



ANEMIA; FREQUENCY OF H. PYLORI INFECTION AMONG DYSPEPTIC PATIENTS WITH ANEMIA.

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ABSTRACT... Objectives: To estimate the frequency of H. pylori infection among dyspeptic patients with anemia. **Period:** From 23th Oct 2016 to 23th Apr 2017. **Setting:** Inpatients and out patients department of Gastroenterology, Liaquat National Hospital Karachi. **Patients and Methods:** All the patients with dyspepsia had iron deficiency for 6 or more than 6 months were enrolled in this study and underwent for esophagogastroduodenoscopy (EGD) & biopsy to find out H Pylori Gastritis. The data saved and analyzed in SPSS 16. **Results:** A total 129 patients were included in our study. 59 (45.7%) were female and 70 (54.3%) were male. 53 patients (41.1%) were single, while 76 (58.9%) were married. Mean duration of dyspepsia was 5.03±1.24 months, while mean duration of iron deficiency anemia was 4.54±1.10 months. 62 (48.1%) were smokers, 39 (30.2%) had history of alcohol intake. 39 (30.2%) were illiterate, while 90 (69.8%) were literate. H. Pylori infection on gastric biopsy was seen in 63 patients (48.8%). **Conclusion:** The prevalence of H. pylori using biopsy based methods among dyspeptic subjects is high in our population.

Key words: H. Pylori Infection, Anemia, Dyspepsia.

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INTRODUCTION

Helicobacter pylori (H. pylori) is a bacteria resides in stomach and adheres specifically to gastric epithelial cells.¹ The role of H. pylori in dyspepsia is increasingly recognized as one of the common chronic infections in humans and infecting majority population of the world.² Its prevalence varies from country to country and can acquired during early childhood & becomes a chronic – the life threatening infection if not untreated.³ The majority of patients is symptoms free but can present with peptic ulcer, gastritis, and gastric cancer.⁴ The simultaneous risk factors includes, advance age, smoking & tobacco use, obesity, low socioeconomic status, poor hygienic food and water.⁵⁻⁷

The anemia is a major health burden and is a consequence of nutritional deficiency includes iron, minerals, folic acid and vitamins.⁸⁻¹⁰ The former literature observed that eradication of H. pylori infection leads to resolve iron deficiency anemia and suggest a strong association between

iron deficiency anemia and H. pylori infection.¹¹⁻¹³ The reported prevalence for anemia in H. Pylori infected subjects was 31% and the presence of H. Pylori infection is associated with lack of response for oral iron therapy while eradication of infection shown dramatic response even without iron supplement.¹⁴⁻¹⁷ The patho-physiology exist behind this includes iron malabsorption in relation to hypochlorhydria, most of diet iron is in non-hemic ferric form and acidic medium (dependent on ascorbic acid – a regulator of iron absorption) required to reduce it to ferrous state for absorption.^{18,19}

As limited international & very limited local data is available on frequency of helicobacter pylori infection in individuals had iron deficiency anemia among adult dyspeptic patients and there is wide variation in frequencies of H. Pylori infection therefore the present study was designed to assess the frequency of Helicobacter pylori infection in patients with anemia among adult dyspeptic patients. In case of significantly high

frequency of *H. Pylori* infection, we can devise a strategy of giving *H. pylori* eradication in adult dyspeptic patients with iron deficiency in order to improve the outcome.

PATIENTS AND METHODS

The six months cross-sectional study (from 23th Oct 2016 to 23th Apr 2017) conducted on inpatients and out patients Department of Gastroenterology, LNH Karachi.

