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Research Article

Study of clinical features and outcome in cases of spontaneous bacterial peritonitis

Tuba Zia, Nadia Naoreen and Bushra Saleem

[1]Woman Medical Officer,
T.H.Q Hospital KotAddu
[2]Woman Medical Officer,
RHC Jaman Shah Layyah
[3]Woman Medical Officer,
Multan Institute of Kidney Diseases Indus Hospital, Multan

ABSTRACT

Objectives: To study the clinical features and outcome in cases of spontaneous bacterial peritonitis

Material and methods: This cross sectional was conducted at T.H.Q Hospital KotAddu from February 2017 to August 2017.

Total 50 patients diagnosed as cirrhosis of liver with SBP were studied. SBP was diagnosed based on ascitic fluid cell PMN count of > 250. Serial ascitic fluid cell count was done at 24 hours, 48 hours, and at 5 days.

Results - Male:Female ratio in SBP patients was 2:1. Mean age at the time of diagnosis was 50.96 +/- 11.48 years (28 – 74 years). Common clinical features were - jaundice(64 %), fever(56 %), abdomen pain(54 %), altered sensorium(44 %), haemetemesis or malena (40 %) and oliguria(32 %), icterus (74 %), asterixis (46 %), hypotension (24 %), abdominal tenderness (60%). Outcome was grave with 42 % mortality.

Conclusion: Results of this study showed that male patients were more victim of SBP as compared to female patients. Most of the patients reported in 6th decade of life. Mortality is high in present study.

Keywords: SBP, serial ascitic fluid cell count, cirrhosis

INTRODUCTION

Cirrhosis of Liver is the common hepatological disorder seen in clinical practice. The terminal event in these patients is Hepatic encephalopathy.[1] One of the predisposing factors which are responsible for hepatic encephalopathy and subsequent deterioration in the condition of cirrhosis patient is appearance of spontaneous bacterial peritonitis (SBP).[2]

Spontaneous bacterial peritonitis is characterized by abrupt onset of fever, chills abdominal pain with rebound tenderness over abdomen, absent bowel sounds and leuco- cytosis. Paracentesis reveals cloudy ascitic fluid with many WBCs predominantly,polymorphonuclear cells (PMN).[3]

A single organism usually, enteric group is cultured from the ascitic fluid in majority of cases.[4]The same organism is often recovered from blood culture. Most of the patients die, due to infection per se, others of its complications and

some from other hazards of cirrhosis such as bleeding varices or thehepatorenal syndrome.[5]

This syndrome which first appeared to be a disorder of alcoholic cirrhosis, has also been reported in postnecrotic cirrhosis[6], chronic active hepatitis[7], Nephrotic syndrome[8], Cardiac cirrhosis[9], malignant ascites and primary biliary cirrhosis[10].

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 encephalopathy of uncertain cause.[10]

So unexplained fever, hypothermia, hypotension, encephalopathy, abdominal pain or simply unexplained clinical deterioration should be considered indications for diagnostic paracentesis in cirrhotics for the diagnosis of SBP[11-12]. SBP being the problem in cirrhosis with ascites, all cirrhotics should be screened for SBP with atleastascitic fluid PMN cell count and culture of ascitic fluid. These patients are treated with antibiotics aggressively as they have poor prognosis and high mortality if not treated early.[12]

The study done to evaluate the importance of serial ascitic fluid PMN cell count showed that serial ascitic fluid cell count can be used to monitor treatment and in determining the duration of antimicrobial therapy in SBP[13].

MATERIALS AND METHODS

This cross sectional was conducted at T.H.Q Hospital KotAddu from February 2017 to August 2017.

Total 50 patients admitted for liver disorder and/ or its complications of hepatic cirrhosis were studied. All patients who were either confirmed of hepatic cirrhosis by liver biopsy or ultra sound were screened for SBP.

SBP diagnosed by following criteria were included in the study.

- An ascitic fluid PMN cell count greater than 250 cells/ mm^3.

OR

- An ascitic fluid cell count greater than 500 cells/ mm^3 with >50% PMN cells.

AND

- An absence of a primary source of infection.

In this study for ultra sound, 3.5 MW Mechanical Probe USG machine was used to diagnose cirrhosis of liver and ascites giving special reference to caudate lobe, portal vein, and spleen. VIM Silverman cutting needle was used to perform liver biopsy, if required. Proper importance was given particularly eliciting the present and past history of tuberculosis and other genitourinary infection. Careful history was taken to rule out other causes of fever and deterioration in the clinical status.

