

Original Research Article

A clinical study of prevalence of helicobacter pylori in patients with gastritis

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ABSTRACT

Background: Stomach infections with *Helicobacter pylori* mainly occur during childhood. If persistent, these may cause chronic gastritis often leading to peptic ulcer disease, later on in life. Ulcer is a sore or hole in the lining of the stomach or duodenum (the first part of the small intestine). Objective was to detect the prevalence of *H. Pylori* in patients with gastritis.

Methods: This study involved 90 patients with gastritis who attended surgical outpatient as well as inpatient department of ESIC Medical college hospital from April 2014 to March 2016.

Results: Endoscopy was carried for all patients to diagnose gastritis. Urease and Serum IgG anti *H. Pylori* antibodies used to detect the presence of *H. Pylori* in these patients. Ninety patients; 60 males (66.67%) and 30 females (36.33%) were infected with gastritis. The results showed that 53.33% of the patients gave positive results on urease test. The results showed that for screening and determining the clinical features of gastritis, at least one method for *H. Pylori* are required to give positive result in order to identify an infected patient with *H. Pylori*.

Conclusions: There is an additional aspect to treatment of gastric ulcers, the one of health care providers and patient's awareness of the cause and most efficient treatments for this medical condition. Ulcers that presented until recently a life-long disease with only symptomatic relieve available, became an easily curable condition, when the right pathway of treatment is chosen.

Keywords: Gastritis, Retrosternal- burn, *Helicobacter Pylori*, Urease

INTRODUCTION

The most common ulcer symptom is gnawing or burning pain in the abdomen between the breast bone and belly button. The pain often occurs when the stomach is empty, between meals and in the early morning hours, but it can occur at any other time. It may last from minutes to hours and may be relieved by eating food or taking antacids. Less common symptom includes nausea, vomiting or loss of appetite. Ulcers may present bleeding, and if bleeding persists it may lead to anaemia causing weakness and fatigue. Additionally, *H. Pylori* is implicated in the pathogenesis of gastric cancers such as gastric

adenocarcinoma and mucosa associated lymphoid tissue lymphoma.

Helicobacter pylori (*H. Pylori*) are gram negative facultative anaerobic rods. Researchers believe that *H. Pylori* are responsible for the majority of peptic ulcers [Fauci et al.¹](#) *H. Pylori* infection is common in the India. About 20% of people under the age of 40 and half of those over the age 60 have *H. Pylori*. Most infected people, however, do not develop ulcers. The most likely infection depends on the characteristics of the infected person [Kaptan et al.²](#) *H. Pylori* weaken the protective mucous coating of the stomach and duodenum, which

allows acid to get through to the sensitive lining beneath. Both the acid and the bacteria irritate the lining and cause a sore, or ulcer Laurila et al.³ H. Pylori are able to survive in stomach acid because they secrete enzymes that neutralize the acid. This mechanism allows H. Pylori to make its way to the "safe" area-the protective mucous lining O'Morain et al.⁴ Enervating habits, the use of stimulants, excesses in eating and pleasurable enjoyments, using irritating substances like salt, pepper, vinegar, spices, hot sauces, alcohol, tobacco, cathartics, etc., lack of emotional poise, overwork or any natural or unnatural expenditure of nerve energy beyond the power of recuperation. Chronic gastritis is the culmination of a number of recurrences of acute gastritis with a continuous abuse of the stomach between crises Kaptan et al.² Gastritis can be caused by infection, irritation, autoimmune disorders (disorders caused by the body's immune response against its own tissues), or backflow of bile into the stomach (bile reflux). Gastritis can also be caused by a blood disorder called pernicious anaemia Fauci et al.¹ There are several tests that may be performed for diagnosis. These can include endoscopy of the stomach. The laboratory tests needed may depend on the specific cause of gastritis. A stool test may be used to check for the presence of blood, or a biopsy may be taken of the stomach tissues to determine the cause of discomfort. A breath test may detect H. Pylori, or samples from the esophagus or stomach may be taken to detect the organism Gold H.⁵

Marshall B (born 30' September 1951 an Australian physician) and Robin Warren showed that bacterium *Helicobacter pylori* are the cause of most of the peptic ulcers. This discovery has allowed for a breakthrough in understanding a causative link between H. Pylori infection and stomach cancer. For which they are awarded with Noble prize in physiology in 2005.

METHODS

A total of 90 patients who had attended the surgery outpatients as well as inpatient department at ESIC Medical college Hospital with different types of gastric complaints were enrolled in the present study. Patients in various ages ranging from 18 to 65 years old (60 males and 30 females) were enrolled. The period of this analytical study was carried out from April 2014 to March 2016. Blood samples were collected from patients with gastritis after endoscopy (confirmation of patients infected with gastritis). The blood specimens were allowed to clot and the sera separated. These sera were immediately examined by H. Pylori ELISA kit for the diagnosis of gastritis caused by H. Pylori. Gastric aspirations were taken from patients and examined by rapid urease test. All the patients were asked regarding the age, sex, occupation, residence, socioeconomic status, smoking, family history, alcohol history, the duration of disease and symptoms, the treatment or any antimicrobial therapies have been received during the previous three months, any previous and/or present history of any

complaints of gastritis and other clinical signs. SPSS programmer ver. 15 and one way T- test were used to analyze data of the present study.

RESULTS

From 90 patients with gastritis, 60 were males (66.67%) and 30 were females (33.33%).

Table 1: Patients with gastritis.

