PREVALENCE OF HELICOBACTER PYLORI GASTRITIS AMONG PATIENTS WITH SYMPTOMATIC CHOLELITHIASIS

ABSTRACT

BACKGROUND: H. Pylori gastritis is considered to be the causative factor for gallstone disease. Though this infection is reported to be the leading factor contributing to the pathogenesis of gastro-duodenal ulcers, and gastric cancer. Its infestation of the gallbladder and causing chronic cholecystitis and cholelithiasis are still debatable.

METHODOLOGY: This study was descriptive cross-sectional in nature, performed on 110 patients (chosen via non-probability, consecutive sampling), presented at Surgical OPD with symptomatic cholelithiasis. All the participants underwend for diagnostic endoscopy and a biopsy was taken for confirmation of H.Pylori gastritis. Those who had positive H.Pylori test, were treated by eradication therapy first and then submitted for the laparoscopic cholecystectomy and those who were negative submitted for the laparoscopic cholecystectomy. The study lasted 1 year from February 2021 to February 2022.

RESULTS: Among the subjects, 72.7% (n=80) were female, 32.5% were under 40 years old while male gender composed of 17.3% of the sample population. 3/4th of the population hailed from the rural setting. 70.1% (n=78) of the patients had positive H. Pylori test on histopathology. Upon the findings of diagnostic endoscopy, severe and moderate gastritis was found to be in 25.6% and 74.4% of the participants with positive helicobector gastritis, respectively. A significant association was found out between familial history of gall stones and helicobector pylori gastritis (p=0.02).

CONCLUSION: A high prevalence of H. Pylori infection is among patients with symptomatic cholelithiasis, which also crossponds to the endoscopic findings. The association between the familial history of gall stones and helicobetor gastritis merits to be explore further to establish the casuality of the relationship.

KEYWORDS: H. pylori gastritis, symptomatic cholelithiasis, chronic cholecystitis, postcholecystectomy syndrome.

INTRODUCTION:

Helicobacter pylori is a gram -ve micro-organism[1] which affects about 50% of the world's population[2]. Almost 4.4 billion individuals suffered from H. pylori infection in 2015[3]. H. Pylori affects the epithelial tissue of the stomach and may lead to gastric and duodenal ulcers[4] gastric carcinoma [5, t6] gastric malignant lymphoma of the mucosa-associated lymphoid tissue (MALT) [7]. As the incidence of cholelithiasis is increasing among the adult population approximately 76.66 % of patients with symptomatic cholelithiasis were infected with the concomitant H. pylori gastritis as well[8]. Nowadays chronic cholecystitis and cholelithiasis establish serious health problems with an excessive medical burden with a prevalence of 11% to 36% [6,9]. H. Pylori could reach the gallbladder directly from the stomach or through the portal blood circulation. Hence, there might be a possibility of another underlying H. pylori infestation of gall bladder and pathophysiology behind the cholecystitis and gastritis [4,9]. As H. pylori along with the gut microbiome reduce bile acid metabolism and leads to gallstone formation [7, 10].

Patients with cholelithiasis present most commonly with abdomen pain either in the right hypochondrium or at the epigastrium followed by heartburn, dyspepsia, and bloating[11, 12]. The endoscopy findings of most patients with cholelithiasis were in favor of moderate to severe gastritis with a significant 3/4th ratio of cholelithiasis patients with other gastroduodenal problems. Cholecystectomy in patients with cholelithiasis along with concomitant H. pylori infection having nonspecific gastrointestinal symptoms is unjustifiable as the symptoms persist even after surgery and it will be miss-labeled as a case of the post-cholecystectomy syndrome[11]. The H. Pylori eradication therapy benefits in decreasing the intensity of symptoms, especially the heartburn, and improves the quality of life for patients with the concomitant diseases even before submitting a cholelithiasis patient for laparoscopic cholecystectomy, as the surgery alone can't

relieve the symptoms in this scenario [13]. This study was conducted with an aim to determine the prevalence of H. Pylori gastritis among patients presenting with symptomatic cholelithiasis.

OBJECTIVE: To determine the prevalence of H. Pylori gastritis among patients presenting with symptomatic cholelithiasis.

