Original Research Article

Seroprevalence of *Helicobacter pylori* in patients with symptoms of upper gastro intestinal tract at a tertiary care hospital

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ABSTRACT

Background: The association of helicobacter pylori with upper gastrointestinal diseases is widely reported. Currently according to guidelines the test and treat option is preferable in population with a moderate to high prevalence of Helicobacter pylori infection (≥10%), and empiric trial of acid suppression with a proton pump inhibitor for 4 to 8 weeks in low prevalence situation. Hence prevalence rate of *Helicobacter pylori* is significant for the treatment strategies. Aim of the study was to determine the prevalence of *Helicobacter pylori* in patients with symptoms of upper gastrointestinal tract in our tertiary care hospital and to analyse its distribution according to age and sex.

Methods: The study was conducted in the department of surgery at ACS medical college for a period of 6 months from February 2016 to July 2016.Adult patients attending the outpatient department in our hospital with symptoms of upper gastrointestinal tract for more than 6 weeks were evaluated for Helicobacter pylori by doing the immuno-card test "one step antibodies to *Helicobacter pylori* (SD Bioloine)". Analysis of *Helicobacter pylori* distribution according to age and sex were done in these positive patients.

Results: Out of 400 patients, 117 were found positive for Helicobacter pylori by giving a prevalence rate of 29.25%. Age-wise distribution showed prevalence rate progressively increased with age and the high prevalence was seen in the 41 to 50 years age group and thereafter decreased gradually in the older age groups. High prevalence was observed in males, as out of the 117 Helicobacter pylori positive patients, 74 (63.25%) were males and 43 (36.75%) were females.

Conclusions: The prevalence of *Helicobacter pylori* infection in patients with symptoms of upper gastrointestinal tract was lower than rates reported in developing countries. But as the prevalence rates in our study is more than 10%, the test and treat approach is more appropriate than starting empirical treatment with a proton pump inhibitor.

Keywords: Helicobacter pylori, Immunocard test, Prevalence

INTRODUCTION

Helicobacter pylori is the principal species of the genus Helicobacter that inhabits the gastric mucosa of the human stomach. Approximately 80 to 90% of patients with upper gastro intestinal tract in the developing world are infected with *Helicobacter pylori*.[1] Chronic-infection with *Helicobacter pylori* causes atrophic and even metaplastic changes in the stomach and it has a known association with peptic ulcer disease (PUD). Until the discovery of Helicobacter pylori by two Australians Robin Warren and Barry Marshall it was thought that Peptic ulcer disease was related to stress, lifestyle, and acid secretion based on the dictum of Schwartz " No acid no ulcer".

When Warren and Marshall reported their findings in early nineteen eighties it was coincided by the

introduction of omeprazole belonging to the group of proton pump inhibitors (PPIs). The PPIs was documented as a potent antisecretory agent who yielded very good results for ulcer healing and achieving a potential cure for patients with peptic ulcer disease. Hence there was lot of sceptism in the gastroenterology community world over to accept that peptic ulcer disease was the result of infection.

However it was found that patients with peptic ulcer disease continued to have remission of the disease even after cessation of anti-secretary therapy.[2] Hence guidelines on treatment of *Helicobacter pylori* infection were introduced which underwent gradual changes.

Currently guidelines for the management of dyspepsia vary, with one of two options usually suggested. The first is a test and treat option, which is preferable in populations with a moderate to high prevalence of *Helicobacter pylori* infection (>10%).

The second option is to use an empiric trial of acid suppression with a proton pump inhibitor for 4-8 weeks, and this is the recommended option in low prevalence situation.[3] As per the test and treat strategy, patients undergo a non-invasive test for Helicobacter pylori infection and if positive are treated with eradication therapy. This strategy reduces the need for anti-secretory medications as well as the number of endoscopies.[4]

Hence, background information on the epidemiology of *Helicobacter pylori* is required to design the treatment strategies. The prevalence may vary significantly within and between countries. Similarly there may be wide variations in the prevalence between more affluent urban population and rural population.[5]

Hence the present hospital based cross sectional study was done on patients attending outpatient department with symptoms of upper gastrointestinal tract in our tertiary care hospital. Moreover prevalence studies continue to provide important baseline measurements for future preventive measures.

METHODS

This cross sectional hospital based study was done in the department of surgery at ACS Medical College and Hospital, Chennai from February 2016 to July 2016, which included 400 patients. Adult patients with symptoms of upper Gastro-intestinal Tract for more than six weeks duration were included.

