ORIGINAL RESEARCH PAPER

Volume-8 | Issue-5 | May-2019 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

COMMON PRECIPITATING FACTORS AND PROGNOSIS IN A GROUP OF PATIENTS PRESENTING WITH HEPATIC ENCEPHALOPATHY IN DIAGNOSED CASES OF CIRRHOSIS OF ANY ETIOLOGY" A HOSPITAL BASED DESCRIPTIVE AND PROSPECTIVE STUDY AT DEPARTMENT OF MEDICINE RIMS RANCHI JHARKHAND

General Medicine

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ABSTRACT

Background: 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 .The syndrome of hepatic encephalopathy (HE) 1 describes all neuropsychiatric symptoms occurring in patients with acute or chronic liver diseases (CLD) in the absence of other neurological disorders. In the present study an attempt was made to study the common precipitating factors and the prognosis in patients presenting with HE.

METHODOLOGY: This study was conducted in RIMS Ranchi during the period from December 2017 to November 2018.The study included 50 diagnosed cases of cirrhosis presenting or complicating into HE For data collection, a questionnaire was developed. A detailed clinical history of the patient was taken regarding the present and past illnesses. For each patient full CBC, LFT, RFT, random blood sugar, serum electrolytes, serum ammonia and coagulation profile were carried out. An abdominal ultrasound was done to look for liver and spleen size, parenchyma echogenicity, portal vein diameter, and ascites. In case of ascites, an ascites tap was also done to look for SBP

RESULTS: In this study most common clinical presentation was ascitis (70%) and Altered sensorium (68%). Most common precipitating factor was GI bleeding. Serum ammonia was raised in 40(80%) of patients. Mortality rate was 48%

CONCLUSION: Gastrointestinal bleeding, electrolyte disturbances, infection, constipation are the most common factors of hepatic encephalopathy in this study. Caution must be exercised in putting cirrhotic patients on diuretics. Early and effective infection control measures and better hygienic conditions are needed to be maintained. More and more endoscopic facilities should be made available nationwide for prompt control of gastrointestinal bleeding.

KEYWORDS

CLD-Chronic liver disease HE-Hepatic encephalopathy GI bleed-Gastrointestinal bleeding SBP-Spontaneous bacterial peritonitis –complete blood count, LFT-Liver function tests, RFT-Renal function tests.

INTRODUCTION

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.

The syndrome of hepatic encephalopathy (HE)[1] describes all neuropsychiatric Symptoms occurring in patients with acute or chronic liver diseases (CLD) in the absence of other neurological disorders .About 30% of patients with cirrhosis die in hepaticcoma[2].Appearance of HE in any patient is indicative of poor prognosis[4].HE can occur either due to acute liver failure or due to one or more precipitating factors in a cirrhotic patient, or it could happen as a result of prolonged portal systemic shunting resulting in a chronic portal systemic encephalopathy[5]

Survival of patients having chronic portal systemic encephalopathy is better than those who develop HE acutely (100% vs. 70%)[6] However prognosis in the later group can be improved if the precipitating factors are recognized early and managed accordingly[7].Common precipitating factors include gastrointestinal bleeding ,infection, azotemia, constipation, electrolyte imbalance[8] and high protein diet. Usage of drugs such as sedatives[9], tranquilizers, analgesics and diuretics, fulminant hepatic injury, large volume paracentesis have all been considered to precipitate encephalopathy in an otherwise stable cirrhotic patient. Exact pathogenic mechanism involved is unknown till date, however the basic process is failure of hepatic clearance of gut derived substances such as ammonia, free fatty acids, mercaptans etc., either through hepatocellular failure or shunting, and altered amino acid metabolism, both of which result in changes in cerebral transmission causing depressed cerebral function. This study was aimed at ascertaining the common precipitating factors and the prognosis in patients presenting with HE. Other objectives were to analyse the commonly associated biochemical laboratory findings in such patients, to stratify these patients according to Child's classification of CLD, the outcome, and the etiological factors involved.

