

Evaluation of Endoscopic Findings & H.pylori Infection in Upper Gastrointestinal Disorders in South Maharashtra Population



Medical Science

KEYWORDS : Gastrointestinal disorders, Helicobacter pylori infection, Histopathological examination, Rapid urease test

INGTY MOSES A.W

DEPT. OF SURGERY,BVDUMC& HOSPITAL,SANGLI.

GORAD KEDAR P

379/1,FLAT NO.1,VARDAN PALACE APARTMENT,NEAR SPHURTI CHOWK,GOVT. COLONY ,VISHRAMBAG,SANGLI.416415

SHAH SHILPA R

DEPT. OF PATHOLOGY,BVDUMC& HOSPITAL,SANGLI.

ABSTRACT

Background:Helicobacter pylori related gastritis and gastrointestinal disorders are major health ailment in developing nations. There is high morbidity and mortality ranging from chronic gastritis to gastric malignancies.

Prevalence of H. pylori infection varies markedly according to regions.Aim:To study the prevalence of H. pylori gastritis in patients undergoing endoscopy and its association with the development of gastrointestinal diseases by various methods with the help of Endoscopic biopsies.Subjects and Methods:Upper G.I Endoscopy was done in rural Maharashtra forpatients with upper G.I symptoms of dyspepsia. Punch biopsy from pylorus was taken from all these patients after proper documentation and consent.Biopsies was sent for detection of H. pylori by various methods namely Rapid Urease Test(R.U.T), histopathology, culture and microscopic staining.

Results:Out of 160 cases, 108 cases i.e.67.5% was detected with H. pylori. Age group from 21-40years had the highest incidence with male predominance.Male : Female = 88 : 72 = 55 : 45%. Commonest diagnosis was Gastritis and histopathology was the method which had the most positive results 50=46.30%. Study showed that significant association of H. pylori infection with the presence of endoscopic abnormalities, peptic ulcer, gastritis and dysplasia or cancer was seen.Conclusion:The prevalence of H. pylori infection is significantly high in rural Maharashtra. Early detection and prompt treatment are essential for prevention of serious complications.

Introduction:

Helicobacter Pylori infection has been known to cause chronic gastritis and upper G.I.disorders and is an established fact [1,2].Helicobacter pylori gastritis is the principal cause of chronic active gastritis and has major complications like gastric adenocarcinoma and mucosa associated lymphoid tissue lymphoma[3].H. pylori is a gram negative flagellated bacillus that usually colonizes gastric pits under the mucus layer and in close association to gastric epithelial cells. Approximately, 50% of the normal population across the world harbor H. pylori, though only 10-20% of them become symptomatic [4,5].There is a high prevalence of H. pylori infection in developing countries with up to 80% of the children under the age of 10 years are infected. In India, the prevalence of this infection is 22%, 56%, and 87% in the 0-4 years, 5-9 years and in the 10-19 years age group respectively[6]. There are many other etiological factors such as smoking, non-steroidal anti-inflammatory drugs (NSAIDs), and reflux of gastric juice (chemical gastritis) that are also implicated to cause chronic gastritis. H. pylori, though is regarded as the primary cause of gastritis, it can act as a synergist in addition with other etiological factors [7]. A wide range of laboratory investigations are available for diagnosis of H. pylori. The tests belong to non-invasive group and invasive group. Non-invasive tests include, urea breath test, serological Immunoglobulin G (IgG) and Immunoglobulin M (IgM) detection, saliva and urinary antibody test, and stool antigen test[8]. The invasive tests are endoscopy based tests, which include histopathological examination, rapid urease test (RUT) and polymerase chain reaction. Whereas, invasive tests carry high sensitivity and specificity of >90%.[9] the role of non-invasive tests such as serology is limited in areas of high prevalence, because of non-distinction between previous and current infection. Histological identification of H pylori infection is now a widely used means of the Giemsa,Warthin-Starry, Gimenez, Genta, and immunohistochemicalH.pylori antibody stains. Immunohistochemistry is the agreed "gold standard" for histology, being a highly sensitive and specific staining method [10].

