Original Research Article

Prevalence of comorbidities amongest h.pylori-positive patients at a tertiary care hospital, Jammu

Shoket Mahmood Chowdry[1], Abdul Hamid[2], Rubina Kausar[3], Nusrat Chouhan[4*]

[1]Assistant Professor, Gastroenterology Superspeciality Hospital, Govt Medical College, Jammu, Jammu and Kashmir, India
[2]Medical Officer, J&K Health Services, Jammu and Kashmir, India
[3]Blood Transfusion Office, GMC/ SMGS, Jammu, Jammu and Kashmir, India
[4]Demonstrator, Department of Physiology, Govt. Medical College, Jammu, Jammu and Kashmir, India

Received: 24-11-2021 / Revised: 27-12-2021 / Accepted: 01-01-2022

Abstract

Introduction: Helicobacter pylori is a gram-negative, microaerophilic bacterium usually found in the stomach. The bacterium is transmitted by feco oral route and is associated with peptic ulcer, duodenal ulcer, and gastric carcinoma. The scope of this study is to determine the prevalence of comorbidities amongest H.pylori-positive patients at a tertiary care hospital, in Jammu, which can give a better picture of the current situation and estimate the at-risk population of gastric carcinoma. **Materials and Methods:** This was a prospective observational study done at a tertiary healthcare hospital in Jammu, India, over 04 years (March 2016 to March 2020). Written and informed consent regarding the purpose, procedures, and risks was obtained from all patients. Data were collected by conducting a personal interview and doing a complete physical examination of the participants of the study. A structured pro forma was used and filled out after interviewing and examining the patient. The following information was collected for all the participants: age, gender, symptoms, duration, comorbidities, and durations, and any treatment patient has received. **Results:** Most common comorbidity was hypertension in the study group and among these patients, 138(88.46%) were H pylori positive, 2nd common comorbidity was Diabetes mellitus and among them 133(91.86%) were H pylori positive and 04 patients had CRPF and all of them were H pylori positive. **Conclusion:** Among all symptomatic patients enrolled in this study the most symptom was epigastric pain followed by dyspepsia and the most common comorbidities in the study group were HTN and Diabetes mellitus. A rapid urease test was performed on UGI endoscopic biopsy specimen for H pylori infestation and 78.5% of patients were found to be positive.

Key Words: Helicobacter pylori, comorbidity, hypertension, Diabetes mellitus.

Introduction

Helicobacter pylori is a gram-negative, microaerophilic bacterium usually found in the stomach. The bacterium is transmitted by the feco-oral route and is associated with peptic ulcer, duodenal ulcer, and gastric carcinoma[1].

H. pylori infection is widely prevalent in the world, especially in developing countries. Approximately half of the world's population is known to be infected with this bacterium. Infected patients are usually asymptomatic, but clinical manifestations can range from acute gastritis and abdominal pain to chronic gastritis and dyspepsia[2].

A major post-infection complication of this disease is gastric carcinoma. Laboratory diagnosis of H. pylori can be done by invasive methods such as upper gastrointestinal endoscopy with biopsy and rapid urease test[3]. Non-invasive methods of testing are less sensitive and include blood antibody tests, H. pylori stool antigen tests, and carbon urea breath tests[4].

The scope of this study is to determine the prevalence of comorbidities amongest H.pylori-positive patients at a tertiary care hospital, in Jammu, which can give a better picture of the current situation and estimate the at-risk population of gastric carcinoma.

Materials and methods

This was a prospective observational study done at a tertiary healthcare hospital in Jammu, India, over 04 years (March 2016 to March 2020).

*Correspondence
Dr. Nusrat Chouhan
Demonstrator, Department of Physiology, Govt Medical College, Jammu, Jammu and Kashmir, India
E-mail: nusrattaman@gmail.com

Written and informed consent regarding the purpose, procedures, and risks was obtained from all patients.

Data were collected by conducting a personal interview and doing a complete physical examination of the participants of the study. A structured pro forma was used and filled out after interviewing and examining the patient. The following information was collected for all the participants: age, gender, symptoms, duration, comorbidities, and their durations, and any treatment patient has received. All patients underwent basic investigations as per symptoms and comorbidities. Patients having DM II underwent fasting and postprandial blood sugar levels, and hemoglobin A1c (HbA1c) levels, All patients having pain abdomen and fatty dyspepsia also underwent USG Abdomen. UGIE was performed on all the study participants using a video gastroscope. Gross features of the upper GI tract were noted and biopsies were obtained from the stomach (antrum, body, and fundus), and the second part of the duodenum. One antral and one corpus biopsy sample each were used for the rapid urease test (RUT) (for high yield). All the biopsy samples were also sent for histopathological examination (HPE). A commercially available RUT kit, manufactured by Halifax Research Laboratory, Kolkata, under the trade name of Pylo Dry, was used.

