

## ORIGINAL ARTICLE

# Frequency of Helicobacter Pylori Infection in the Local Population Presenting with Dyspeptic Symptom

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## ABSTRACT

**Objectives:** To determine the frequency of Helicobacter pylori infection in the local population presenting with dyspeptic symptom report to a tertiary care hospital of Nawabshah.

**Methodology:** This cross-sectional study took place at department of medicine, Peoples Medical College and Hospital Nawabshah; during six months, from August 2015 to February 2016. A total of 115 patients with dyspeptic symptoms with upper abdominal disorders such as discomfort and pain, nausea, fullness, bloating, heartburn, anorexia, belching and regurgitation were included. After conducting detailed clinical examination and history, patients were subjected to relevant examinations, i.e. Blood antibody test (IgA antibody test), for H. pylori and venous blood was drawn. All the information was collected in the proforma.

**Results:** The patients' average age was 30.92±6.10 years. There were 66(57.4%) male cases and 49(42.6%) female cases. Helicobacter pylori (*H. pylori*) infection was observed to be frequent (60% cases) among both genders.

**Conclusion:** In conclusion, the present results confirm that the frequency of patients suffering from helicobacter pylori infection was quite high in local population at tertiary care hospital, Nawabshah. Strategies could be developed at an earlier stage and prompt treatment may reduce the morbidity.

**Key Words:** Dyspepsia, Helicobacter pylori, IgA antibody test

## INTRODUCTION

Dyspepsia is a digestive disorder characterized by difficult, painful, or disrupted digestion, and can possibly also appear with the symptoms of nausea and heartburn, vomiting, stomach discomfort, and bloating.<sup>1</sup> Dyspepsia is a common symptom experienced by around 25-40% of general population annually, however a large number of affected individuals do not consult a doctor.<sup>2</sup> Dyspepsia is accountable for a significant amount of health-care expenditures and wasting of working time.<sup>3</sup> The incidence of this medical condition has been reported to be strongly linked to socioeconomic status and growing age.<sup>4</sup> In adult population of the West, the incidence of dyspepsia ranges between 10% and 20%,<sup>5</sup> and in Pakistan it is unknown, but it is thought to be prevalent, as 20-25% of patients with dyspepsia seek medical advice.<sup>5</sup> Helicobacter pylori (*H. pylori*) is a widespread infection that affects over 50% of the adults globally.<sup>6,7</sup> *H. pylori* is linked to serious conditions of GI-tract (upper gastrointestinal tract) in both children and adults. *H. pylori* has affected over half of the global population, with highest incidence recorded in underdeveloped nations like 30% in USA and Canada, 82% in Bangladesh, 88% in India, 20% in Australia and 80% in Saudi Arabia. Although some studies have found that *H. pylori*-infected people are more likely to experience dyspepsia,<sup>8</sup> the link between dyspepsia and *H. pylori* is still debated. Studies reported that *H. pylori* infected patients presented with dyspepsia symptoms like abdominal pain, epigastric pain, anorexia, weight loss, nausea, vomit, heart burn, bloating, belching, melena, dysphagia and gastric fullness.<sup>9,10</sup> The American College of Gastroenterology (ACG) guidelines 2005 for dyspepsia management recommended *H. pylori* infection assessment among

patients with dyspepsia without "Alarming features" as the most cost-effective and preferred approach.<sup>11</sup>

This study aimed at assessing the frequency of *H. pylori* infection within local population with dyspeptic symptom reporting at a tertiary care hospital of Nawabshah.

