

Prevalence of Helicobacter Pylori Associated Dyspepsia among Patients Attending Gastroenterology Department of a Tertiary Care Hospital

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Abstract: *Dyspepsia is the presence of discomfort and recurrent pain in the upper abdomen. Aim: The study aims to evaluate the prevalence of Helicobacter Pylori associated dyspepsia among patients attending gastroenterology department of a tertiary care hospital. Objective: The research was performed to find out the baseline characteristics, clinical presentations, endoscopic features, and treatment regimen for Helicobacter Pylori infection. Methods: This is a prospective observational study, from January 2022 - June 2022 involving 100 patients. Patient's socio demographic and clinical data were recorded in a predesigned profoma. Results: Prevalence was found to be 50% and was high in the age >51 years and females have higher prevalence than male. Heart burn was most common symptom. Based on endoscopic features gastritis predominates more in the population. According to treatment regimen, HP kit had a greater significance in eradicating the organism. The study shows that H. Pylori infection should be considered as a serious problem in our community. Most of the clinical presentation were almost same for both positive and negative patients, so it can only assessed through endoscopic biopsy and other test. If people are reluctant to do the test it will lead to serious complications like gastric cancers.*

Keywords: H. Pylori, dyspepsia, gastritis, prevalence, endoscopy

1. Introduction

Dyspepsia is defined as the presence of discomfort or chronic and recurrent pain in the upper abdomen. It has been described as a negative sensation that can incorporate a wide variety of symptoms including bloating, early satiety, fullness, burping, nausea, or continuous or intermittent vomiting.

Dyspepsia prevalence varies between populations due to differences in frequency of disease, the diagnostic criteria used, and the degree of meticulousness used to rule out organic causes. Worldwide the prevalence of dyspepsia is found to be about 20 - 30% and a study from India reported a prevalence of about 30.4%.^[1]

Apart from several organic causes, the main causes of dyspepsia are PUD, H. Pylori, GERD, medications (NSAIDs), and gastric malignancy.^[2]

Helicobacter Pylori

H. pylori is a gram negative bacteria of about 2 - 4 um in length and 0.5 - 1um in width. Even though it is spiral shaped, it can appear as rod. It has flagella of about 3um long and aid in motility as well as its rapid development in the gastric mucosa. H. pylori transmission is mostly via oral - fecal route greatly due to absence of good sanitation, bad eating habits, safe drinking water, essential cleanliness, overcrowding.^[3] H. pylori is shown to cause dyspeptic symptoms including motor disorders, causing visceral hypersensitivity, acid secretion alterations, active and persistent inflammation in the GI mucosa. H. pylori survives in acidic conditions by producing urease, which catalyzes hydrolysis of urea to yield ammonia thus elevating the pH of its environment.^[4]

HP KIT^[5]

S. No	Name of Drug	Classification	Dose	Mechanism of Action
1.	Amoxicillin	Penicillin	750mg	It acts by inhibiting bacterial cell wall synthesis
2.	Tinidazole	Anti amoebics	500mg	Nitro group of tinidazole is reduced by cell extracts of trichomonous. The free nitro radicles generated as a result of this reduction is responsible for the anti - protozoal activity.
3.	Omeprazole	Proton pump inhibitor	20mg	It inhibits H+/K+ ATPase pump found at the secretory surface of gastric parietal cells.

2. Methods

In a tertiary care hospital in Trivandrum, India, a prospective observational study based on a single institution was conducted. The study was conducted from January 2022 to

June 2022 for a period of six months. 100 patients admitted to the hospital's gastrointestinal department served as a convenient sample size for the study. From January 2022, data collection has been underway. Patient demographic information is included on the data collecting form, along

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with endoscopic results and therapy. Patient case record which contains patient’s demographics, reason for admission, lab investigations, endoscopy findings, and prescribed drugs was the source of data.

Chi square test is one of the statistical tests used to condense the demographic and clinical data. For all tests, a p value of less than 0.001 was regarded as statistically significant. SPSS Version 26 was used for all statistical computations. Ethical clearance was obtained from the institute and informed consent was obtained from patients before data collection.

Inclusion criteria:

- Age group between 13 - 90 years.
- Gender: male and female.
- Patients who are willing to involve in study.

Exclusion criteria:

- Pregnant ladies.
- Presence of any Psychiatric disorder.
- Patients unwilling to participate in study.

