

## Frequency of *Helicobacter Pylori* in Patients with Dyspepsia in Civil Hospital, Khairpur

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### ABSTRACT

**Background:** The *Helicobacter pylori* is a gram negative bacterium which is found in majority of population in all over the world. It is possible due to contaminated food consumption, working in unsanitary condition and the use of public toilets with poor sanitation. In the field of gastroenterology infection caused by *H. pylori* and functional dyspepsia are most common clinical issue but their association is also unclear.

**Aim:** To determine the frequency of *Helicobacter Pylori* in patients with presenting with Dyspepsia in Civil Hospital, Khairpur

Study Design: Descriptive Cross sectional study.

**Duration of study:** One year from 01-Jan-2019 to 31-12-2019.

**Setting:** Institute of Microbiology, Shah Abdul Latif University, Khairpur.

**Methodology:** All the patients between 15 to 60 years of age, admitted patients of dyspepsia were diagnosed and evaluated for *Helicobacter pylori* infection through histopathological examination.

**Results:** Total 100 subjects with dyspepsia were screened for *Helicobacter pylori* infection. Mean age of patients was 40.0 ±15.40. Majority of patients with *H. pylori* positive were from age group between 40-60 years, from which 56.7% of them were *H. pylori* positive; while 30% of patients were from age between 20-40 years of age and only 13.3% were from age below 20 years of age

**Conclusion:** The dyspeptic patients are prone to acquire *Helicobacter pylori* infection therefore present study reported 30% prevalence for *H. pylori* infection with male gender predominance.

**Key words:** Dyspepsia, *Helicobacter Pylori* Infection, Peptic ulcer, histopathology, endoscopy

### INTRODUCTION

A Gram-negative bacterium of the stomach, *Helicobacter pylori* is found in approximately half of the world's population<sup>1</sup>. The infection is mostly acquired earlier in life and is common in less developed countries<sup>2</sup>. In Some patients *H. pylori* infected patients remain asymptomatic for a long time due to superficial infection and usually symptoms appear when organism damages the duodenum or lining of stomach<sup>3</sup>. *H. pylori* infection may lead to number of gastric disease like gastritis, peptic ulcer disease and gastric carcinoma<sup>4, 5</sup>.

*H. pylori* have been classified by World Health Organization as risk for gastric adeno-carcinoma and class I carcinogen<sup>6</sup>. In previous Epidemiological studies<sup>7</sup> it was reported that *H. pylori* is responsible for up to 90% of gastric cancers and its incidence can be reduced to a significant level by giving standard eradication therapy<sup>8</sup>. In the field of gastroenterology infection caused by *H. pylori* and functional dyspepsia are most common clinical issue but their association is unclear still under debate<sup>8</sup>. In previous literature prevalence rate of *H. pylori* in functional dyspepsia was reported upto 87% but their association and role in appearance of symptoms was not observed.

Previous trials shown that non ulcer dyspepsia can be managed with eradication of *H. pylori* but these findings were conflicting, but few studies observed subsiding of symptoms when eradication therapy of *H. pylori* was given<sup>9, 10</sup>. Hence, this study is carried out to determine the

frequency of *H. pylori* in dyspeptic patients so that early and effective measures and management can be provided and study will be helpful for streamline referral of patients to specialized treatment before appearance of life threatening complication of *H. pylori* infection.

### METHODOLOGY

Study was cross sectional in design and conducted in Institute of Microbiology, Shah Abdul Latif University, Khairpur, from 01-Jan-2019 to 31-12-2019 in one year duration. Study was started after ethical approval from hospital ethical committee. Written informed consent was obtained from patients after detailed information about purpose of study. Patients of both gender (male or female), age from 15 years to 60 years and presenting with upper abdominal pain and signs of dyspepsia were included in the study. Sample size was calculated by using openepi.com an online sample size calculator using *H. pylori* prevalence in functional dyspepsia as 64.4%% with 10% margin of error, 95% confidence level. Endoscopy was performed to collect samples, on patients admitted to gastroenteritis wards with acute or chronic gastritis and peptic ulcer problem. It was performed vialignocaine throat anesthesia and with the administration of intra-venous diazepam. Samples for biopsy were transported in Stuarts transport medium and sent to histopathology lab and report was considered as positive in case of identification of *Helicobacter pylori* infection by gram staining method.

Version 25 of Statistical package for social sciences SPSS was used for data analysis. Mean and SD were analyzed for numerical data like age and frequency percentages were calculated for categorical data. Test of significance (chi-square test) was applied to see association among study variables. A probability value (p-value)  $\leq 0.05$  was taken as significant statistically.

