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Research Article

**A CASE CONTROL STUDY TO KNOW RELATIONSHIP
BETWEEN HEPATIC ENCEPHALOPATHY AND
HELICOBACTER PYLORI INFECTION**¹Dr. Zill-e-Huma, ²Dr. Zubair Ahmad, ¹Dr. Najum Fatima¹Punjab Medical College, Faisalabad²District Headquarters Hospital, Mandi Bahauddin**Abstract:**

Information on the pathology of Helicobacter pylori (H. pylori) in human liver and biliary tract diseases is vast.

Objective: *The purpose of this analysis is to evaluate the possible relation between hepatic encephalopathy and H. pylori seropositivity.*

Study Design: *A case control study.*

Place and Duration: *In the Gastroenterology Department, Services Hospital, Lahore for one year period from December 2016 to December 2017.*

Methodology: *These three groups are a case-control study with cirrhotic patients with non-HE cirrhotic patients' hepatic encephalopathy (HE) and healthy controls. Based on ELISA investigation all subjects were serologically examined to determine IgG class antibodies against H. pylori.*

Results: *H. pylori positivity Hepatic encephalopathy cirrhosis was present in 86% of patients with cirrhosis without hepatic encephalopathy and 88% of patients with a healthy control of 66%.*

Conclusion: *H. pylori seropositivity incidence according to our analysis in cirrhotic patients with and without hepatic encephalopathy was greater than healthy controls. However, H. pylori seropositivity was not vastly distinct between cirrhotic patients with non-cirrhotic patients and hepatic encephalopathy.*

Key words: *cirrhosis Hepatic encephalopathy, H.pylori infection, GIT Diseases.*

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INTRODUCTION:

In present decade concentration has been paid not only to upper gastrointestinal diseases, but also to a number of additional gastrointestinal diseases, chronic cardiovascular, colorectal cancers H. Helicobacter pylori (H. pylori), biliary and hepatic diseases. Hepatic encephalopathy is a serious and common issue affecting liver disease patients. Knowing the contribution of H. pylori to liver pathology and bile duct diseases in humans has been severely shattered. H.pylori infection plays a role in the encephalopathy development. This is probably due to the increase in ammonia production due to the effect of bacterial urease present in the stomach lumen. The H. pylori importance as a cause of hyperammonemia in liver cirrhosis patients has not yet been elucidated fully. In 1993, the first study with H. pylori on hepatic encephalopathy as a risk factor was printed. Clinical observations are controversial. Some authors have pointed to beneficial effects of hepatic encephalopathy eradication therapy; for this reason, this view is not compatible with others. The purpose of this analysis is to know the relationship between hepatic encephalopathy and H. pylori seropositivity.

MATERIALS AND METHODS:

This case control study was held in the Gastroenterology Department of Services Hospital, Lahore for one year period from December 2016 to December 2017. 3 groups of patients were made. cirrhotic patients with (HE) hepatic encephalopathy, without hepatic encephalopathy having cirrhotic patients and healthy controls. 50 patients with hepatic encephalopathy, liver cirrhosis and 50 control groups were selected for the prospective study. In this study, inclusion criteria were: upper gastrointestinal tract, vagotomy (pudding) or operation history in peptic ulcer disease. With group 3, one and two groups were compared in gender and age. All patients in the first and second groups done with upper endoscopy and PUD was not detected and rapid urease test for H. pylori infection was performed. The controls were those having no issue selected from hospitalized patients. Cirrhosis liver biopsy confirmed ascites,

cirrhosis, clinical, prothrombin time (PT) and esophageal varices. Encephalopathy pattern (evaluated by clinical judgment including insomnia, daytime sleepiness), which is manifested by a mental state (wakefulness, mood, curiosity, and guidance) and a modified sleeping pattern ie day and night return. All patients were evaluated clinically for jaundice, fever, spider edema, anemia, abdominal fullness, palmer erythema, hepatomegaly, acid, gastrointestinal bleeding, splenomegaly and response developed for lactulose. With SPSS 10 software on Windows platform Statistical data analysis was recorded. The relation between hepatic encephalopathy and H. pylori infection was evaluated by Fisher's exact test. The case control groups were then compared with H. pylori infection frequency. All results were compared as a ratio between the three groups. In addition, the percentage of hepatic encephalopathy was estimated to be 95% of the probability and range of H. infection (OR) and confidence in pylori.

