

Observation of Prevalence of H. Pylori Infection in Patients with Sign and Symptoms of Dyspepsia at Patna Medical College and Hospital, Patna

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Abstract: Background: *Helicobacter pylori* are the most common chronic bacterial infection prevalent worldwide. It is a Gram negative, microaerophilic spiral shaped motile bacillus with ability to colonize normal human stomach mucosa. Aim: To study the prevalence of H. Pylori infection, in patients with sign and symptoms of dyspepsia, at PMCH, Patna with reference to age, sex and other risk factor that help in understanding the nature of disease. Methods: It is a clinical based cross sectional study that included patients ranging from 15 years to 75 years who were admitted at Patna Medical College with sign and symptoms of dyspepsia. From all enrolled patients history and routine as well as special investigations- Endoscopy and H pylori serological test were performed. Conclusion: Out of 91 patients, there were 53 male and 38 female patients, age ranging from 15 years to 75 years. 60 % of male patients were h.pylori positive, and 56% female were positive. H. Pylori was + in 74.19 % cases of Ulcer Dyspepsia, but only 40.38 % cases of Non Ulcer Dyspepsia. 84% cases of H.Pylori were positive for Duodenal ulcer, and 79% cases of H. Pylori for case of Gastric ulcer. 32 patients presented with sign and symptoms of dyspepsia, but the upper G.I endoscopy was normal, however out of 32 11 were found to be serological positive for *Helicobacter pylori* infection (34.37%).

Keywords: *Helicobacter pylori*, Dyspepsia, Endoscopy

1. Introduction

Helicobacter pylori was first discovered in the stomach of patients with stomach ulcers in 1982 by Dr. Barry Marshall and Dr. Robin Warren of Perth, Western Australia.

Helicobacter pylori is a Gram-negative, motile bacterium with ability to colonize the normal human stomach. It is microaerophilic; that is, it requires oxygen, but at lower concentration than is found in the atmosphere. The *H. pylori* infection is likely to be one of the most common bacterial health problems worldwide. Since old people have weaker immune systems, they are most likely to be affected by this bacterial species. It also occurs frequently amongst young people in developing countries, since the infection tends to be common where poor sanitation; poor socioeconomic status and overcrowding prevail.

Its high prevalence rate is becoming a major public health problem in the world in general and in developing countries in particular. In India, there were no several studies done on the prevalence of *H. pylori* infection and major risk factors including in the present study area. Therefore, it was important to assess the prevalence of *H. pylori* infection and its associated factors to implement appropriate public health measures targeted against the disease.

2. Materials and Methods

Study design:

A cross sectional study was conducted from Jan 2019 to March 2020. Convenient sampling was used to source the study subjects.

Source population:

Study participants were recruited from different areas in Patna district, Bihar which included Populations of age group 15 years to 75 years of different sex and socioeconomic status, admitted with complaints of

dyspepsia, at Patna Medical college and hospital, Patna, Bihar

Data Collection

The Proposed study was done in the following manner:

- History of the patients
- signs and symptoms including:-Pain upper abdomen, Nausea, Vomiting, Belching, Haematemesis, Malena
- Routine Investigations-
- Special Investigations-
 - Upper GI Endoscopy
 - Serological test with H. pylori whole blood/serum cassette test.

Endoscopic Examination

Every patient was subjected to upper G.I. endoscopy in surgery department and following points were to be noted.

- Gastric and duodenal mucosal pattern
- Inflammatory signs in stomach, & duodenum
- Any ulcer, fissure or growth, in the lumen along with its morphology.
- Biopsy is taken, wherever necessary for diagnosis,

Serological Test with H. Pylori Whole Blood/ Cassette Test

Principle

This assay is a double antigen chromatographic lateral flow immunoassay. The test strip in the device includes:

- A burgundy-colored conjugate pad containing colloidal gold coupled with H. Pylori antigen, and
- Nitrocellulose membrane containing a test line (T line) and a control line (C line). The T line is coated with H. Pylori antigens and the C line is coated with goat anti-H.Pylori antigens used in this device are from H. Pylori cell lysate.

When IgG antibodies specific to H. Pylori are present in the specimen. The T line will become burgundy colored

band. If antibodies to H. Pylori are not present or present below detectable level, No T line will develop.

