



RESEARCH ARTICLE

PREVALANCE OF H-PYLORI IN NON ULCER DYSPEPSIA IN KASHMIRI POPULATION

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ABSTRACT

Introduction Functional dyspepsia is a common public health problem. Pathophysiology of non ulcer dyspepsia includes several possible mechanisms. Aims and objective to know the prevalence of Helicobacter pylori in non ulcer dyspepsia/ Functional dyspepsia patients through histopathological examination and rapid urease test of biopsy. Material and methods Patients with symptoms suggestive of dyspepsia and normal ultrasound findings were subjected to upper gastrointestinal endoscopy. 100 Patients having normal gastric mucosa or having features of gastritis without erosions were included in the study and subjected to biopsy from body and antrum of stomach which was studied for Helicobacter pylori by histopathological examination of specimen, rapid urease test to check for urease activity of Helicobacter pylori by using a using rapid urease test kit and was also inoculated into the medium and kept at room temperature to look for the colour change from yellow to pink. Results By histopathological examination 44 patients were positive for H. pylori and 56 were negative for H. pylori. while by rapid urease test 40 patients were positive and 60 were negative. Three patients were positive by rapid urease test alone, seven patients were positive by histopathology alone and thirty seven patients were positive by both tests. Final result was considered positive if either histopathology for H. pylori was positive or rapid urease test was positive or both were positive.. Overall 47 patients were positive for H. pylori and 53 patients were negative for H. pylori, so percentage of H. pylori positive patients was 47%. Conclusion Non-ulcer dyspepsia is a common problem encountered in clinical practice with an estimated incidence of 2-3 times more common than peptic ulcer disease. Although significant number of cases were infected with H pylori, but it cannot be concluded that H pylori is significant cause of non ulcer dyspepsia unless control group is included. Infectivity rate with H pylori was more in ulcer like subgroup were the predominant symptom is pain compared to other subgroups. So It can be concluded that non ulcer dyspeptic patients, where predominant symptom is pain, can be benefited more with H pylori eradication treatment.

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INTRODUCTION

The term 'dyspepsia' originates from the Greek 'dys' and 'pepse', popularly known as indigestion. It was first recorded in the mid 18th century and since then it has been widely used (Baron et al., 2006). In the 18th century dyspepsia was thought to be one of the 'nervous disorders' along with hypochondria and hysteria (Hare, 1991). Dyspepsia should be differentiated into organic dyspepsia and functional dyspepsia (non ulcer dyspepsia) (Brun and Braden, 2010). Pathophysiology of non ulcer dyspepsia includes several possible mechanisms. These include Helicobacter pylori infection, delayed gastric emptying, altered gastric electrical activity and antral hypomotility, impaired gastric accommodation and

unsuppressed phasic fundic contractility, disturbed brain gut interactions, altered bacterial flora, alteration of gastrointestinal hormones and psychosocial factors. Several studies attempted to answer the question if there is a relation between Helicobacter pylori infection and functional dyspepsia. Different approaches have been used such as epidemiological, therapeutic and experimental studies. A meta-analysis showed that the prevalence of Helicobacter pylori infection is more common in patients with functional dyspepsia than in controls (Moayyedi et al., 2000), but other study demonstrated that this statement is valid more for ulcer like dyspepsia than for the dysmotility type (Lazzaroni et al., 1996). Different meta-analysis showed a trend or a small benefit in terms of symptom alleviation after eradication of Helicobacter pylori infection (Tach et al., 2006). Functional (nonulcer) dyspepsia (FD) is the focus of this review, and usually indicates abdominal discomfort or pain with no obvious organic cause that could be identified by endoscopy

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and our study was undertaken with intent to know the prevalence of Helicobacter pylori in non ulcer dyspepsia/ Functional dyspepsia patients through histopathological examination and rapid urease test of biopsy

