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THE ASSESSMENT OF SPONTANEOUS BACTERIAL PERITONITIS (SBP) INCIDENCE IN CIRRHOTIC ASCITES PATIENTS WITH RESPECT TO AGE, GENDER & SBP MODE

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Abstract:

Objective: *Our aim of this research was to investigate the incidence of spontaneous bacterial peritonitis (SBP) in cirrhotic ascites patients.*

Methods: *We completed this particular research on a total of one hundred cirrhotic ascites patients at Bahawal Victoria Hospital Bahawalpur from March to December 2017. History and clinical assessment helped in the study of SBP. The diagnosis was possible through cell PMN count of ascitic fluid (more than 250 / mm^3) OR. There was an absence of primary infection source and positive culturing of ascitic fluid.*

Results: *We reported Cirrhosis after Alcoholism with dominance in the male participants as only 14 females reported against 86 males with a male to female respective proportion 86% and 14%. The only male population had the incidence of SBP. The mean age of patients and SBP diagnosed patients was respectively 49.10 years and 50.58 years. In the total eighteen positive cases of SBP, fourteen had a count of PMN above 250 / mm^3. E. Coli and positive staph aureus were respectively in three and one participants. During the SBP diagnosis research vomiting and fever was among 66% of the SBP diagnosed cases. Every case of abdomen pain and altered sensorium was SBP positive. No fever was in about 2.5% SBP positive cases. During the investigations of SBP associated clinical symptoms, every patient had abdominal tenderness. While making a comparison of positive Child-Pugh grading with an increase in the severity SBP also increased and there were 13 cases out of 18 with a proportion of (85.71%) who had an association with Child-Pugh Class – C; whereas, in Class – B only five cases with a proportion of (7.8%). About forty-four percent cases had a level of Ascitic Fluid Protein under (1 g/dl). The most common type of SBP was CNNA as it was available in fifteen cases (83.3 %).*

Conclusion: *About eighteen percent of cirrhotic ascites patients had the infection of ascitic fluid which was a possible reason for SBP incidence. All the patients who presented general condition deterioration were commonly due to higher liver function derangement as the chances of SBP also increase. Level of Ascitic Protein less than (1 g/dl) in the patients may likely present the incidence of SBP than the patients having AF protein more than (1 g/dl). Cirrhosis severity increases with an increased development of SBP and also with the judged cirrhotic severity with Child-Pugh Class.*

Keyword: *Spontaneous Bacterial Peritonitis (SBP), Cirrhosis, Pain, Abdominal Tenderness, Fever, Child-Pugh, Poly Morpho Nuclear Cells (PMN cells) and Ascitic Protein.*

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INTRODUCTION:

Clinical practice reports liver cirrhosis as the most repeated hepatological disorder. Portal hypertension causes ascites which is a clinical property of cirrhosis. SBP is the most important factor involved in cirrhosis deteriorating state and hepatic encephalopathy. A hepatic encephalopathy is a terminal event in such cases. SBP is an abrupt fever onset with other signs like abdominal pain, chills and liver tenderness. Most cases also present an absence of leukocytosis and bowel sounds.

Paracentesis discloses ascitic cloudy fluid having a predominance of WBCs (PMN cells). Majority of the patients usually have only one organism with a culturing of ascitic fluid [1]. Blood culture also presents the same culturing. Numerous patients fail to survive and die because of the infection, related complications and numerous other cirrhosis hazards (hepatorenal syndrome and bleeding varies). The appearance of the syndrome was firstly in the alcoholic cirrhosis disorders and also in the postnecrotic cirrhosis, Nephrotic syndrome, chronic active hepatitis, malignant ascites, Cardiac cirrhosis and primary Biliary cirrhosis [2 – 6]. There is a possibility of absence of few or one component instead of the full-blown syndrome. There may be a presentation of unknown origin fever or hypothermia. In a few cases, it is in the shape of encephalopathy without any certainty of the cause [7, 8]. So, in the presence of an unexplained hypothermia, fever, encephalopathy, hypotension and abdominal pain we consider the unexplained clinical deterioration as a diagnostic marker to diagnose SBP in cirrhotic patients [7 – 12]. The cause of SBP is enteric organism group which is in about seventy-five percent and remaining are non-enteric organism group with an inclusion of aerobes [13, 14].

There is a need for screening for all SBP because of cirrhosis with ascites and also an analysis of the ascitic fluid, ascitic fluid culture and PMN cell count. An aggressive management is mandatory for such patients in order to avoid mortality.