## MATERIAL AND METHODS

This cross-sectional study was conducted at Medical department of Peoples Medical College & hospital Nawabshah. Study duration was six months from August 2015 to February 2016. All the patients regardless of sex and ≥ 18 years were admitted to the medicine department through OPD (outpatient department) with any of the two outcomes of the dyspeptic symptoms such as upper abdominal disorders like discomfort and pain, nausea, fullness, bloating, heartburn, anorexia, belching and regurgitation were included. Patients with peptic ulcer disease (PUD), those who had undergone eradication therapy for *H. pylori*, those who had been on prolonged NSAID therapy, as well as those who were positive for Anti-HCV/HBsAg were all excluded. All the patients gave an informed written consent before participating in the study. Subjects fulfilling the inclusion criteria were interviewed using the pre-tested questionnaire. The interview was conducted by the principal researcher at outpatient department of Peoples Hospital Nawabshah. After detailed clinical examination and receiving history, patients were subjected to relevant examinations i.e. Blood antibody test (IgA antibody test) for *H. pylori* and venous blood was drawn. Proforma (Attached Annexure A) was filled accordingly. All the information regarding study variables (age, sex, socioeconomic status, abdominal discomfort and pain, nausea, bloating, anorexia, fullness, heartburn, belching and regurgitation) linked to *H. Pylori* was

collected via self-made study proforma. SPSS version 20 was used for the purpose of analysis.

## RESULTS

A total of 115 diagnosed cases of peptic ulcer disease were studied and the mean age of these cases was  $30.92 \pm 6.10$  years. The average duration of disease was  $3.51 \pm 1.74$  months. Out of 115 patients, males and females were 66(57.4%) and 49(42.6%) respectively. Regarding socioeconomic status, most of the cases were from lower and middle class. Abdominal pain and discomfort was the commonest symptoms that was observed in 87.8% cases followed by 71.3% cases nausea 48.7%, fullness 47.8% other symptoms is also presented in table 1.

Table 1. Descriptive statistics of demographic characteristics of the patients n=115

Variables		Statistics
Age (mean+SD)		30.92±6.10
Duration of disease (mean+SD)		3.51±1.74
Gender	Males	66(54.4%)
	Females	49(42.6%)
Socioeconomic status	Lower class	54(47.0%)
	Middle class	55(47.8%)
	Upper class	6(5.2%)
Dyspeptic symptoms	Abdominal pain and discomfort	101(87.8%)
	Bloating	82(71.3%)
	Fullness	55(47.8%)
	Nausea	56(48.7%)
	Anorexia	40(34.8%)
	Heartburn	53(46.1%)
	Regurgitation	45(39.1%)
	Belching	53(46.1%)

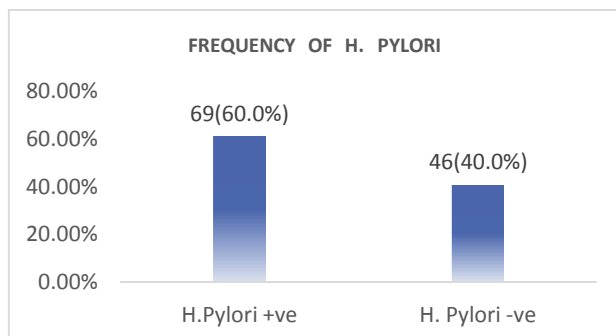


Figure 1: Frequency of Helicobacter Pylori Infection n=115

Table 2: Frequency of helicobacter pylori infection with respect to age groups n=115

Variables		Total	Helicobacter pylori infection		p-value
			Yes	No	
Age groups	18-20	6	3	3	0.87
	21-25	21	12	9	
	26-30	29	16	13	
	31-35	26	17	9	
	36-40	33	21	12	
Gender	Male	66	43	23	0.19
	Female	49	26	23	
Socioeconomic status	UpperClass	6	5	1	0.39
	MiddleClass	55	34	21	
	LowerClass	54	30	24	

Frequency of helicobacter pylori infection was observed in 60% (69/115) cases as presented in figure 1.

Rate of helicobacter pylori infection was statistically insignificant according to the age, gender and socioeconomic status ( $p > 0.05$ ). Table.2

## DISCUSSION

Dyspepsia is a costly and long-term illness. In most cases, the symptoms of brief or of minor severity are reported, and they can be self-managed. Testing against *H. pylori* infection and managing all infected individuals empirically using antimicrobial medication has been the most effective therapeutic method for patients of age 55 years or below presenting with fresh-onset of dyspepsia without alarming features. In this study, the patients' mean age was 30.926.10 years. Furthermore, the difference in the *H. pylori* infection rate between age groups was statistically insignificant ( $p=0.08$ ). According to available evidence, the acquisition of *H. pylori* occurs in early age via interpersonal contact within the environment (particularly in underdeveloped nations) and contact between family members, possibly via faecal-oral or oro-oral routes, and if left untreated, the bacterium can persist permanently.<sup>12</sup>

