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Research Article

**INCIDENCE OF DUODENAL ULCER IN LIVER CIRRHOSIS**Dr. Manseba Zahid<sup>1</sup>, Dr. Murtaza Khan<sup>2</sup>, Dr. Asma Aslam<sup>1</sup><sup>1</sup> University Medical and Dental College Faisalabad<sup>2</sup> Jiujiang University, China**Article Received:** April 2020**Accepted:** May 2020**Published:** June 2020**Abstract:**

**Introduction:** Liver cirrhosis is a common cause of duodenal ulcers. Cirrhosis causes portal hypertension, splenomegaly, esophageal varices (EV) and duodenal ulcer. Bleeding from duodenal ulcers is a serious complication with significant morbidity and mortality. Therefore, it is recommended that patients with cirrhosis be examined for the presence of duodenal ulcer at the time of initial diagnosis and periodically throughout their lives. Duodenal ulcer can cause fatal bleeding in patients with cirrhosis, emphasizing that duodenal ulcer should be monitored as the cause of bleeding rather than esophageal varices. This study aims to show the relationship between duodenal ulcers in patients with cirrhosis as presented in Medical Department. The implementation of its results may help in the early treatment of life-threatening upper gastrointestinal bleeding.

**Aim:** To determine the frequency of duodenal ulcers in patients with cirrhosis.

**Study design:** A cross-sectional study.

**Place and Duration:** In the Medicine Unit of Services Hospital Lahore for one year duration from April 2019 to April 2020.

**Methods:** The study included one hundred patients with liver ecotoxicity in the abdominal ultrasound examination and meeting the inclusion criteria. These patients then performed endoscopy of the upper gastrointestinal tract after informed consent and the presence and number of duodenal ulcers were noted. The location of the ulcer, its size and whether the ulcer was bleeding was also noted.

**Results:** The incidence of duodenal ulcers in patients with cirrhosis was 9.6%.

**Conclusion:** The study showed that 9.6% of patients with cirrhosis had a duodenal ulcer. Its use will help identify the cause of bleeding in patients with cirrhosis and help in treatment during endoscopy of the upper gastrointestinal tract.

**Key words:** liver cirrhosis, duodenal ulcer, upper gastrointestinal endoscopy.

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**INTRODUCTION:**

Cirrhosis is a global problem. It can be found in all social strata, races, age groups and both sexes. Alcoholism and viral hepatitis are the most common causes of liver cirrhosis. Cirrhosis is an increasing burden of morbidity and mortality in Great Britain; It is estimated that cirrhosis is 30,000 people and at least 7,000 new cases are diagnosed each year<sup>1-2</sup>. In the United Kingdom, there was a 45% increase in the incidence of liver cirrhosis and a 68% increase in the incidence in the decade 1992-2001. Cirrhosis is responsible for 1.2% of all deaths in the US<sup>3</sup>. According to the United States Center for Disease Control (CDC), although the cause of death from cirrhosis and chronic liver disease fell from 7 to 12 in 2000, the number of people who died from this disease was 26,219 in the United States, almost cirrhosis was in the seventh century<sup>4-5</sup>. Cirrhosis is caused by hepatic cell necrosis followed by fibrosis and lump formation. The architecture of the liver is usually abnormal, which prevents blood flow and liver function<sup>6-7</sup>. This disorder causes the clinical features of portal hypertension and impaired liver cell function. The main complications are portal hypertension, acid, liver failure, encephalopathy, hepatocellular carcinoma and coagulopathy. In patients with cirrhosis, gastrointestinal bleeding is often attributed to esophageal varices; however, it has been observed that 5-15% of patients with cirrhosis bleed from duodenal ulcer instead of varicose veins. Similarly, 30% of patients with cirrhosis have dyspeptic symptoms and signs due to peptic ulcer disease, not cirrhosis. The incidence of peptic ulcers in the United States is 10%, and duodenal ulcer is four times more common than gastric ulcer. In Pakistan, the ratio is 5: 1, and the rate of gastric and duodenal ulceration is very high in some regions of India. The incidence of duodenal ulcers in patients with cirrhosis is 9.5. There is a strong relationship between *Helicobacter pylori* (*H pylori*) and peptic ulcer disease, and duodenal ulcer is more common than gastric ulcer, and its incidence increases with age. NSAID-related peptic ulcer disease is common in Pakistan and is most commonly associated with gastric and duodenal ulcers. *H. pylori* infection is common in NSAID-associated peptic ulcers<sup>8</sup>. Gastric and duodenal ulcers have been reported to be particularly common in patients with liver cirrhosis. In these patients with cirrhosis, the presence of gastric and duodenal ulcer is significantly associated with hypertensive gastropathy, but not with *H. pylori* infection. Recent alcohol consumption supports the appearance of erosions in the stomach and duodenum. Similarly, *H pylori* eradication does not reduce the percentage of ulcers remaining in patients with cirrhosis, suggesting that *H pylori* may not be an important risk factor for peptic ulcer disease in patients with cirrhosis. Therefore, routine control of *H. pylori*

