ORIGINAL ARTICLE

Frequency of Encephalopathy in Cirrhotic Patients Presenting with Upper Gastrointestinal Bleeding

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ABSTRACT

Objective: To determine the frequency of hepatic encephalopathy in cirrhotic patients presenting with upper gastrointestinal bleed.
Methods: This was a case series (Observational Study) in which hundred cirrhotic patients presenting with upper GI bleed were enrolled.
Results: One hundred patients of liver cirrhosis with upper GI Bleed were included in this study. Most of the patients i.e., 61(61%) were positive for HCV RNA alone while another 15 (15%) were positive for both HCV RNA and HBsAg. Out of 100 patients, 62(62%) developed encephalopathy and 38 (38%) were having no evidence of encephalopathy.
Conclusion: Most of cirrhotics with Upper GI bleed develop encephalopathy. Preventing
Upper GI bleeding can thus contribute significantly in reducing the morbidity and mortality resulting from hepatic encephalopathy.
Keywords: Cirrhosis, hepatic encephalopathy, upper GI bleeding

INTRODUCTION

Cirrhosis represents the final common histologic pathway for a wide variety of chronic liver diseases. The term cirrhosis was first introduced by Laennec in 1826. It is derived from the Greek term scirrhus and is used to describe the orange or tawny surface of the liver seen at autopsy. Cirrhosis implies irreversible liver damage. Histologically, there is loss of normal hepatic architecture with fibrosis and nodular regeneration[1]. Often a poor correlation exists between histologic findings and the clinical picture. Some patients with cirrhosis are completely asymptomatic and have a reasonably normal life expectancy. Other individuals have a multitude of the most severe symptoms of end-stage liver disease and have a limited chance for survival. Common signs and symptoms may stem from decreased hepatic synthetic function (e.g., coagulopathy), decreased detoxification capabilities of the liver (e.g., hepatic encephalopathy), or portal hypertension (e.g., variceal bleeding). The incidence of cirrhosis is increasing annually in Pakistan. Hepatitis B and Hepatitis C are responsible in most of these cases. Encephalopathy occurs in some of these cases[2].

Hepatic encephalopathy (HE) may be defined as a disturbance of the central nervous system (CNS) function secondary to porto-systemic shunting. It represents a wide spectrum of neuropsychiatric abnormalities seen in patients with liver dysfunction after exclusion of other known neurological diseases[3].

Hepatic encephalopathy leads to changed cognitive function. This can range from subtle deficits in higher mental functions (in mild cases) to obtundation and coma (in severe cases). Left untreated, severe hepatic encephalopathy can cause death.

In majority of patients with hepatic encephalopathy, a clearly defined precipitating factor is identified, and reversal or control of this factor is key step in management. Common precipitating factors are gastrointestinal bleeding, infections, electrolyte imbalance, heavy protein intake, constipation, sedatives, diuretics, and abdominal paracentesis[4].

Acute upper gastrointestinal bleeding is a global problem and a common medical emergency. Patients with acute upper gastrointestinal bleeding are seriously ill and require proper assessment and intensive monitoring. The presentations of a patient with acute upper gastrointestinal bleeding are either with Hematemesis, Malena or Hematochezia. Ruptured esophageal varices cause 70% of all upper gastrointestinal bleeding episodes in patients with portal hypertension. Thus, in any cirrhotic patient with acute upper gastrointestinal bleeding, a variceal origin should be suspected[5].

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MATERIALS AND METHODS

It was a descriptive (observational) study.Patients of either sex above the age of 16 years, known to have cirrhosis diagnosed by ultrasonography and/or liver biopsy, presenting with upper gastrointestinal bleeding. Patients having other risk factors for hepatic encephalopathy such as infection, hypoglycemia, electrolyte imbalance, constipation, dehydration and use of sedative drugs. Subjects suffering from other diseases causing encephalopathy such as acute fulminant hepatic failure, uremia, sepsis, hypoglycemia, hyponatremia, Wernicke's encephalopathy, intracranial diseases such as meningitis and stroke will be excluded from the study.

