Original Research Article

A study of association of *H. pylori* infection and cholelithiasis

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ABSTRACT

Background: Aims and objective of the study was to study the association of H. Pylori infection and cholelithiasis.
Methods: The study was conducted at Dr. D. Y. Patil Medical College and Hospital, DPU University, for a period of 2 years and is a descriptive cross-sectional type of study using 100 patients.
Results: In this study 26 % of total patients were seen in the age group of 21-30 years. The mean age of the patients was 26 years. 78 patients in present study were male (78%) and only 22 were females (22%) male predominance was seen. male to female ratio is 3.5:1. 18 % patients show association with cholelithiasis and 84 patients were detected positive by RUT method.
Conclusions: *H. pylori* infection has a positive association with cholelithiasis and if eradicated, may lead to prevention of gallstones.

Keywords: Cholelithiasis, *H. pylori*, RUT

INTRODUCTION

Helicobacter pylori (H. pylori) infection is very common throughout the world, occurring in 40-50% of the population in developed countries and 80-90% of population in developing regions. Since the discovery of *H. pylori* by Marshall and Warren in 1983, overwhelming evidence has accumulated to confirm that *H. pylori* infection plays a significant role in the development of chronic active gastritis and peptic ulcer.[1]

H. pylori the etiologic agent of acute and chronic gastritis, peptic ulcer disease and two forms of gastric cancer.[2] Up to 80% of gastric carcinomas and 92% of low grade gastric mucosa-associated lymphoid tissue lymphomas are *H. pylori* associated.[3]

Every method for detection of *H. pylori* has its own inherent advantages and disadvantages.

Rapid urease test (RUT), with its high sensitivity and specificity, is considered to be a quick and reliable test for the initial diagnosis of *H. pylori* infection and simple and inexpensive.[4]

Gallstone disease is one of the most common problems affecting the digestive tract where autopsy reports show a prevalence of 11-36%.[1]

The association between *H. pylori* and gallstones has been investigated but not clearly demonstrated in the past. Also, *H. pylori* has been detected in the gallbladder mucosa of patients with gallstones.[6]

The present study is done for evidence of *H. pylori* infection in our set up and detection of H. pylori from Gastric biopsy specimen using Rapid Urease Test & the association of *H. pylori* with gallstone disease, i.e., cholelithiasis.

Aim of the present study was to study the demographic data related to *H. Pylori* in our hospital. To study the association of *H. Pylori* infection and cholelithiasis.

METHODS

The study was conducted at Dr. D. Y. Patil Medical College and Hospital, DPU University, for a period of 2 years and is a descriptive cross-sectional type of study using 100 cases. The study was approved by the Institute's Ethics Committee.

Inclusion criteria

- Age - 18-75 years
- All patients with upper abdominal pain more than 6 month.

Exclusion criteria

- Alcoholic Patients
- Patients taking NSAIDS
- Acute Abdominal pain
- Immunocompromised patient

Plan of study

In present study, 100 patients with history of epigastric pain more than 6 months, burning sensation in epigastric region, were admitted and evaluated.

Patients taking NSAIDS, PPI, were advised to stop drugs at least 5 days prior to scopy. HIV and HBsAG status was done.

Patient was kept nil by mouth (NBM) 4-6 hrs. prior to endoscopy. Two biopsies were taken from different sites (antrum and pylorus). Two biopsies were subjected to RUT and result was seen within 1-2 hrs. The patients were then subjected to routine ultrasonography (USG) of the abdomen to detect cholelithiasis.

Procedure

Specific preparation

Patients were instructed not to eat or drink for 4-6 hours before endoscopy.

Pre-endoscopy preparation

IV access was obtained for giving IV fluids and SOS Inj. Antispasmodics.

Premedication

Premedication consists of local oral anaesthesia by lidocaine. Topical aerosol LOX 10% oral spray.

