FREQUENCY OF PEPTIC ULCER DISEASE IN PATIENTS WITH CIRRHOSIS

Muhammad Shoaib Khan[1], Adnan Ur Rehman[1], Khalid hameed[1], Said Amin[2],

ABSTRACT

Objective of the Study: To determine the frequency of peptic ulcer disease in patients with liver cirrhosis

Patient and Methods: This study was conducted in the Gastroenterology and Hepatology Department of Hayatabad medical complex Peshawar. Patients with diagnosed liver cirrhosis were included in the study after applying the exclusion criteria. Detailed history taking and relevant systemic examination were carried out. Base line investigations were done for all patients followed by endoscopic examination of the upper GI tract. All this information was entered into a specially designed proforma. All data was analyzed using SPSS Program 10.0. Descriptive statistics were calculated for the study variables.

Results: A total of 100 patients with cirrhosis were included in this study out of which 56 (56 %) were male and 44 (44 %) were female patients. 37 patients (37 %) were found to have peptic ulcer disease endoscopicaly. 20 patients (20 %) were having duodenal ulcers, 14 patients (14 %) were having only gastric ulcers while 3 patients (3 %) were having both gastric and duodenal ulcers. The rest of 63 patients (63 %) were free from peptic ulcer disease.

Conclusion: Peptic ulcer disease is more common in patients with liver cirrhosis than in general population. It is the second most common cause of upper GI bleed in patients with cirrhosis after varices. The exact cause of this increased prevalence of peptic ulcer disease among patients with cirrhosis is not known but among many proposed mechanism impairment in gastroduodenal mucosal defense mechanisms, portal hypertension, poor child class and H.Pylori are considered to be important. Prophylactic use of medications for peptic ulcer disease in patients with cirrhosis can not only decrease morbidity among these patients but also decrease hospital admissions and health budget expenditures.

Key Words: Peptic ulcer disease, cirrhosis, gastric ulcer, duodenal ulcer

INTRODUCTION:

Hepatitis B and C are spreading like an endemic disease in developing countries like Pakistan, due to many reasons. The late diagnosis of HCV and HBV infection has resulted in increased number of patients with decompensated liver disease. One of the many complications of cirrhosis is upper gastrointestinal (GI) bleed and peptic ulcer disease is the second most common cause of upper gastrointestinal bleed after variceal bleed. Although the incidence and prevalence of peptic ulcer disease appear to be increased in cirrhosis, the underlying mechanism of peptic ulcer disease in cirrhosis is unclear [1, 2, 3]. The prevalence of peptic ulcer in cirrhotic patients, reported from endoscopy screening studies, is approximately 5–20% when compared with 2–4% of the general population [4, 5, 6]. A report indicates that H. pylori infection increases the risk of peptic ulcer in cirrhotic patients by 2.7 fold [7]. In one study, having hepatic venous pressure gradient (HVPG) >12 mmHg seemed to increase the risk of gastric ulcer in cirrhotic patients [4]. Present study was conducted to determine the frequency of peptic ulcer disease in patients having decompensated cirrhosis of liver and also to emphasize the importance of primary prophylaxis with proton pump inhibitors for prevention of peptic ulcer in these patients.

Gastroenterology and Hepatology Unit, PGMI/HMC[1]
Medical A unit HMC Peshawar[2]

Contact:
Dr Muhammad Shoaib Khan,
TMO, Gastroenterology and Hepatology Unit, HMC.
Phone: 03339249019
E-mail: hotwire_14@hotmail.com

OBJECTIVE:

To determine the frequency of peptic ulcer disease in patients with cirrhosis

PATIENTS AND METHODS:

This cross sectional study was conducted in the Gastroenterology and Hepatology Department of Hayatabad medical complex Peshawar, from January 2012 to August 2012. The study was approved by the research and ethics committee of the hospital. Written informed consent was obtained from all the participating patients.

All adult patients from 20-70 years of age of either sex who were diagnosed cases of cirrhosis, on the basis of history, clinical examination and investigations were included in the study on the basis of non-probability convenience sampling.

All patients who had a previous history of peptic

ulcer disease diagnosed endoscopicaly, those who have received proton pump inhibitors for more than a week in the last three months and those who were treated for helicobacter Pylori infection in the last six months were excluded from the study.

Patients were interviewed and data regarding demographic profile, history of upper gastrointestinal bleed in the past, presence of associated medical illnesses and medications used were collected.

Data was recorded in a specially designed proforma. All data was analyzed using statistical package SPSS 10.0. Descriptive statistics were used. Mean and standard deviation was calculated for age. Frequencies and percentages for variables were calculated.

RESULTS:

A total of 100 patients were enrolled into the study on the basis of inclusion and exclusion criteria. Out of them 56 (56 %) were male and 44 (44 %) were female with a male to female ratio of 1.27:1.

Age range was from 20 to 70 years with a mean age ± s.d of 52 ± 8.3 years. Most of the patients were in the age range of 40 to 60 years as shown in **Table1**.