Our aim of this research was to investigate the incidence of spontaneous bacterial peritonitis (SBP) in cirrhotic ascites patients.

MATERIALS AND METHODS:

We completed this particular research on a total of one hundred cirrhotic ascites patients at Bahawal Victoria Hospital Bahawalpur from March to December 2017. History and clinical assessment helped in the study of SBP. The diagnosis was possible through cell PMN count of ascitic fluid (> 250 / mm^3) OR. There was an absence of primary infection source and positive culturing of ascitic fluid. We included confirming cases of hepatic cirrhosis presenting ascites as observed through ultrasonography screening of SBP.

In order to diagnose cirrhosis, various involved variables are liver size, liver surface, caudate/right lobe ratio, portal vein diameter, echogenicity, spleen size and mean flow velocity of the portal vein. Researcher studies one hundred cases throughout the course of research for clinical assessment and history. We diagnosed SBP through ascitic fluid neutrophil count (above 250 cells / mm^3) or with a positive culture of ascitic fluid. Another possible way is the absence of the primary infection source in the abdomen. Liver cirrhosis diagnosed started before any intake of antibiotics. Every patient experienced in the timeframe of first twenty-four hours after hospitalization. Samples collection was such that every patient given ascitic fluid (30 ml) keeping in view the aseptic precautions. Rapid inoculation and microbiological testing continued on (10 ml) ascitic fluid. Laboratory staff used another (10 ml) fluid for conventional culturing and remaining (10 ml) for the cytological and biochemical assessment.

Clinical staff assessed ascitic fluid for cells types and count. Every patient received an assessment of Gram Staining and ascitic fluid culturing to confirm the pathogenic organism's presence. Detailed clinical outcomes are present in tabular data.

RESULTS:

We reported Cirrhosis after Alcoholism with a dominance in the male participants as only 14 females reported against 86 males with a male to female respective proportion 86% and 14% (Figure – I). The only male population had the incidence of SBP. The mean age of patients and SBP diagnosed patients was respectively 49.10 years and 50.58 years (Table – I). In the total eighteen positive cases of SBP, fourteen had a count of PMN above 250 / mm^3. E. Coli and positive staph aureus were respectively in three and one participants. During the SBP diagnosis research vomiting and fever was among 66% of the SBP diagnosed cases (Table – II). Every case of abdomen pain and altered sensorium was SBP positive. No sign of fever was in about 2.5% SBP positive cases (Table – III). During the investigations of SBP associated clinical symptoms, every patient had abdominal tenderness. While making a comparison of positive Child-Pugh grading with an increase in the severity SBP also increased and there were 13 cases out of 18 with a proportion of (85.71%) who had an association with Child-Pugh

Class – C; whereas, in Class – B only five cases with a proportion of (7.8%) (Table – IV). About forty-four percent cases had a level of Ascitic Fluid Protein under (1 g/dl). The most common type of SBP was CNNA as it was available in fifteen cases (83.3 %). Detailed outcomes analysis is as under:

