

Frequency of Seropositivity of Helicobacter Pylori Among Patients Presented with Dyspepsia

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ABSTRACT

Objective: To determine the frequency of seropositive helicobacter pylori (*H. pylori*) among patients presented at outpatient department (OPD) with dyspepsia at tertiary care Hospital.

Methodology: This descriptive case-control study was conducted at medicine department of Peoples University of Medical and Health Sciences for women Nawabshah (SBA). Study duration was six months from October 2018 to March 2019. All the patients of age 18-70 years, presented with complaint of dyspepsia, either of gender were included in the study. After taking informed consent all the patients underwent serological assessment for *H. pylori*. From each study participant a 5ml blood sample was taken and sent to the laboratory for the diagnosis of *H. pylori*. After collection of the laboratory reports, all the data was collected via self-made study proforma. Data analysis was done by using SPSS version 20.

Results: Total 78 patients of dyspepsia were enrolled, their mean age was 34.23±6.22 years and average duration of symptoms was 15.23±7.14 months. Males were 43(55.1%) and females were 35(44.9%). Feeling of abdominal distension after meal was among 21(26.9%) cases, epigastrium pain was in 14(17.9%) cases, heart burn was among 32(41.0%) patients, 07(9.0%) had belching and 19(24.4%) had multiple complaints. Seropositivity rate of *H. pylori* was 33.30% among patients of dyspepsia and it was statistically insignificant according to gender and socioeconomic status ($p > 0.05$).

Conclusion: As per study conclusion the seropositivity of *H. pylori* was observed to be higher among patients of dyspepsia and seropositivity of *H. pylori* was insignificantly linked to gender and socioeconomic status.

Keywords: Dyspepsia, *H. pylori*, seropositive

INTRODUCTION

Dyspepsia is the most widely recognized condition represented as pain in epigastrium or heart burning, discomfort after meal, bloating and fullness sensation of the abdomen.¹ Dyspepsia is related with the high rates of absence from employment or other social life activities like less work activity, missed time of relaxation, decreased house activities and more clinical and medications recommended costs each year, suggesting that for the society, the financial implication of dyspepsia as a whole are enormous.² Dyspeptic patients are more than two times likely to be infected with *H. pylori* in contrast to asymptomatic individuals.^{3,4} Infection of the Helicobacter pylori (*H. pylori*) is the significant pathogen of the gastrointestinal tract that has been associated with the wide range of infection of the gastrointestinal tract, with dyspepsia, gastritis, peptic ulcer, carcinoma of gastrointestinal tract, and lymphoma related with mucosa.⁵ The *H. pylori* infection incidence in the developing nations is higher than in developed nations, as reported that *H. pylori* infection rate in developed nations is 15.5% where as in developing nations is 93.6%,⁶ while there is inadequate and controversial data in Pakistan.⁵ Although different studies showed different prevalence of *H. pylori* among patients of dyspepsia.^{7,8} The potential reasons for raised incidence includes the crowded households and poor socioeconomic status. The transmission mode incorporates contaminated food ingestions or contaminated water or

direct contact between individuals. Also, iatrogenic transmission during dental practice and endoscopies have been accounted for.^{9,10} Typical symptoms of the dyspepsia are reported as epigastric pain, abdominal fullness and nausea or vomiting. Eradication of the *H. pylori* and Proton pump inhibitors (PPIs) are the most widely used managements for the *H. pylori* infection.¹¹ Poor quality of life among cases of the functional dyspepsia recommends the need for perfect diagnosis, subsequently symptomatic treatment and the management of prevention of relapse.^{11,12} Many diagnostic tools exist for the diagnosis of the infection of *H. pylori*. Serological test for the diagnosis of *H. pylori* is the noninvasive and is based on the results of antibodies to the bacterium in the serum, urine or saliva. A positivity of the test of serum therefore specifies exposure, not a current infection.⁴ Essentially serology is viewed as inferior compared to other direct noninvasive diagnostic tools as stool antigen and urea breath in clinical practice.^{4,13} This study has been conducted to assess the frequency of seropositive *H. pylori* among patients presented with dyspepsia.