**RESULTS**

Total of 100 samples from patients were examined for infections of *H. pylori* out of them male 65 (65%) and 35 (35%) were female patients (figure1); over all 30 patients were shown positive for infection of *H. pylori*. Out of which, male 17 (56.7%) and 13 (43.3%) females were diagnosed with *H. pylori* positive. In our study sample there were more *H. pylori* positive males as compare to females.

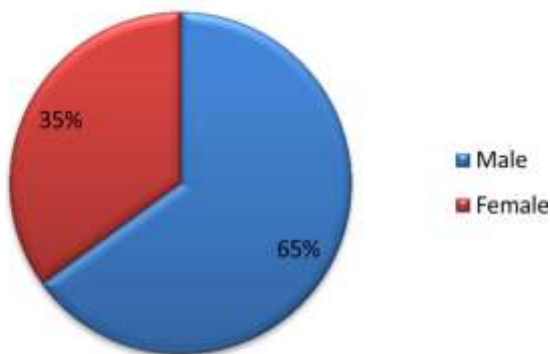


Figure 1: Gender-wise distribution of subjects

The mean age of patients was  $40.0 \pm 15.40$ . Majority *H. pylori* positive patients were from age group between 40-60 years, from which 17 (56.7%) of them were *H. pylori* positive; while 9 (30%) of patients were from age between 20-40 years of age and only 4 (13.3%) were from age below 20 years of age as shown in figure 2.

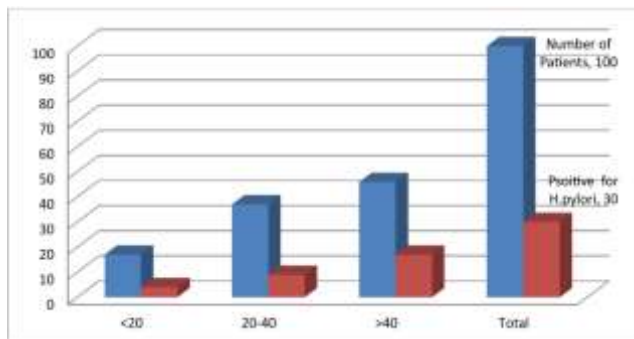


Figure 2: Age group of Patients and prevalence of *H. pylori*

Table 3: The gender according to *helicobacter pylori* infection

Infection		Gender		Total
		Male	Female	
<i>H. Pylori</i>	Positive	17 (56.7%)	13 (43.3%)	30
	Negative	48 (31.2%)	22 (62.8%)	70
Total		65	35	100

**DISCUSSION**

The occurrence of *H. pylori* positive infection was 30% in our study; which is considerably lower in contrast to older studies. Results by Tahir et al. at the King Abdullah Teaching Hospital Mansehra for one year from May 2018 to April 2019 reported the prevalence of *H. pylori* as 56.4%. A study conducted by Qureshi et al among dyspeptic population from Nilore, Islamabad showed very high prevalence (66.5%) of *H. pylori* infection. A study from Tooba et al et at Liaquat National Hospital, Karachi reported 64.4% prevalence for *H. pylori* infection.

There is a high possibility that low rate of patients with *H. pylori* is probably due to increased administration of antibiotics, improved hygiene awareness and urbanization; also low number of patient turnover for treatment is also the contributing fact for such a low frequency of *H. pylori* positive cases. In the current study, the total frequency of *H. pylori* was comparable with the reported prevalence in countries of this region. A study from neighboring country Iran reported the frequency of *H. pylori* 23.2% was in their study.

In our study *H. pylori* positive cases in males (17%) were greater as compared to females (13%). Similar outcomes were found in other studies done in Pakistan. Sarwar N et al in Lahore also confirmed similar findings that shown more infected patients in male gender as compare to female. Male gender predominance is also reported from all other studies carried out in different regions of Pakistan. Higher frequency of *H. pylori* cases in men are possibly due to contaminated food consumption, working in unsanitary conditions and the use of public toilets with poor sanitation.

Majority, 56% of *H. pylori* positive patients were from age group between 40 to 60 years of age. Our findings are in agreement with other similar studies done at both national and international hospitals. A research conducted in India found similar results where majority of *H. pylori* positive patients were from age of 40 years. Similarly hospital in Karachi observed majority of middle aged patients infected with *H. pylori*. Also from Barakaho, Islamabad also recorded increased risk of *H. pylori* infection with the advancement in age.

Sarwar Net al. from Lahore also observed similar results. From above discussed results we can safely surmise that the younger population is less likely to get infected due to their better overall immunity and asymptomatic state of health. Reason for increased *H. pylori* infection in age 40 and above is due to following factors; such as exposure to contaminated environment, decreased natural immunity response due to other comorbidities and progressive age.

**CONCLUSION**

Near to fifty percent of our study population showed *H. pylori*-positive, and observed trend of *H. pylori* infection was found comparable to the recorded results also in available literature. Moreover, the studied population in the present study belong to a younger age group.

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