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FREQUENCY OF HELICOBACTER PYLORI STOOL ANTIGEN IN INDIVIDUALS WITH DYSPEPTIC SYMPTOM.

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ABSTRACT… To evaluate the frequency of H. pylori stool antigen in individuals with dyspepsia. **Study Design:** Cross sectional study. **Setting:** Liaquat National Hospital, Karachi. **Period:** July-2017 to 31st December-2017). **Materials and Methods:** The individuals with dyspeptic symptoms for ≥3 months durations were included and explored for H. Pylori infection by H. Pylori stool antigen while the result were analyzed and frequencies and percentages were calculated. **Results:** The mean ± SD for overall population was 36.29±8.57 years while the frequency of H. pylori was recorded as 38.57% (54/140) patients respectively. **Conclusion:** H. pylori infection usually observed in dyspeptic individuals and should be screened for eradication therapy.

Key words: Endoscopy, Dyspepsia, Helicobacter Pylori, Proton pump inhibitors, Stool Antigen.

INTRODUCTION

Dyspepsia is a major health trouble encountered worldwide and overall prevalence of dyspepsia is 25%.[1] The Helicobacter pylori infections is responsible for dyspeptic symptoms.[2] The prevalence of H. pylori infection differs worldwide. The reported prevalence in middle and lower economical countries shown greater than 80% exposure rate.[3] while in developed countries its much lower. This higher prevalence is directly related to poor socioeconomic conditions, overcrowding and poor sanitation.[1] An Indian study shows 63.38% prevalence of h.pylori in functional dyspepsia.[4] Another study from Saudi Arabia shows 36.8% prevalence in adult population.[5] On further searching the literature, a study from Bhutan shows 73.4% prevalence of H.pylori[6,7] The accurate and early diagnosis of infection by this micro-organism is very important because diagnosis and management of dyspepsia costs a lot of economic burden worldwide.[8,9] Studies have shown ≥ 80% of African migrated population resided in Australia has positive stool antigen tests on arrival.[10]

No study is available in Pakistan for identifying the H. pylori stool antigen in population. Thus this study was focused to estimate whether H. pylori stool antigen can be diagnostic tool as endoscopy (painful procedure) & biopsy of GI mucosa. The rational was to identify the frequency of Helicobacter pylori stool antigen in individuals with dyspepsia and to evaluate the diagnostic efficacy of H. pylori infection by non invasive tools and spare the endoscopic intervention that is painful procedure and also cost effective.

PATIENTS AND METHODS

The study was conducted as six months cross sectional (from 1st July-2017 to 31st December-2017) at Liaquat national hospital Karachi. Total sample size calculated is 140, using WHO software considering p=36.8%,[9] d=8%, and 95% confidence level.

The inclusion criteria were:
1. Both sex
2. Age - 18 to 50 years
3. Dyspepsia (as defined in operational

definition)

The exclusion criteria:
1. Patients with History of vomiting with weight loss was excluded as they was in differentials of Gastric Carcinoma.
2. Those who had received antibiotics or proton pump inhibitors as well as antacids in the previous 4 weeks.

They if included in study will produce bias in study result.

Dyspepsia: is a condition of impaired digestion and it is also known as indigestion. It was assessed on the basis of history and clinical examination.

H. Pylori is a gram negative bacillus that resides within the stomach and small intestine (duodenum).

H. pylori stool antigen: It is a non-invasive method widely being used for diagnosing H. pylori infection. It is done by using immunochromatographic assay (ICA).

All patients presented to department of gastroenterology Liaquat National Hospital fulfilling the inclusion criteria were selected and the informed consent was taken while the sample H. Pylori stool antigen sample was sent to laboratory. The SPSS 17 was used for analysis and the frequencies and percentages were calculated for qualitative variables like gender, educational status, economic status (on the basis of monthly income) and H.pylori positivity. Ratio (M: F) was computed to present gender. Additionally; age, gender, duration of symptoms and clinical presentation was stratified to control the confounders whereas the Chi-square test was used to get the p- value and the level of significance was ≤0.05.

RESULTS
Total 140 individuals were recruited with the mean age of the individuals was 36.29 ± 8.57 year likewise demographic characteristics weight, height and BMI was also computed and shown in Table-I. Mean duration of dyspepsia symptoms was 4.81 ± 1.48 months as also shown in Table-I. Man to women ratio was 2.4:1.

Economic status of the patients was evaluated by monthly salary and presented in Figure-3. Regarding education status, 51.54% patients were either metric or intermediate 18.57% were below metric, 15% were illiterate and 15% were graduated.

