ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 10 | October - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PREVALENCE OF H.PYLORI IN DIABETIC & NON DIABETIC PATIENTS WITH DYSPEPSIA

Gastroenterology

Dr Akshay Kodmalwar — Postgraduate, Department Of Medical Gastroenterology Government Kilpauk Medical College Chennai

Dr A Anand — Department Of Medical Gastroenterology Government Kilpauk Medical College Chennai

Dr Prem Kumar — Department Of Medical Gastroenterology Government Kilpauk Medical College Chennai

ABSTRACT

Background And Aims: To assess the prevalence of H. pylori infection in diabetes mellitus and to study the relationship between histological findings and H. pylori infection in diabetic patients. **Methods:** This was a observational cross sectional study conducted in Department of Digestive Health and Disease over a period of 1 year. A total of 108 patients above the age of 18 years 54 patients diagnosed with DM ,54 patients with no DM were included; underwent gastroscopy and biopsy specimens were obtained for the presence of H. pylori. The relationship between patients with DM and non-DM patients was investigated in terms of the correlation between endoscopic findings and H pylori prevalence. **Results:** A total of 54 patients, 24 female and 30 male in the DM group, and 54 patients, 25 female and 29 male in the non-DM group, were included. Findings such as Pangastritis, Gastric ulcer, Duodenitis were more common in diabetic patients. This difference was statistically significant. The prevalence of H. pylori infection was 58% and 25% respectively, among diabetic patients and non-diabetics and difference between the groups was statistically significant. **Conclusion:** Prevalence of H. pylori infection in diabetes mellitus patients with dyspepsia is higher than non-diabetics. H. pylori infection was significantly associated with the presence of chronic gastritis in diabetic patients

KEYWORDS

H Pylori, Dyspepsia, Diabetes Mellitus

INTRODUCTION:

Helicobacter pylori (H. pylori) is one of the most common chronic infections, which is more prevalent in developing countries. Recent studies suggested that H. pylori might have a high prevalence among with diabetic patient.Etiopathogenesis of H. pylori infection in patients with diabetes mellitus have not been defined clearly. It has been proposed diabetes causes impairment in the function of the cellular and humoral immunity, which also increases the individual's sensitivity to H. pylori infection. Second, it reduces GI movements and secretion of gastric acid, which in turn increases colonization and bacterial infection. Studies had controversial results regarding prevalence of H pylori in diabetic patients. Aim of this study was to assess the prevalence of H. pylori infection in patients with diabetes mellitus and to study the relationship between histological findings and H. pylori status in diabetic patients.

AIM:

To assess the prevalence of H. pylori infection in diabetes mellitus and to study the relationship between histological findings and H. pylori infection in diabetic patients.

Study Design- Analytic Observational Study.

Inclusion Criteria -

Diabetic and Non-Diabetic patients who underwent esophagogastroduodenoscopy for Dyspepsia defined by Rome criteria.

Exclusion Criteria-

1. Eradication therapy 2. Antibiotics in the previous 3 months, 3. Gastric cancer 4. Patients on nonsteroidal anti-inflammatory drugs.
Study Period – May 2021 to June 2022

Method:

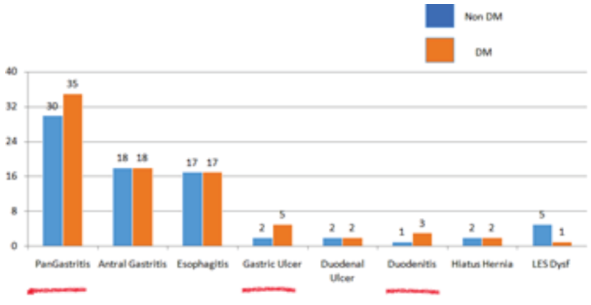
A structured questionnaire containing demographic data, recent use of antisecretory drugs and past medical history was filled individually. Patients with fasting blood sugar higher than 126 mg/dl in two separated samples were considered diabetic according to the American Diabetes Association criteria. Total of 108 patients above the age of 18 years 54 patients diagnosed with DM ,54 patients with no DM were included; underwent gastroscopy and biopsy specimens were obtained for the presence of H. pylori. Specimens were colored by Giemsa stains. The relationship between patients with DM and non-DM patients was investigated in terms of the correlation between endoscopic findings and H pylori prevalence.

