Section: Miscellaneous

Original Research Article

PREVALENCE OF HELICOBACTER PYLORI IN PATIENTS WITH DYSPEPSIA ATTENDING A TERTIARY CARE CENTRE, KERALA, INDIA

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ABSTRACT

Background: Dyspepsia, one of the commonest presenting complaints in medicine outpatient clinics, is caused by several factors, one of them being Helicobacter pylori infection. **Objectives:** This study estimated the prevalence of Helicobacter pylori in patients with dyspepsia and evaluated the associated endoscopic and histopathological findings. **Materials and Methods:** A cross-sectional study was done in 260 patients with dyspepsia attending the Internal Medicine and Gastroenterology Departments in Government Medical College, Trivandrum. Clinical details were collected, upper GI Endoscopy done and biopsy samples taken from stomach. Tissue sections were prepared and stained with hematoxylin and eosin for histopathological studies and modified Giemsa stain for Helicobacter pylori detection. **Result:** The prevalence of Helicobacter pylori was found to be 30.8%. Statistically significant association was derived for past history of peptic ulcer disease and presence of Helicobacter pylori. Antral gastritis and chronic gastritis are significant endoscopic and pathologic findings associated with Helicobacter pylori respectively. **Conclusion:** Helicobacter pylori is found in about one third of dyspepsia patients and hence endoscopy followed by biopsy is helpful in detecting Helicobacter pylori making it an important modality of dyspepsia management.

INTRODUCTION

Dyspepsia has been one of the commonest functional gastrointestinal disorders which accounts for a huge proportion of patient visits in outpatient clinics. Patients with dyspepsia present with varying symptoms like epigastric pain, postprandial fullness, early satiation, nausea and vomiting. Several consensus definitions for dyspepsia have been proposed by different committees, but Rome IV criteria (2016) are currently the most accepted one. The Rome IV criteria defines functional dyspepsia as any of the 4 symptoms: postprandial fullness, early satiety, epigastric pain, and epigastric burning that are severe enough to interfere with the usual activities and occur at least 3 days per week over the last 3 months with an onset of at least 6 months in advance.[1]

Dyspepsia can be of two types: organic or functional. Organic causes include peptic ulcer disease, gastro esophageal reflux disease, gastrointestinal malignancies, biliary or pancreatic disorders, systemic illnesses, infections, drugs, certain food items etc. Functional dyspepsia (FD) or non-ulcer dyspepsia (NUD) is dyspepsia without any organic, systemic or metabolic abnormalities that could explain the symptoms on routine investigations including Upper GI endoscopy.

Functional dyspepsia according to ROME IV criteria is classified into; post prandial distress syndrome PDS (predominantly postprandial fullness/ early satiety) and epigastric pain syndrome EPS (predominantly epigastric pain/burning).1 The worldwide prevalence of dyspepsia is 20-30%, slightly higher in the Western population and about 7.6-49% of the Indian population.[2]

Endoscopy is the major mode of investigation in dyspepsia, but being an invasive and costly procedure is not feasible in every case. According to major practice guidelines, patients of age more than or equal to 55 presenting with new onset dyspepsia are to be investigated with upper gastrointestinal endoscopy. However, endoscopy is indicated in younger patients if they present with alarm symptoms like weight loss, progressive dysphagia, recurrent vomiting, evidence

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of gastrointestinal bleeding, or family history of cancer.[3] Helicobacter pylori, a known agent associated with dyspepsia, an opportunistic, gram-negative, flagellated bacillus, has the ability to infect the stomach of half of the global population. However, there is a wide variation in the prevalence of Helicobacter pylori infection across the world. Long-standing infection can lead to preneoplastic pathological changes, atrophy, and intestinal metaplasia in the infected patients. If tested positive for Helicobacter pylori, eradication therapy may be started as it reduces the risk of future malignancy and peptic ulcer disease.

MATERIALS AND METHODS

Study design: Hospital based cross sectional study
Study duration: 1 year
Study setting: Department of Internal Medicine and Medical Gastroenterology, Government Medical College, Trivandrum, Kerala.
Study population: 260 patients with dyspepsia
Inclusion Criteria: All patients 18-year-old or more, attending the OP of Internal Medicine and Gastroenterology Departments, who satisfy the symptoms of dyspepsia according to ROME IV criteria,[1] and who satisfy indications of endoscopy according to British Society of Gastroenterology guidelines on the management of functional dyspepsia.[3]

Exclusion Criteria

- Patients with known case of gastrointestinal malignancy or chronic pancreatitis
- Medically unfit for endoscopy

Data Collection and Analysis

After relevant history and investigations, indicated patients were taken for upper GI Endoscopy, tissue samples were stained by Haematoxylin and Eosin stain for histopathology and modified Giemsa stain for Helicobacter pylori detection. Data analysed by using SPSS Version 27 software. 'p' value < 0.5 was considered significant. Prevalence was calculated with 95% confidence interval. Associated factors were analysed using Chi-square test for qualitative variables and 't' test for quantitative variables.