MATERIAL AND METHODS

This was a descriptive case-control study, which was carried out at Department of medicine of Peoples University of Medical and Health Sciences for women Nawabshah. Study duration was six months from October 2018 to March 2019. All the patients of age 18-70 years,

presented with complaint of dyspepsia, of either gender were included in the study. All the cases presented with history of eradication of H. pylori, with proton pump inhibitor and antibiotics within one year and the individuals with history of esophageal or gastric surgery or hepatocellular carcinoma and those patients who refused to participate in the trial were excluded from the study. After taking informed consent all the patients underwent serological assessment for H. pylori. From each study participant a 5ml blood sample was taken and sent to the laboratory for the diagnosis of H. pylori. After collection of the laboratory reports, all the data was collected via self-made study proforma, and SPSS version 22 was used for the analysis of data.

RESULTS

Total 78 patients of dyspepsia were enrolled, their mean age was 34.23±6.22 years and average duration of symptoms was 15.23±7.14 months. Males were in majority 43(55.1%) and females were 35(44.9%). As per clinical presentation abdominal distension after meal was among 21(26.9%) cases, epigastric pain was in 14(17.9%) cases, heart burn was among 32(41.0%) patients, 07(09.0%) had belching and 19(24.4%) had multiple complaints. Most of patients were socioeconomically poor and had average level of education as showed in table.1

Frequency of seropositivity of H. pylori was found 33.30% among patients of dyspepsia. Fig.1

Seroprevalence of H. Pylori was statistically insignificant according to gender and socioeconomic status (p>0.05). Table.2

Table 2. Descriptive statistics of demographic characteristics n=78

Variables		Statistics
Age (years)		34.23±6.22
Duration of symptoms (months)		15.23±7.14
Gender	Males	43(55.1%)
	Females	35(44.9%)
Clinical presentation	Distension after meal	21(26.9%)
	Epigastric pain	14(17.9%)
	Nausea and vomiting	10(12.8%)
	Heartburn	32(41.0%)
	Belching	07(09.0%)
	Others	19(24.4%)
Educational status	Illiterate	12 (15.4%)
	Primary	15 (19.2%)
	Secondary	29 (37.2%)
	Higher secondary	14(17.9%)
	Graduation	08(10.3%)
Socioeconomic status	Poor	50(64.1%)
	Middle	22(28.2%)
	Upper	06(07.7%)

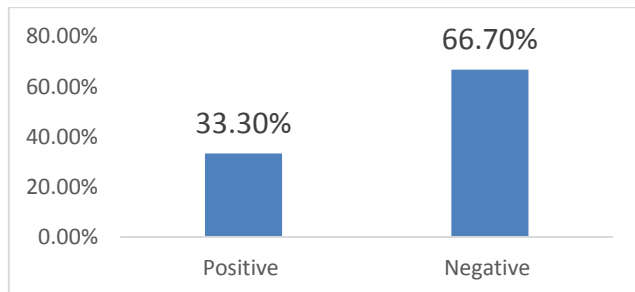


Fig.1. Frequency of H. pylori among patients of dyspepsia n=78

Table.2 frequency of seropositive H. pylori according to gender and socioeconomic status n=78

Variables		Helicobacter pylori		p-value
		Positive n=26	Negative n=52	
Gender	Males	14	29	0.872
	Females	13	22	
Socioeconomic status	Poor	19	31	0.449
	Middle	06	16	
	Upper	01	05	

