Original Research Article

Prevalence of symptomatic peptic ulcer in diabetes mellitus patients at out patient department of Government Medical College and Hospital in and around Villupuram District

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Abstract

Introduction: A peptic ulcer is a sore that forms when digestive juices wear away the lining of the digestive system. A peptic ulcer can occur in the lining of the stomach, duodenum, or lower part of the esophagus. Symptoms can include indigestion-like pain, nausea, and weight loss. It is not uncommon for people to have a peptic ulcer and no symptoms at all. However, one of the most common symptoms of peptic ulcers is an indigestion-like pain. Diabetic shave increased the vulnerability of the gastric mucosa to various ulcerogens such as ethanol, ischemia/reperfusion, stress, and non-steroidal anti-inflammatory drugs. The notable changes that are often observed in patients with chronic diabetes mellitus are decreased gastric secretion (in response to insulin but not to either histamine or pentagastrin) and motility.

The aim of the study: To assess the prevalence of gastric ulcer in diabetes mellitus patients who were attended Medicine OPD.

Materials and methods: The study was conducted from April to August 2017 to explore the prevalence of peptic ulcer disease among the patients attended the Department of Medicine. Detailed information about the common signs and symptoms of peptic was analyzed with questioner regarding the prevalence of disease. Totally 50 patients with diabetes on medication with prone ulceration

symptoms (25 –Group A) and (25-group B) patients with diabetes who were asymptomatic were considered as control group are taken in for the study.

Results: After treating symptoms such as abdominal pain, nausea, abdominal bloating were completely relieved for group A subjects except for one case. Among 25 subjects with group B above symptoms were not completed seen. Out of treated subjects in the group A, 21subjects had a good appetite, free from the tar-like stool, abdominal pain, GERD reflex were improved in 22 cases after medication and diet control.

Conclusion: The problems of the disease can be tackled through prevention and treatment which includes education, increasing awareness, reducing stress, and smoking and decreased intake of NSAIDs. H. Pylori prevalence was found to be high. Individuals who had a low educational level and NSAIDs consumers were under higher risk of infection than others. H. pylori infection appears not to be associated with diabetes.

Key words

Introduction

A peptic ulcer is a common disease found worldwide. In the United States, ulcers are a major cause of morbidity and lost productivity [1]. Concepts of the peptic ulcer disease have undergone radical change over the last 20 years, particularly following the recognition that *Helicobacter pylori* infection was a major contributing factor. Despite greatly expanded knowledge of the pathogenesis and treatment of ulcers, much remains unknown about their occurrence, natural history, and risk factors, particularly on a population or national basis [2]. *Helicobacter pylori* (*H. pylori*) is gram-negative, a non-spore forming spiral bacterium which colonizes the human stomach and is prevalent worldwide. Since its discovery in the 1980s much has been learned about this bacterium and its associated disease states. In 1994, the National Institute of Health Consensus Conference recognized *H. pylori* as a cause of gastric and duodenal ulcers. Later that year, the International Agency for Research on Cancer declared *H. pylori* to be a group I human carcinogen for gastric adenocarcinoma [3]. There is also evidence that *H. pylori* infection is a risk factor for gastric mucosa-associated lymphomas [4], Furthermore, the organism is thought to be involved in other human illnesses such as hematologic, autoimmune disorders, insulin resistance and the metabolic syndrome. High

rates of *H. pylori* infection reassociated with low socioeconomic status and educational levels. Peptic ulcer disease was categorized as follows: Gastric or stomach ulcer, duodenal ulcer, unspecified peptic ulcer, and any ulcer (which comprised all types). Ulcers present during the 12 months preceding the interview were further broken down into two types: *incident* ulcers (peptic ulcers that occurred for the first time during this period) and *chronic active* ulcers (active ulcers that relapsed during the 12 months preceding the interview in patients with previously diagnosed ulcer disease).UGIB is the most frequently encountered complication of peptic ulcer disease. *H. pylori* infection and non-steroidal anti-inflammatory drug (NSAID) administration are two independent risk factors forUGIB [5]. The paper entitled "Diagnosis, treatment, and outcome in patients with bleeding peptic ulcers and Helicobacter pylori infections" reviewed and elucidated the relationship between bleeding peptic ulcer and *H. pylori* infection from the chronological perspective with an emphasis on diagnosis, treatments, and outcomes. They summarized that sufficient evidence supports the concept that *H. pylori* infection eradication can heal the ulcer and reduce the likelihood of rebleeding. With increased awareness of the effects of *H. pylori* infection, the etiologies of bleeding peptic ulcers

have shifted to NSAID use, old age, and disease comorbidity [6].

Materials and methods

The study was conducted from April to August 2017 to explore the prevalence of peptic ulcer disease among the patients attended the Department of Medicine Detailed information about the common signs and symptoms of peptic was analyzed with questioner regarding the prevalence of disease. Totally 50 patients with diabetes on medication with prone ulceration symptoms (25 –Group A) and (25-group B) patients with diabetes who were asymptomatic were considered as control group are taken in for the study.

Inclusion criteria: All patients with abdominal pain in the indoor or outdoor under the Department of Medicine, Patients who were willing to participate in the study, Patients who were able to communicate.

Exclusion criteria: Patients without the abdominal pain, Patients who were not present at the time of data collection, Patients who refused to participate.

Physical examination and completely designed proforma was collected. All the patients were instructed to visit the opd with overnight fasting followed by bowel empty. Necessary medications intake list and dosage of drugs were changed according to age, body weight, and social habits. Complete diet modification and risk factors for disease were explained in consent languages.