MATERIALS AND METHODS

This study was conducted in Post-graduate Department of Surgery in Govt. Medical College Srinagar over a period of two years from June 2013 to June 2015. Hundred patients with non-ulcer dyspepsia, who attended the Department of Surgery, were subjected to this study. A detailed history was taken and thorough clinical examination was done according to the set proforma. Patients were subjected to routine investigations. Ultrasonography of abdomen was done to rule out any pathology responsible for dyspepsia. After that patients were subjected to upper G.I. endoscopy to rule out any organic cause for dyspepsia like erosions, ulcers, growth etc. Patients having normal gastric mucosa or having features of gastritis without erosions were included in the study. Endoscopic biopsy was taken from body and antrum of stomach and was studied for Helicobacter pylori by histopathological examination of specimen using haematoxylin and eosin and special stains such as Giemsa stain. Biopsy was also subjected to rapid urease test to check for urease activity of Helicobacter pylori by using a using rapid urease test kit. Biopsy was inoculated into the medium and kept at room temperature. The change in colour from yellow to pink was taken as positive. Mostly the colour change occurred within one hour in positive cases.

RESULTS AND OBSERVATION

In our study, maximum number of patients of NUD were recorded in the 4th decade (26%) Mean age being 39.8±13.6. There were 51% males and 49% females thus giving male to female ratio of 1.04. Most of the patients were from rural areas (59%) than from urban areas (41%). Patients in lower socio-economic class (34%) were more in number compared to upper socio-economic class (19%) and less in number compared to middle socio-economic class (47%). In our study, patients in ulcer like subgroup (38%) were more compared to non specific subgroup (34%) and patients in non specific subgroup were more as compared to those in motility disorder like subgroup (28%).

Subgroup	No. of patients	Percentage
Ulcer like	38	38%
Motility disorder like	28	28%
Mixed(Non – specific)	34	34%
Total	100	100

Endoscopic Findings	No. of Patients	Percentage
Features of gastritis	54	54%
Normal	46	46%
Total	100	100

There were only 17% of patients who were using NSAIDS and around 1/3rd of patients were smokers. 80% of patients were using proton pump inhibitors. In our study, 46% of patients

were having normal mucosa while 54% of patients had features of gastritis.

Histopathology and rapid urease test for h. pylori

In our study, by histopathological examination using special stains, 44 patients were positive for H. pylori and 56 were negative for H. pylori while by rapid urease test 40 patients were positive and 60 were negative. Three patients were positive by rapid urease test alone, seven patients were positive by histopathology alone and thirty seven patients were positive by both tests. Final result was considered positive if either histopathology for H. pylori was positive or rapid urease test was positive or both were positive.. Overall 47 patients were positive for H. pylori and 53 patients were negative for H. pylori, so percentage of H. pylori positive patients was 47%.

No. of H. pylori +ve/ -ve patients	Rapid Urease test	HPE	Total (including both tests)
No. of H. pylori +ve patients	40	44	47
No. of H. pylori –ve patients	60	56	53
Total	100	100	100

Distribution of h. pylori positive patients according to endoscopic features

In our study, we found that patients with abnormal mucosa were infected more with H. pylori (62.96%) compared to patients with normal mucosa (28.26%). P value=0.034(chi square test)

Endoscopic features	No. of H. pylori +ve patients	Total no. of Patients in each group	Prevalence H. pylori infection in each group
Abnormal mucosa	34	54	62.96
Normal	13	46	28.26
Total	47	100	

Distribution of h. pylori positive patients in clinical subgroups of non ulcer dyspepsia

In our study, we found that patients in ulcer like subgroup are more infected (55.26%) compared to patients in non-specific subgroup (44.11%) or motility disorder like subgroup (39.28%). p- value= 0.72(chi square test)

Clinical subgroups	No. of H. pylori +ve patients	Total no. of patients in each clinical subgroup	Prevalence of H. pylori infection in each clinical subgroup
Ulcer like	21	38	55.26
Motility disorder like	11	28	39.28
Mixed (N.S)	15	34	44.11
Total	47	100	

DISCUSSION

The discovery of H. pylori and effective treatment of peptic ulcer disease has resulted in focusing of research activity into functional dyspepsia, a common condition with limited therapeutic approach. It is probably a heterogeneous condition. Despite advances in technology and diagnostic methods, the true underlying pathogenic abnormality in this disease remains

elusive. This study has been conducted to see the prevalence of *H. pylori* in patients with non-ulcer dyspepsia and clinical subgroups of non-ulcer dyspepsia. Non-ulcer dyspepsia is a common problem encountered in clinical practice with an estimated incidence of 2-3 times more common than peptic ulcer disease. Patients of gastritis on endoscopy without any erosion or ulcer were included in NUD. In this study *H. pylori* infection was higher in patients with abnormal looking mucosa compared to normal mucosa. 54 patients were having findings of gastritis in endoscopy. Among these patients, 34 patients (62.96%) were infected with *H. pylori*. 46 patients were having normal mucosa on endoscopy. Among these, 13 patients (28.26%) were infected with *H. pylori*. From these observations, it is clear that patients having endoscopically abnormal looking mucosa had high *H. pylori* infection rate compared to patients with endoscopically normal gastric mucosa and the difference was statistically highly significant ($p=0.034$).