DISCUSSION

Gastroenterologists and primary care physicians both regard dyspepsia as a prevalent clinical condition. A Gram-negative bacterium (H. pylori) colonizes the stomach of around two-thirds of population throughout the world, and it has a role in the pathophysiology of gastroduodenal illnesses.⁶ In this study mean age of the patients was 34.23±6.22 years and males were in majority. On the other hand in the study of Alkali M et al¹⁴ reported that the average age of the patients was 25.60±10.35 years and males were in majority with male to female ratio as 1:1.63. In another study of Aminde JA et al⁴ reported that the mean age of the patients was 40.7 years and females were in majority 63.6%. In the agreement of our findings the Mehmood K et al¹⁵ demonstrated that the mean age of the dyspeptic patients was 45±6.3 years and males were in majority 64.9% as compared to females as 35.1%. The difference in age and gender with other studies may be because of in our population males were mostly involved in outdoor activities and also having more habits of smoking and alcohol consumption.

In this study fullness of upper abdomen after meal was among 21(26.9%) cases, epigastric pain was in 14(17.9%) cases, heart burn was among 32(41.0%) patients, 07(09.0%) had belching and 19(24.4%) had multiple complaints. Similarly in the study of Yazdanpanah K et al¹⁶ reported that 25.4% cases had pain in upper abdomen, distention after meals had 26.8% of the cases, early satiety was in 22.4% of the patients, nausea after meals was in 12.7% cases and 7.6% cases had vomiting and belching was in 13.9% of the patients. Although in the study of Naushad VA et al⁹ demonstrated that most common symptom among dyspeptic patients was pain in epigastric and heart burn among 80.6% and 26.2% of the cases respectively. In the study of Desai SB et al¹⁷ also reported that that 42.41% cases had early satiety, 72.15% patients had epigastric pain, 51.90% patients had postprandial fullness and most of the cases had multiple symptoms and we also found most of the cases with multiple symptoms.

In this study seropositive rate of H. pylori was 33.30% among patients of dyspepsia. Although Alkali M et al¹⁴ found higher seropositive rate as 44.8% of H. pylori among patients. On the other hand Aminde JA et al⁴ demonstrated that the overall seroprevalence of H. pylori is 51.5%. In a national study of Mehmood K et al¹⁵ reported that H. pylori prevalence among dyspeptic patients was 88.3%. In Tanzania, H. pylori seroprevalence was 39.1% among dyspeptic individuals,¹⁸ and 27.5% was among symptomatic individuals at a health facility of North West

region.¹⁹ In the agreement of this study the Niknam R et al²⁰ demonstrated that the H. pylori was diagnosed among 31.2% of the dyspeptic cases. On the other hand Muhammad N et al²¹ also found higher frequency of H. pylori 66.66% among dyspeptic cases. Above all mentioned studies showing different prevalence of H. pylori and this difference may be, because of the valuables difference in sample size and the studies and the selection criteria.

In this study the seroprevalence of H. Pylori was statistically insignificant according to gender and socioeconomic status ($p > 0.05$). Similarly in a 5 years study of Aminde JA et al⁴ stated that the poor socioeconomic status is a significant risk factor of infection of H. pylori, although some studies have identified no link between educational level or work status and H. pylori seropositivity. On the other hand Niknam R et al²⁰ also found no significant link between gender and rate of infection. The study participants' educational background and socioeconomic status are the known indices of public health education, knowledge, awareness, and preventative approach, which are linked to the level of excellent sanitation and personal cleanliness.¹⁴ There were several limitations of the study, as small sample size, selected patients' comorbidities, some were smokers and also NSAID history was observed in some study subjects. However large sample size population-based studies should be done by excluding the other factors of dyspepsia to evaluate the right seroprevalence of H. pylori among patients of dyspepsia.

CONCLUSION

As per study conclusion the seropositivity of H. pylori was observed to be higher among patients of dyspepsia and seropositivity of H. pylori was insignificantly linked to gender and socioeconomic status. This was a small sample size and single center study; hence further large-scale population studies are recommended on this subject to know the exact seroprevalence and relationship of H. pylori in dyspeptic patients and to develop the proper management and preventive strategies to decrease the morbidity and mortality caused by this preventable and curable disease.

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