



CODEN [USA]: IAJPBB

ISSN : 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4321328>Available online at: <http://www.iajps.com>

Research Article

**A CROSS SECTIONAL STUDY ON SPONTANEOUS  
BACTERIAL PERITONITIS IN LIVER CIRRHOSIS****<sup>1</sup>Dr Aurangzeb Khan, <sup>2</sup>Dr Saba Iqbal, <sup>3</sup>Dr Munaza Khattak**<sup>1</sup>Swat Medical College, Marghzar Road Saidu, Swat<sup>2</sup>Gujranwala Medical College, Gujranwala<sup>3</sup>Peshawar Medical College, Warsak Road Peshawar**Article Received:** October 2020    **Accepted:** November 2020    **Published:** December 2020**Abstract:**

**Objective:** To determine the frequency of spontaneous bacterial peritonitis (SBP) in patients with liver cirrhosis.

**Material and Methods:** This was a cross sectional study, carried out at Saidu Teaching Hospital, Swat and the duration of this study was from January 2020 to May 2020. In this study the patients of liver cirrhosis of either gender and with age range of 20 to 70 years were included. The diagnosis of liver cirrhosis was made on clinical examination and on USG abdomen revealing coarse echo texture with or without splenomegaly. The patients with alcoholism and hepatocellular carcinoma were rule out. Spontaneous bacterial peritonitis was labelled when Serum ascitic albumin gradient >1.1, total leukocyte count >500/ml and neutrophil count > 250/ml.

**Results:** In this study there were 100 patients of liver cirrhosis and out of these 64 (64%) were males and 36 (36%) females. The mean age of the patients was 51.34±9.62 years. There were 67 (67%) in Child Pugh class C. Spontaneous bacterial peritonitis was seen in 32 (32%) of the patients. There was no significant difference in terms of gender and age with p values of 0.97 and 0.95 respectively. However, spontaneous bacterial peritonitis was significantly high in patients that had child Pugh class C where it was seen in 25 (37.21%) of patients as compared to 7 (21.21%) of patients in class B with p value of 0.04.

**Conclusion:** Spontaneous bacterial peritonitis is seen in almost every 3<sup>rd</sup> patient of liver cirrhosis and is seen significantly high in patients that had Child Pugh class C.

**KEYWORDS:** Splenomegaly, Liver Cirrhosis, Spontaneous Bacterial Peritonitis, Neutrophil, Carcinoma

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Please cite this article in press Aurangzeb Khan et al, A Cross Sectional Study On Spontaneous Bacterial Peritonitis In Liver Cirrhosis., Indo Am. J. P. Sci, 2020; 07[12].

**INTRODUCTION:**

Liver disorders are the most common disorders in the gastroenterology and medical clinics and among them hepatitis is the salient one due to increase in number of hepatitis B and C infections. Acute inflammation led to ongoing injury and then ultimately fibrosis of the liver parenchyma leading to cirrhosis [1]. Liver cirrhosis is can result in various complications and portal hypertension leading to ascites is a highly prevalent one. Ascites need to be drained both for diagnostic and therapeutic purposes as it can only be transudative needing no aggressive treatment or can be exudative augmenting intensive diagnostic workup [2,3]. Both needs recurrent aspirations and endanger the spread to infection in the peritoneal cavity. Spontaneous bacterial peritonitis (SBP) is the development of peritonitis i.e. infection in the abdominal cavity, despite the absence of an obvious source for the infection. Organism isolation is not common but E coli is the most common isolated organism [4]. It can be fatal and need urgent aggressive treatment. Saqib A et al in their study found spontaneous bacterial peritonitis in 31% of the patients having liver cirrhosis [5]. The other studies have shown that this is associated with high mortality rate.

