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A STUDY TO DETERMINE THE H. PYLORI PREVALENCE IN PATIENTS HAVING NON-ULCER DYSPEPSIA

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Abstract:

Objective: *To determine H. pylori prevalence in patients suffering from non ulcer dyspepsia by doing rapid urease test, histopathology of gastric biopsy and serology.*

Place and duration: *In the Medicine Unit II of Jinnah Hospital, Lahore for one year duration from March 2018 to March 2019.*

Methods: *Rapid urease test, serology test and gastric biopsy histopathology for H. Pylori were performed in 50 patients with ulcer-like symptoms in both sexes but no evidence of peptic ulcer disease on gastroscopy.*

Results: *H. Pylori was detected in gastric biopsy histopathology in 33 patients (66%). 95% CI was 51.14% to 78.41%. Serological test was positive in 36 patients (72%). 95% CI was 50.30% to 76.31%. In 35 patients (70%); rapid urease test was positive. The 95% confidence interval was 55.21% to 81.71%.*

Conclusion: *Rapid urease test and serological test for H. Pylori may provide good diagnostic performance in subjects with non-ulcer dyspepsia in our inhabitants.*

Keywords: *H. Pylori, non-ulcer dyspepsia, diagnosis.*

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INTRODUCTION:

Since characterized by Marshall and Warren in 1983, Helicobacter pylori has been discovered to cause gastritis, peptic ulcer and gastric carcinoma[1-3]. The H. Pylori complete role in non-ulcer dyspepsia is still speculative. However, it has been connected with non-ulcer dyspepsia, and large published data suggest that H. Pylori is etiologically related with non-ulcer dyspepsia[4-6]. Invasive and non-invasive tests can be performed to diagnose H. pylori infection[7-8]. In this study, serology, rapid urease test and histopathological methods were used as diagnostic tools. This study will help to understand the H. Pylori prevalence in our dyspeptic patients and, if high, will support the need to investigate dyspeptic patients. It will also be useful to evaluate the effectiveness of the various tests used for diagnosis[9].

MATERIALS AND METHODS:

This Prospective study was held in the Medicine Unit II of Jinnah Hospital, Lahore for one year duration from March 2018 to March 2019.

Inclusion criteria:

1. 50 patients were included in the study. There were recurrent or persistent pain or discomfort symptoms in the upper abdomen, such as indigestion, early saturation, heartburn, insufficiency, water, belching, nausea, and vomiting.
2. These patients underwent physical examination and research; ie CBC, liver function tests, ECG, urea creatinine, S / amylase, abdominal ultrasound. Only patients with the above-mentioned normal tests were included.
3. Patients without evidence of peptic ulcer on upper digestive endoscopy.

Exclusion Criteria:

1. Patients with chronic liver disease, upper gastrointestinal bleeding, hepatic encephalopathy, pancreatic disease, gallbladder disease or severe concurrent disease were excluded from the study.
2. Patients with a history of NSAID intake, erythromycin theophylline.
3. Patients who had H. Pylori treatment history in the last month were excluded from the study. Patients who encountered the above standards were subjected to histopathology of serology, rapid urease test and gastric biopsy as described below:

a) Serology: Serological testing was performed using the best H. Pylori test disc. A commercially available step. To obtain serum, 2 cc patient's blood was centrifuged and 2-3 drops of sample were placed into the well of the kit. The results were interpreted after 10 minutes. When the test started, a purple color was seen in the result window. If two color bands appear in the results window, the test is declared positive. The test was declared negative when only one color band appears in the results window. If a purple band does not appear in the results window, the test is declared invalid.

b) Gastric biopsy histopathology: gastroscopy was performed to perform gastric biopsy. The procedure was performed with the help of Olympus Gastroscope GIF E. Four gastric and gastric antrum biopsies were taken. Two gastric biopsies (sample # 1) were placed in formalin solution and taken to the Histopathology Department where they were stained with eosin, giemsa and hematoxylin. The remaining 2 biopsies (sample no. 2) were provided for rapid urease tests. Rapid urease test Procedure steps

1. To perform a rapid urease test, a CHRISTENSENS UREA BROTH (OXOID) solution from the Department of Pathology was introduced. It was yellow in its original color.
2. Rapid urease solutions were added to the test tubes and placed at 4 ° C in the refrigerator in the endoscopy room. After preparation of the solution, the solution was used for five days and then a new Christenson broth was prepared.
3. Two gastric biopsies (example # 2) of the body and antrum were added to a test tube containing rapid urease solutions. The results of the rapid urease test were interpreted after 2 hours and after 24 hours. However, the final result was evaluated at 24 hours. The change in color of the RUT solution is yellow to pink or magenta positive; If there is no color change, RUT declared negative.

