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Research Article

Frequency of H. pylori infection in cases with symptoms of upper gastro intestinal tract

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ABSTRACT

Objective: Frequency of H. pylori infection in cases with symptoms of upper gastro intestinal tract

Material and methods: This cross sectional study was conducted at Department of Medicine DHQ Teaching Hospital, Sargodha from January 2018 to June 2018. Total 400 patients with symptoms of upper gastrointestinal tract having age from 20-60 years either male or female were included in this study. H. pylori infection was assessed in selected patients.

Results: Total 400 patients were selected for present study.Mean age of the patients was 38.12 ± 9.77 years. Total 117 (29%) patients were found positive for H. pylori infection. Total 250 (62.5%) patients belonged to age group 20-40 years and 150 (37.5%) patients belonged to age group 41-60 years. H. Pylori was found positive in 71 (28.4%) patient of age group 20-40 years and in 46 (30.67%) patients of age group 41-60 years. There was no association (P = 0.6508) was found between H. Pylori infection and age group. Total 222 (55.5%) were male and 178 (44.5%) patients were female. H. Pylori infection was noted in 74 (33.33%) male patients and 43 (24.16%) patients respectively. Statistically significant association between H. Pylori infection and gender was noted with p value 0.0473.

Conclusions: Results of present study showed a higher rate of H. Pylori infection in cases with symptoms of upper gastro intestinal tract. H. pylori infection was insignifcnalty associated with age groups. Male patients were more victim of H. pylori infection as compared to female patients. Increasing trend of H. pylori infection with increasing duration was observed.

Keywords: Helicobacter pylori, Immunocard test, GIT, PPIs

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".[2]

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%).[3]

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.

MATERIAL AND METHODS

This cross sectional study was conducted at Department of Medicine DHQ Teaching Hospital, Sargodha from January 2018 to June 2018. Total 400 patients with symptoms of upper gastrointestinal tract having age from 20-60 years either male or female were included in this study. Patients who had taken proton pump inhibitors or antibiotic for a month prior to study, patients with complaints of weight loss, anemia or hematemesis were excluded from the study.

Written informed consent was taken from all the patients after explaining to them the nature and purpose of study. Ethical clearance was taken prior to the study from the ethical committee. Patients' stool samples were collected in airtight containers and stool assay was performed using Immunocard STAT HpSA test (Standard diagnostics Inc). Test was performed in Pathology Laboratory of Qauaid-e-Azam Medical College Bahawalpur. Findings of the test (H. pylori : Yes/No) were entered in pre-designed performa along with demographic profile of the patients.

All the collected data was entered in SPSS version 20 and analyzed. Mean and SD was calculated for numerical data i.e. age. Frequency of H. pylori (Yes/No) gender (Male/Female) were calculated. Stratification was done for age and gender. Post stratification chi-square test was applied to see the effect of these on outcome variable. P value ≤ 0.05 was taken as significant.

RESULTS:

Mean age of the patients was 38.12 ± 9.77 years. Total 117 (29%) patients were found positive for H. pylori infection. Selected patients were divided into two age groups i.e. age group 20-40

years and age group 41-60 years. Total 250 (62.5%) patients belonged to age group 20-40 years and 150 (37.5%) patients belonged to age group 41-60 years. H. Pylori was found positive in 71 (28.4%) patient of age group 20-40 years and in 46 (30.67%) patients of age group 41-60 years. There was no association (P = 0.6508) was found between H. Pylori infection and age group. (Table 1)

Total 222 (55.5%) were male and 178 (44.5%) patients were female. H. Pylori infection was noted in 74 (33.33%) male patients and 43 (24.16%) patients respectively. Statistically significant association between H. Pylori infection and gender was noted with p value 0.0473. (Table 2)

Minimum duration of symptoms was 1 month and maximum duration was 6 months. Two groups were made according to duration of symptoms, 1-3 months duration and 4-6 months duration. Total 187 (46.75%) patients were belonged to 1-3 months duration group and 213 (53.25%) patients belonged to 4-6 months duration group. H. pylori infection was found positive in 40 (21.39%) patients of 1-30 months group while in 77 (36.15%) patients of 4-6 months group. Statistically significant association of H. pylori infection with duration of symptoms was noted with p value 0.0014. (Table 3).

Frequency of H. Pylori

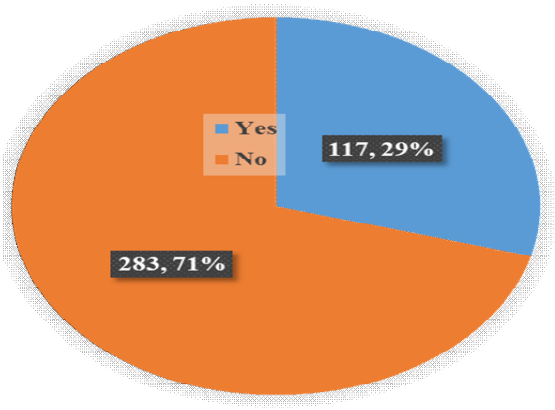

Table No.1: Association of H. Pylori Infection with age

Age Group	H. Pylori Infection		Total (%)	P. value
	Yes (%)	No (%)		
20-40	71 (28.4)	179 (71.6)	250 (62.5)	0.6508
41-60	46 (30.67)	104 (69.33)	150 (37.5)	
Total	117 (29)	283 (71)	400	

Table No.2: Association of H. Pylori Infection with gender

Gender	H. Pylori Infection		Total (%)	P. value
	Yes (%)	No (%)		
Male	74 (33.33)	148 (66.67)	222 (55.5)	0.0473
Female	43 (24.16)	135 (75.84)	178 (44.5)	
Total	117 (29)	283 (71)	400	

Table No.3: Association of H. Pylori Infection with duration of symptoms

Duration of symptoms	H. Pylori Infection		Total (%)	P. value
	Yes (%)	No (%)		
1-3 months	40 (21.39)	147 (78.61)	187 (46.75)	0.0014
4-6 months	77 (36.15)	136 (63.85)	213 (53.25)	
Total	117 (29)	283 (71)	400	

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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