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Role of helicobacter pylori in oesophagitis

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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 diagnostic 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 pKa, could be a neutralizing substance in the oesophagus [3].

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.

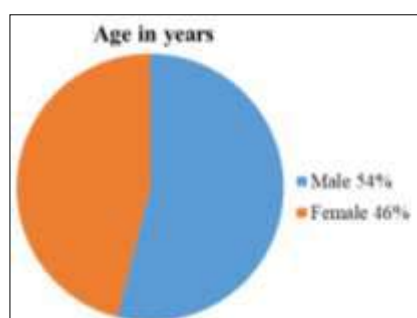
50 patients who enrolled had endoscopically proven gastritis

- 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

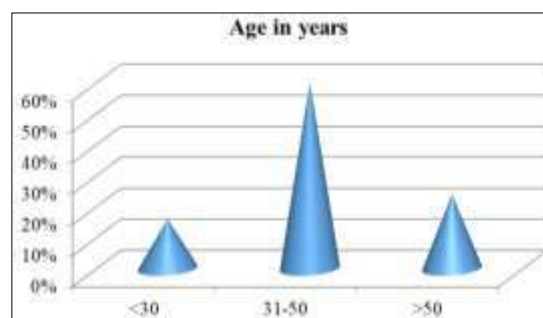
Sex Distribution

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



Graph 1: Gender Distribution

Age Wise Distribution of Dyspeptic Patients



Graph 2: Age Distribution

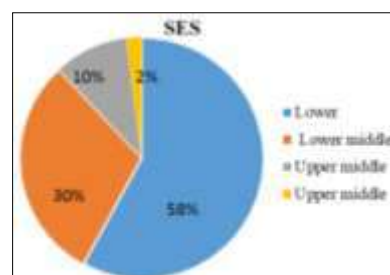
Endoscopically proven gastritis changes in the mucosa were more in the age middle age group with about 60%(30) of the study population. Mean age for males for 35 and for females 36.

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%).

Table 1: Socioeconomic Status Distribution

SES	Frequency	Percent
Lower	29	58%
Lower middle	15	30%
Upper middle	5	10%
Upper	1	2%
Total	50	100

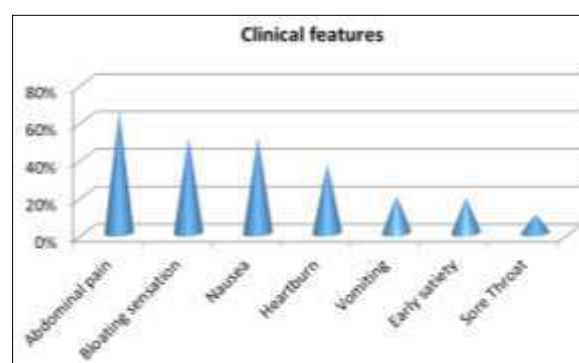


Graph 3: Socioeconomic Status Distribution

Thus the lower middle and lower socioeconomic status had higher prevalence of dyspeptic symptoms among the study group

Symptomatology

This histogram shows the various symptoms and their frequency in dyspeptic patients

