

Clinical Spectrum of Spontaneous Bacterial Peritonitis in Tertiary Care Centre

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Abstract

Introduction: Cirrhosis is a common diagnosis in the inpatient population seeking care at the gastroenterology department of the Institute Of Medicine.

Spontaneous Bacterial Peritonitis (SBP) is commonly associated with decompensated liver cirrhosis and has been associated with frequent adverse outcome. This small study was designed to spectrum of disease and profile of patient having Spontaneous Bacterial Peritonitis.

Methods: The retrospective study was conducted in patient admitted in department of gastroenterology. A total of 51 patients suffering from cirrhosis with ascites was studied. All subject underwent different investigations, like abdominal paracentesis, abdominal ultrasonography and biochemical analysis, these tests were analyzed. MELD score was calculated for all the patient.

Results: Total of 51 patients with Spontaneous Bacterial Peritonitis were enrolled. Majority of patient had alcohol as the cause of cirrhosis. Jaundice, abdominal pain and fever along with hepatic encephalopathy were chief presenting complaints. A mortality rate of 22% was seen in this small sample of patients.

Conclusions: SBP is a major concern in case of hepatic cirrhosis as it can cause considerable risk of adverse outcome and prolong the hospital stay. Early diagnosis and aggressive treatment should be practiced in order to eliminate the risk.

Key words: Spontaneous Bacterial Peritonitis, Cirrhosis, Ascites, MELD.

Introduction

Cirrhosis of liver is a common disease seen in clinical practice. The terminal event in these patients is generally development of hepatic encephalopathy. One of the predisposing factors which are responsible for hepatic encephalopathy and subsequent deterioration in patient with cirrhosis is appearance of spontaneous bacterial peritonitis (SBP).¹ Spontaneous bacterial peritonitis is characterized by abrupt onset of fever, chills abdominal pain with tender abdomen on palpation. This syndrome which first appeared to be a disorder of alcoholic cirrhosis has also been reported in chronic active hepatitis, Nephrotic syndrome, cardiac cirrhosis and also in malignant ascites.²

The full blown syndrome may not be present and any one

or all of its components may be missing. It may present as fever of unknown origin or as hypothermia. Sometimes it emerges as cause of encephalopathy of unknown origin.³

Unexplained fever, hypothermia, hypotension, encephalopathy, abdominal pain or simply unexplained clinical deterioration should therefore be considered as indication for diagnostic paracentesis in cirrhosis for the diagnosis of SBP.

SBP being the major complication of cirrhosis with ascites, all cirrhotic should be screened for SBP with ascitic fluid analysis and possible culture of ascitic fluid^{4,5}. These

patients are treated with antibiotics aggressively as they have poor prognosis and high mortality if not treated early.

The study is conducted to evaluate the clinical spectrum and demographic profile of patient admitted in Department Of Gastroenterology with spontaneous bacterial peritonitis.

Methods

The study was carried out on patients admitted in IOM TUTH, Department of Gastroenterology. Patients admitted with hepatic cirrhosis were studied during the period from November 2010 to October 2012. Total of 51 patients of age group >18 years were studied thoroughly with regards to both clinical examination and laboratory parameters.

SBP was diagnosed by following criteria and then included in the study. An ascitic fluid PMN cell count greater than 250cells/mm³ OR an ascitic fluid cell count greater than 500cells/mm³ with neutrophilic predominance.

All patient underwent paracentesis within 24 hrs of admission. About 20 ml of ascitic fluid was tapped in each patient with aseptic precaution.

95% confidence interval has been used to find the significance of study characteristics. Student t test (two tailed, independent) has been used to find the significance of study parameter between the deceased cohort and the survivor cohort. Data was analyzed using SPSS 16.0 and Microsoft word and Microsoft Excel have been used to generate graphs and tables.

Results

A total of 51 patients of age group >18 years, diagnosed as SBP were studied thoroughly with regards to both laboratory parameters and clinical examination as shown in table 1. SBP is seen predominantly in male population (69%) compared to 31% in female. Majority of patients (86%) were alcoholics while 4% were chronic Hepatitis B related cirrhosis. In 10% of patients, etiology could not be ascertained and were considered cryptogenic.