Figure – I: Gender Distribution

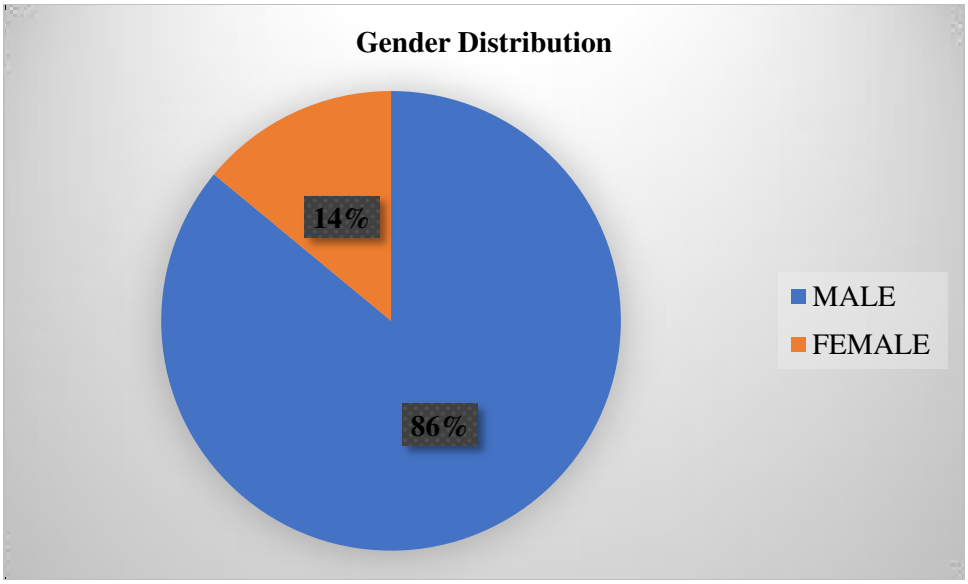


Table – I: Distribution of Age

Age	Number
20 – 29 Years	1
30 – 39 Years	25
40 – 49 Years	28
50 – 59 Years	25
60 – 69 Years	19
70 – 79 Years	2

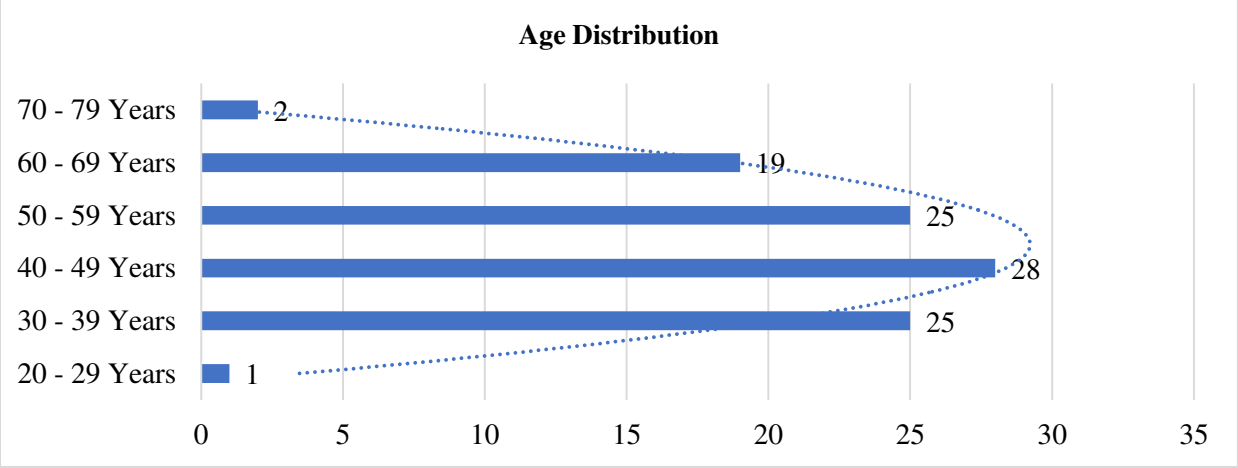


Table – II: SBP Incidence

Total Patients	SBP Positive	PMN Positive > 250/mm^3	Culture Positive	Males	Females
100	18	14	4	18	0

