Role of helicobacter pylori in oesophagitis

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DOI: https://doi.org/10.33545/surgery.2021.v5.i4e.804

Abstract

Background: Reflux oesophagitis is defined as a condition that develops when the reflux of stomach contents causes troublesome symptoms and/or complications. Helicobacter pylori (H. pylori) is an important human pathogen involved in the pathogenesis of atrophic gastritis, gastro-duodenal ulcer, gastric cancer. The relationship between Reflux oesophagitis and H.pylori infection is still subject of debate.

Aims: To evaluate treatment modality of H.pylori positive patients endoscopic followup and evaluate the incidence of reflux oesophagitis among the followup patients. To evaluate incidence of H.pylori infection in clinically diagnosis dyspeptic patients. To evaluate various modes of presentation.

Study design: This is a prospective study done between October 2019 to September 2021 which includes 50 patients diagnosed with dyspeptic symptoms in RMMCH Chidambaram

Results: Male population between 30 to 50 were the most affected among all. Lower socioeconomic group appear to be most affected. Majority of the patients had abdominal pain as the most common symptom. Majority of the patients who were treated with triple therapy had incidence of endoscopically proven lower end oesophagitis

Conclusion: As a result of appropriate treatment given to the hpylori positive patients, majority of the patients had successful eradication of Hpylori and subsequent incidence of endoscopically proven lower end oesophagitis. Thus helicobacter pylori could play a protective role in reflux oesophagitis.

Keywords: H.pylori, reflux oesophagitis, rapid urease test

Introduction

Reflux oesophagitis is due to the long term continuous exposure of the oesophageal mucosa to acid secretion from the stomach [1]. Reflux oesophagitis is defined as a condition that develops when the reflux of acid from the stomach that causes troublesome symptoms [2]. Helicobacter pylori (H.p) infection is a risk factor for the development of many conditions namely peptic ulcer, atrophic gastritis, gastric cancer. The relationship between Reflux oesophagitis and H.pylori infection is still subject of debate [1].

Helicobacter pylori (H. pylori) is a major human pathogen which causes progressive gastro-duodenal damage. Helicobacter pylori (H. pylori) is an important human pathogen involved in the pathogenesis of atrophic gastritis, gastro-duodenal ulcer, gastric cancer. The rapid urease test (RUT) is a COMMON diagnostic test and it is a rapid, cheap and simple test that detects the presence of urease in/on the gastric mucosa.

The cure of Helicobacter pylori is associated with an impressive reduction of ulcer recurrences and ulcer complications. Because duodenal ulcer may be associated with other acid-related disorders such as reflux esophagitis, it was hoped initially that antibacterial treatment would cure reflux esophagitis as well. When it was observed the first cases of reflux esophagitis arose after cure of H.pylori infection, question arose as to whether the cure had an unfavourable effect on reflux oesophagitis [3].

First, individuals who, after years of food-related pain, could finally eat what they liked may overeat and increase their body weight. Weight gain or, more likely, a higher intake dietary fat and larger meals leading to weight gain might increase the risk of reflux esophagitis. Second, we observed that H. pylori produces large amounts of ammonia, which, because of its pH, could be a neutralizing substance in the oesophagus [4].

The present study was done to establish that eradication/cure of H.pylori infection can lead to reflux oesophagitis.
Aims and Objectives
1. To evaluate treatment modality of H.pylori positive patients, endoscopic followup and evaluate the incidence of reflux oesophagitis among the followup patients.
2. To evaluate incidence of H.pylori infection in clinically diagnostic dyspeptic patients.
3. To evaluate various modes of presentation.

Methodology
This study will be conducted among the patients in the Rajah Muthiah Medical College who have diagnosed as oesophagitis with dyspeptic symptoms in RMMCH during study period. Patients will be studied in the terms of
1. Clinical History
2. Examination and Appropriate investigations.
3. Endoscopic follow up and outcome

Inclusion Criteria
- All patients diagnosed with oesophagitis in Raja Muthiah Medical College Hospital, Chidambaram
- All patients presented with dyspeptic patients

Exclusion criteria
- Patient not willing to participate
- Mental retardation
- Pregnancy

Method of Study
Data will be collected pertaining to patient’s details like Name, Age, sex, history, clinical examinations, investigations which includes
1. UGI scopy with biopsy
2. Rapid Urease Test

Observation and Results
Total of 50 patients were enrolled in the study, who presented with dyspeptic symptoms and were willing for the study between the period of October 2019 to September 2022.
- Out of 50 endoscopically proven gastritis, 45 patients were proven to be infected with helicobacter pylori based on rapid urease test
- 45 patients who were H.pylori infected were treated and were followed up and planned for repeat testing after 4 weeks of therapy
- 45 patients could be successfully followed up for repeat testing following the therapy.

Further studies and comparison were done with these 45 patients

Sex Distribution
Male female ratio was nearly 2:1, 27 males (54%): 23 females (46%)

Age Wise Distribution of Dyspeptic Patients
Endoscopically proven gastritis changes in the mucosa were more in the age middle age group with about 60%(30) of the study population. Mean age for males for 35 and for females 36.

Socioeconomic Status (SES)
Being a tertiary care centre in the government setup we had more than half of the study population coming from the lower socioeconomic status (58%).

Symptomatology
This histogram shows the various symptoms and their frequency in dyspeptic patients
Abdominal pain is the commonest symptom (65%) followed by bloating sensation and nausea (51%).

As in literature, abdominal pain which is due to mucosal damage in gastric mucosa is the most common symptom.

**Site of Lesion**

![Graph 5: Endoscopic Distribution of Site of Lesion](image)

- Major site of infection for dyspeptic patients leading to gastritis was at Antrum (78%).
- More predilection for antrum region to be affected than lesser curvature.