First hundred cases of liver cirrhosis which fulfill the inclusion criteria were included in the study. Informed consent was taken from the patient and then all the information were collected on pre-designed pro forma, having the significant clinical features (history and clinical examination) and investigations of liver cirrhosis, hepatic encephalopathy and upper GI bleed.

All the information collected on the proforma were analyzed using statistical package for social sciences (SPSS) version 10.0 and data entry was performed through Epi Info version 6.4. No inferential statistical tests were applied since it was an observational study.

RESULTS

One hundred patients were included in this study. Out of 100 patients, 56 (56%) were male and 44 (44%) were female. The age ranged from 15 years to above 70 years. Majority of the patients (86%) were 20 to 59 years old while only 02% were less than 20 years and 12% were older than 59 years. The patients were divided into 8 groups according to age (Table 1)

Table 1: Age distribution (n=100)

Age in years	Frequency %age
15-19	2
20-29	09
30-39	21
40-49	35
50-59	21
60-69	08
70 and above	04

Out of 100 patients, 62 were in encephalopathy and 38 were having no neurological disturbance (Table 2). Out of 62 patients 36 were males and 26 were females.

Table: 2 Encephalopathy status of patients (n=100)

Gender	Encephalo-pathy Present	Encephalo-pathy Absent	Total
Male	36	20	56
Female	26	18	44
Total	62	38	100

Out of all the 100 patients, 17(17%) were HBsAg positive, 61(61%) were positive for HCV RNA, both were positive in 15 (15%) and both were negative in 7(7%) cases. 34 patients (34%) were in grade "B" of Modified Child Pugh's classifications. Among them 20 were HCV positive and 06 HBV positive. While 38 patients (38%) were in grade "A" and 28 patients (28%) in grade "C" according to Modified Child Pugh's classifications. Out of 62 patients in encephalopathy 24(39%) patients were in grade IV encephalopathy.

Table 3: Grades of Hepatic Encephalopathy

Grade	Frequency	%age
I	7	11
II	13	21
III	18	29
IV	24	39

DISCUSSION

Liver diseases affect millions of people worldwide each day. However, in the developing countries where cost of health care has always been an issue, long lasting diseases such as liver cirrhosis and its complications are a major health problem and pose a big challenge to the health economy. Because of poverty, poor hygienic conditions, inadequate education and lack of counseling, the number of cirrhotic patients is increasing and most of them are admitted to medical wards with different complications.

Cirrhosis of liver is very common in Pakistan and it is becoming alarming situation here in Pakistan. Physicians know hepatic cirrhosis and its complication since the time of Hippocrates. W.H.O. has estimated that cirrhosis is responsible for 1.1% of all deaths worldwide. About 175 million people in the world have cirrhosis of liver.

Upper gastrointestinal bleeding is a potentially fatal medical emergency, which needs early diagnosis of the cause. This is a common cause of hospitalization worldwide. It has multifactorial etiology which varies widely between different geographical areas of the world. Esophageal varices which develop uniformly in cirrhotics at some stage during the course of their disease is the most common cause of upper GI bleeding in our country.

Hepatic Encephalopathy has never been less than an unsolved mystery for physicians and researchers around the globe. Since the time of Hippocrates it has been difficult to diagnose and manage any patient of hepatic encephalopathy. Although the exact pathogenic mechanism is yet to be determined, modern research has proved time and again that identifying and removing precipitating factors like GI bleeding, infection and many others is still the key step in the overall management.

In the present study total one hundred patients were included. Out of 100 patients, 56(56%) were male and 44(44%) were female. The male predominance has been observed in various studies conducted in Pakistan as well as internationally previously, so is the case here in this study. This male to female difference may be due to delayed consultation by female patients and gender inequality in utilization of health care facilities in Pakistan. The other factor may be that, as compared to female, male are relatively more exposed to the risk factor for the transmission of hepatitis B and C viruses i.e., transmission through barbers and intravenous drug abuse. In this study majority (68%) of patients were more than forty years old (Table 1). Durrani[6] had a similar finding in the province of Balochistan. Age beyond forty suggests that most of people suffering from that menace acquired HCV (commonest cause of liver cirrhosis as seen in the study) during early years of their life thus leading to cirrhosis after a period of 20 years or more. This is in complete harmony with the natural history of liver cirrhosis in HCV positive cases.