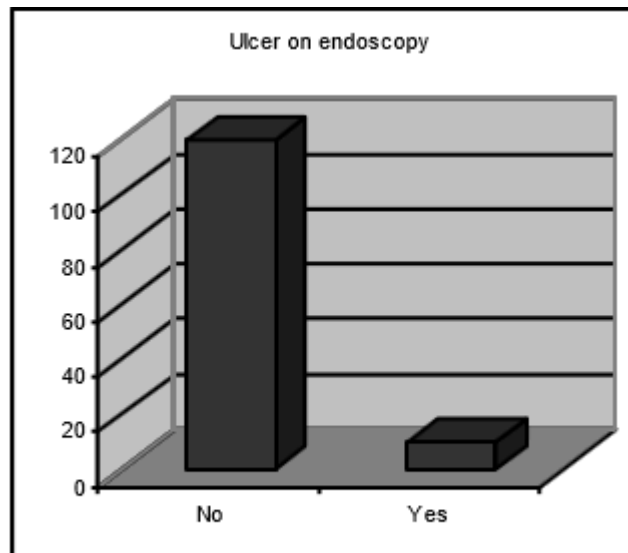
may not be guaranteed in patients with cirrhosis and peptic ulcer disease. *H. pylori* infection is directly related to duodenal ulcer in the general population. However, a duodenal ulcer appears to be independent of *Helicobacter pylori* infection in liver cirrhosis. In patients with liver cirrhosis, duodenal ulcer tends to heal slowly and recur more often than in non-cirrhosis patients. Seventy-nine percent of relapses are asymptomatic in patients with cirrhosis<sup>9-10</sup>. Bleeding can be caused by low platelet counts, prolonged prothrombin time, and a general reduction in coagulation factors. Duodenal ulcer has been observed to be more common in patients with cirrhosis than in the general population. In previous years, most cases of bleeding in patients with liver cirrhosis have been attributed to esophageal varices<sup>11</sup>. The widespread use of upper gastrointestinal endoscopy has shown that in many cases other injuries such as erosions, gastritis or peptic ulcer, especially duodenal ulcer, may be responsible. There is no data in our community regarding the incidence of duodenal ulcers among cirrhosis, which is why the diagnosis of duodenal ulcer can be overlooked in patients, and therefore a duodenal ulcer can be treated accordingly may be delayed, especially in patients with haematemesis<sup>11</sup>. The purpose of my research was to determine the incidence of duodenal ulcers in patients with cirrhosis. This study was intended to help treat patients with cirrhosis with duodenal ulcers by learning about their frequency and reducing morbidity and mortality.

**MATERIALS AND METHODS:**

The study was conducted at the Medical Unit of Services Hospital Lahore for one year duration from April 2019 to April 2020. The calculated sample size was 135 cases with a 5% margin of error and a 95% confidence level, the incidence of duodenal ulcers, i.e. 9.5%, in patients with cirrhosis. An improbable purposeful sampling technique was used. According to the operational definition, male and female patients aged 18 to 60 years with cirrhosis. Patients with cerebrovascular disease, chronic obstructive pulmonary disease, myocardial infarction, corrosive uptake, encephalopathy, and chronic renal failure were excluded.

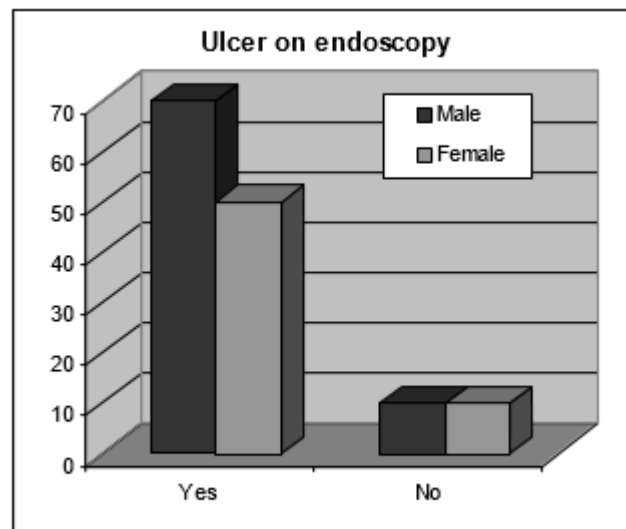
**RESULTS:**

A total of 135 patients with ascites and splenomegaly in the physical examination, increased echogenicity and general abdominal parenchymal equation in abdominal ultrasound were selected. Table I showed that 56.3% of 135 patients are male and 43.7% are female. The overall percentage of men is higher than the percentage of women. Cirrhosis was more common in the 43-60 age group, i.e. 80% of the mean age was 47.75, and standard deviation was 9.06.