MATERIALS AND METHODS:

STUDY DESIGN : A hospital based descriptive and prospective study

PLACE : Department of Medicine RIMS Ranchi Jharkhand

STUDY PERIOD : Study was done over a period of one year from December 2017 to November 2018

PROCEDURE :

INCLUSION CRITERIA:

1. Patients with cirrhosis of liver, belonging to either sex
2. Age above 12
3. Hepatic encephalopathy including minimal hepatic-encephalopathy

EXCLUSION CRITERIA:

1. Patients with psychiatric disorders or on treatment for psychiatric disorders
2. Those with altered sensorium due to metabolic disease or head injury
3. Acute alcoholic intoxication and alcoholic withdrawal state

PROCEDURE:

For data collection, a questionnaire was developed. A detailed clinical history of the patient was taken regarding the present and past illnesses. Questions were asked about gastrointestinal bleeding, including hematemesis and melaena, constipation, vomiting, diarrhea, oliguria, fever, bleeding, manifestation, high protein diet, paracentesis and any trauma or surgery. Personal history about alcohol consumption was noted in along with smoking and i.v drug abuse Use of any sedatives, diuretics, tranquilizers, analgesics and cough syrups was also inquired in detail. All patients were carefully examined with special attention to jaundice, anemia, fever, asterixes, hydration, pedal edema, and ascites. Detailed per abdominal and neurological examination was done on all patients.

For each patient full blood count, liver function tests, renal function tests, random blood sugar, serum electrolytes, serum ammonia serum albumin and coagulation profile was carried out. An abdominal ultrasound was done to look for liver and Spleenic size, parenchymal

echogenicity, portal vein diameter, and ascites. In case of ascites, an ascites tap was also done to look for spontaneous bacterial peritonitis. Any evidence of the presence of other co-existent complications of cirrhosis liver was also recorded. and Child's score was assessed for each patient.

OBSERVATION & DATAANALYSIS

A total of 50 admitted patients, including 48(96%), male and 02(4%) females, presenting or complicating into hepatic encephalopathy were studied. Majority i.e. 46(92%) patients were older than 40 years. Four (8%) patients were between 20 and 40 years old, all of them were males.

Most common presenting clinical features in the patients was ascitis. Other common presenting features are given in table 1

Table 1: Common presenting features in patients with HE

Clinical feature	No of patients
Fever	11
Vomiting	16
Diarrhoea	17
Constipation	20
Bleeding tendency	32
Disorientation	29
Confusion	26
Coma	16
Ascitis	35

When cirrhotic patients with HE were grouped into Child Pugh classification, 64% of the patients were found to be in Class C, 28% of patients in Class B, 8% of patient in class A, as shown in Table 2

Table – 2 Patients in different class of encephalopathy

Child pugh class	No of patients	Percentage (%)	No of patients acc to age group			
			< 40 years		< 40 years	
			M	F	M	F
Class A	4	8%	2	0	0	2
Class B	14	28%	0	0	14	0
Class C	32	64%	0	0	32	0

The precipitating factors of hepatic encephalopathy most commonly found in this patients were GI bleeding 30 (60%), electrolyte disturbance 19 (38%), infection 10 (20%) and constipation 20 (40%).Out of a total of fifty patients of HE, , 09 (18%) patients had one factor; 21 (42%) had two factors, while 17 (34%)patients had more than two precipitating factors. 35 (70%) patients have associated ascites, 10(20%) had spontaneous bacterial peritonitis, 10 (20%) patients had hepatorenal syndrome. However thrombocytopenia (platelet count <150,000/ μL) was a consistent finding in 40 (80%) patients. Hyponatremia, hypokalemia and low haemoglobin were found in 13 (26%), 06 (12%), and 44 (88%) patients respectively. In 10(20%) patients' blood urea and creatinine was above normal limits. Hypoalbuminemia (serum albumin <3.3 g/dl) was found in 46 (92%) patients.

Leukocytosis (total leukocyte count >11000/ μL) was a feature in the laboratory data of 10 (20%) patients. The rest of the patients had either normal or low TLC count. Coagulation profile was abnormal in a fraction of patient with 29(58%) patients having Prothrombin time >5. Out of all the 50 patients 34 (48%) expired, all of them males. 12 patients were in HE grade 3 and 10 patients were in grade 4. All cirrhotic patients who expired were found to be in Class C of Child's Pugh classification.