In present study abdominal pain and discomfort was the commonest symptom that was observed in 87.8% cases followed by 71.3% cases nausea 48.7%, fullness 47.8% other symptoms. It was also reported by Malik et al<sup>13</sup> that the most (90%) patients complained of upper abdominal pain and retrosternal burning. Other symptoms were regurgitation (65%), nausea (55%) and vomiting (30%); some patients also had haematemesis (4.5%). In Iran<sup>10</sup> the *H. pylori* prevalence in heartburn cases was 89.7%, and this prevalence was similar to the prevalence of abdominal pain. Generally, heartburn and gastroesophageal reflux disorder (GURD) were frequent among *H. pylori*-negative cases.<sup>14</sup>

A higher percentage of our patients (60%) in our study had *H. pylori* infection. Previous research suggested an incidence rate of 80-90% in underdeveloped nation and local data by Afzal S et al and Fareed et al suggested an incidence of 60-85%.<sup>19,20</sup> A few Pakistani studies including Butt AK et al., reported the prevalence ranging between 40% and 57%.<sup>21</sup> Faisal et al found 39.8% incidence of *H. pylori*,<sup>22</sup> and Mohsin L et al found 43.6 % incidence.<sup>23</sup> However, a local study done by Baqai R et al<sup>24</sup> suggested 60.5% incidence, which is analogous to ours.

In India, 38 asymptomatic and 49 symptomatic individuals (56.7% and 61.3% respectively) were infected with *H. pylori*.<sup>25</sup> In Saudi-Arabia, out of 488 dyspeptic cases, 54.90% of gastric biopsies were positive for *H. pylori*.<sup>26</sup> In Yemen, out of 275 dyspeptic cases, 82.2% were positive for *H. pylori*.<sup>27</sup> In Jordan, out of 197 patients, 82% cases were positive for *H. pylori*.<sup>28</sup>

In this study out of 115 patients, male and female patients were 66(57.4%) and 49(42.6%) respectively. Most of the cases were from lower and middle class. However, association between gender and *H. pylori* positivity was statistically insignificant ( $p=0.19$ ). Males were shown to be at a higher risk of infection in some research studies, whereas infection rates were found to be independent of sex in other studies.<sup>25</sup> In our study, no association was found between *H. pylori* infection and socioeconomic status.

In a study from Kuwait<sup>10</sup> on dyspeptic patients, *H. pylori* infection among young females (38%) was significantly more common as compared to males (10.5%), ( $p = 0.008$ ); however, overall no difference was found in terms of sex (females 43.2% Vs males 42.2%). This suggests that Kuwaiti female patients are infected with *H. pylori* at an earlier age as compared to male patients, which could lead to a more severe disease with a longer infection period. In a Norwegian population-based study,<sup>26</sup> the *H. pylori* infection distribution in terms of dyspepsia was uneven in both genders. Furthermore, infection with *H. pylori* has decreased irrespective of dyspepsia, particularly in younger people. In *H. pylori* infected patients, screening and treatment is expected to be more effective than other techniques, and the effect of this approach is probably minimal in case of non-prevalent infection. Furthermore, studies on cost-effectiveness indicate that noninvasive screening should be chosen as per the community's infection prevalence. The urea breath tests or stool antigen tests are the most frequently performed tests in intermediate and low prevalence circumstances. The accuracy of these screening modalities increases with increasing costs. As a result, evaluating the frequency of *H. pylori* in the population is essential for selecting the best cost-effective management plan for patients with unidentified dyspepsia.

## CONCLUSION

In conclusion, the present results confirm that the frequency of patient suffer from *helicobacter pylori* infection was quite high in local population at tertiary care hospital Nawabshah. Strategies could be developed at an earlier stage and prompt treatment may be initiated to reduce the morbidity. Physicians who diagnose and treat patients with dyspepsia should seriously consider *H. pylori* as an important etiopathological agent.

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