Graph I: Frequency of duodenal ulcer in cirrhosis

The frequency of duodenal ulcers was 9.62%, i.e. 13 of 135 patients had 13, and 122 (90.37%) negative ulcers during endoscopy (Chart I). Ten (76.92%) patients with duodenal ulcer bleeding and 3 (23.08%) no. In the case of duodenal ulcer, it occurs in the first part of the duodenum in twelve patients (69.23%), and in the second part of the duodenum (30.76%) in 4 patients. In terms of sexual intercourse with duodenal ulcer, 11.86% (7 out of 59) women and 7.89% men (6 out of 76 men) had duodenal ulcers (Figure II).



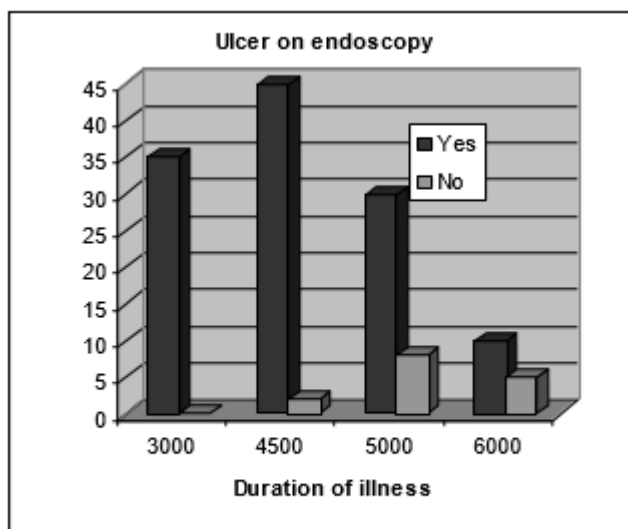
Graph II: Duodenal ulcer in male and female patients

Thirty three patients had disease for 3 years (24.44%), 46 patients for 4 years (34.07%), 39 for 5 years (28.88%) and 17 patients were having disease for 6 years (12.59%). Regarding the effect of disease duration on duodenal ulcer, none of the patients with a 3-year history had a duodenal ulcer.

Table 1: Gender wise distribution of cases (n=135)

Gender	Frequency	Percentage %
Male	76	56.3
Female	59	43.7

In the 4-year group, only one of the 46 patients had a positive ulcer (2.17%). Seven of 39 patients with five-year duration of illness were positive DU (17.94%). The frequency of duodenal ulcers in patients with disease lasting 6 years is 29.41 (5 out of 17 patients). It was clear that the longer the duration of the disease, the higher the DU frequency (Figure III).



Graph III: Relationship of duodenal ulcer and duration of illness

### DISCUSSION:

The aim of the study was to determine the incidence of duodenal ulcers in patients with cirrhosis. Most of the patients who took part in our study were 35-55 years old. A similar average age was found in most other studies in patients with liver cirrhosis<sup>9</sup>. This may be because cirrhosis usually occurs as a result of chronic hepatitis, which usually lasts one to twenty years to cause cirrhosis. Gastrointestinal bleeding is often attributed to esophageal varices in patients with cirrhosis. But; duodenal ulcer can cause upper gastrointestinal bleeding instead of varicose veins<sup>10</sup>. Similarly, in patients with cirrhosis, indigestion may be due to a gastric and duodenal ulcer of approximately 30%, rather than cirrhosis alone. A study was conducted to see the pattern of peptic ulcer disease in the UK. In this study, rates of use in peptic ulcer disease in 1972–2000 were observed, as well as a significant decrease in admissions and mortality associated with peptic ulcer disease<sup>11-12</sup>. Some recent epidemiological studies indicate a reduction in the incidence of all causes of upper gastrointestinal bleeding. However, the frequency of bleeding from peptic ulcers remained stable. Bleeding from peptic ulcer is the most common cause of upper gastrointestinal bleeding and accounts for about 50% of all cases. Esophagitis and gastric erosion are the second and third causes, respectively. Esophageal varices are the cause of 50-60% of bleeding in patients with liver cirrhosis. The duration of the disease was changing. Duodenal ulcers were more common in longer patients with cirrhosis. Patients with disease lasting 6 years had a larger duodenal ulcer (29%), while patients with disease lasting 5 years had 17% DU<sup>13-14</sup>. the frequency of DU was 0.02% in patients with a 4-year history and 0% in patients with a 3-year history. Therefore, the incidence of duodenal ulcers in

patients with cirrhosis is almost the same as in previous years. Secondly, duodenal ulcer can cause bleeding in patients with upper gastrointestinal bleeding. Thirdly, the duration of the disease is associated with the presence or absence of duodenal ulcer<sup>15</sup>. Finally, endoscopic surveillance of duodenal ulcer is useful in diagnosing and treating patients with liver cirrhosis.

### CONCLUSION:

The incidence of duodenal ulcers was 9.6% in patients with cirrhosis. The impact of disease duration on the appearance of duodenal ulcer is obvious, but more research is needed.

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