Examination

All patients were kept NBM for 6 hours prior to endoscopy and after bringing the patient to endoscopy room lox 10% spray was sprayed on the both tonsillar pillars, posterior pharyngeal wall and after waiting for 5 minutes patient was kept in left lateral position with the head on a small pillow flexed forward and mouth tilting downward to facilitate drainage of saliva and a pulse oximeter was attached to the patient and endoscope was introduced after placing a mouth gag.

The scope was passed through the oropharynx and nudged through cricopharynx under vision with the voluntary swallowing movement of the patient. The scope was rapidly passed through the esophagus doing a rough scanning and leaving the detailed mucosal examination to be done during withdrawal. As per the endoscopic finding a total of 2 biopsies were taken for the RUT. After confirming hemostasis the scope was removed after deflating the stomach.

Two biopsies were placed on yellow paper of RUT kit after removing the plastic cover and a single drop of distilled water was placed on yellow paper and then plastic cover was again sealed with its own adhesive and results were observed after 1- 2 hrs. change of color of yellow paper to pink indicates an *H. pylori* infection.

The patient was advised to start oral diet after 1 hr. of procedure.

Algorithm

The patients then underwent routine ultrasonography of the abdomen and pelvis, wherein it was assessed whether or not the patient is suffering from cholelithiasis.

Table 1: RUT and histopathological examination.

RUT	Histopathological examination	Remark
Positive	Positive	Pylokit started immediately
Positive	Negative	Pylokit started immediately
Negative	Positive	PPI started immediately and pylokit after HPE report
Negative	Negative	PPI started immediately

RESULTS

Table 2 shows that incidence of *H. pylori* infection was maximum in the 2nd and 3rd decade of life and was less in patients with age <20 years.

Table 2: Age wise distribution of cases in study group.

Age (Yrs)	No of cases	Percentage
≤20	3	3
21-30	26	26
31-40	20	20
41-50	21	21
51-60	19	19
>60	11	11
Total	100	100

Table 3: Sex wise distribution of cases in study group.

Sex	No of cases	Percentage
Male	78	78
Female	22	22
Total	100	100

Table 3 shows that 78 patients out of 100 were male and 22 patients were female. Incidence was more in male than female with a male to female ratio of 3.5:1. Table 4 shows that 18 *H. pylori* gastritis patients out of 100 shows association with cholelithiasis.

Table 4: Association with cholelithiasis wise distribution of cases in study group.

Association with cholelithiasis	No of cases	Percentage
Present	18	18
Absent	82	82
Total	100	100

Table 5: RUT wise distribution of cases in study group.

RUT	No of cases	Percentage
Positive	84	84
Negative	16	16
Total	100	100

Table 5 shows that 84 patients out of 100 are RUT positive and 16patients are RUT negative.

DISCUSSION

Age distribution

In present study 26% of total patients were seen in the age group of 21-30 years. The mean age of the patients was 26 years. This is comparable with the study contributed by MDU Islam, SHZ Rahman et al found the age group was 21- 30 years.[7]

Sex distribution

78 patients in present study were male (78%) and only 22 were females (22%) male predominance was seen. male to female ratio is 3.5:1. This is comparable with study conducted by Vijaya et al found male female ratio was 3:1.[8]

Association with cholelithiasis

In present study 18% patients show association with cholelithiasis. This is comparable with study conducted by Attaallah W et al found 37% association of h pylori with symptomatic gall stones.[9] Also in a study by Takahashi et al, there was found to be gallstone prevalence of 6.08% in *H pylori* positive patients.[10]

Rut results at first presentation

In present study 84 patients were detected positive by RUT method. This is comparable with study conducted by Jemilohun et al found RUT is accurate for the diagnosis of *H. pylori* infection. Its use will serve as a suitable alternative to histology in management of patients with dyspepsia in resource poor environments, except in patients who need histology for reasons other than *H. Pylori* diagnosis.[11]

CONCLUSION

H. pylori infection has a positive association with cholelithiasis and if eradicated, may lead to prevention of gallstones.

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