Patients with complaints of weight loss, anemia or hematemesis were excluded. An informed consent was taken from all the patients. Blood sample was collected from all these patients and tested for helicobacter pylori using the immuno card test "one step antibodies to *Helicobacter pylori (*SD Bioline)".

This is an immuno-chromatographic test for the qualitative detection of antibodies of all isotypes (IgG, IgM and IgA) specific to *Helicobacter pylori* in human serum, plasma or whole blood.

RESULTS

A total of 400 patients with symptoms of upper gastrointestinal tract were included in this study. Out of which 117 (29.25%) patients were positive for Helicobacter pylori (Table 1).

Prevalence increased progressively with age until the 41 to 50 years age group in which the prevalence rate was 31.62% and thereafter diminished gradually in the older age groups (Table 2).

Table 1: Prevalence of helicobacter pylori.

Total samples	Procedure	No. of positive cases	Percentage
400	Rapid card test	117	29.25%

Table 2: Age distribution of helicobacter pylori positive patients N=117.

Age group (Years)	No. of positive cases	Percentage
21-30	7	5.98
31-40	27	23.08
41-50	37	31.62
51-60	30	25.64
61-70	10	8.55
71-80	5	4.27
81-90	1	0.85

A trend towards increased prevalence in males was observed as out of 117 *Helicobacter pylori* positive patients, 74 (63.25%) were males and 43 (36.75%) were females (Table 3).

Table 3: Sex distribution of helicobacter pylori positive patients n= 117.

Gender	No. of Positive cases	Percentage
Male	74	63.25
Female	43	36.75

DISCUSSION

H pylori plays a key role in the aetiology of many upper gastro intestinal disorders.[6] Initially, the underlying pathology in patients with symptoms of upper gastrointestinal tract is unknown. Rather than recommending endoscopy for all patients, most national guidelines suggest a 'test and treat' strategy.

If positive for Helicobacter pylori then eradication of these bacteria is central to the management of the illness for the following reasons; (i) The risk of developing gastric cancer is increased by three to six times in infected persons; (ii) Eradication provides a small and highly variable symptomatic benefit in patients with nonulcer dyspepsia; (iii) Eradication improves healing and reduces the risk of recurrence or rebleeding in patients with duodenal or gastric ulcer; (iv) A decrease in mucosal inflammation and possible improvement in gastric mucosal atrophy is observed. (v) Eradication is less expensive than chronic antisecretory therapy.[4,7,8]

The frequency of *H pylori* in our study in patients with symptoms of upper gastrointestinal tract is 29.25%. In a study from Chennai in an urban upper class population the *Helicobacter pylori* prevalence is 49.4%.[9] In a study from Karachi in dyspeptic patients the prevalence rate was 39.8%.[10] However *Helicobacter pylori* frequency in our study is even lower than that of the above studies. This may be explained by the fact that more widespread use of Helicobacter pylori eradication therapy.

Moreover in developing countries higher frequency of Helicobacter pylori is reported in lower socioeconomic group and as our study was conducted at a private hospital where patients paid for the health care it could be presumed that these individuals are from a higher socioeconomic background. Both these factors may attribute for lower frequency of *Helicobacter pylori* (29.25%) in present study.

Age wise distribution in our study showed that the prevalence increased progressively with age until the 41 to 50 years age group (31.62%) and then diminished gradually in the older age group (Table 2). This is in accordance with Navarro M et al study in which the prevalence rate gradually increases with age and was highest in the age group 41 to 50 years (68.7%) and thereafter gradually decreases in the older age group.[11]

But in Moujaber T et al (23.3%) study and Faisal N et al study (22.4%) the prevalence rate increased with increasing age and the highest prevalence was observed in >50 years age group.[10,12] It remains unclear whether this fall in prevalence rate after the age of 50 is due to the spontaneous cure.

In present study among the Helicobacter pylori positive patients 63.25 % were males and 36.75 % were females which shows *Helicobacter pylori* is more prevalent among males. This is in accordance with Faisal N et al study in which 71.4% of males were positive as compared with 28.6% of females and Abo-Shadi MA et al which shows 70.5% of males versus 29.5% of females.[10,13]

Findings from this study suggest that acquisition of Helicobacter pylori infection is common in our setup and consequently health benefits are possible with the implementation of preventive measures aimed at decreasing the prevalence of the infection.

Sero-epidemiological studies are an important source of information, not only to describe disease patterns but also allow comparison in certain population groups.

CONCLUSION

To conclude in all patients with symptoms of upper gastrointestinal tract empirical, test and treat approach is the more appropriate initial approach than starting treatment with a proton pump inhibitor in our setup. More population based studies are required to evaluate the role of *Helicobacter pylori* in gastrointestinal disorders in this region.

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