Section A -Research paper

Study of Helicobacter Pylori Gastritis in Diabetic Patients Versus Non-Diabetic Patients

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Abstract:

Helicobacter pylori is one of the most common human pathogens that can cause gastrointestinal (GI) disorders, including simple gastritis, gastric ulcer, and gastric malignancy. In some cases, such as immunodeficiency and underlying diseases, it can be problematic as opportunistic infections. Diabetes mellitus is one of the H. pylori underlying diseases. Since GI problems are observed in diabetic patients, it is necessary to treat H. pylori infection. Reports on Helicobacter pylori infection in diabetics are inconsistent and contradictory.

Keywords: H. pylori, Gastritis, DM.

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Helicobacter pylori, often known as H. pylori, is one of the most prevalent chronic infections that has been associated to the etiology of peptic illness. Recent studies suggested that diabetic people may have a higher prevalence of H. pylori than the general population does. In patients who have diabetes mellitus, the etiopathogenesis of H. pylori infection has not been fully identified. There have been findings that suggested autonomic neuropathy and poor glycemic control could play a key role in this field, while other studies reported results that were dubious (**1).**

Several studies have reported finding a correlation between an infection with H. pylori and alterations in the motility of the stomach. H. pylori infection is connected with certain of the upper gastrointestinal (GI) symptoms that improved following eradication of the infection, according to primary researches made on patients who had diabetes. These studies were performed on patients who were infected with H. pylori(**2).**

Previous findings offer direct evidence that the prevalence of H. pylori infection is significantly higher in diabetic dyspeptic individuals than it is in those who do not have diabetes. In diabetics, dyspepsia is a common symptom, which may help to explain why this study included such a high proportion of diabetic patients (50 out of 80, or 62.5

percent). Previous studies provided conflicting information regarding the frequency of H. pylori infection in diabetic patients (**3).**

There may be a correlation between the epidemiological spread of H. pylori and the variation in prevalence rates, or the correlation may be due to the type of diagnostic technology used to identify infection. According to the findings of a seroprevalence study that was carried out in the Netherlands, the prevalence of H. pylori infection was significantly greater in diabetic patients as compared to the control subjects (**4).**

Another seroprevalence study conducted in the United Arab Emirates found that the percentage of diabetic patients who had a positive antibody titer for H. pylori infection (IgA>250) was 63.3%, which was higher than the percentage of non-diabetic patients. In diabetes individuals, H. pylori infection was found at a rate of 76.7% (P300), which is significantly higher than the infection rate of 64.8% (P=0.009) found in non-diabetic patients. Histological examination of the gastrointestinal mucosa revealed evidence of H. pylori infection in 74.4 percent of the diabetics and in 50 percent of the controls(**1).**

The same kind of data was shown by Morrollo et al., and they observed that the prevalence of H. pylori infection was substantially greater in diabetics than in controls (24). According to the findings of two further investigations, the prevalence of H. pylori infection in diabetics was statistically significant when measured by a quick urease test and the detection of HpSA (stool antigen positive in 73.0% of diabetics and 51.4% of non-diabetics, respectively). There are some research that have shown that there is no connection between having diabetes and having an infection caused by H. pylori. According to the findings of Gasbarrini et al., the prevalence of H. Pylori infection was the same in patients with diabetes type I as it was in the control group (37% vs. 34%, respectively) (**2).**

According to the findings of Mallecki and colleagues' research, the prevalence of H. pylori infection in diabetes patients was 30%, which was a substantial reduction from the prevalence in controls (68%). The seroprevalence study found that the frequency of H. pylori infection was 33% and 32% correspondingly in patients with diabetics and controls. The authors of the study came to the conclusion that H. pylori infection does not appear to be connected with diabetes (**1).**

According to the findings of the Anastasios et al. study, there is no correlation between H. pylori infection and diabetes. The prevalence of H. pylori infection was found to be 37.3% among diabetics, while it was 35.2% among non-diabetics (P=0.78). According to the findings of Demir et al., the prevalence of H. pylori infection was 61.7% among people with type 2 diabetes and 58.5% among people who did not have diabetes; this difference was not statistically significant(**2).**

In order to confirm the higher prevalence of H. pylori infection in diabetic patients, several hypotheses were presented. These hypotheses included an impaired immune

system in diabetic patients, a reduction in both gastrointestinal motility and acid secretion, and an increase in the secretion of pro-inflammatory cytokines related to the H. pylori gastric infection itself. Infection with H. pylori is invariably accompanied by inflammation in the stomach and results in chronic gastritis; however, more severe disorders such as peptic ulcer and gastric cancer only manifest themselves in a minority of people who are infected with H. pylori (**3).**

This conclusion can be related to the diabetes-induced achlorydria that was observed in the Morrollo et al. study, which indicated that chronic gastritis and H. pylori infection were much greater in diabetics. Previous findings were comparable to those of the Morrollo et al. study. Because diabetics tend to have weaker immune systems, it is possible that this makes them more susceptible to the potentially dangerous consequences of H. pylori. On the other hand, Anastasios and colleagues found that the prevalence of gastritis did not significantly differ between diabetics and people who did not have diabetes (**1).**

Histopathology of H pylori gastritis in diabetes versus in non diabetes:

Regarding the endoscopic findings, **Ullah et al. (5)** found that congestive and nodular gastritis were the most common findings which were present in 47.8% patients. Ulcerative gastritis was found in 26.7% patients while esophagitis and hiatal hernia were found in 12.2% and 13.3% patients. Their results were in line with the aforementioned study which also reported that congestive and nodular gastritis were the most common finding followed by ulcerative gastritis (**6)**. Regarding the histological findings they found that chronic gastritis was present in 74.4% patients while gastric atrophy was 18.9% and intestinal metaplasia was 6.7%, similar findings were observed in the aforementioned study (**6)**, they reported that majority of the diabetic patients in their study had chronic gastritis on histological findings followed by gastric atrophy.

Vasihnav et al. (7) compared diabetic and non-diabetic patients in terms of endoscopic findings. They found that the presence of pangastritis and bulbitis was higher and the presence of HP was more common in diabetic patients compared to non-diabetics. While **Bilgili et al. (8)** did not obtain such results in their study. On the contrary, the laxity of the lower esophageal sphincter (LES) was observed to be present at a higher rate in the non-DM group. There was no statistically significant difference in terms of Helicobacter pylori (HP).

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