspepsia	Frequency	Percent
Nil	4	10
Mild	10	25
Moderate	12	30
Severe	14	35
Total	40	100

Association of Dyspepsia with H.Pylori:

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

All H.pylori positive patients were given H.pylori treatment in form of 3 drug regimen which contain... Clarithromycin 250mg Pantoprazole 30 mg.

Tinidazole 500 mg, for 14 days. Results are as following...

No. of patients cured	5
No. of patients improved(symptomatic)	25
No improvement	5
Total patients	35

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. Talley NJ, 1992,⁸ 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, Theerabuttra 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 non ulcer dyspeptic patients, 14.28% improved of symptoms, 71.42% improved of symptoms and 14.28% 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 Elta CH, Scheiman JM, Barnett JL, Nostrant TT, Behler EM.¹⁵ in their study symptomatic improvement in 60-65% of non-ulcer dyspepsia patients anti H. pylori treatment was observed. Long-term symptom follow-up in both the control and infected groups gave similar results.

REFERENCES

1. Talley NJ. Functional gastroduodenal disorders. Gut 1992; 45:1137. | 2. Veldhuyzen Van Zanten S, Flook N, Chiba N. An evidence based approach to | the management of uninvestigated dyspepsia in the era of Helicobacter pylori. | Can Med Assoc J 2000; 162: 53. | 3. Fisher R, Parkman H. Management of nonulcer dyspepsia. N Engl J Med | 1998; 339: 1376. | 4. Hu W, Talley N. Functional (non-ulcer) dyspepsia – Unexplained but not | unmanageable. Med J Aug 1998; 168: 507. | 5. <http://www.patient.co.uk/health/Helicobacter-Pylori-and-Stomach-Pain.htm> | 6. Moayyedi P, Deeks J, Talley NJ, Delaney B, Forman D. An update of the Cochrane systematic review of Helicobacter pylori eradication therapy in nonulcer dyspepsia: resolving the discrepancy between systematic reviews. Am J Gastroenterol 2003;98:2621–2626. | 7. Talley NJ, Colin-Jones D, Koch KL, Koch M, Nyren O, Stanghellini V. Functional dyspepsia: a classification with guidelines for diagnosis and management. Gastroenterol Int 1991; 4: 145-60 | 8. Brig N Rig. Role of Helicobacter pylori in non ulcer dyspepsia. Gastroenterology 1995; 14: 493. | 9. Jean Graftie, Michel Fredrick Dixon. Therapy for H. Pylori in NUD a metaanalysis of randomized controlled trials. Gastroenterol 2000; 160: 186. | 10. Kachintorn U, Luengrojanakul P, Atisook K, Theerabuttra C, Tranwandee T. Helicobacter pylori and peptic ulcer diseases ; prevalence and association with | antral gastritis in 210 patients. J Med Assoc Thai 1992; 75(7): 386-92 | 11. Moayyedi P, Delaney B, Vakli N, Forman D, Talley N. The efficacy of proton pump inhibitors in non-ulcer dyspepsia: a systematic review and economic analysis. Gastroenterology 2004;127:1329–1337. | 12. Moayyedi P, Soo S, Deeks J, Forman D, Harris A, Innes M, Delaney B. systematic review: antacids H2-receptor antagonists, prokinetics, bismuth and sucral-fate therapy for non-ulcer dyspepsia. Aliment Pharmacol Ther 2003;17:1215–1227. | 13. Soo S, Forman D, Delaney B, Moayyedi P. A systematic review of psychological therapies for nonulcer dyspepsia. Am J Gastroenterol 2004;99:1817–1822. | 14. Camilleri M, Talley NJ. Pathophysiology as a basis for understanding symptom complexes and therapeutic targets. Neurogastroenterol Motil 2004;16:135–142. | 15. Elta CH, Scheiman JM, Barnett JL, Nostrant TT, Behler EM. Long-term | Follow up of Helicobacter pylori treatment in non-ulcer dyspepsia patients. Am | J Gastroenterol 1995; 90(7): 1089-93. |