3. Result

In this study, 100 individuals between the ages of 13 and 90 participated, with 44 men and 56 women. H. pylori prevalence was found to be 50 % (50/100 cases), of whom 22 were male and 28 were female. Table No.2 shows the prevalence in various age groups for both males and females. Regardless of gender, the highest prevalence [78%, (39/100)] was seen in the age group of >51 years.

1) Prevalence of h. pylori associated dyspepsia

Presence of H. Pylori	Frequency	Percent
Negative	50	50.0
Positive	50	50.0
Total	100	100.0

2) Distribution according to age group

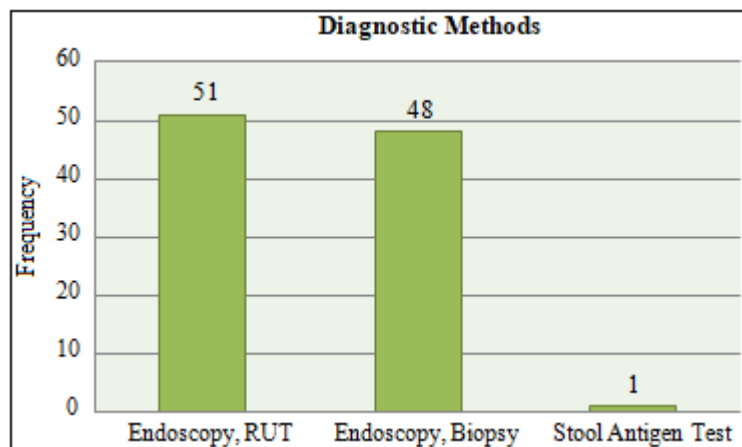
Age	Frequency	Percent
20 - 30	2	4
31 - 40	4	8
41 - 50	5	10
>51	39	78
Total	50	100.0

3) Distribution according to gender

Gender	Frequency	Percent
Male	22	44
Female	28	56
Total	50	100.0

4) Clinical presentations of patients with dyspepsia

Symptoms of Dyspepsia	Frequency	Percent
Gastritis with Acidic reflux	12	12
Mouth ulcer and Dyspepsia	14	14
Nausea and Vomiting	10	10
Abdominal pain and Abdominal Discomfort	24	24
Heart burn	19	19
Chest pain	2	2
Abdominal Bloating	10	10
Recurrence of fever	2	2
Fatigue and loss of appetite	5	5
Altered bowel habits	2	2



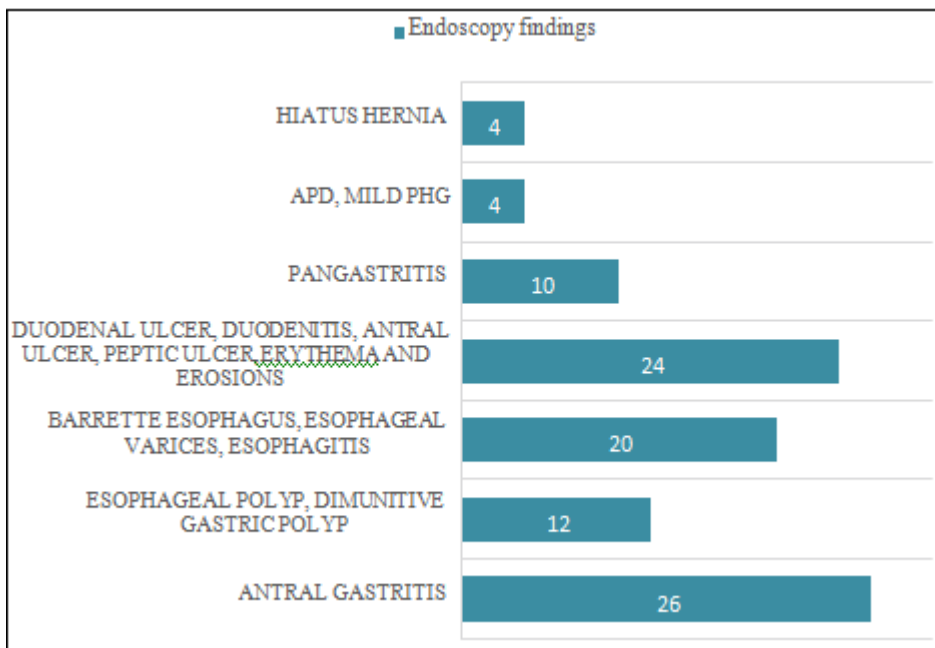
5) Distribution according to diagnostic recommendations