Ascitic fluid for analysis was aspirated as soon as the patients were admitted, before giving any antibiotics and before subjecting the patients for invasive procedures like liver biopsy, endoscopy or therapeutic aspiration.

All patients underwent paracentesis within 24 hours of admission. About 40 ml of ascitic fluid was tapped in each patient with asceptic precautions. Blood contaminated or bloody ascitic fluids were discarded from the study.

1. 10ml of ascitic fluid was immediately inoculated in to blood culture bottles at the bed side for proper transport to microbiological laboratory.
2. 10ml of ascitic fluid was sent to the laboratory in sterile test tubes for conventional culture.
3. 20ml of ascitic fluid was sent for biochemical and cytological examination.

Ascitic fluid of all patients was analyzed for the type of cells and cell count. Ascitic fluid was cultured to know the presence of pathogenic organisms. Due to lack of facilities, culture for anaerobes, fungi and viruses in the ascitic fluid could not be done in the present study.

Collected data was entered in SPSS version 20 and analyzed. Mean and SD was calculated for numerical data and frequencies were calculated for categorical data.

RESULTS

Total 50 patients of age group >12 years, diagnosed as SBP were studied thoroughly with

regards to both history and clinical examination. The observations of study were as follows:

SBP is seen predominantly in male population i.e. 33 cases (66 %) and only 17 (34%) females. This was mainly because of the similar sex distribution in patients of cirrhosis. (Fig. 1)

Age distribution ranged widely with youngest patient being 28 years and oldest patient of 74 years. Cirrhosis and SBP was seen predominantly in older age group with 66% of patients >50 yrs. Mean age was 51 years. (Table 1)

Majority of patients (86%) were alcoholics while 4% were HBsAG positive. In10 % of patient's etiology could not be determined and may be cryptogenic or nutritional. (Table 2)

All patients had free fluid in abdomen which was moderate to massive in extent. The accumulation of fluid was gradual in onset, rapidly progressive in 28 of cases. About 90 % of patients having ascites had pedal oedema indicating associated hypoalbuminaemia. Most of the patients were in late stages of cirrhosis. In 64 % of cases jaundice was present at the time of admission itself, indicating hepatocellular failure. Total 56 % of cases had fever and 54 % had abdominal pain at the time of presentation, while 44 % of cases were brought with history of altered sensorium ranging from irritability to restlessness and from drowsiness to deep coma, indicating that many patients 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 epigastric region. Total 40 % had bleeding manifestations in form of hemetemesis or malena indicating that many of patients were in late stage of cirrhosis and had esophageal varices though in a few patients cause of bleeding was portal gastropathy and alcoholic gastritis. 32 % had h/o decreased urine output. (TABLE 3)

All the patients studied in this series had moderate to severe ascites, 40 % of cases had tense ascites while in rest cases shifting dullness could be easily elicited. Veins over abdomen were distended and engorged in 80 % of cases. Jaundice was seen in 74 % of cases. Bilirubin level ranged from 1 – 13.2 mg/dl. Asterixis was seen in 46 % of cases. All these patients were in altered sensorium. Rebound abdominal tenderness characteristics of peritonitis was seen only in 60 % of cases. Splenomegaly was clinically appreciable in only 20 % of cases. In the remaining cases splenomegaly could not be made out clinically due to tense ascites. However USG revealed splenomegaly in 84 % of cases. (TABLE 4)

Outcome was grave with 42 % of mortality. Most of patients died due to SBP and hepatic encephalopathy, while some of the patients died due to hemetemesis, hepatorenal syndrome and other complications of cirrhosis. (Table 5)