Patients with gastritis	No of patients
Male	60 (66.67%)
Female	30 (33.33%)
Total	90

The patients were screened for dyspeptic symptoms associated with gastritis and the results are illustrated in Table 2 which shows that the 44 patients (48.88%) had Heart burn followed by other symptoms such as: dysphagia 14 (15.55%), and abdominal discomfort in relation to meals 14 (15.55%), Abdominal pain 12 (13.33%), vomiting 6 (6.66%), the difference was significant ($p < 0.05$).

Table 2: Dyspeptic symptoms associated with gastritis.

Symptoms	No. of patients	Percentage of patients
Heart burn	44	48.88
Dysphagia	14	15.55
Abdominal pain	12	13.33
Abdominal discomfort in relation to food	14	15.55
Vomiting	6	6.66
Total	90	

Table 3 shows 47 patients (52.22%) were treated with antiulcer drugs and antibiotics, while 18 patients (20.00%), and 25 patients (27.77%), treated with antiulcer alone and antibiotics alone respectively ($p < 0.01$).

Table 3: History of antiulcer and/or antibiotic treatment of patients with gastritis.

Mode of treatment	No. of patients	Percentage of patients
Anti-ulcer drugs	18	20.00
Antibiotics	25	27.77
Both	47	52.22

Table 4 demonstrates the diagnostic tests that used to detect H. Pylori in gastritis patients, 53.33% of patients gave positive results to Urease test, and 13.33% of patients gave positive results to serum IgG anti- H. Pylori antibodies ($p < 0.001$).

Table 4: Diagnostic tests to detect H. Pylori in gastritis patients.

Test name	Results	No. of patients	Percentage of patients
Urease test	Positive	48	53.33
	Negative	42	46.67
Serum IgG antibodies	Positive	12	13.33
H-pylori antibodies	Negative	78	86.67

DISCUSSION

Helicobacter pylori are now considered to be the most prevalent infectious disease known to occur in humans; about 50% of the human population is estimated to be infected Letley et al.⁶ This bacteria can cause persistent gastritis and is directly linked to the development of peptic ulcer disease as well as gastric adenocarcinoma and mucosa-associated lymphoma of the stomach Schenk et al.⁷ Individuals living in countries with low socioeconomic conditions had high prevalence rates of H. Pylori acquired at an early age Ally et al.⁸ The current study found that gastritis caused by H. Pylori was significantly higher in studied age group. This finding was in agreement with many other studies that showed a similar age incidence of H. Pylori Drumm et al, Abbas et al, Shuker et al.⁹ WHO found that the majority of infections occurred in young and middle age groups (25-50 years) more than in other age groups and the factors that predispose the higher colonization rates included poor socioeconomic status and less education in addition to genetic factors.

The explanations for the present study are in agreement with approved results of other studies which were mainly due to socioeconomic status and the sample size of the population studied, type of patients, location of the study as well as the mode of transmission whereby spread infection was acquired from person to person or by oral-oral or feco-oral routes. This study found that there was a significant difference between both sexes (males > females) regarding the incidence of gastritis with H. Pylori, a result which is in agreement with many other studies Shuker et al, Twaij et al, Al-Yas et al.¹⁰ Also, this investigation found that the Heart burn and Dysphagia were most predominant symptoms in percentages of (48.88% and 15.55%) respectively followed by other symptoms. The main chemotherapy given was antiulcer with antibiotics to 52.22% of patients. The results described above are similar to the approved results from other modern studies Drumm et al, Abbas et al, Shuker.⁹

In this study, the presence of H. Pylori in gastritis patients was determined by aspiration rapid urease test and serum IgG anti-H. Pylori antibodies test. 13.33% of patients were positive to serum IgG anti-H. Pylori antibodies test, 53.33% of patients were positive in rapid urease test

Patients was considered to be infected with H. Pylori if they positive in one of these two test Shuker et al. The use of multiple diagnostic methods was recommended to accurately diagnose H. Pylori gastritis. These results agree with the results by Twaij et al who found the prevalence of H. Pylori was (65.7%) in Iraqi patients, in comparison with the results by Al-yas and AL-Dhaher, who found the prevalence of H. Pylori (81.5%) and (74.78%) respectively in Iraqi patients Shuker et al, Twaij et al Al-Yas et al, Al-Dhaher et al. Also, the results were approved with the results of Shuker, who found the prevalence of H. Pylori was (61%) in Iraqi patients Shuker et al. The results from many researchers depend on one or two tests only for the diagnosis of H. Pylori and any test that would give positive result for H. Pylori was regarded positive for final diagnosis. But every diagnostic method has a percentage of false positive or negative result Al-Yas et al, Al-Dhaher et al.

CONCLUSION

Successful treatment and eradication of H-pylori cures ulcer disease. As the initial infection with this bacterium mainly occurs during childhood and re-infection in adults is very rare, adequate antibiotic treatment permanently cure this condition, until lately known as a chronic, recurrent disease. Curing ulcers and preventing their possible recurrence significantly improves the quality of life and diminishes the economic burden caused by hospitalization, doctor visits, medications and sick - leave.

Despite the major advance in the understanding and treatment of gastritis, ulcers and their bacterial cause, continuous research work is still needed and being performed world-wide. However there is an additional aspect to treatment of gastric ulcers, the one of health care providers and patient's awareness of the cause and most efficient treatments for this medical condition. Ulcers that presented until recently a life-long disease with only symptomatic relieve available, became an easily curable condition, when the right pathway of treatment is chosen.

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