

# Spontaneous Bacterial Peritonitis in Cases with Liver Cirrhosis

Bushra Kokab, Saqib Nadeem, Muhammad Saad Ur Rehman

## ABSTRACT

**Objective:** To determine the frequency of spontaneous bacterial peritonitis (SBP) in cases with liver cirrhosis. **Study design:** Cross-sectional study. **Place of study:** Department of Medicine, Shaikh Zayed Hospital, Lahore **Period of study:** From March 2016 to November 2016. **Methodology:** In this study there were total 100 cases included of liver cirrhosis of both genders with age range of 12 to 70 years. Cirrhosis was labelled depending upon the ultrasonography findings of decreased liver size, parenchymal changes with or without portal vein dilatation with deranged liver functions. SBP was labelled where the ascites albumin gradient was more than 1.1 with TLC count more than 500 with neutrophils more than 250/ml. **Results:** In the present study there were total 100 cases of liver cirrhosis. There were 69 (69%) males and 31 (31%) females. The mean age of the cases was 49.21±8.14 years. Spontaneous bacterial peritonitis was seen in 40 (40%) of the cases. There was no significant different in term of duration of cirrhosis with p= 0.98. SBP was seen in 32 (47.05%) in child pugh class C and 08 (33.33%) in class B with p= 0.04. **Conclusion:** Spontaneous bacterial peritonitis is seen in almost half of the cases of liver cirrhosis and is significantly associated with child pugh class C.

**Keywords:** Liver cirrhosis, Spontaneous Bacterial Peritonitis,

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Submitted for Publication: 13-12-2017

Accepted for Publication: 18-02-2017

**Article Citation:** Kokab B, Nadeem S, Rehman MS. Spontaneous Bacterial Peritonitis in Cases with Liver Cirrhosis. APMC 2018;12(1):74-6.

## INTRODUCTION

Liver cirrhosis is one of the most common diseases presented to the medical departments. It can be defined as architectural distortion of the liver parenchyma which can be due to chronic inflammation and ultimate scarring of the liver due to any cause.<sup>1</sup> The most common causes for it include hepatitis B and C and their number is increasing day by day in the developing countries like Pakistan. The other common causes include alcoholism, hemochromatosis, Wilson disease etc. chronic inflammation lead to liver damage and regenerating nodules.<sup>2-3</sup> There are multiple complications of liver cirrhosis. These included upper gastrointestinal bleeding also known as variceal hemorrhages, hepatorenal syndrome, ascites, spontaneous bacterial peritonitis (SBP), splenomegaly etc. SBP can be defined as infection of the peritoneal cavity specially in the setting of ascites. It is usually low burden infection; but can be fatal even in the absence of particular organism isolation on culture.<sup>4-6</sup>

According to a study conducted by Saqib A et al<sup>7</sup> has reported that the SBP was seen in 31% of the cases with liver cirrhosis I their study. The data has shown that SBP is considered as a poor prognostic factor in cases of liver cirrhosis.<sup>8-9</sup>

### Objective:

To determine the frequency of spontaneous bacterial peritonitis (SBP) in cases with liver cirrhosis.

## METHODOLOGY

### Study Design:

Cross-sectional study

**Place of Study:** Department of Medicine, Shaikh Zayed Hospital, Lahore

### Duration of Study:

March 2016 to November 2016.

### Methods:

In this study there were total 100 cases included of liver cirrhosis of both genders with age range of 12 to 70 years. Cirrhosis was labelled depending upon the ultrasonography findings of decreased liver size, parenchymal changes with or without portal vein dilatation with deranged liver functions. SBP was labelled where the ascites albumin gradient was more than 1.1 with TLC count more than 500 with neutrophils more than 250/ml.

### Statistical analysis:

The data was analyzed by using SPSS version 21.0. Qualitative variables were presented in terms of frequency and percentages while quantitative variables were presented as mean±SD. Post stratification chi square test was applied and p value ≤0.05 was considered as significant.

## RESULTS

In the present study there were total 100 cases of liver cirrhosis. There were 69 (69%) males and 31 (31%) females. The mean age of the cases was 49.21±8.14 years as in table 1. Spontaneous bacterial peritonitis was seen in 40 (40%) of the cases. There was no significant different in term of duration of cirrhosis with p= 0.98. SBP was seen in 32 (47.05%) in child pugh class C and 08 (33.33%) in class B with p= 0.04 as in table 2.

**Table 1: Study demographics**

	Mean	Range
Age	49.21±8.14	12-70 years
Duration of cirrhosis	9.21±4.78	3-20 years

**Table 2: SBP with respect to confounders**

Variables		SBP		
		Yes	No	
Duration of cirrhosis	< 3 years	18 (40.90%)	26 (59.10%)	p= 0.98
	> 3 years	22 (39.28%)	34 (60.72%)	
Child Pugh class	B	08 (33.33%)	24 (66.67%)	p= 0.04
	C	32 (47.05%)	36 (52.95%)	

## DISCUSSION

Liver cirrhosis is one of the salient entity of the gastrointestinal system. It is the end stage fibrosis of the liver parenchyma due to any cause leading to multiple complications due to impairment in the structure and functional parameters of the liver. It's the 10<sup>th</sup> leading cause of death in U.S.

In the present study the spontaneous bacterial peritonitis was seen in 40 (40%) of the cases. These results were near to the findings of the other studies in the past. According to a study done by Jaffery et al, this finding was seen in around 35% of the cases.<sup>10</sup> While in another study by Iqbal et al it was 33% in liver cirrhosis.<sup>11</sup>

The findings of the present study and the others form the same vicinity revealed similar results, while at international level and developed countries the rate of incidence is much low than this and is seen in 7-23% of the cases.<sup>12</sup> This can be explained by the factor that developed countries have much better resources to keep them control to exposures of infection and better health care facilities.

SBP was seen in 32 (47.05%) in child pugh class C and 08 (33.33%) in class B with p= 0.04. The other multiple studies supported this data that the severe is the disease and highly are the chances to develop this complication.<sup>13-15</sup> In a study by Zaman H et al<sup>16</sup> they observe their maximum cases in class B affecting 57% of the cases. This can be explained by the factors that the cases with far advanced disease are more immunocompromised and are prone to recurrent infections. Moreover, recurrent aspiration in cases that have this ascites can also exposure them to infections, which they might have not been exposure before.

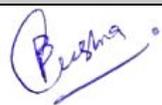
## CONCLUSION

Spontaneous bacterial peritonitis is seen in almost half of the cases of liver cirrhosis and is significantly associated with child pugh class C.

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AUTHORS	Contribution to The Paper	Signatures
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