RESULTS:

The sex distribution of the cases (81.8%) was male sex and H (78.1%) were positive. pylori ($p = 0.56$). mean age (SS = 11.33) without cirrhotic patients (SD = 11.33) without hepatic encephalopathy ($p = 0.56$), with a mean age of 48.92 (SD = 16.95), with cirrhosis and hepatic encephalopathy of 49.03 (SD = 17.95) The mean age of the subjects with seronegative and seropositive at 48.01 (SD = 15.90) and 49.33 (SD = 15.09), respectively ($p = 0.45$). In 50 (88%) of cases H. pylori antibody was detected, 51 (87%) patients with liver disease and in 51 (67%) hepatic encephalopathy of 44 patients with positive hepatic encephalopathy in combination with hepatic encephalopathy and 33). Hepatitis B (43%) showed a seropositivity rate of 88.37% for H. pylori. Of the 50 cirrhotic patients with HE, 44 were positive for anti-H. HE and 50 cirrhotic unrelated pylori, for anti-H. pylori 43 were positive. ($p = 0.786$) [OR 1.20 (96% CI: 0.34-4.39)]. The likelihood of an anti-H presence. In cirrhotic patients without HE, pylori IgG was 3.16 according to the control group. (96% CI: 1.10 - 10.02) ($p = 0.020$) (Table-I).

Table-I: Association between Helicobacter pylori infection in cirrhotics with and without hepatic encephalopathy in comparison with control group

Group	Positive		Negative	
	N	%	N	%
Cirrhosis with hepatic encephalopathy	44	88	6	12
Cirrhosis without hepatic encephalopathy	43	86	7	14
Control	33	66	17	34
Total	120	80	30	20

(P = 0.766) [OR 1.19 (95% CI: 0.33 - 4.43)]

The probability of the H. Pylori infection presence In patients with cirrhotic HE, pylori IgG was 3.78 in healthy subjects. (95% CI: 1.22 to 12.16) (p = 0.01). In addition, an H. pylori positivity is higher in patients with higher hepatic encephalopathy (data not shown).

DISCUSSION:

The contribution of the upper gastrointestinal tract to H. pylori infection in hepatic encephalopathy is a result of its ability to synthesize ammonia because it brings active urease activity to a high degree at the surface of the pathogen and in the periplasm. In 73% of patients IgG antibody against H. pylori was present in with cirrhosis according to the analysis and control group 50% of cases have H.pylori (P <0.004). The IgG antibody relative incidence to H. pylori was found to be greater in cirrhotic patients as compared to controls. Sethar et al. hypothesis; 76 patients of liver diseases with porto-systemic encephalopathy were included. The antibody frequency to H. pylori was higher significantly in patients with porto-systemic encephalopathy in this study,. Wang et al. The prevalence of H. pylori was vastly different between hepatic encephalopathy and cirrhosis (75.04%) or without HE (68.99%) sub clinically (52.99%). In the formation of ammonia the important contributing factor is H.pylori infection in high concentrations of blood and in cirrhotic patients most important cause of hepatic encephalopathy. In these studies, PUD patients were included in the study. In our study, the most important criteria for selection of patients is the lack of PUD endoscopy in patients of liver cirrhosis because the relationship between PUD and H. pylori may have affected the results. As said by Shirmali et al., the severities of hepatic encephalopathy rise with H. pylori seropositivity. With our findings these results don't match. In our study, seropositivity against H. pylori in the upper levels of hepatic encephalopathy was reported by

Gubbins et al. Hepatic encephalopathy in this study relation with H. pylori seropositivity was found: GI (77.63%), GII (78.13%), GIII (100.00%), GIII (76.00%). Shavakhi et al. He compared the anti-H. Pylori antibodies seroprevalence in patients with cirrhosis with controls in India. A few previous studies did not evaluate the relationship between hepatic encephalopathy and H. pylori seropositivity. This topic has been evaluated. PH and NH₃ concentrations in gastric juice were measured taken by endoscopy. By a rapid urease test H.Pylori may detected. In patients with liver cirrhosis, the H. pylori prevalence was similar to controls and there was correlation between NH₃ stomach and blood levels. Some people do not, but some people probably develop an open disease due to the combination of bacterial strains, disease susceptibility. The status of the H. pylori strain relates to a number of risks of clinical outcomes. The lattice protein is highly immunogenic.

CONCLUSION:

The role of pylori infection in further understanding of complications such as H. role, cirrhosis and hepatic encephalopathy is understood to require further study. The application of the same H. pylori eradication strategies in non-cirrhotic and cirrhotic patients may be recommended until more information is available. We also recommend that future studies evaluate the effect of H. pylori genomic structure and hepatic encephalopathy on this organism (eg, Cepas

Age Lattice + and A-).

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