Mohammad Qaseem Khan *et al.*, 1999 also found that endoscopically abnormal looking mucosa was present in 58% cases and among these 82% were infected. Syed Riazul Hassan, Zaigham Abbas (2007) found that 68% patients of dyspepsia having normal gastric mucosa on endoscopy were positive for *H. pylori* compared to 78% patients having abnormal mucosa on endoscopy. In our study, 40 patients were positive for *H. pylori* by rapid urease test where as 44 patients were *H. pylori* positive by histopathological examination. Overall 47 patients were *H. pylori* positive. So prevalence of *H. pylori* in NUD patients in our study is 47%. Bernerson *et al.*, (1992) endoscoped 309 subjects with NUD and found that overall 48% of dyspeptic patients had *H. Pylori* infection. (Greenberg *et al.*, 1990) at New York (1991) found a prevalence of 37% of *H. pylori* in 110 patients of NUD. In our region, studies on *H. pylori* prevalence in NUD have shown higher prevalence of *H. pylori* in NUD patients as compared to our study which showed lesser prevalence of *H. pylori* in NUD. Compared to our study; Zafar *et al.* (2003) in their study of 100 patients of NUD from allied and National Hospital Faisalabad revealed that 52% were urease positive for *H. pylori* and 65% showed the organism on histopathological examination. Functional dyspepsia has been divided, according to the symptoms, into three clinical subgroups: Ulcer like subgroup, Motility disorder like subgroup and Non-specific subgroup. This sub-grouping of NUD patients is useful in predicting the response to therapeutic agents and also to know the association of particular group of symptoms with *H. pylori* infection. In the present study we tried to find out the percentage of NUD patients in different subgroups as well as infectivity rate of different subgroups. 38 (38%) patients were in ulcer like subgroup, 28 (28%) and 34 (34%) patients were in Motility disorder like subgroup and Mixed subgroup respectively. So percentage of patients in three subgroups is not significantly different. In each subgroup, number of *H. Pylori* positive patients was 21 (55.26%); 11 (39.28%); 15 (44.11%) in Ulcer like subgroup, Motility disorder like subgroup and Mixed subgroup respectively. So prevalence of *H. pylori* positive patients in Ulcer like subgroup is more compared to Mixed subgroup which itself is more compared to Motility disorder like subgroup but is not statistically significant ($p=0.72$). Saruc *et al.* (2003) also found the

percentage of patients in Ulcer like, Motility disorder like and Mixed subgroups as 35.6%, 31.2%, and 33.1% respectively. *H. pylori* infection was more prevalent in Ulcer like subgroup (79.1%) than in Motility disorder like subgroup (53%) but there was not much difference when compared with Mixed subgroup (66.7%)

Conclusion

In our study we found that Non ulcer dyspepsia is a common disorder bringing the patient to doctor. Maximum percentage of non ulcer dyspepsia patients were in third decade. Prevalence of *H. pylori* infection increased with age, however there was no significant difference between the two sexes. Prevalence of *H. pylori* in lower socio-economic class was significantly higher from middle and upper classes suggesting that poor hygiene and overcrowding are responsible for increased prevalence of *H. pylori* in patients of lower socio economic status. Prevalence of *H. pylori* was more in patients with features of gastritis on endoscopy than those with normal mucosa. Although significant number of cases were infected with *H. pylori*, but it cannot be concluded that *H. pylori* is significant cause of non ulcer dyspepsia unless control group is included. Infectivity rate with *H. pylori* was more in ulcer like subgroup were the predominant symptom is pain compared to other subgroups. So It can be concluded that non ulcer dyspeptic patients, where predominant symptom is pain, can be benefited more with *H. pylori* eradication treatment.

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