ORIGINAL ARTICLE

Helicobacter Pylori*:* Determine the Frequency of Infection in Patient of Acid Peptic Disorders

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ABSTRACT

Aim: To determine the rate of H. pylori infection in patients presented with acid peptic disorders**.** Also examine the association of serology test (immune chromatographic test) with histopathological examination.
Study Design: Prospective/Observational study.
Place and duration of study: Department of Medicine, Chandka Medical Collage Hospital Larkana from 1st January 2019 to 30th June 2019.
Methods: Total 154 patients of both genders with ages 20 to 65 years presented with acid peptic disorders were included. Patients detailed demographic were recorded after written consent. Two biopsies of each individual were performed for histopathology examination and blood samples were taken for immune-chromatographic procedure for antibodies for H. pylori. Association between ICT antibodies and histopathology examination were examined.
Results: Out of 154 patients 82(53.25%) patients were males while 72(46.75%) were females with mean age 42.26±9.54 years. Upper abdominal pain was the most common symptom found in 108(70.13%) patients. H. pylori infection was positive in 124(80.52%) patients by histopathology examination and 118(76.62%) patients had H. pylori positive by ICT antibodies examination.
Conclusion: The rate of H. pylori infection in this area is quite high. It may be due to unawareness and poor sanitation. Immune-chromatographic for antibodies examination for H. pylori is safe and accurate procedure after histopathology examination.
Keywords: *H .pylori,* Prevalence, ICT, Histopathology

INTRODUCTION

Helicobacter pylori cause inflammatory conditions like esophagitis, gastritis, duodenitis, gastric ulcer, adenocarcinoma and mucosa associated lymphoid tissue (MALT) lymphoma. It may be defined as class 1 cancer causing bacteria described by the world health organization in 1994. The Severity of disease depend upon many factors, among them the status of host's immune system the pathogenicity and *Helicobacter Pylori* strains[1-4].

The prevalence of *H. pylori* infection varies by geographic area, age, gender, race and socioeconomic status in country to country and within country region to region.[4-6] World Health Organization estimates and indicates that more than 50% of population have infected with *H. pylori* particularly in the developing countries as compare to developed countries in world In Asia the studies published and depict a high prevalence of *Helicobacter pylori* infection ranging from 54-76%, it is more prevalent in developing Asian countries like Pakistan, India and Bangladesh as compared to developed countries like Japan, China and Russia but frequency of gastric cancer however is very low in Pakistan, India and Bangladesh as compared to Russia, Japan and China. In Pakistan the sero-prevalence of H. pylori infection accounted 58 to 60%.[3,7,8] H. pylori infection is a common clinical disorder and the most important risk factors are low socioeconomic status, poor sanitation, lack of awareness and unavailability of pure and clean water. These factors are the main reason of high frequency of H. pylori infection[9-11].

In patients with H. pylori infection, severe abdominal pain is the most common symptom followed by nausea, vomiting, loss of appetite, weakness and fatigue and fullness after eating meal[12-14].

H. pylori infection can be diagnosed by invasive method in which RUT, Histopathology examination and bacterial culture with biopsy specimen were included and noninvasive methods included stool antigen Test and Urea Breath Test and serology. Noninvasive tests are easier to accomplish but need appropriate validation of methods for each population and age.[15] Serological testing is less accurate than UBT and SAT, particularly in areas of low *H. pylori* prevalence in developed countries, and cannot differentiate past from present infection[16].

To the best of our knowledge that there is no any study conducted in this area about *H. pylori*, therefore aim of this study was to determine the prevalence of infection in acid peptic disorders. Also examine the association of ICT examination for antibodies with histopathology and taking histopathology as a gold standard.

MATERIAL AND METHODS

This prospective/observational study was carried out at Department of Medicine, Chandka Medical Collage Hospital Larkana from 1st January 2019 to 30th June 2019. A total of 154 patients of both genders with ages 20 to 65 years presented with acid peptic disorders were included.