All patients had free fluid in abdomen. About 90% of patient having ascites ad pedal edema too, indicating associated hypoalbuminemia. In around 64% of cases, jaundice was present at the time of admission itself, indicating hepatocellular failure. 56% of cases had fever and 54% had abdominal pain at the time of presentation, while 44% of cases were brought in with history of altered sensorium ranging from irritability to restlessness and from drowsiness to deep coma indicating that many patient of SBP can present with just worsening of sensorium rather than fever or abdominal pain. Fever was in general, low

grade. Abdominal pain was mainly in flanks or in epi-gastric region. 40% had bleeding manifestation in the form of hematemesis or melena, implying that many of the patient were in late stages of cirrhosis and had esophageal varices though in few patients, cause of bleeding was portal gastropathy and alcoholic gastritis. 32% had history of decreased urine output. Outcome was grave with 22% of mortality. Most of the patient died due to SBP and hepatic encephalopathy. Mean ascitic fluid PMN cell count at the tie of diagnosis was 1300/mm³ in patients of SBP who survived, while it was 3100/mm³ in patient who had fatal outcome. Thus, a high ascitic fluid PMN count at the time of diagnosis was associated with poor prognosis.

Table 1: Comparison of clinical features between survivor and deceased patient *

Variables	Survivor Cohort	Deceased Cohort	Total
Demographics	(n=40)	(n=11)	(n=51)
Age (mean ± SD)	54.2 (± 10.9)	53.5 (± 11.1)	54.1 (± 10.8)
Males	25 (62%)	10 (91%)	35 (69%)
Clinical Findings			
Abdominal Distension	40 (100%)	11 (100%)	51 (100%)
History of Alcohol	35 (88%)	10 (91%)	45 (88%)
Jaundice	31 (78%)	6 (54%)	37 (72%)
Icterus	26 (65%)	6 (54%)	32 (63%)
Abdominal Pain	23 (58%)	6 (54%)	29 (57%)
Abdominal Tenderness	23 (58%)	6 (54%)	29 (57%)
Fever	21 (52%)	7 (64%)	28 (55%)
History of GI Bleed	17 (42%)	4 (36%)	21 (41%)
Altered Sensorium	16 (40%)	5 (46%)	21 (41%)
Asterixis	16 (40%)	5 (46%)	21 (41%)
Oliguria	13 (32%)	6 (54%)	19 (37%)
Splenomegaly	10 (25%)	2 (18%)	12 (24%)
Hepatomegaly	2 (5%)	0 (0%)	2 (4%)

Discussion

This study was carried out on patients admitted to IOM TUTH, department of Gastroenterology. Patients admitted for complications of hepatic cirrhosis were studied during the period from November 2010 to October 2012. USG

was used to diagnose cirrhosis of liver and ascites giving special reference to caudate lobe, portal vein and spleen. All patient who were either confirmed of hepatic cirrhosis by liver biopsy or ultra sonogram were screened for SBP.

The common mode of presentation of SBP in our study was jaundice, associated with fever, abdominal pain and abdominal tenderness. In present series 64% of cases had jaundice at presentation indicating decompensation. This is consistent with study done by Jose Pinto Correrria, where it was 81% while 54.5% of patient had jaundice in study by Filik L, Unal S series³. 56% of cases had fever and 54% had abdominal pain at the time of presentation indicating that many patients of SBP may not have fever or abdominal pain and can just present with hepatic encephalopathy. So all patients presenting with encephalopathy without an obvious precipitating factor must be screened for SBP. The incidence of abdominal pain in our study was comparable to other studies. The mortality of 22% seen in our study is very high, maybe because of referral bias as IOM TUTH is the tertiary referral center. In some earlier study by Jose P (1975) and Hoefs JC (1984) the mortality rate was very high. Both these study had high mortality, probably due to non-availability of higher antibiotics during that period.^{6,7} Now, with advent of higher antibiotics like cephalosporins and quinolones the mortality has decreased.^{8,9,10} Also mortality may have been decreased due to increased awareness of SBP and more aggressive treatment.^{10,11}

The study had many limitations, the sample size was very small, and also it was a cross-sectional observational analysis. Follow up data, after tracking patient longitudinally post discharge would have given more information on survival time and course and progression of disease. The study also did not exclude patient who were on proton pump inhibitors (PPI), which can increase the incidence of SBP.¹² These confounding variables may have small impact on the results.

Conclusions

All patients of cirrhosis of liver with ascites should be screened for SBP as it presents with minimum signs and symptoms in some cases. A high degree of clinical suspicion must be exercised in order to diagnose this clinical entity. Once SBP is diagnosed, ascitic fluid cell count is helpful in predicting diagnosis and can be used to monitor response to treatment. SBP carries a very high risk of mortality and should be treated aggressively.

Conflict of interest

The authors declare that there is no conflict of interest associated with the study.

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