H. Pylori Symptoms	Frequency	Percent
Dyspepsia with mouth ulcer	8	16
Heart burn	16	32
Abdominal bloating	10	20
Nausea and vomiting	8	16
Acidic reflux and gastritis	4	8
Loss of appetite	4	8

6) Clinical presentations of H. pylori associated dyspepsia

Endoscopic Findings in Dyspepsia	Frequency	Percent
Antral Gastritis	24	24
Erosions & erythema	5	5
Esophageal polyp, dimunitive gastric polyp	8	8
Esophageal varices	9	9
Small Telegiectasis, Schitzki ring	2	2
Hiatus Hernia	11	11
Pangastritis	14	14
Esophagitis Barette Esophagus	14	14
Peptic ulcer, Antral ulcer, Duodenal Ulcer	5	5
APD, Mild PHG	8	8

7) Endoscopic findings in dyspepsia



8) Endoscopic findings in H. pylori associated dyspepsia

Treatment Regimen in Hpylori Positive Patients	Frequency	Percent
H. pylori negative	50	50
HP KIT	20	10
Antacids	6	3
Vitamin supplements	4	2
Prokinectic agents	5	5
Antibiotics	6	3
Antiemetics	1	1
PPIs	8	4

9) Treatment regimen in H. pylori associated dyspepsia

Endoscopic Findings in Dyspepsia	Presence of H. PYLORI		Total	Chi - square	p value
	Negative	Positive			
Antral Gastritis	12	13	25	17.15*	0.046
Erosions and erythema	4	0	4		
Esophageal polyp, dimunitive gastric polyp	4	6	10		
Small Telegiectasis, Schitzki ring	1	0	1		
Hiatus Hernia	5	2	7		
Pangastritis	7	5	12		
Esophagitis Barette Esophagus, Esophageal varices	10	10	20		
Peptic ulcer, Antral ulcer, Duodenal Ulcer	3	12	15		
APD, Mild PHG	4	2	6		
Total	50	50	100		

10) Association between the endoscopic features of H. pylori positive and negative patients

Pearson Chi - Square Test, *Significant at 0.05 level

Here Pearson Chi - Square Test is used to test the association between endoscopic features of H. pylori positive patients and negative patients. Here the calculated Chi - square value is 17.15 with p value < 0.05. So that we can conclude that there exists a significant association.

4. Discussion

In order to ascertain the prevalence of Helicobacter pylori associated dyspepsia among patients visiting the gastroenterology department of a tertiary care hospital in Trivandrum from January 2022 to June 2022, a cross-sectional observational study was carried out. Our study's inclusion and exclusion criteria led to the selection of 100 patients in total. The endoscopic features, treatment plan, and length of therapy are all described in the current study, together with demographic information about the study individuals.

The study primarily focuses on how endoscopic findings, clinical manifestations of H. pylori positive patients, and H. pylori negative patients relate to one another. 50 of 100 dyspepsia patients have been identified as having H. pylori-associated dyspepsia.

Over 51 years old is the age group among these with the highest prevalence of the medical condition. The results of the present investigation closely resemble those of the study conducted by Laure Brigitte Kouitcheu Mabeku et al.

Gender distribution shows that females are more likely to get an H. pylori infection. The research populations included more women than men. According to the research population's diagnostic needs, 51% of them received the endoscopy and RUT and endoscopy with biopsy recommendations. This research's findings are very similar to those of study done by M. Brian Fennerty et al. Antral gastritis (13%) predominates more in the population based on endoscopic findings of H. pylori associated dyspepsia. The H. pylori infection population's treatment guidelines state that the HP kit is more effective at getting rid of the infection.

The chi square test, which has a significant p value less than 0.005, demonstrates a significant relationship between the endoscopic findings in the gastric mucosa of both H. pylori positive and H. pylori negative patients. The computed Chi Square value in this case is 17.15, indicating a substantial relationship.

5. Conclusion

Helicobacter pylori is a significant bacterial pathogen causing chronic inflammation of gastric mucosa in over half of the global population. It is a major cause of peptic ulcer disease and a risk factor for gastric adenocarcinoma and mucosa-associated lymphoid tissue lymphoma. The

prevalence of H. pylori infection varies globally, with a 50% prevalence observed in a study. Risk factors include food habits, treatment regimens, and duration of therapy. Clinical pharmacists must raise awareness about H. pylori bacteria, transmission modes, effects, preventive methods, and antimicrobial resistance.

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