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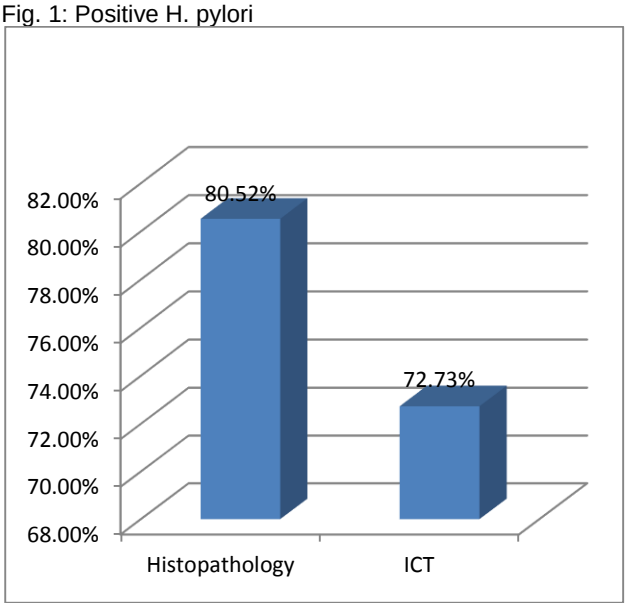
Patients detailed demographic including age, sex, socioeconomic status and symptoms were recorded after written informed consent. Alcohlic patients, patients taking NSAIDS, patients with acute abdominal pain, patients with liver cirrhosis and patients with tuberculosis were excluded from this study. Patients were kept Nil by Mouth (NBM) 6 hrs prior to Endoscopy. Gastric biopsy specimen smear were collected from symptomatic group and also venous blood for serological tests was collected. Procedure started with 4% lignocaine spray to anaesthetize the oropharynx, then with proper position apply endoscopic tube for visualization of mouth, esophagus, stomach up to the duodenum for any abnormality. Total two biopsy samples were taken from antrum of stomach in each patient. The specimens were preserved in formalin container labeled it for histopathology examination and *H. pylori* detection. Serology (ICT) anti bodies test was used to detect *H. pylori* antibodies. After 10 minutes result was noted if two distinct lines in control were observed the result positive and one line declare result negative. Prevalence of H. pylori infection was recorded. Association between ICT antibodies and histopathology examination were examined. All the data was analyzed by SPSS

RESULTS

Table 1: Demographics of all the patients

Variable	**No.**	**%**
Age (years)	42.26±9.54	
Gender		
Male	82	53.25
Female	72	46.75
Socioeconomic status		
Low	106	68.83
Middle	48	31.17
Symptoms		
Severe Abdominal Pain	108	70.13
Heart Burn	92	59.74
Vomiting	55	35.71
Fullness After Meal	31	20.13

Fig. 1: Positive H. pylori



There were 82(53.25%) patients were males while 72(46.75%) were females with mean age 42.26±9.54 years. 106(68.83%) patients had low socioeconomic status while 48(31.17%) patients had middle status. Upper abdominal pain was the most common symptom found in 108(70.13%) patients followed by heart burn 92(59.74%), vomiting 55(35.71%) and fullness after eating meal 31(20.13%) patients (Table 1). H. pylori infection was positive in 124(80.52%) patients by histopathology examination and 118(76.62%) patients had H. pylori positive by ICT antibodies examination (Fig. 1, Table 2).

Table 2: Comparison of histopathology according to ICT test

Histopathology	**ICT Test**		**Total**
	+ ve	**- ve**	
Positive	112	10	124
Negative	6	24	30
Total	118	34	154

Sensitivity = 112/(112+6) x 100 = 94.92%
Specificity = 24/(24+10) x 100 = 70.58%
PPV = 112/(112+10) x 100 = 91.80%
NPV = 24/(24+6) x 100 = 80%

DISCUSSION

H. pylori infections are remarkably different between developed and underdeveloped countries. Gastritis, gastric ulcer and malignancies have many etiological factors among which *H .pylori* infection is a major cause. The prevalence of *H. pylori* infection in Pakistani population is silent alarming and it variable markedly from different areas and in area district to district.

The accurate diagnosis of *H. pylori* infection is essential for the effective treatment to prevent recurrence of acid peptic disorders and its complications, Different diagnostic Procedures for *H. pylori* infection are available like serology, stool antigen test, UBT, ureases test and biopsy but each test has different advantages disadvantages. Initially patients with acid peptic disorder should undergo serologic testing for the presence of *H. pylori* antibodies in serum this test cannot distinguish the present and past infections. But remaining positive for years after treatment .The biopsy based diagnostic method is a Gold standard test for direct detection of *H. pylori* it can distinguish the present and past infection and direct microscopically examination with many stains are available for detection of organism[17,18].

In present study 82(53.25%) patients were males while 72(46.75%) were females with mean age 42.26±9.54 years. 106(68.83%) patients had low socio-economic status while 48(31.17%) patients had middle status. These results showed similarity to some other studies in which male patients were predominant as compared to females 60 to 70% and majority of patients were ages above 30 years[19,20]. Upper abdominal pain was the most common symptom found in 108(70.13%) patients followed by heart burn 92(59.74%), vomiting 55(35.71%) and fullness after eating meal 31(20.13%) patients. These results were similar to several previous studies in which severe abdominal pain was most common symptom in patients diagnosed with H. pylori infection[12-14].

In present study we found H. pylori infection was positive in 124(80.52%) patients by histopathology

examination and 118(76.62%) patients had H. pylori positive by ICT antibodies examination. The association of ICT test with histopathology examination was recorded as sensitivity, specificity, PPV and NPV 94.92%, 70.58%, 91.80% and 80% respectively. A study conducted by Rasheed et al[21] with positive cases were (74%) and Tabasum et al[9] with positive cases as (64.4%). Some of previous studies reported that serology test for antibodies for detection of H. pylori had low accuracy rate as compared to invasive examination[15,16].

CONCLUSION

H. pylori infection in patients with acid peptic disorders is common health problem in developing countries. We concluded that the rate of H. pylori infection in this area is quite high. It may be due to unawareness and poor sanitation. Immune-chromatographic for antibodies examination for H. pylori is safe and accurate procedure after histopathology examination.

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