RESULTS:

Fifty patients of both sexes were included in the study with age ranged from 21 to 65 years. Total number of male patients was 30 (60%) and number of female patients was 20 (40%). (Table 1).

Table 1: Age & sex distribution

Age groups	Female		Males		Total	
	=n	%age	=n	%age	=n	%age
21-30	5	10	8	16	13	26
31-40	4	8	10	20	14	28
41-50	6	12	7	14	13	26
51-60	4	8	3	6	7	14
61-70	1	2	2	4	3	6%
Total	20	40	30	60	50	100

Serology results: In 36 of 50 patients (72%), the serological test was positive 10 minutes after the start of the test. Twenty patients (40%) were men and 16 (32%) were women (95% CI. The positivity of H. Pylori with serology was 50.30% to 76.31%) (Table 2).

Sex	H Pylori +ve		H Pylori -ve	
	n=	%age	n=	%age
Males	20	40	10	20
Females	16	32	4	8
Total	36	72	14	28

Rapid urease test results: After 24 hours, rapid urease test was positive in 50 patients in 35 patients (70%). Of these 35 patients, 28 were positive after starting the test at the end of the first two hours, and 7 were positive 24 hours after starting the test. 17 patients (34%) were males and 18 patients (36%) were females (95% CI: H. Pylori positivity with RUT was 55.22% to 81.71%) (Table 3).

Sex	R.U.T Positive		R.U.T Negative	
	n=	%age	n=	%age
Males	17	34	13	26
Females	18	36	02	4
Total	35	70	15	30

Histopathological results: H. Pylori was detected in 33 patients (66%) on histopathology of gastric biopsy. Nineteen patients (38%) were male and 14 (28%) female (95% CI for H. Pylori positivity, 51.14% to 78.41% due to histopathology) (Table 4).

Sex	R.U.T Positive		R.U.T Negative	
	n=	%age	n=	%age
Males	19	38	11	22
Females	14	28	06	12
Total	33	66	17	34

DISCUSSION:

H.Pylori has been shown to be associated with gastric peptic ulcer disease, gastric carcinoma and other extra-gastrointestinal diseases [10-11]. However, the exact role of H. Pylori in non-ulcer dyspepsia remains controversial [12]. Many studies have been conducted to establish a link between H. Pylori and non-ulcer dyspepsia in Western countries and Pakistan. The results of some foreign studies show that H. Pylori has no role in non-ulcer dyspepsia. However, other foreign studies associate H. Pylori with dyspepsia without ulcers and show evidence that H. pylori plays an etiological role in dyspepsia without ulcers [13]. In this study, H. Pylori was detected in 66% of patients with gastric biopsy histopathology. 70% of patients had rapid positive urease test and 72% of patients had

positive serology [14]. The results of this study are supported by studies conducted in other parts of Pakistan. Javed Iqbal et al. He found that gastric biopsy in H. Pylori was positive in 80% and rapid urease test was positive in 63% of patients with dyspepsia. Najmul Hassan Sheikh showed H. Pylori on gastric biopsy in 87% of patients with dyspepsia. Guhu Sarver et al. He conducted a research in Balochistan and identified H. Pylori by serological method in 71% (72%) of dyspeptic patients very close to serological outcomes by K. Hameed et al. conducted a study in Peshawar and demonstrated that 74% of patients with dyspepsia had H. Pylori infection [14]. H. Pylori is common at different frequencies in different parts of the world. There is a high proportion of H. Pylori in Pakistan and other developing countries. For example, Parsad et al. reported that 71.4% of non-ulcer dyspepsia cases were positive for H. Pylori in India. A review of the Western literature shows that the prevalence of H. Pylori in dyspeptic patients ranges from 30% to 70%. The prevalence in developed countries is lower than in developing countries. This is evident in studies by Gregson et al., Rokkas, who found that H. Pylori was 55 to 37% in patients with dyspepsia, respectively [15].

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