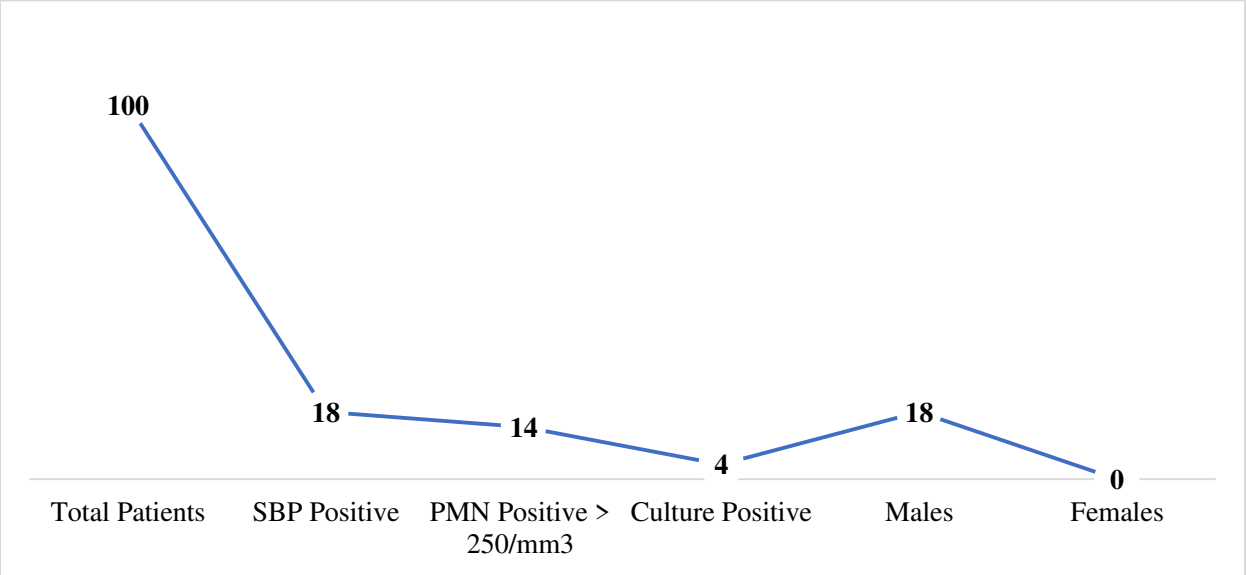


Table – III: SBP Presentation Mode

Presentation Mode	Number	SBP Positive	PMN > 250	Positive Culture	Percentage
Fever	24	16	14	2	60.00
Vomiting	6	4	3	1	64.00
Altered Sensorium	3	3	2	1	100.00
Without Fever	76	2	0	2	2.50

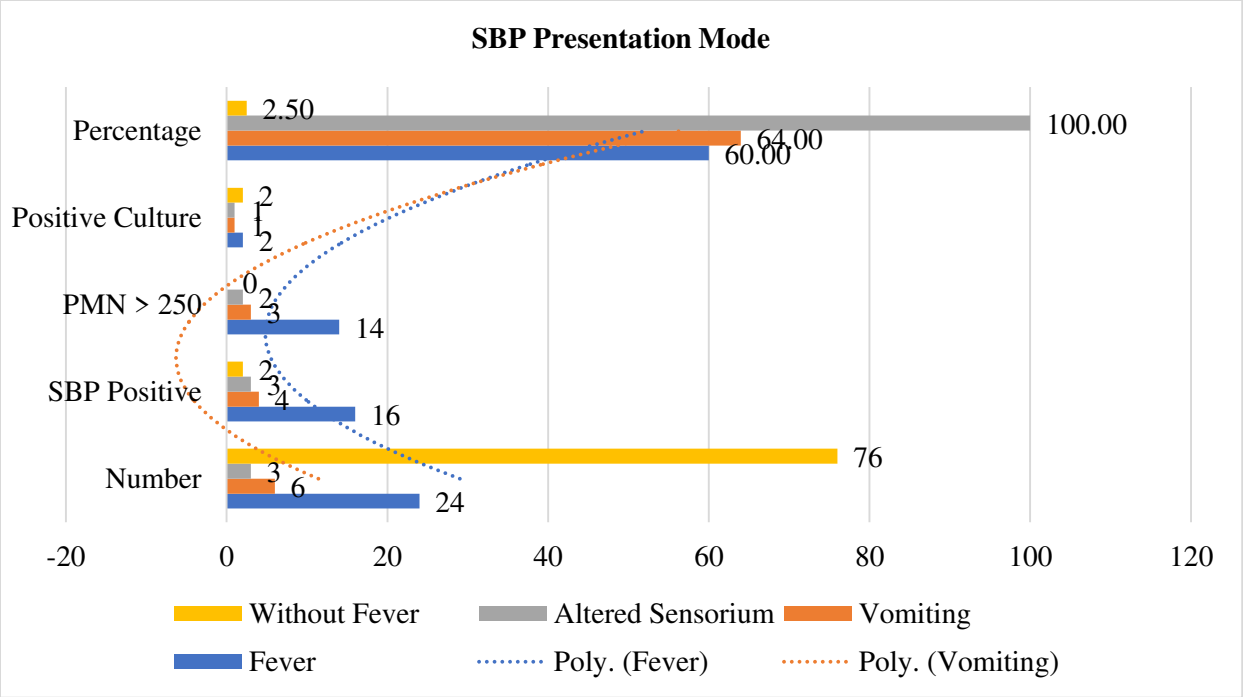
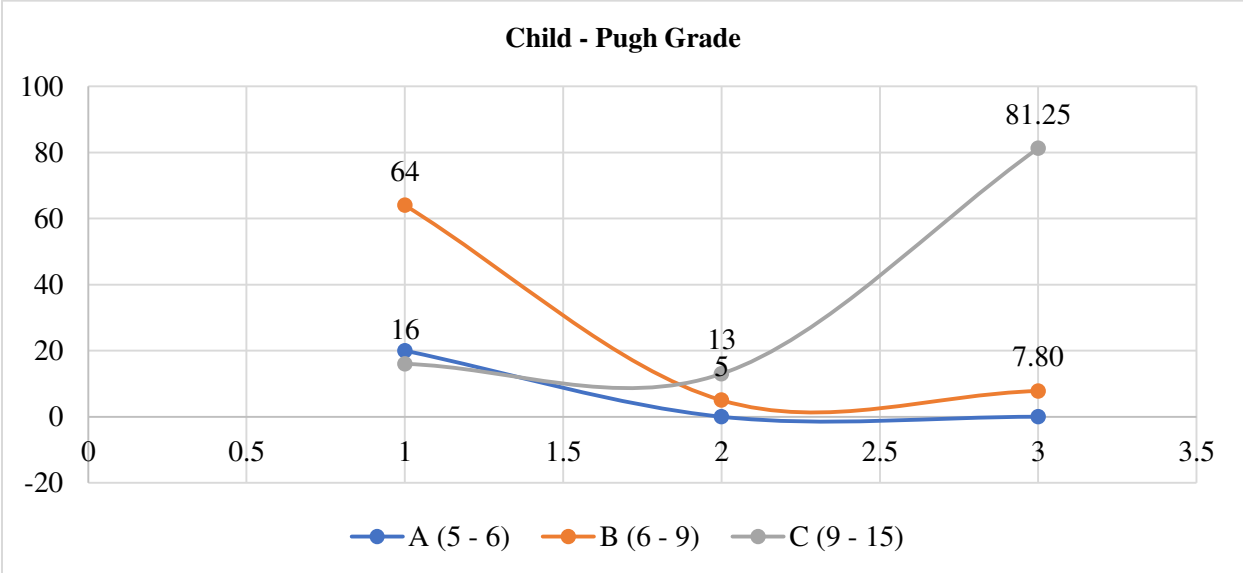