The inclusion criteria were;

- Individuals of 18 - 50 years of age & either gender
- Dyspepsia since 6 months (as defined in operational definition)
- Iron Deficiency Anemia since 6 months (as defined in operational definition)

The exclusion criteria;

- Previous gastric or small intestine surgery.
- Taken *H. pylori* treatment in the previous three month
- Recent use of antibiotics (one month), antacids, NSAIDS and H_2 receptor blocker, proton pump inhibitors (PPI) and remedies containing bismuth.
- Pregnant women (on the basis of urinary beta HCG level; and ultrasound pelvis showing alive fetus)
- Hemolytic Anemia on the basis positive coomb's test
- Menorrhagia on the basis of history; i.e. excessive menstrual blood flow

Patients attended gastroenterology clinic or ward in Liaquat National Hospital, Karachi with Dyspepsia with iron deficiency for 6 or more than 6 months was enrolled in this study. A questionnaire used to save the data for demographic, smoking (labeled as 5 or more than 5 cigarettes per day for > 3 months), alcohol intake (drinking of one drink of >14 gm/day for >3 months on). Informed consent was taken while the exclusion criteria were strictly followed to avoid confounders. Esophagogastroduodenoscopy (EGD) & Biopsy all Patients were done to find out *H Pylori* Gastritis, to control the confounder's evaluation of all the records was done by a researcher himself. All the relevant information was entered on the annexed proforma.

Helicobacter pylori Infection: *Helicobacter pylori* is spiral shaped gram-negative, micro aerophilic bacterium found in the stomach, EGD & Gastric Biopsy was taken to identify *H.pylori* on Giemsa, Warthin, & Diff-quick stains in addition to standard hematoxylin & eosin staining.

Iron Deficiency Anemia: taken when a hemoglobin concentration of < 11 g/dl in Female & <12 g/dl in males, ferritin ≤ 30 ng per ml, increased total iron-binding capacity > 450 $\mu\text{g/dL}$, serum iron level < 50 $\mu\text{g/dL}$, low transferrin saturation < 20%.

Dyspepsia

It refers to recurrent or persistent upper abdominal pain, accompanied by bloating & nausea greater than 6 months of duration; to be assessed on basis of history.

SPSS version 17 was used while the frequencies & percentages were computed whereas the chi-square test was used and the $p \leq 0.05$ was the level of significance.

RESULTS

A total 129 patient shaving history of dyspepsia with iron deficiency anemia were included in our study. The mean age of 36.07 ± 8.54 years, the distribution of age is presented in Graph-2. The descriptive statistics and results are presented in Figure-1-3 and Table-I to IV. The mean duration of dyspepsia was found to be 5.03 ± 1.24 months.