Statistical Methods:

Chi-square for qualitative and independent sample t-tests for quantitative variables were used in data analysis. Two-tailed significance level at 0.05 was used to detect the difference between variables.

RESULTS:

A total of 54 patients, 24 female and 30 males in the DM group, and 54 patients, 25 female and 29 males in the non-DM group, were included. The overall mean age was 53.10±17.10 years. The mean of age was 53.45±16.12 and 51.34±19.76 in female and male patients respectively. Findings such as Pangastritis, Gastric ulcer, Duodenitis were more common in Diabetic patients. This difference was statistically significant P (0.001). When the groups were compared in terms of endoscopic findings, most common findings in both groups were Pangastritis, Antral Gastritis f/b esophagitis. Findings in DM patients in decreasing order of frequency Pangastritis 35, Antral gastritis 18, Esophagitis 17, Gastric ulcer 5, Duodenal ulcer 2, Duodenitis 3, Hiatus hernia 2, LES dysfunction. Findings in Non-DM patients in decreasing order of frequency Pangastritis 30, Antral gastritis 18, Esophagitis 17, Gastric ulcer 2, Duodenal ulcer 2, Duodenitis 1, Hiatus hernia 2, LES dysfunction. The prevalence of H. pylori infection was 58% and 25% respectively, among diabetic patients and non-diabetics and difference between the groups was statistically significant (0.001)



Graph 1- Endoscopic Finding In Diabetics Vs Non Diabetics

Table 1-Histological Diagnosis In Diabetic Vs Non Diabetic

Chronic Gastritis (Histological)	Diabetic	Non-Diabetic
Negative (Normal)	8(14.8%)	25 (46.29%)
Mild	14(25.92%)	20(37.03%)
Moderate Inactive	11(20.37%)	8 (14.81%)

Moderate Active	15(27.77%)	1(1.85%)
Severe	6 (11.11%)	0

DISCUSSION

Our data provide direct evidence for a higher prevalence of H. pylori infection in diabetic dyspeptic patients than in non-diabetics. We examined 108 patients with dyspepsia. Prevalence of H. pylori infection was documented by histology of gastrointestinal mucosa in 58% of the diabetics and in 25 % of the controls (P<0.01). In study Jamshid Vafaeimanesh, the prevalence of HP infection was 65.9% among diabetics while it was 50.5% among nondiabetic subjects, and it was more prevalent among patients with diabetes It was confirmed in other studies. In Talebi-Taher et al.'s study, its prevalence among diabetic and nondiabetic patients were 60% and 26.66%, respectively (P = 0.001) or in Bener et al.'s study, it has been reported 76.7% versus 64.8% in diabetic and nondiabetic subjects (P=0.001) Association of Helicobacter pylori in causation of diabetic gastropathies was found in study by RP Aggrawal . Similar data showed by Morrollo et al., they reported that prevalence of H. pylori infection was significantly higher in diabetics than in controls. In Bajaj Prevalence of H. pylori infection was significantly higher in diabetes as compared to controls. Presence of H. pylori infection significantly correlated with the level of HbA1C. Two Other studies showed that the prevalence of H. pylori infection in diabetics by rapid urease test and detection of HpSA (stool antigen positive in 73% and 51.4% of diabetics and non-diabetics, respectively) was statistically significant .Several hypotheses were presented for higher prevalence of HP in diabetic patients autonomic neuropathy resulting in decrease in gastrointestinal motility ,immune system impairment ,decrease in gastric acid secretion in diabetic patients may facilitate bacterial colonization of the gastrointestinal tract. There are some studies that showed no association between diabetes mellitus and H. pylori infection Anastasios et al.'s study, the difference of HP prevalence between diabetics and nondiabetics was not significant (37.3% vs. 35.2%). In Małlecki et al.'s study, the rate of HP infection in Hong Kong Chinese subjects with type 2 diabetes was around 50%, which is similar to control subjects. Gasbarrini et al. reported the same prevalence of H. Pylori infection in patients with diabetes type I and the control group(37 vs 34%, respectively) . Demir et al. showed that the prevalence of H. pylori infection was 61.7% and 58.5%, respectively, among type 2 diabetics and non-diabetics and was not statistically significant (P=0.577) .