Table – IV: SBP and Child-Pugh Classification

Child – Pugh Grade	Number	Positive Cases	Percentage
A (5 – 6)	20	0	0.00
B (6 – 9)	64	5	7.80
C (9 – 15)	16	13	81.25



DISCUSSION:

About 18% of Ascitic patients were positive for SBP in total research sample; furthermore, fourteen patients had a PMN cell count above (250 / mm^3) with a negative organism culturing. There were four patients of isolated E. Coli and positive culture with the occurrence of Staph organism in the seventy-two hours culturing process. The mean age of patients and SBP diagnosed patients was respectively 49.10 years and 50.58 years. Older patients had an increased incidence of SBP especially in the age from 50 – 60 years. Patients had a mean age during diagnosis as (50.58) years. FilikL reported a mean age at the time of diagnosis as (49.9) years [17]. Rawat and Mihas reported respective mean ages as 39 and 44 years respectively [13, 18].

Majority of the patients had common signs of fever, altered sensorium, vomiting and abdominal tenderness as modes of SBP presentation. Fever and vomiting were respectively in twenty-four and six patients who were SBP positive. Three cases of an altered sensorium were SBP positive. Mihas and Toussaint reported fever and abdominal pain respectively as (69%) & (59%); whereas, hepatic encephalopathy, diarrhoea and abdominal tenderness as (54%), (32%) and (49%) [10].

We reported the SBP incidence prevalence as eighteen percent; whereas, CNNA in fourteen cases out of these eighteen cases (77.7%) and MNB in four cases (22.3%). Numerous other studies also report regular paracentesis with SBP prevalence from (10% – 27%) [19 – 20]. Andreu and Amrapurkar reported the same respectively 28% and 22.5% [21, 22]. Jarcuska reported SBP prevalence in 27 cirrhotic cases (16.0%). Romney reported ten MNB and no cases of CNNA in his research [23]. In our research Child-Pugh (Class – C) class included 13 cases (85.71%) and Class – B included five cases (7.8%); whereas, Amrapurkar reported (6 / 7) SBP cases those related to Child-Pugh (Class – C) [24]. It also confirms the increased incidence in the severe cases of liver disease.

CONCLUSION:

An SBP screening is mandatory for the Cirrhotic cases presenting SBP signs and symptoms followed by and antibiotic therapy in order to eradicate the chance of possible morality. SBP also predisposes the liver function gross derangement. Therefore, it is better to restrict the progression of cirrhotic which leads to hepato-cellar failure instead of managing patients after SBP diagnosis.

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