DISCUSSION

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 is still the key step in the overall management[11].In majority of patients with HE, a clearly definable precipitating factors is identified and reversal or control of these factors is the key step in the management. In the present study 50 patients of Cirrhosis of liver presenting with HE, all possible factors which could be responsible for precipitating or aggravating HE were looked for and analyzed.

In our study that was conducted on 50 patients, majority (96%) of patients were more than forty years old. **Durrani**[12] had a similar finding in the province of Baluchistan, Pakistan. Male dominance in progression to advanced stages of chronic liver disease was found in our patients. **Al-Gindan**[13] also reported the same pattern in a study in Saudi Arabia. The most common cause of Cirrhosis liver in this study is Alcohol intake 45(90%) person were alcoholic, compared to 05(10%) non alcoholic. This is in conjunction with the studies done in industrialized nations of the west, Conn 18 Faloon[19], which showed alcohol as the main etiological factors. Hepatitis C was a common cause of cirrhosis in our study but Hepatitis B uncommon than Hepatitis C as a cause of cirrhosis of liver in this study. A probable explanation could also be that most of our patients were at end stage cirrhosis in which hepatitis C is the commonest cause.

Gastrointestinal bleeding was the most common precipitating factor for HE This is especially true for the province of Punjab where **Aisha**[23] and **Khurram**[25] reveal gastrointestinal bleeding, infection and constipation as the main factors. Studies done by **Shaikh**[22] and **Hameed24** show electrolyte imbalance ranked at the top. Infection, gastrointestinal bleeding and have been repeatedly demonstrated as important precipitating factors of HE a fact also borne out by our study.

Out of four foreign studies however reveal infection as a less common cause abroad, which is understandably due to better hygienic conditions of the patients and hospitals in the western countries.26% of our patients had hyponatremia and 12% were hypokalemic. This was due to the fact that most of them were on diuretics and there was associated diarrhea or vomiting contributing to the electrolyte disturbances. Findings of low hemoglobin, thrombocytopenia and hypoalbuminemia correspond well with advanced stages of cirrhosis[28]. Raised total leukocyte count in 20% of patients, supports infection[23] as a common precipitant in our settings.

Serum ammonia was raised in 40(80%) patients. The figure correlates with Sheila Sherlock6 (serum ammonia is raised in 90% 0f patients with hepatic encephalopathy).

Raised urea and creatinine is seen in 20% of patients, highlight the fact that azotemia is an important pathogenic contributor to the onset of HE[29]. The mortality rate in our patients was 48%, which is in excess than what reported by **Sheila Sherlock**[6]. Who did expire were mostly in Class C of CPC, Gastrointestinal bleeding, electrolyte disturbances, infection, constipation are the most common factors of hepatic encephalopathy in this study. Priority should be given to these factors in terms of hospital funds medicines and human efforts. Caution must be exercised in putting cirrhotic patients on diuretics. Early and effective infection control measures and better hygienic conditions in government hospitals are needed to be maintained. Consistent use of lactulose and fibre should be encouraged to prevent constipation. More and more endoscopic facilities should be made available nationwide for prompt control of gastrointestinal bleeding. Most importantly, a more committed effort is the need of the hour to control increasing incidence of hepatitis B. Only then we stand any chance of combating cirrhosis and even worse hepatic encephalopathy.

CONCLUSION

From this study it was concluded that in most of the cases there are different factors which play a key role in precipitating hepatic encephalopathy which is a common phenomenon in patients with cirrhosis of liver. Upper GI bleed, infections, diuretics, electrolyte imbalance and constipation were the most common precipitating factors.

There is a definite need for health education in patients who are diagnosed with cirrhosis of liver regarding the risk of hepatic encephalopathy and its precipitating factors. Prompt control of infections, routine upper GI endoscopy and follow up, prevention of constipation by laxatives, judicial use of sedatives and diuretics and proper advice regarding diet must be an integral part of all counseling protocol to cirrhotic patients. Hence the early detection and diagnosis of these precipitating factors helps in starting treatment of this fatal condition hence reducing the mortality.

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