The helicobacter pylori infection was observed in 38.57% (54/140) dyspeptic patients while the results of the study are mentioned in Table-I to III and Figure-1 & 2.
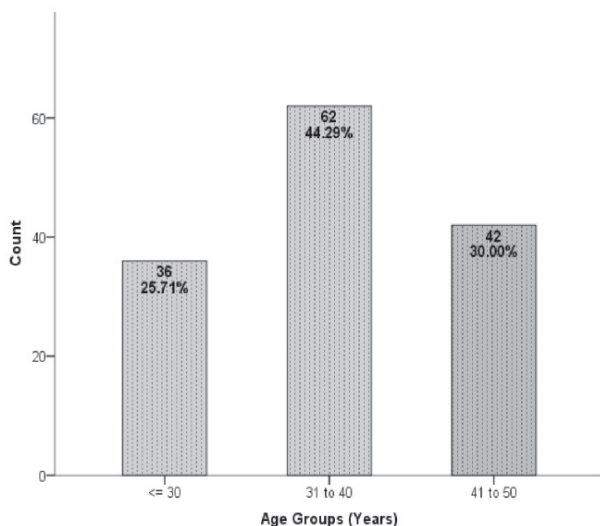

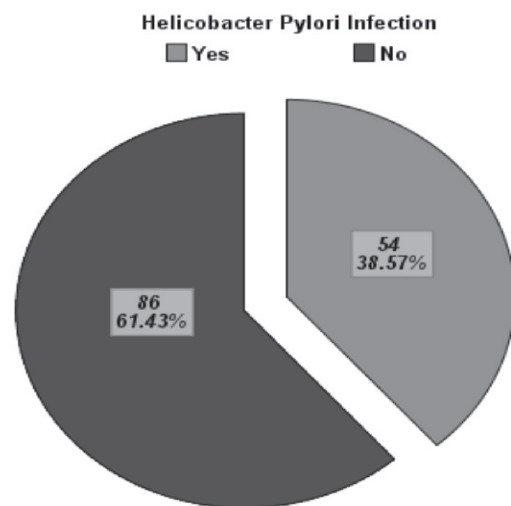**Figure-1. Age distribution of the patients n=140**

Figure-2 H. Pylori infection in individuals with dyspeptic symptom n=140

Age Groups (Years)	Helicobacter Pylori Infection		Total	P-Value
	Yes	No		
≤30	19(19%)	17(47.2%)	36	
31 to 40	20(32.3%)	42(67.7%)	62	0.119
41 to 50	15(35.7%)	27(64.3%)	42	

Table-I. Helicobacter pylori infection in dyspeptic individuals with respect to age n=140 Chi-square applied

Gender	Helicobacter Pylori Infection		Total	P-Value
	Yes	No		
Male	43(43.4%)	56(56.6%)	99	
Female	11(26.8%)	30(73.2%)	41	0.066

Table-II. Helicobacter pylori infection in dyspeptic individuals with respect to gender n=140 Chi-square applied

Duration of Dyspepsia Symptom	Helicobacter Pylori Infection		Total	P-Value
	Yes	No		
≤ 5 months	38(41.8%)	53(58.2%)	91	
>5 months	16(32.7%)	33(67.3%)	49	0.29

Table-III. Helicobacter pylori infection in dyspeptic individuals with respect to duration of symptom n=140 Chi-square applied

DISCUSSION

H. pylori infections epidemiology knowledge gain mainly from former studies. The infection exists more in developed countries where as in developing countries its rate around 2-6% per year with reported prevalence as 25–45% in adult population.[11] In present study the mean age was 36.29±8.57 years and the ratio for man to women population was 2.4:1. In former study [5] the male and female population was 221 (48.5%) and 235 (51.5%) with mean ±SD age was 36.4±9.8 years. In current series, the prevalence for H. pylori in dyspeptic individuals was 38.57% while the higher prevalence was reported in former study;[12] as 72% in dyspeptic subjects. The higher prevalence was also reported in Turkey;[13] as 53%, whereas in Libya, Nigeria, Bangladesh, Tunis, Riyadh and Makkah (Saudi Arabia) as 76%, 80%, 92%, 83%, 66% and 51% respectively.[14-19] The former studies detected increase in prevalence as 70% with respect to age ≥20.[18,20,21] In accordance to gender appears to have no effect;[21] while in the study by Broutet, et al[22] there as gender differences as higher in males than females. The reason still unclear but might be dietary habits.[23] The similar observation was detected in the previous study.[24] The socioeconomic factors also plays role in acquiring the GI infections.[25] The current study sort that population with low socioeconomic status a risk factor to acquire GI infection burden while the previous studies also emphasized that poor hygienic conditions and low income families with crowded members are risk factors for H. pylori infection,[26] the observations was also detected by former study that declared poor parental education, low socioeconomic status and tap water are the determinants of the H. pylori infection. The H. pylori infection emerges as childhood and proceeds with age thus prevention can be possible by improving the hygienic conditions and levels of education in families of low socioeconomic profile.[27]

CONCLUSION

H. pylori infection is prevalent in individuals with dyspeptic symptoms and must be investigated for its existence and the eradication therapy should be commenced on time to save the individuals from various complications.
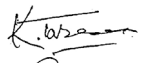**Copyright© 07 Feb, 2019.**

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Khalid Ahmed Tareen	Contribution to conception and design acquisition of data, analysis and interpretation of data.	
2	Riaz Hussain Awan	Drafting the article and shares its expert research opinion and experience in finalizing the manuscript.	
3	Seema Nayab	Contributed the conception and interpretation of data and give his expert view for manuscript designing.	
4	Khadim Hussain Awan	Collection and acquisition of data, analysis and interpretation of data and make it suitable for final revision and a corresponding.	
5	Faqir Muhammad Awan	Data collection and analysis.	