Fig. 1: Sex Distribution of Patients Studied

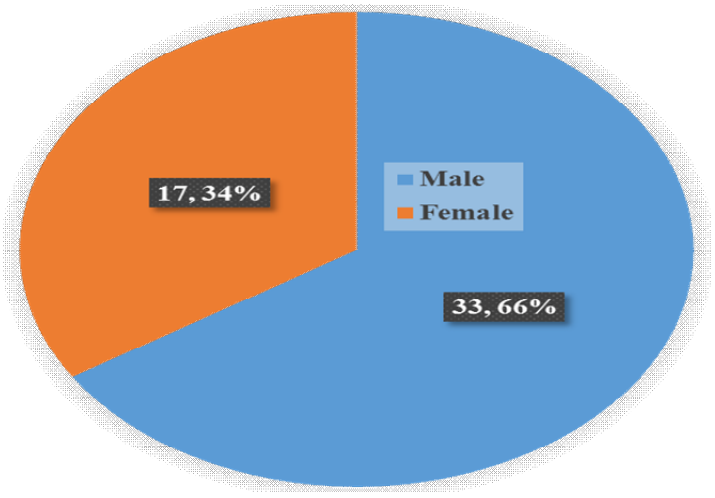

Table 1: Age Distribution of Patients Studied

Age in years	Number	%
21-30	3	6.0
31-40	7	14.0
41-50	11	22.0
51-60	17	34.0
61-70	9	18.0
>70	7	14.0
Total	50	100.0
Mean ± SD	50.96±11.48	

Table 2: Etiology of Cirrhosis

Etiology	Number	Percentage
Alcoholic	43	86
HBsAG	2	4
Others	5	10

Table 3: Symptoms Distribution of Patients

Symptoms	Number (n=50)	%	90%CI
Abdomen distension	50	100.0	94.89-100.00
Jaundice	32	64	52.38-74.18
Fever	28	56	44.44-66.94
Abdomen pain	27	54	42.00-65.09
Altered sensorium	22	44	33.06-65.66
Haemetemesis , malena	20	40	29.40-51.62
Oliguria	16	32	22.31-42.53

Table 4: Signs Distribution of Patients

Signs	No. of cases	Percentage
Fever	28	56
Icterus	37	74
Asterixis	23	46
Hypotension	12	24
Petechiae, purpura, ecchymosis	17	34
Abdominal tenderness	30	60
Ascites	50	100
Hepatomegaly	1	2
Splenomegaly	10	20

Table 5: Outcome in SBP Patients

Outcome	Number (n=50)	%
Survived	29	58.0
Death	21	42.0

DISCUSSION

This study was carried out on patients admitted to THQ Hospital KotAddu. Patients admitted for liver disorder and/ or its complications of hepatic cirrhosis were studied during the period. USG machine was used to diagnose cirrhosis of liver

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

SBP was seen predominantly in male population i.e. 33 cases (66 %) and only 17 (34%) females. SBP was seen in predominantly older age group, with most patients in 6th decade. Mean age at the time of diagnosis was 51 years. Mean age at the time of diagnosis in Filik L, Unal S[14] was 49.9 while 39 in N Rawat, MK Bhatnagar[15-16] series and 44 in Mihas AA[17] study. Mean age in our series of cases was slightly higher then in other studies. While distribution of males and females was almost similar in all the studies.

The common mode of presentation of SBP in our series was jaundice associated with fever, abdominal pain and abdominal tenderness. In present series 74 % of cases had jaundice at presentation while it was 81% in Jose Pinto Correira series and 54.5% in Filik l, Unal S[18] series indicating decompensated cirrhosis. Jaundice was the commonest presenting complaint in all the series of patients including our patients. Except for the DN Amarapurkar[19] study (28%) the incidence of hepatic encephalopathy was very high ranging from 46 % in Mihas AA[17] study, 48 % in present study, 50.7 % in Filik L, Unal S[18] and as high as 71 % in Jose Pinto Correira, Conn HO[6] study indicating that patients were in advanced stage of cirrhosis.

The incidence of hepatic encephalopathy was very high in Jose Pinto Correira, Conn HO[10] study, probably due to unavailability of effective drugs. One of the reasons could also be unawareness of the complications like SBP at that time (1975), and lack of regular screening for SBP in all patients of ascites.

Only 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 and abdominal tenderness in our study was comparable to other studies.

In Jose P[10] (1975) series the mortality was 96 % while in Hoefs JC[20] (1984) the mortality was 78 %. Both these study had high mortality due to non availability of higher antibiotics during that period. Now with advent of higher antibiotics like cephalosporins and quonolones the mortality has decreased. Also mortality may have been decreased due to increased awareness of SBP and more aggressive treatment.

The mortality in DN Amrapurkar[19] and Filik L, Unal S[18] series was 43 % and 37.4% which is similar to the mortality in present series (42%). Still the mortality of 42 % seen in our study is very high, as these patients present in advanced stage of cirrhosis.

CONCLUSION

Results of this study showed that male patients were more victim of SBP as compared to female patients. Most of the patients reported in 6th decade of life. Mortality is high in present study.

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