The present study was done to estimate the prevalence of H. pylori infection in patients presenting with the dyspep-

sia and association of H. pylori with gastrointestinal lesions, in a medical college hospital in south Maharashtra, India.

Subjects and Methods:

Out of 160 cases, 108 cases i.e.67.5% was detected with H. pylori. Age group from 21-40years had the highest incidence. There were more males than females effected. Male : Female = 88 : 72 = 55% : 45%. Commonest diagnosis was Gastritis . Histopathology was the method which had the most positive results 50 =46.30%. Findings suggest that H. pylori infestation was a common cause for Upper G.I. Disorder in south rural Maharashtra.

The study was carried out in 160 patients in BVDUMC & H, Sangli, Maharashtra. The study was retrospective study, during the period of September 2009 to August 2012. The patients were selected on the basis of chief complaints of dyspepsia and the age of patients ranged from 10 to 80 years. Endoscopy was carried out using forward viewing esophago gastro duodenoscope. The patients were taken for upper gastrointestinal endoscopy after making them fast overnight. The endoscopy was considered normal when mucosa is pink in color, smooth, and lustrous. Four biopsies were obtained from each patient from the antrum. One section was mounted on slide. Slide was stained with normal H and E stain. One biopsy fragment was sent to histopathology department in formalin container. Histopathological assessment of gastric mucosa was carried out by a pathologist and grading was carried out according to the visual analog of updated Sydney grading system[11] for mononuclear cell infiltration, neutrophilic infiltration, atrophy, intestinal metaplasia, and density of H. pylori for reporting gastric biopsies. In positive cases, H. pylori appeared as light bluish rods in H and E stained slides. Diagnosis of reactive gastritis was based on the criteria laid by Dixon et al.,[12] and Niemelä et al.[13]

Results:

Out of 160 patients were studied 55% (88/160) were males and 45 (72/160) were females. The mean (SD) for age was 41.1 years with age ranging from 10 to 80 years. Histo-

pathological examination showed *H. pylori* positivity in 46.30% (50/108) cases and RUT showed *H. pylori* positivity in 17.5% (19/108) cases [Table 1]. Diagnosis of *H. pylori* infection was made if either of the tests was positive. The proportion of male cases positive for *H. pylori* 59.26% (64/108) and the proportion of females positive for *H. pylori* 40.64% (44/108). *H. pylori* prevalence was highest in the age group of 21-40 years [Table 2] with 37.5% (60/160) patients showed *H. pylori* positivity. The most common endoscopic abnormality was gastritis 31.25% (50/160), followed by oesophagitis -15.62% (25/160), duodenitis -8.13% (13/160), duodenal ulcer -4.38% (7/160), gastric ulcer -3.75% (6/160), carcinoma oesophagus -2.50% (4/160), carcinoma stomach -1.87% (3/160) [Table 3]. Patients presentations were abdominal pain -49.38% (79/160), gastric fullness -13.13% (21/160), vomiting -11.25% (18/160), bloating -8.13% (13/160), belching -5% (8/160), malaena -5% (8/160), early satiety -5% (8/160) and weight loss -3.13% (5/160).

Table 1. Detection of H. Pylori by different methods from Endoscopic biopsy

Serial no:	METHOD	NUMBER	PERCENTAGE
1.	Histopathology	50	46.30%
2.	Rapid Urease Test (RUT)	19	17.59%
3.	Microscopy	20	18.52%
4.	Culture	19	17.59%
TOTAL		108	100.00%

Table 2. Age of the patients

S.NO:	AGE	NUMBER	PERCENTAGE
1.	10-20 YEARS	11	06.87%
2.	21-40 YEARS	60	37.50%
3.	41-60 YEARS	56	35.00%
4.	61-80 YEARS	33	20.63%
TOTAL		160	100%