METHODOLOGY:

This was a cross-sectional descriptive study which was performed from February 2021 to February 2022, on 110 patients (chosen via non-probability, consecutive sampling), who presented at Surgical OPD with symptomatic cholelithiasis along with ultrasound abdomen pointing towards the stone (single/multiple) at the gallbladder without any sign of acute cholecystitis or choledocholithiasis. Informed written consent was taken from patients. Patients were asked to undergo diagnostic endoscopy. The biopsy was also carried out to evaluate the presence of H. Pylori gastritis. Those who came to be H. Pylori positive will be treated for 10-14 days and then submitted for surgery after resolving the gastritis symptoms. The patients with negative H. Pylori will be admitted to the Department of Surgery at Liaquat University of Medical & Health Sciences (LUMHS) Jamshoro and submitted for the surgery. The exclusion criteria were previous the use of H. pylori eradication therapy. Data were documented using a structured questionnaire, including inquiries related to sociodemographic details, and disease specifics, and observed for the incidence of h.pylori gastritis among patients with symptomatic cholelithiasis. All the maneuvers (history taking, physical examination, sampling, and data collection) were done by the principal researcher while the data was collected on a pre-designed proforma. The data was analyzed using SPSS version 22.0 Chi-square test was applied to find the association familial history of gall stones & helicobetor gastritis.

RESULTS:

Among the subjects, 72.7% (n=80) were female, 32.5% were under 40 years old while male gender composed of 17.3% of the sample population. The mean age of participants were 43.57 years (± 7.54). 3/4th of the population hailed from the rural setting. 70.1% (n=78) of the patients tested positive for H. Pylori infection on histopathology. Gastritis was present in 93% of patients (n=102). Upon the findings of diagnostic endoscopy, severe and moderate gastritis was found to be in 25.6% and 74.4% of the participants with positive helicobector gastritis, respectively. A significant association was found out between familial history of gall stones and helicobector pylori gastritis (p=0.02).

Table No. 1: **Descriptive Statistics**

Variable		**n (110)**	**%**
MEAN AGE		43.57 years (± 7.54)	
GENDER	Male	30	17.3%
	Female	80	72.7%
RESIDENCE	Urban	24	11.9%
	Rural	86	78.1%
NUMBER OF GALL STONES	Single	63	57.3%
	Multiple	47	42.7%
H. PYLORI STATUS	Positive	78	70.1%
	Negative	32	29.9%
SEVERITY OF GASTRITIS	Mild	17	16.6%
	Moderate	62	60.8%
	Severe	23	22.6%

Table No. 2: **Association of Family History of Galls Stones & Severity of Gastritis with H. Pylori Infection**

VARIABLE	**H. PYLORI POSITIVE (78)**	**H. PYLORI NEGATIVE (32)**	**P VALUE**

Family History of Gall Stones	Positive	51 (65.4%)	17 (53.1%)	0.02
	Negative	27 (34.6)	15 (46.9%)	0.3
Severity of Gastritis	Mild	0 (0%)	17 (100%)	0.23
	Moderate	58 (74.4%)	4 (12.5%)	0.6
	Severe	20 (25.6%)	3 (9.38%)	0.07

DISCUSSION:

The aim of this research was to find out H. pylori gastritis incidence in patients with symptomatic cholelithiasis. 70.1% of the patients with symptomatic cholelithiasis had helicobetor infection during histopathology examination. Nonetheless, the intensity of gastritis was not significantly associated with helicobetor gastritis. Family history of gallstone was also related to H. Pylori gastritis in the present research.

A research reported that people with symptomatic cholelithiasis had 37% more chances of haing helicobetor gastristis than non-choliathiasis patient, which is reported more in this study. [14] A study counducted by Zhang et al. found the 9.47% prevalence of cholelithiasis among helicobacter gastritis and 8.46% in non-helicobacter gastritis. They also reported a 9.02% prevalence gallstones in patients who have taken eradication therapy helicobacter. [15] Another study conducted by Sabbaghian et al. found 33.3% positivity rate of helicobeter pylori infection by polymerase-chainreaction who underwent cholecystectomy which was more in this research. [16]

A research upon 58 patients with choleliathiasis reported a total of 17 patients with helicobector gastritis. [17] This is against the findings of our study. Monstein et al. found that around half of the patients i.e. 55%, suffering from cholesterol choleliathiasis were tested positive helicobector pylori infection. this rate was lesser in comparison to our finding. [18] Takahashi et al. found the 3.81% incidence rate of choleliathiasis among patients with negative helicobacter status in comparison to 6.08% incident rate of choleliathiasis among positive cases. While those who have been had on eradication therapy, had 4.37% incident rate. [19]

Similarly, a study reported a contributing rate of 63% of helicobetor gastritic, which is higher than our obtained results. [20] Overall, incidence of H. Pylori among symptomatic cholelithiasis patients, is reported to be high. The relation between familial history of cholelithiasis and helicobetor gastritis is of statistical significance.

CONCLUSION:

A high prevalence of H. Pylori infection is among patients with symptomatic cholelithiasis, which also crossponds to the endoscopic findings. The association between the familial history of gall stones and helicobetor gastritis merits to be explore further to establish the casuality of the relationship.

Ethical Approval:

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Consent

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

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