3. Results

Out of 91 patients with dyspepsia, with various clinical presentations, mostly presents with abdominal pain and nausea/vomiting (>90%), but Prevalence of Helicobacter pylori is less than 50%. But those with malena are 80% H.Pylori positive.

Depending on the endoscopic findings, all these patients were categorized into 2 groups:

- a) Ulcer Dyspepsia
- b) Non-Ulcer Dyspepsia

Cases	Total Number	H.pylori Positive	Percentage
Ulcer Dyspepsia	35	27	77.14
Non-Ulcer Dyspepsia	56	25	44.64

Table 3: Age and Sex incidence in various groups

Case	Male- Female	Age Range	Mean age
Ulcer Dyspepsia	17 : 18	15 - 75 yrs	49.57
Non-Ulcer Dyspepsia	33 : 23	15 - 75 yrs	40.56

In case of Ulcer dyspepsia incidences are equal in both sexes with mean age is around 50 years. And in case of non ulcer dyspepsia incidence are more in male patient with mean age is around 40 years.

Based on Endoscopic Finding

ULCER DYSPEPSIA:

This group was further divided into 2 subgroups:

- 1) Duodenal Ulcer
- 2) Gastric Ulcer

Ulcer Dyspepsia	Total no. of Cases	H.Pylori positive	Percentage
Duodenal Ulcer	14	12	85.71
Gastric Ulcer	21	17	80.95

H.Pylori is + in 82 % cases of Ulcer Dyspepsia In Lower Socioeconomic Groups, but 62 % cases are + in Middle Socioeconomic Groups.

H.Pylori is + in 84.61 % cases of Ulcer Dyspepsia In Regions of North Bihar, but 72.22 % cases are + in South Bihar Regions.

4. Discussion

We at the "Department of Surgery," have made a sincere attempt to explore the possibility of proving this association between Helicobacter pylori and ulcer dyspepsia and its contribution to non-ulcer dyspepsia. We have also compared our studies with other studies done in the past.

In Our present study, Out of 91 patients, there were 50 male patients and 41 female patients, age ranging from 15 years to 75 years. Out of 50 male patients, % were h.pylori positive, and % female were positive. Significantly more male were found positive for *H.pylori* than female, which is consistent

with Murray *et al* who carried out a study in a geographically distant area from Northern Ireland.

Out of 91 patient, most patient presents with abdominal pain and nausea/vomiting (>90%), but < 50% patient are H.pylori positive. But those with malena are 80% H.Pylori positive. The results are comparable with the studies with Talley NJ *et al* 1991.

Depending on the endoscopic findings,

In case of Ulcer dyspepsia incidence of Male and Female are equal. And in case of non ulcer dyspepsia majority are male patients. This is comparable with the studies done by Ashorn *et al.* 1995, Rehnberg-Laiho *et al.* 1998, Roosendaal *et al.* 1997. Our findings of H.pylori prevalence in different socioeconomic groups is similar to studies done at Broutet *et al* 1995.

5. Conclusion

This was a study conducted to determine the role of Helicobacter pylori in acid-peptic diseases. This study design was based on clinical study, endoscopic study of gastric mucosa (and duodenal mucosa whenever necessary) and serological study in 91 patients with a history of dyspepsia.

From the present study it is evident that,

- There was no specific symptom attributable to H. pylori infection. Helicobacter pylori infection is more common in males than females. Seroprevalence of Helicobacter pylori increases with increasing age.
- Helicobacter pylori is associated with peptic ulcer disease and non-ulcer dyspepsia, but more commonly with ulcer dyspepsia which is in broad agreement with the studies done earlier. Thus we conclude that, Helicobacter pylori infection may have a role in the etiopathogenesis of peptic ulcer disease as well as non ulcer dyspepsia.
- H.Pylori is more positive in male than female
- Also more common in low socioeconomic status but its prevalence is increasing in middle socioeconomic group.
- Out of the 48 patients with Helicobacter pylori infection, 25 had Ulcer Dyspepsia. Remaining 23 patients even though having Helicobacter pylori infection did not have ulcer diseases.
- In our study most cases are seen in the age group of 31-50 H.PYLORI +VE IS 61.5%.
- Hence, we recommend eradication of the bacteria only in patients positive for the bacterium, who have either ulcer dyspepsia and non ulcer dyspepsia.

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