CONCLUSIONS:

From our study comparing with previous studies we can conclude that

1. H. pylori infection is more common in diabetic patients
2. There is higher frequency of H. pylori infection among elderly diabetics.
3. H. pylori infection enhances the presence of chronic diabetic complications in its different categories.
4 There is no significant difference in male-to-female ratio distribution of H. pylori infection.

REFERENCES:

1. Marrollo M, Latella G, Melideo D, Storelli E, Iannarelli R, Stornelli P, Valenti M, Caprilli R. Increased prevalence of Helicobacter pylori in patients with diabetes mellitus. Dig Liver Dis 2001;33(1):21-9
2. Suerbaum S, Michetti P. Helicobacter pylori infection. N Engl J Med 2002;347:1175-86.
3. Khademi F, Faghri J, Poursina F, Esfahani BN, Moghim S, Fazeli H, et al. Resistance pattern of Helicobacter pylori strains to clarithromycin, metronidazole, and amoxicillin in Isfahan, Iran. J Res MedSci2013;18:1056-60.
4. Anastasios R, Goritsas C, Papamihail C, Trigidou R, Garzonis P, Ferti A. Helicobacter pylori infection in diabetic patients: Prevalence and endoscopic findings. Eur J Intern Med 2002;13:376.
5. Talebi-Taher M, Mashayekhi M, Hashemi MH, Bahrani V. Helicobacter pylori in diabetic and non-diabetic patients with dyspepsia. Acta Med Iran 2012;50:315-8.
6. Bajaj S, Rekwal L, Misra S, Misra V, Yadav RK, Srivastava A. Association of helicobacter pylori infection with type 2 diabetes. Indian J Endocrinol Metab. 2014;18(5):694.
7. Agrawal RP, Sharma R, Garg D, Pokharna R, Kochar DK, Kothari RP. role of Helicobacter pylori in causation of diabetic gastropathies and non-gastrointestinal complications in type 2 diabetes. J Indian Med Assoc 2010;108:140-3.
8. Bener A, Micallef R, Afifi M, Derbala M, Al-Mulla HM, Usmani MA. Association between type 2 diabetes mellitus and Helicobacter pylori infection. Turk J Gastroenterol 2007;18:225-9.
9. Devrajani BR, Shah SZ, Soomro AA, Devrajani T. Type 2 diabetes mellitus: A risk factor for Helicobacter pylori infection: A hospital based case-control study. Int J Diabetes Dev Ctries 2010;30(1):22-6.
10. Gasbarrini A, Ojetti V, Pitocco D, De Luca A, Franceschi F, Candelli M, Sanz Torre E, Pola P, Ghirlanda G, Gasbarrini G. Helicobacter pylori infection in patients affected by insulin-dependent diabetes mellitus. Eur J Gastroenterol Hepatol 1998;10(6):469-72.
11. Małlecki M, Bień AI, Galicka-Latałła D, Stachura J, Sieradzki J. The prevalence of Helicobacter pylori infection and types of gastritis in diabetic patients. The Kraków Study. Exp Clin Endocrinol Diabetes 1996;104(5):365-9.
12. Vafaeimanesh, Jamshid & Bagherzadeh, Mohammad & Mirzaei, Atefeh & Parham, Mahmoud & Norouzinia, Mohsen & Vafaee, Reza. (2016). Effect of Helicobacter pylori on metabolic syndrome parameters in diabetic patients. Gastroenterology and Hepatology From Bed to Bench. 9. S36-S41.