In the study, the mean age of participants was 47.1 years with a standard deviation of 15.8 years. 47.3 % were males, 52.7 % were females. Post prandial fullness was the presenting complaint in 43.5%, early satiety in 45.4% and both together in 23.5%. Most common histopathology finding was chronic gastritis (69.2%). 30.8% of study population showed the presence of Helicobacter pylori.

RESULTS

Statistically significant results

- A major proportion of patients with Helicobacter pylori showed absence of erosions (73.8%) and only 26.2% had erosions as histological finding.
- In those with Helicobacter pylori, antral gastritis (86.3%) and chronic gastritis (93.8%) are the major endoscopic and histopathology findings respectively.
- Among patients with Helicobacter pylori, significant histopathologic findings are activity with neutrophilic infiltration (27.5%) and metaplasia / dysplasia (0.8 %)

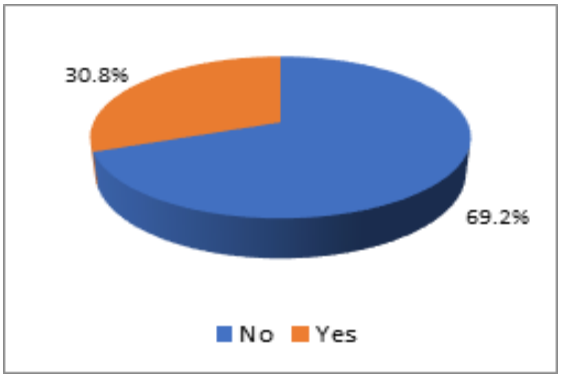

Figure 1: Prevalence of Helicobacter pylori

Table 1: Clinical presentation in the study population

Clinical history	Count	Percentage
Post prandial fullness	113	43.5
Early satiety	118	45.4
Both Post prandial fullness and early satiety	61	23.5
Epigastric pain	184	70.8
Epigastric burning	177	68.1
Both Epigastric pain and Epigastric burning	128	49.2
Weight loss	64	24.6
Malena/ hematemesis	77	29.6
Vomiting	90	34.6
Nausea	95	36.5

Table 2: Distribution of endoscopy findings

Endoscopy finding	Count	Percent
Hiatus hernia	20	7.7
Portal hypertensive gastropathy	45	17.3
Erosions	45	17.3
Antral gastritis	204	**78.5**
Pangastritis	4	1.5
GERD	69	26.5

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Candidiasis	9	3.5
Ulcer	19	7.3
GAVE	4	1.5
Varices	2	0.8
Nodule	8	3.1
Barrett	14	5.4
Polyp	19	7.3
Normal	2	0.8

Table 3: Distribution of histopathology findings

Histopathology finding	Count	Percent
Normal	69	26.5
Chronic gastritis	128	69.2
Activity with neutrophilic infiltration	28	10.8
Metaplasia	7	2.7
Dysplasia	3	1.2
Presence of Helicobacter pylori	80	30.8
Malignancy	2	0.8

DISCUSSION

The present study aimed to estimate the prevalence of Helicobacter pylori in patients with dyspepsia and to explore the endoscopic and histopathologic findings and the factors associated with Helicobacter pylori infection in dyspepsia.

In this study it was estimated that the prevalence of Helicobacter pylori in patients with dyspepsia was 30.8 % while the existing study by Yi- Cho Chen et al (2024),[4] gives a global prevalence of 35.1 %. As per the parent study, in a Sikkim based study by O P Dhakal et al, 2018,[5] prevalence of Helicobacter pylori was 27%.

This study showed that the percentage of people with dyspepsia with normal endoscopy findings is only 0.8 % which doesn't tally with the existing study by Mahadeva S et al (2006).[6]

In this study 98.2 % of dyspepsia patients has significant endoscopic findings making upper GI endoscopy one of the most important investigations in dyspepsia which is consistent to existing studies (De Korwin J D et al, 2003).[7]

One of the major findings in Helicobacter pylori is metaplasia and dysplasia. But, in this study, metaplasia showed lower prevalence compared to previous study (Olmez S et al, 2015).[8]

Among histopathologic findings, it was found that chronic gastritis, neutrophil activity and the presence of Helicobacter pylori infection were significant. It has similar results as in a study by A Kalebi et al, (2007).[9]

In patients with previous endoscopy showing peptic ulcer disease, current endoscopy showed about significant amount of Helicobacter pylori (52.9 %) which is consistent with the previous study Tarkhashvilli N et al, 2009).[10]

Our study showed that 65% of the subjects had anxiety which proves the impact of dyspepsia on the quality of life. (P Aro et al, 2011).[11]

Among the people who were posted for Upper GI endoscopy, each had different indications. Majority of them (68.8 %) had undergone endoscopy as there was no symptom relief with proton pump inhibitors for 4 to 6 weeks (V X Nguyen et al, 2010).[12]

According to our study, organic causes for dyspepsia are antral gastritis (78.5%), Gastro esophageal reflux disease (26.5%) and ulcers (7.3%). Some of them are consonant with existing studies, namely Oustamanolakis P et al, 2012.[13]

In this study, about 86.3% of those with endoscopy showing antral gastritis were found to have Helicobacter Pylori in their histopathology. This was statistically significant and corresponded to previous study by Watari J et al 2014.[14]

Limitations

- Single-center study, limiting generalizability to broader populations.
- Cross-sectional design, preventing assessment of long-term prognostic implications.
- Potential variability in laboratory measurements affecting data accuracy.
- Study establishes correlation but does not confirm causation, requiring further research.