Results

This was a prospective observational study done at a tertiary healthcare hospital in Jammu, India, over 04 years (March 2016 to March 2020). Written and informed consent regarding the purpose, procedures, and risks was obtained from all patients. A total of 1000 patients underwent UGIE for a different set of complaints.

Table 1: **Correlation of comorbidities with *Helicobacter pylori* infection**

Comorbidities	No. of patients	H Pylori positive %	H Pylori negative %
Hypertension	156	138(88.46%)	18 (11.5%)
Diabetes mellitus	138	133(96.37%)	5 (3.62%)
Hypothyroidism	86	79(91.86%)	7 (8.13%)
Hyperthyroidism	13	9(69.23%)	4 (30.76%)
Portal HTN	9	3(33.33%)	6 (66.66%)
CRF	4	4(100%)	0 (0%)

The most common comorbidity was hypertension in the study group and among these patients, 138(88.46%) were H pylori positive, 2nd common comorbidity was Diabetes mellitus and among them 133(91.86%) were H pylori positive and 04 patients had CRPF and all of them were H pylori positive.

Discussion

The occurrence of H. pylori transmission varies on age, race, ethnicity, and geographic area. The rate of transmission of H. pylori in developing countries is comparatively high as compared to developed nations. H. pylori bacterium has infected approximately 50 percent of the total population[6]. The frequency of H. pylori diseases is reducing over the last decade in many countries but still, its intensity is high in some underdeveloped countries[5].

The decline of H. pylori is due to changes in the epidemiology of the bacterium which further cause changes in the epidemiology of peptic ulcer, gastroesophageal reflux disease, and gastric cancer[6]. Around 70% of children in underdeveloped countries may be affected by H. pylori infection. The cause of infection in children is contact with bacteria. A child may contact the bacteria by not eating cleaned and properly cooked food, drinking water that was contaminated with infected bacteria, and not washing hands properly after going to the bathroom[7].

Kukreja et al conducted a study in Gujrat by using RUT and found a prevalence rate of H. pylori infection was 24.19 %. More than half (53%) of the infected patients had complained of persistent burning abdominal pain. The prevalence rate was found highest in the patients suffering from peptic ulcer disease (66.6%)[8]. Rajesh kumar et al enrolled 265 symptomatic patients of acid peptic disease, out of which 92 patients were found H. pylori-positive (by biopsy urease test and histopathological test) giving a prevalence of 34.71%. Among H. pylori-positive patients, 64.13% were males and 35.86% were females[9].

In a study by Agarwal et al[10], in a North Indian population, they found a total of 41 (76%) patients out of 54, positive for H. pylori by RUT. By serology, we found 81% of patients positive. Collectively, a total of 85% of patients were found to be positive for H. pylori and 15 patients were negative. The prevalence of h pylori infection was lesser in our study group as compared to this study population.

Conclusion

Among all symptomatic patients enrolled in this study, the most symptom was epigastric pain followed by dyspepsia and the most common comorbidities in the study group were HTN and Diabetes mellitus. A rapid urease test was performed on UGI endoscopic biopsy specimen for H pylori infestation and 78.5% of patients were found to be positive.

References

1. McColl KEL. Helicobacter pylori, clinical aspects. Journal of Infection 1997; 34: 7-13.
2. Riegg SJ, Dunn BE, Blaser MJ. Microbiology and pathogenesis of Helicobacter pylori.. Infections of the gastrointestinal tract. New York. Raven Press. 1995; 535-550.
3. Marshall BJ, Warren JR. Unidentified curved bacilli in the stomach of patients with gastritis and ulceration. Lancet 1984; i:1311-1315.
4. International- Agency for Research on Cancers. Monographs on the evaluation of carcinogenic risks to hu-mans. Geneva World Health Organisation. 1994; Vol. 61.
5. Kusters JG, Van Vliet AH, Kuipers EJ Pathogenesis of Helicobacter pylori infection". Clinical Microbiol Rev July 2006 19(3): 449-490.
6. Brown LM. Helicobacter pylori epidemiology and routes of transmission" Epidemiol Rev 2000 22(2): 283-297.
7. Farthing NJG. Helicobacter pylori infection: an over-view. British Medical Bulletin. 1998, 54: 1-6.
8. Dunn BE, Cohen H, Blaser MJ, Helicobater pylori Clinical Microbiology Reviews. 1997, 10: 720-741.
9. Bardhan PK: Epidemiological features of Helicobactor pylori infection in developing countries. Clinical Infectious Disease. 1997, 25: 973-978.
10. Tomb JF, White 0, Kerlavage AR, Clayton RA, Sutton GG, Fleischmann RD. The complete genome sequence of the gastric pathogen Helicobactor pylori"August 1997: Nature 388 (6642): 539-547.

Conflict of Interest: Nil Source of support: Nil