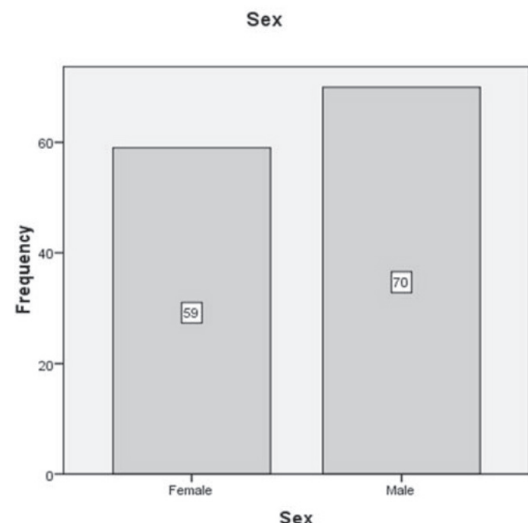


Figure-1. Frequency distribution of sex

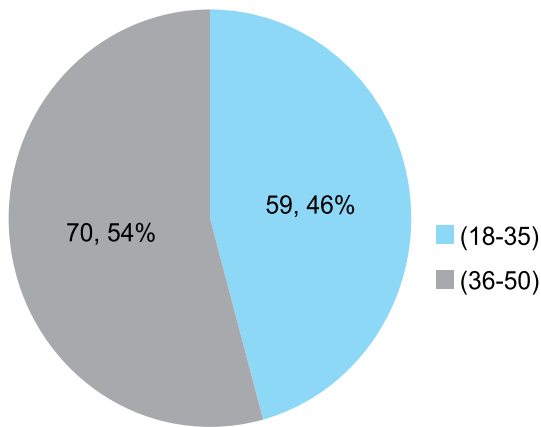


Figure-2. Percentage of patients according to age groups

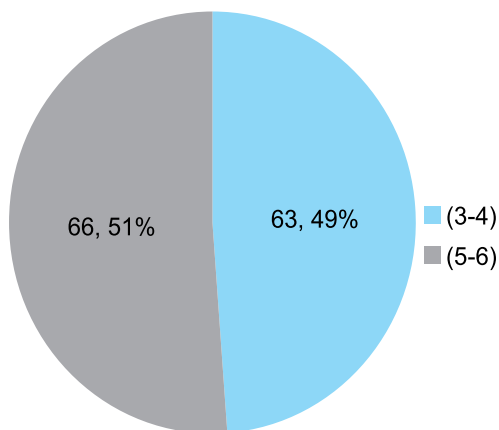


Figure-3. Percentage of patients according to duration (months) of iron deficiency anemia groups

Education	Frequency (n)	Percentage (%)
Yes	63	48.8%
No	66	51.2%
Total	129	100(%)

Table-I. Frequency distribution of h.pylori infection (on gastric biopsy) (n=129)

Age	H.Pylori infection (Gastric Biopsy)		Total	P-value
	Yes	No		
18-35 Years	3	56	59	0.000
36-50 Years	60	10	70	
Total	63	66	129	

Table-II. H.Pylori infection (gastric biopsy) with respect to age (n=129)

Gender	H.Pylori infection (Gastric Biopsy)		Total	P-value
	Yes	No		
Female	8	51	59	0.000
Male	55	15	70	
Total	63	66	129	

Table-III. H.Pylori infection (gastric biopsy) with respect to gender (n=129)

Duration of Iron Deficiency Anemia	H.Pylori Infection (Gastric Biopsy)		Total	P-Value
	Yes	No		
3-4Months	37	26	63	0.001
5-6 Months	26	40	66	
Total	63	66	129	

Table-IV. H.Pylori infection (gastric biopsy) with respect to duration of iron deficiency anemia (n=129)

DISCUSSION

Dyspepsia includes upper abdominal discomfort as nausea, pain, fullness, early satiety, anorexia, blotting, bleeding, fullness, heart burn and regurgitation; among them the abdominal pain is common and predominant. H. pylori infection is a cause of dyspepsia and is most common chronic infection associated with preponderance gastric, duodenal ulcer and gastric mucosal abnormalities. The long term chronic H-pylori infection is associated with gastric carcinoma.²⁰ In our study H. Pylori infection on gastric biopsy was seen in 63 patients (48.8%) as compare to Yasir S et al²¹ study in which reported prevalence was 69.3% on histopathology also consistent with the prevalence observed in developing countries.^{22,23} 81% prevalence was detected in Kuwait,²² 86% was observed in Jordan²³ One hundred forty five (74%) dyspeptic patients were detected to have H. Pylori infection Saudi Arabia,²⁴ while in Sudan the gastric and duodenal ulcer due to Helicobacter pylori infection was reported as 80% and 56% respectively.²⁵ In the study conducted in Iran the prevalence for H. pylori infection identified as 67.1% in dyspeptic individuals while in Yemen and UAE it was 82.2% and 90.3%.²⁶⁻²⁸ The local study observed 62%, 51%, 82% and 64% prevalence for H. pylori in dyspeptic anemic individuals.²⁹⁻³¹ In present study 45.7% were female and 54.3% were male, is contrast to another study in which male and female population infected with H. pylori

on histology was 75.7% and 59.7% respectively.³² The culture is gold standard to detect the existence of Helicobacter Pylori infection but the current study used histopathology of gastric antrum and duodenal mucosa to detect the H. pylori infection to represent the strong association of Helicobacter Pylori infection and dyspepsia. The limitation of this study is as it was conducted in a hospital setup & may not cover the overall prevalence of H. pylori among dyspeptic anemic individuals in general population as conducted at single centre. Thus, the community study is therefore needed to represent the population suffered from H. pylori infection.

CONCLUSION

The present study detected 48.8% subjects' positive for H. Pylori infection on histopathology. Thus the prevalence of H. pylori using biopsy based methods among dyspeptics is high in our population.

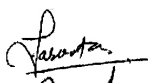


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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Jasoota Kumari	Contributions 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 in 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 author.	