**METHODOLOGY:**

The study was conducted in Saidu Teaching Hospital, Swat and the duration of this study was from January 2020 to May 2020. In this study the patients of liver cirrhosis of either gender and with age range of 20 to 70 years were

included. The diagnosis of liver cirrhosis was made on clinical examination and on USG abdomen revealing coarse echo texture with or without splenomegaly. Child Pugh classes were documented. The patients with alcoholism and hepatocellular carcinoma were rule out. Spontaneous bacterial peritonitis was labelled when Serum ascitic albumin gradient  $>1.1$ , leukocyte count  $>500/\text{ml}$  and neutrophil count  $>250/\text{ml}$ . The data was stratified by using SPSS-version 22. The effect modifiers were controlled and post stratification chi square test was used and p value  $<0.05$  was considered as significant.

**RESULTS:**

In this study there were total 100 patients of liver cirrhosis and out of these 64 (64%) were males and 36 (36%) females. The mean age of the patients was  $51.34 \pm 9.62$  years. There were 67 (67%) in Child Pugh class C. Spontaneous bacterial peritonitis was seen in 32 (32%) of the patients. There was no significant difference in terms of gender and age with p values of 0.97 and 0.95 respectively as shown in table I & II. However, spontaneous bacterial peritonitis was significantly high in patients that had child Pugh class C where it was seen in 25 (37.21%) of patients as compared to 7 (21.21%) of patients in class B with p value of 0.04 as shown in table III.

**Table I; SBP vs Gender**

Gender	SBP		Total	p value
	Yes	No		
Male	21 (32.81%)	43 (67.19%)	64 (100%)	0.97
Female	11 (30.55%)	25 (69.45%)	36 (100%)	
<b>Total</b>	<b>32 (32%)</b>	<b>68 (68%)</b>	<b>100 (100%)</b>	

**Table II; SBP vs Age Groups**

Age groups	SBP		Total	p value
	Yes	No		
20-50	24 (31.57%)	52 (68.43%)	76 (100%)	0.95
>50	08 (33.33%)	16 (66.67%)	24 (100%)	
<b>Total</b>	<b>32 (32%)</b>	<b>68 (68%)</b>	<b>100 (100%)</b>	

**Table III; SBP vs Child Pugh Class**

Child Pugh class	SBP		Total	p value
	Yes	No		
<b>B</b>	7 (21.21%)	26 (78.79%)	33 (100%)	0.04
<b>C</b>	25 (37.21%)	42 (62.79%)	67 (100%)	
<b>Total</b>	<b>32 (32%)</b>	<b>68 (68%)</b>	<b>100 (100%)</b>	

**DISCUSSION:**

Liver cirrhosis is an end stage fibro sing disease and can result in wide range of physiological and mechanical complications [6]. Some complications are direct and the others are associated with other conditions like Spontaneous bacterial peritonitis is seen in patients having ascites and those that undergo recurrent therapeutic and diagnostic aspirations [7,8,9]. In this study spontaneous bacterial peritonitis was observed in 32 (32%) of the patients having liver cirrhosis. This result was close to the results of the studies done in the past where similar protocol and operational definitions were used and it was seen in 31 and 33% of the patients respectively by the studies done by Jeffery et al and Iqbal et al [10]. This finding was in contrast to the results of the international studies where this prevalence was seen in 7 -22%. This can be explained by the factor of better hygienic condition and aseptic measures for thoracentesis [11].

Spontaneous bacterial peritonitis was significantly high in patients that had child Pugh class C where it was seen in 25 (37.21%) of patients as compared to 7 (21.21%) of patients in class B with p value of 0.04 [12]. This was also supported by the studies done in the past where they revealed that the higher the degree of the disease; and higher were the chances to develop this, which might be due to recurrent aspirations of ascitic fluid which is common in advanced cirrhosis [13,14]. However, this finding was in contrast to a study done by Zaman H et al where they found most patients in class B having

57.7% of the patients with overall frequency of spontaneous bacterial peritonitis in 39% of the patients.

**CONCLUSION:**

Spontaneous bacterial peritonitis is seen in almost every 3<sup>rd</sup> patient of liver cirrhosis and is seen significantly high in patients that had Child Pugh class C.

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