**Rapid urease Test**

![Graph 6: The Distribution of Rapid Urease Test](image)

- Out of the 50 endoscopically proven gastritis (dyspeptic patients), 45 (90%) had rapid urease test positivity.
- Prevalence of helicobacter pylori infection in endoscopically proven gastritis were at 90%.
- Thus our part of country is a high prevalence area.

**Table 2: RUT & Type of Gastritis**

| RUT  | Antral gastritis | Percentage (%) | Pyloric gastritis | Percentage (%) | Lesser curvature | Percentage |
|------|------------------|----------------|-------------------|----------------|-----------------|------------|
| Positive | 36               | 94.7           | 9                 | 82             | 0               | 0          |
| Negative | 2                | 5.3            | 2                 | 18             | 1               | 100        |
| Total   | 38               | 100            | 11                | 100            | 1               | 100        |

**Graph 7: Histogram Showing Relationship between RUT and Gastritis**
Among the 38 antral gastritis patients, 36 (94.7%) had H pylori infection and in case of 11 pyloric gastritis, 9 (80%) had H pylori infection.

Among the 45 H pylori positive patients, 36 (80%) had antral gastritis and 9 had pyloric gastritis (20%).

**Follow up Patients**
- 45 H.Pylori infected patients who were instituted therapy (triple dose regimen consisting of amoxicillin, metronidazole and omeprazole) had come for post therapy testing to assess eradication
- 36 of the 45 were from the antral group and 9 were from the pyloric group

**Table 3: Follow up Patients and the Gastritis Type they belonged**

| Follow up patients   | Frequency | Percent |
|----------------------|-----------|---------|
| Antral Gastritis     | 36        | 80      |
| Pyloric Gastritis    | 9         | 20      |
| Total                | 45        | 100     |

**Post treatment endoscopic findings**
- Post treatment endoscopic findings revealed a cure rate of 89% with about 11% of patients having persistent gastritis
- Of the uncured 6.6%(3) were antral and 4.4%(2) were pyloric gastritis

Out of the 45 patients who were followed up in the study, 40 became RUT negative (89.2%). Thus the eradication rate in our study was nearly 90%.

**Post Treatment Endoscopic Findings**

| Post treatment findings   | Frequency | Percent |
|---------------------------|-----------|---------|
| Antral                    | 3         | 6.6     |
| Pyloric                   | 2         | 4.4     |
| Cured                     | 40        | 89      |
| Total                     | 45        | 100     |

**Graph 8: Relationship between H.Pylori Infection and Type of Gastritis**

**Graph 9: Follow up Rapid Urease Test**

**Graph 10: Post Treatment Findings Showing New Onset Reflux Oesophagitis after H.Pylori Eradication**
Among the cured (95%)(40), 72% patients (29 patients) had incidence of new onset endoscopically proven lower end oesophagitis

Hassan et al. [4], Xie et al. [5], C A Fallone et al. [6] studies showed similar results when compared to our study.

Conclusion
Following were the conclusions which resulted from this present study that was conducted on 50 dyspeptic patients diagnosed in RMMCH

• Most affected age group was found to be of 30 to 50 years and slight preponderance to males
• Most common socioeconomic group affected were the lower socioeconomic group
• Abdominal pain has been found to be the most predominant symptom
• Most patients with dyspeptic patients had H.pylori as the source of infection
• H.pylori associated dyspeptic patients had antrum as the most common site and antral gastritis as the most common mode of presentation
• Eradication rate of helicobacter and endoscopic cure rate of gastritis in the study were going hand in hand
• Eradication of h.pylori is associated with subsequent onset of lower end oesophagitis in most patients

As a conclusion
So effective treatment and follow up of patients with endoscopically proven gastritis in dyspeptic patients will improve eradication of the organism. The overall outcome is even after eradication of organism, patients develop lower end reflux oesophagitis. Thus helicobacter pylori could have a protective role for reflux oesophagitis.

References
1. Scida S, Russo M, Miraglia C, Leandro G, Franzoni L, Meschi T, et al. Relationship between Helicobacter pylori infection and GERD. Acta Biomed 2018;89(8-S):40-43. doi: 10.23750/abm.v89i8-S.7918. PMID: 30561416; PMCID: PMC6502218.
2. Vakil N, Van Zanten SV, Kahrilas P, Dent J, Jones R. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus. Official journal of the American College of Gastroenterology [ACG] 2006;101(8):1900-1920.
3. Labenz J, Blum AL, Bayerdörffer E, Meining A, Stolte M, Börsch G. Curing Helicobacter pylori infection in patients with duodenal ulcer may provoke reflux esophagitis. Gastroenterology 1997;112(5):1442-7. Doi: 10.1016/s0016-5085(97)70024-6. PMID: 9136820.
4. Ashktorab Hassan et al. "Helicobacter pylori protection against reflux esophagitis. Digestive diseases and sciences 2012;57(11):2924-8. doi:10.1007/s 10620-012-2349-3
5. Xie Tingtinga, Cui Xiaobing, Zheng Haoxuana, Chen Dongb, He Lingb. Jiang, Boa Meta-analysis, European Journal of Gastroenterology & Hepatology 2013;25(10):1195-1205. doi: 10.1097/MEG.0b013e328363e2c7
6. Fallone Carlo, Barkun Alan, Friedman Gad, Mayrand Serge, Loo Vivian, Beech Robin, et al. Is Helicobacter pylori eradication associated with gastroesophageal reflux disease?. The American journal of gastroenterology 2000;95:914-20. 10.1111/j.1572-0241.2000.01929.x.