Chronic hepatitis C virus infection alone was found to be the major cause of liver cirrhosis in this study i.e., 61% and in another 15% patients along with hepatitis B virus. HBV alone was the culprit in 17% of patients while 7% were negative for both hepatitis B and C virus infection. One of the international study concluded that co-infection of hepatitis B and C viruses is much prevalent i.e., 66% of HCV positive patients had occult HBV infection also[7].

In a local study conducted at King Edward Medical College Lahore, Hussain and fellows found that anti HCV was positive in 52% patients and HBsAg was positive in 24%. While 8% were positive for both HBV and HCV markers. In 16% patient no cause could be determined[8]. In another local study conducted at Khyber Teaching Hospital Peshawar, Farooqi and fellows concluded HCV as the major cause of liver cirrhosis. They found that Anti-HCV was found positive in 42.68% patients, HBsAg was positive in 25.60% patients and both were positive in 7.32% patients whereas both the viruses were negative in 24.40% patients.[9] This is also in complete harmony with the study done by Alam[10] in the province of N.W.F.P.

In an international prospective study, conducted on 312 patients, 80% were found positive for anti HCV, 13% for HBV and 07% co-infected with both HBV and HCV[11].

The results in the local studies are comparable with the present study. Higher percentage of patients of liver cirrhosis being affected by hepatitis C virus may be due to the silent and asymptomatic course of infection by HCV. This causes delay in seeking advice for the management and usually present to the health facility with full blown picture of liver cirrhosis or its complications.

In the present study, in 62(62%) patients who presented in encephalopathy after Upper GI bleed, 34(55%) patients were in grade “B” of Modified Child Pugh’s classifications. Among them 20 were HCV positive and 6 HBV positive. 28 patients (45%) were in grade “C” according to Modified Child Pugh’s classifications. In a local study at Lahore, the frequencies of patients in Modified Child Pugh’s classes are comparable with the present study i.e., 46% in Class B and 42% in class C[12]. Most patients in our study were in grade IV encephalopathy i.e., 39% while in other studies conducted in Pakistan majority of the patients were in grade II encephalopathy[2,13].

Because most of our patients were villagers living in remote areas, they reached our hospital late. Lack of health education regarding precipitating factors may be a contributory factor. It is clearly depicted by the study that most of cirrhotics (62%) with GI bleed do develop hepatic encephalopathy but it is not inevitable; as significant number of patients (38%) did not show any neurologic disturbance suggestive of encephalopathy (Table 2).

Gastrointestinal bleeding has been repeatedly demonstrated as important cause of HE, a fact also borne out by my study[14]. The findings of the frequency of gastrointestinal bleeding leading to HE in different national and international studies suggest that it is one of the leading cause of development of encephalopathy in cirrhotics presenting with Upper GI bleed. This is especially true for the province of Punjab where Aisha[4] and Khurram[15] reveal gastrointestinal bleeding as the main causative agent for encephalopathy. Studies done by Shaikh[16] and Hameed[17] also showed Upper GI bleed as one of leading cause of encephalopathy.

CONCLUSION

It is concluded that most of cirrhotics with Upper GI bleed develop encephalopathy. Hepatic encephalopathy is a common complication of liver

cirrhosis. Its occurrence correlates with the severity of disease, which is best, assessed by Child scoring.

Upper GI bleed is the leading cause of that devastating complication of cirrhosis. Stress should thus be given to prevent that complication by early detection of development of varices in cirrhotics. More and more endoscopic facilities should be made available nationwide for prompt control of gastrointestinal bleeding, and most importantly, a more committed effort is the need of the hour to control increasing incidence of hepatitis C. Only then we stand any chance of combating cirrhosis and its life threatening complications.

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