Out of 100 patients 37 patients (37 %) were found to have peptic ulcer disease endoscopicaly. Out of these patients 14 patients (14 %) were found to have gastric ulcers, 20 patients (20 %) were having duodenal ulcer and 3 patients (3 %) were having both gastric as well as duodenal ulcers while the rest of 63 patient (63 %) had no peptic ulcer disease as shown in **Figure 1**.

Table 1: Age groups of Patients

Age Range	Number Of Patients	Percentage
20 – 30 years	4	4 %
31 – 40 years	14	14 %
41 – 50 years	38	38 %
51 – 60 years	32	32 %
61 – 70 years	12	12 %
TOTAL	**100**	**100 %**

DISCUSSION:

In developing countries like Pakistan viral infections are the most common cause of liver cirrhosis among many causes, particularly Hepatitis B and Hepatitis C infection. These infections are spreading among the developing countries due to many factors including poor hygienic conditions, tattoo marks, use of non sterile syringes, lack of proper screening facilities for blood transfusion, increase in number of I\V

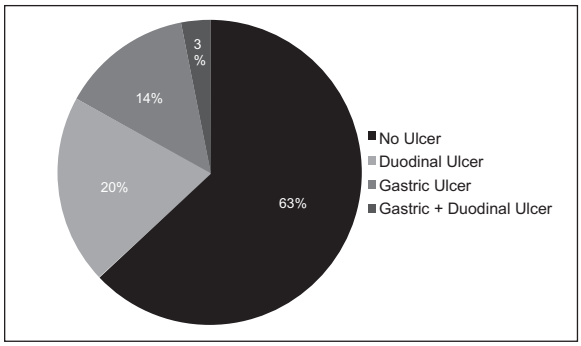

Figure 1: Frequencies of Peptic Ulcer Disease in Cirrhotic Patients

drug addicts and ignorance among the masses[8, 9]. Due all these factors, patients with Hepatitis B and Hepatitis C related cirrhosis have increased markedly over the last decade or so [10].

Patients with cirrhosis are at risk of many complications among which upper gastrointestinal (GI) bleeding is the most common and life threatening complication. Esophageal and gastric varices and peptic ulcer are the two most common causes for upper GI bleed in such patients. Cirrhotic patients are at increased risk of peptic ulcer disease as compared to general population and they have a higher prevalence of peptic ulcer disease than general population as suggested by other studies as well[4, 5, 6, 11, 12, 13, 14]. The exact pathophysiologic mechanisms responsible for increase susceptibility of cirrhotic patients to peptic ulcer disease are not clearly known but different mechanisms are proposed for it.

From earlier studies, several changes of gastroduodenal mucosa in cirrhotic patients were explained from the reduction of potential difference in gastric mucosa[15] impairment of bicarbonate secretion[16] the reduction of gastric mucosal blood flow[17] and the impairment of gastric mucosal oxygenation[18]. These structural and physiological changes can lead to mucosal damage. Altered gastric mucosal response to injury, suppression of endogenous production of prostaglandins[19] and increasing nitric oxide were found to make gastric mucosa more susceptible to injury[20].

Portal hypertension and poor child class are also associated with increased risk of peptic ulcer disease[11]. Several derangements of gastroduodenal mucosa response to injury and impairment of mucosa protection mechanism in late stages of chronic liver diseases may make the patients prone to developing peptic ulcers. Theoretically, portal hypertension is involved in the pathogenesis of peptic ulcer by causing splanchnic congestion, altered normal reparative processes of gastroduodenal mucosa, gastric microvascular abnormalities and impaired gastric mucosal secretion, thus leading to an increased susceptibility to

acid and pepsin[17, 21].

The role of H. pylori infection in the pathogenesis of peptic ulcer disease has been extensively evaluated in non-cirrhotic patients. The increased rate of peptic ulcer disease in patients with cirrhosis has been explained in some studies, by higher rates of gastric colonization with H. pylori[11, 28, 29, 30, 31] and it is considered to be involved in the causation of peptic ulcer disease in cirrhotic patients and a meta-analysis and various other studies show that H. pylori infection is the most important risk factor of peptic ulcer in cirrhotic patients [22, 23, 24]. However, other studies have found no relationship between H. pylori infection and peptic ulcer disease in cirrhosis [25, 26, 13]. To find the relation between H. pylori infection and peptic ulcer disease in cirrhotic patients further studies need to be done.

CONCLUSION:

Peptic ulcer disease is more common in patients with liver cirrhosis than in general population. It is the second most common cause of upper GI bleed in patients with cirrhosis after varices. The exact cause of this increased prevalence of peptic ulcer disease among patients with cirrhosis is not known but among many proposed mechanism impairment in gastroduodenal mucosal defense mechanisms, portal hypertension, poor child class and H.Pylori are considered to be important. Prophylactic use of medications for peptic ulcer disease in patients with cirrhosis can not only decrease morbidity among these patients but also decrease hospital admissions and health budget expenditures. However further large scale studies need to be done to find the exact cause of the increased prevalence of peptic ulcer disease among patients with cirrhosis and to validate the role of prophylactic proton pump inhibitors in its prevention.

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