CONCLUSION

This study showed that the prevalence of Helicobacter pylori in patients with dyspepsia is 30.8% and there are significant endoscopic and histopathologic findings associated with Helicobacter pylori like antral gastritis and chronic gastritis respectively. People with past history of endoscopically proven peptic ulcer disease have high prevalence (52.9%) of Helicobacter pylori. This study concluded that endoscopy followed by histopathologic study provides a reliable and effective strategy for management of dyspepsia and detection and treatment of Helicobacter pylori, thereby improving patient outcomes. Further multicentre research is required to validate these findings and assess their impact on clinical approach.

REFERENCES

1. Francis P, Zavala SR. Functional Dyspepsia. [Updated 2024 Jun 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan.
2. Sud, Randhir et al. "Dyspepsia - The Indian perspective: A cross sectional study on demographics and treatment patterns of Dyspepsia from across India (Power 1.0 study)." The

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Journal of the Association of Physicians of India vol. 71,4 (2023): 11-12. doi:10.5005/japi-11001-0231
3. Black CJ, Paine PA, Agrawal A, et al. British Society of Gastroenterology guidelines on the management of functional dyspepsia. Gut. 2022 Sep;71(9):1697-1723. doi: 10.1136/gutjnl-2022-327737. Epub 2022 Jul 7. PMID: 35798375; PMCID: PMC9380508.
4. Chen, Yi-Chu et al. "Global Prevalence of Helicobacter pylori Infection and Incidence of Gastric Cancer Between 1980 and 2022." Gastroenterology vol. 166,4 (2024): 605-619. doi:10.1053/j.gastro.2023.12.022.
5. Dhakal OP, Dhakal M. Prevalence of Helicobacter pylori infection & pattern of gastrointestinal involvement in patients undergoing upper gastrointestinal endoscopy in Sikkim. Indian J Med Res. 2018 May;147(5):517-520. doi: 10.4103/ijmr.IJMR_1482_16. PMID: 30082578; PMCID: PMC6094510.
6. Mahadeva S, Goh KL. Epidemiology of functional dyspepsia: a global perspective. World J Gastroenterol. 2006 May 7;12(17):2661-6. doi: 10.3748/wjg.v12.i17.2661. PMID: 16718749; PMCID: PMC4130971.
7. De Korwin JD [Advantages and limitations of diagnostic methods for H. pylori infection]. Gastroenterol Clin Biol. 2003 Mar;27(3 Pt 2):380-90. French. PMID: 12700494.
8. Olmez, Sehmus et al. "The Prevalence of Gastric Intestinal Metaplasia and Distribution of Helicobacter pylori Infection, Atrophy, Dysplasia, and Cancer in Its Subtypes." Gastroenterology research and practice vol. 2015 (2015): 434039. doi:10.1155/2015/434039
9. Kalebi A, Rana F, Mwanda W, Lule G, Hale M. Histopathological profile of gastritis in adult patients seen at a referral hospital in Kenya. World J Gastroenterol. 2007 Aug 14;13(30):4117-21. doi: 10.3748/wjg.v13.i30.4117. PMID: 17696233; PMCID: PMC4205316.
10. Tarkhashvili, Nato et al. "Helicobacter pylori infection in patients undergoing upper endoscopy, Republic of Georgia." Emerging infectious diseases vol. 15,3 (2009): 504-5. doi:10.3201/eid1503.080850
11. Aro P, Talley NJ, Agréus L, Johansson SE, Bolling-Sternevald E, Storskrubb T, Ronkainen J. Functional dyspepsia impairs quality of life in the adult population. Aliment Pharmacol Ther. 2011 Jun;33(11):1215-24. doi: 10.1111/j.1365-2036.2011.04640.x. Epub 2011 Mar 28. PMID: 21443537.
12. Nguyen, Vien X et al. "Appropriate use of endoscopy in the diagnosis and treatment of gastrointestinal diseases: up-to-date indications for primary care providers." International journal of general medicine vol. 3 345-57. 1 Nov. 2010, doi:10.2147/IJGM.S14555
13. Oustamanolakis P, Tack J. Dyspepsia: organic versus functional. J Clin Gastroenterol. 2012 Mar;46(3):175-90. doi: 10.1097/MCG.0b013e318241b335. PMID: 22327302.
14. Watari, Jiro et al. "Helicobacter pylori associated chronic gastritis, clinical syndromes, precancerous lesions, and pathogenesis of gastric cancer development." World journal of gastroenterology vol. 20,18 (2014): 5461-73. doi:10.3748/wjg.v20.i18.5461.