Table 3. Endoscopic Diagnosis

S.No:	DIAGNOSIS	NUMBER	PERCENTAGE
1.	NORMAL	52	32.50%
2.	GASTRITIS	50	31.25%
3.	DUODENITIS	13	08.13%
4.	GERD/OESOPHAGITIS	25	15.62%
5.	GASTRIC ULCER	06	03.75%
6.	DUODENAL ULCER	07	04.38%
7.	CARCINOMA OESOPHAGUS	04	02.50%
8.	CARCINOMA STOMACH	03	01.87%
TOTAL		160	100.00%

Table 4. Symptoms

S.No:	DIAGNOSIS	NUMBER	PERCENTAGE
1.	ABDOMINAL PAIN	79	49.38%
2.	FULLNESS	21	13.13%
3.	VOMITTING	18	11.25%
4.	BLOATING	13	08.13%
5.	BELCHING	08	05.00%
6.	MALAENA	08	05.00%
7.	EARLY SATIETY	08	05.00%
8.	WEIGHT LOSS	05	03.13%
TOTAL		160	100.00%

Discussion:

H. pylori infection is dependent upon many variables such as age, sex, socioeconomic status, dietary habits, genetic, and immunological factors. Gastritis, gastric ulcer, and gastric malignancies have *H. pylori* as a principal etiological factor. In the present study, we got slight preponderance of males in *H. Pylori* prevalence according to gender which is in concordance with study by Kaore et al., [14] showed higher prevalence in male gender.

Age distribution of *H. pylori* infection showed increase in infection with the younger age which is similar to the studies such as Shokrzadeh et al., [15] and Kaore, et al., [14] reported increased *H. pylori* infection in age groups of 20-40 years than the older age group.

In the present study, the commonest identifiable lesion at endoscopy was gastritis (31.25%). The correlation of endoscopic abnormality with *H. pylori* infection was significant and proving endoscopic changes to be a sensitive indicator of *H. pylori* infection. This is in contrast to the observation laid by Jemilohun et al., [16] in which the correlation was not statistically significant. This can be attributed to a lower number of cases (86) being evaluated in their study compared to the present study (160).

Pathological reporting of 160 cases showed only 12.5% (20/160) of cases having serious gastrointestinal complications like peptic ulcers and carcinoma. The association of these lesions with *H. pylori* infection was found to be statistically significant with 65% (13/20) patients with peptic ulcer and 35% (7/20) with carcinoma. This is comparable to the study of Zapata-Colindres et al., [17] and Ahmad et al., [18] documenting *H. pylori* prevalence in gastric ulceration patients to be 80% and 84% respectively. Cotran et al., [19] reported the international association of *H. pylori* with gastric ulceration to be more than 70%.

The present study showed increasing trend towards reactive gastritis. There is rising incidence of reactive gastritis in rural and suburban population of developing nations like India due to increased duodenogastric reflux associated with changing life-style of the population, injudicious, and rampant use of drugs like NSAID, which are easily available and often being prescribed for musculoskeletal ailments (20).

This study showed carcinoma develop only in few of the cases having predisposing factors such as intestinal metaplasia. *H. pylori* infection in cases having dysplasia and carcinoma in this study indicates that the gastric adenocarcinomas can be prevented with early stage detection of *H. pylori* and *H. pylori* eradication therapy. This is in concordance with the findings documented by an International agency for research on cancer, stating that 60% or more of gastric cancers world-wide can be prevented by the absence of *H. pylori* infection. [21]

In conclusion, there is a high prevalence of *H. pylori* infection in rural population of south Maharashtra, India.. Still there is a need of another studies for assessing the association of different demographic and life-style factors conditions with prevalence of *H. pylori* infection and follow-up of the patients after treatment and life-style modifications. Early detection and prompt treatment are essential for prevention of serious complications.

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