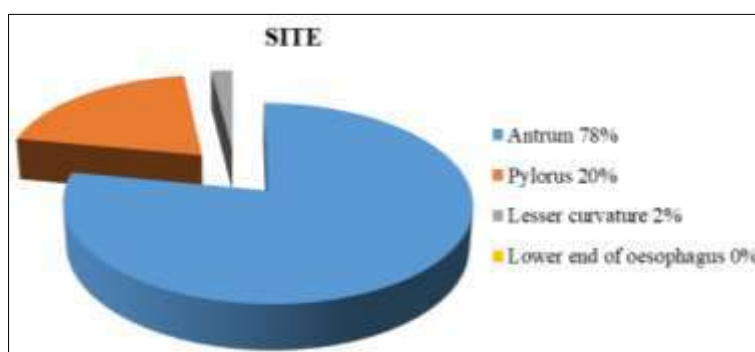


Graph 4: Histogram Showing Frequency of Presenting Symptoms

- 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

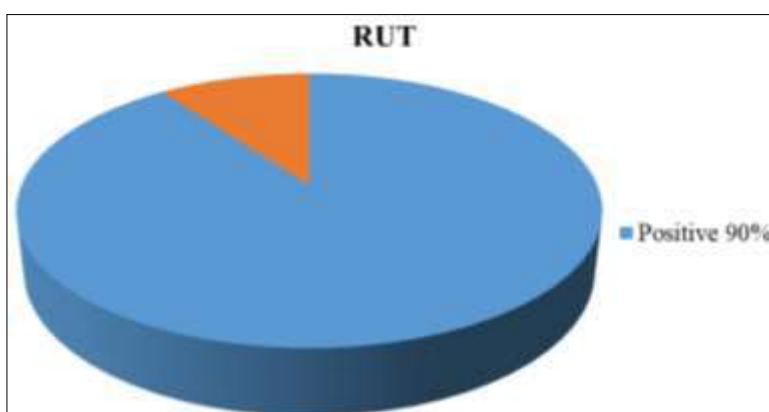
Site of Lesion



Graph 5: Endoscopic Distribution of Site of Lesion

- 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

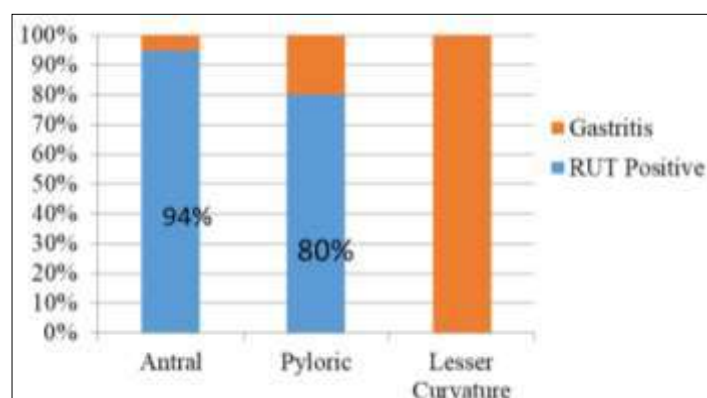


Graph 6: The Distribution of Rapid Urease Test

- 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

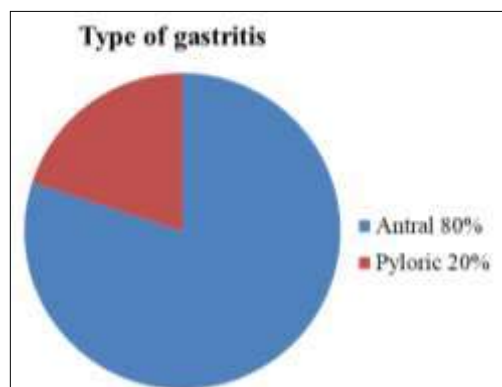
RUT	Antral gastritis	Percentage (%)	Pyloric gastritis	Percentage (%)	Lesser curvature	Percentage
Positive	36	94.7	9	82	0	0
Negative	2	5.3	2	18	1	100
Total	38	100	11	100	1	100



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%).



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

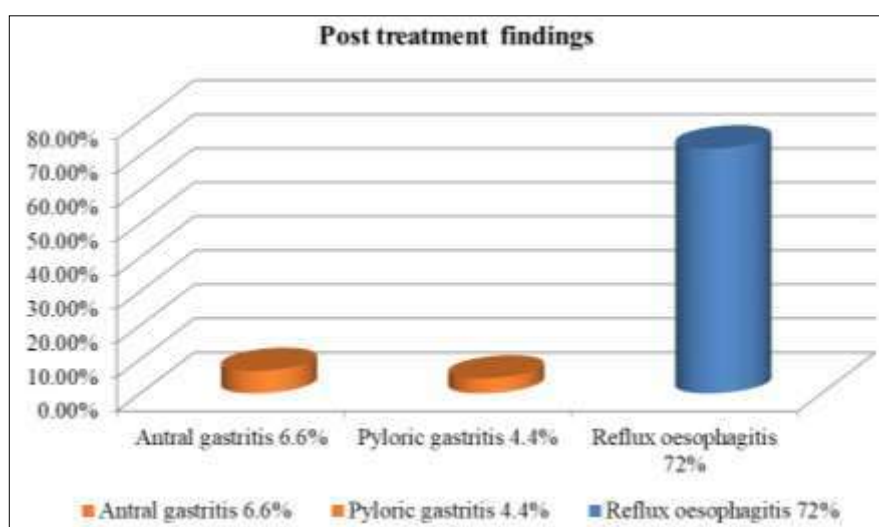
Follow up Patients

- 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

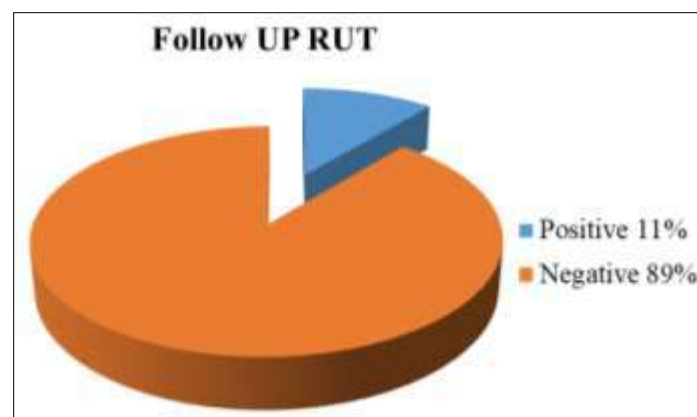
Follow up patients	Frequency	Percent
Antral Gastritis	36	80
Pyloric Gastritis	9	20
Total	45	100

Post treatment endoscopic findings



Graph 10: Post Treatment Findings Showing New Onset Reflux Oesophagitis after H.Pylori Eradication

Follow up Rapid Urease Test



Graph 9: Follow up Rapid Urease Test

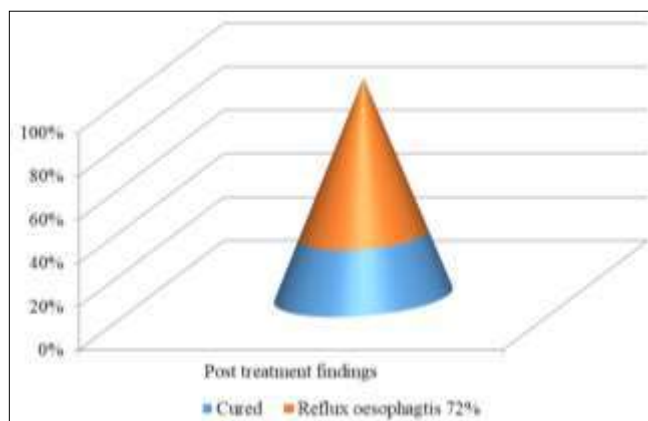
Out of the 45 patients who were followed up in the study, 40 became RUT negative (89.2%). Thus the eradication rate in our study was nearly 90%.

Post Treatment Endoscopic Findings

Table 4: Endoscopic Findings after Treatment

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

- 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



Graph 11: Histogram Showing Incidence of Reflux Oesophagitis among Cured Patients

- 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.

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