Results

Totally 50 patients were recruited in the study. Age variations and sex variations were as per **Table – 1**. **Table - 2** shows the group A and group B symptoms of a gastric ulcer. p-value of <0.001 which was found to be statistically more significant.

Table – 1: Age distribution among patients (N=50).

Age group (n=50)	Value	Gender distribution	Percentage
20-25	6	2 (M) 4 (F)	2
25-30	4	5 (F) 1(M)	3.5
30-35	3	3 (F)	3
35-40	15	9 (M) 16(F)	15
40 years above	22	11(M) 11(F)	22

Table – 2: Clinical symptoms presentations among patients (n=50).

Symptoms	Group –A (n=25)	Group –B (n=25)	P-value
Loss of hunger	23	2	<0.001
Abdominal bloating	21	2	<0.005
Abdomen pain	23	3	<0.005
Weight loss	24	2	<0.005
Tarry stools	19	0	<0.001
Constipation	23	5	<0.001

Discussion

H. pylori were linked with several extra gastrointestinal diseases, including preeclampsia and intrauterine growth restriction of the fetus. There are several methods to detect *H.pylori* infection. One of them is the urease test using

gastric mucosal tissue obtained during gastroendoscopy. Despite being proven that procedure is safe when performing on the pregnant women [7] the general unwillingness, the high cost, the invasiveness of the procedure, and the possible sampling error make it not the ideal choice for screening the *H. pylori* infection

during pregnancy. The noninvasive tests include the urea breath test (UBT), the stool antigen test, and the serum *H. pylori* IgG antibody test [8]. The latest one is easy to perform during antenatal examination and the existence of the antibody was found to be associated with the intrauterine growth restriction How the maternal. *pylori* antibody influences the growth of the fetus is still elusive, but, interestingly, the antibody can be transmitted transplacentally to the fetus. Persons with incident duodenal ulcers were found to be a small proportion of persons with any history of duodenal ulcer (2.4 percent), particularly when compared with the proportion of any gastric ulcers that were incident cases (8.7 percent) [8]. In addition, the incidence of duodenal ulcers was only about a third that of gastric ulcers, whereas, historically, the rate of duodenal ulcers has been higher than that of gastric ulcers [9]. Such a pattern would be expected if the incidence of duodenal ulcers had declined substantially relative to gastric ulcers, resulting in a larger reservoir of persons with past duodenal than past gastric ulcers relative to the incidence of these two conditions. The more dramatic decline in medical care for duodenal than for gastric ulcers over the last two decades gives some credence to this inference. As regards risk factors other than age, low socioeconomic status is an acknowledged risk factor for peptic ulcer and it is also associated with infection with *Helicobacter pylori,* an important pathogen for peptic ulcers. The relatively equal risk of incident ulcers for men and women reflects a long-term trend in the changing demographic patterns of peptic ulcer. Peptic ulcer incidence among diabetics was higher than that among non-diabetics [10]. This elevated risk was not statistically significant and may have been subject to ascertainment bias, as the information on diabetes diagnosis was obtained by self-report [11]. Gastrointestinal tract disorders are common in diabetic patients. More than 75% of patients visiting diabetesmellitus clinics reported significant gastrointestinal symptoms such as dysphasia, early satiety, reflux, abdominal pain, nausea, vomiting, constipation, and diarrhea. In the paper entitled "Decreased gastric motility in type II diabetic patients," the authors hypothesized that diabetic patients had lower motilin and ghrelin or higher glucagon-like peptide-1 (GLP-1) and hence inhibited gastric motility and induced gastrointestinal symptoms [12]. Compared gastric motility and sensation between type II diabetic patients and normal controls and explored the roles of different gastric motilin peptides in this motility effect. Type II diabetic patients have delayed gastric emptying and less antral contractions than normal controls may be associated with less postprandial sensations. They concluded the observation that less serumGLP-1 in type II diabetic patients could offer a clue to understand that delayed gastric emptying in diabetic patients not mainly regulated by GLP-1.

Concerning diabetes, no association was found with *H. pylori*. In fact, the link between *H. pylori* infection and diabetes remained controversial; it was studied for the first time by Simon [13]. Simon reported a higher prevalence of *H. pylori* infection in diabetic patients compared with controls (62% *vs.* 21%) These data were further confirmed in 1996 by a case-control study that examined 143 diabetics. Zelenkova had reported a prevalence of *H. pylori* to be lower in diabetics compared to non-diabetic controls (27% *vs.* 51%) In other studies, the prevalence of *H. pylori* infection was comparable between diabetic and control [14]. In our study we found a significant association between *H. pylori* and diabetes (p=0.979).This is in line with a study done by Naja, et al. on the association of. *pylori* infection with insulin resistance and metabolic syndrome(Mets) among Lebanese adults that found no association of *H. pylori* infection with IR or Mets, and concluded that the eradication of *H.pylori* infection to prevent IR or Mets is not warranted. On the other hand, symptomatic persons with previously documented ulcers may not undergo repeated diagnostic revaluation instead, they may be treated based on the recurrence of ulcer symptoms, which could have led to overreportingchronic active ulcers. In any event, it is unlikely that misreporting chronic

active ulcers would have strongly biased our evaluation of risk factors for ulcers [15].

Conclusion

In conclusion, this national population-based study measured the incidence of peptic ulcers in the UnitedStates. Additionally, we found evidence for the following: duodenal ulcer incidence is declining faster than gastric ulcer incidence; incident ulcers are associated with increasing age, low socioeconomic status, and painful conditions associated with the use of NSAIDs; and cigarette smoking is associated with chronic active ulcers but not incident ulcers.

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