



MICROBIOLOGICAL PROFILE OF SPONTANEOUS BACTERIAL PERITONITIS IN CHRONIC LIVER DISEASE PATIENTS IN SKMCH MUZAFFARPUR .

Microbiology

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ABSTRACT

Spontaneous bacterial peritonitis(SBP) is infection of ascitic fluid particularly common in chronic liver disease. Patients with chronic liver disease with compensated cirrhosis develops ascites. Due to inadequate defense mechanism chronic liver disease patients with ascites are susceptible to infection. Our study done to know the microbiological profile of spontaneous bacterial peritonitis in chronic liver disease patients. This was done over a period of two year from October 2017 to September 2019. Ascitic fluid sample collected aseptically, culture on blood agar and Mac Conkey agar. Positive cases obtained on culture were included in this study. Isolates are identified by standard protocol as per standard bacteriological technique. Out of 150, 60 diagnosed as culture positive cases in spontaneous bacterial peritonitis patients.

Bacterial isolates recovered from ascitic fluid sample, most commonly isolated species are *E.coli*, *Klebsiella spp.*, *Staphylococcus aureus*, *Pseudomonas spp.* and *Acinetobacter baumannii*. In our hospital chronic liver disease is most common cause of ascites and Culture positive *E. Coli* is most common isolate in spontaneous bacterial peritonitis (SBP) pts.

KEYWORDS

INTRODUCTION

Spontaneous bacterial peritonitis is infection of ascitic fluid particularly common in chronic liver disease¹. Patients with chronic liver disease with compensated cirrhosis develops ascites². Due to inadequate defense mechanism chronic liver disease patients with ascites susceptible to infection Spontaneous bacterial peritonitis (SBP)³ is the commonest infection of the ascitic fluid diagnosed when we find polymorphonuclear leukocyte count in ascitic fluid is more than 250 cells/mm⁴.

AIMS AND OBJECTIVE

To know the microbiological profile of spontaneous bacterial peritonitis in chronic liver disease patients.

MATERIAL AND METHODS

This was a retrospective study done over a period of last two year from October 2017 to September 2019. All patients were subjected to ascitic fluid tap under aseptic conditions preferably before administration of the antibiotics⁵.

Ascitic fluid sample collected aseptically studied in the patients who were admitted with chronic liver disease with ascites in our hospital^{6,7}. Culture done on blood agar and Mac Conkey agar⁸. Positive cases obtained on culture were included in this study. Isolates are identified by standard protocol as per standard bacteriological technique⁷. Our study was approved by ethics committee.

RESULT:

A total of 150,60 SBP pts were culture positive for pathogenic bacteria isolates. The most commonly bacteria isolated was *E.coli* followed by *klebsiella pneumonie*, *Staphylococcus aureus*, *Pseudomonas spp.*, and *Acinetobacter baumannii*⁹. All gram negative isolate was sensitive to amikacin, ciprofloxacin, piperacillin + tazobactam, cefuroxime, ceftriaxone and cefpodoxime⁸.

Pseudomonas spp. was another common isolate was sensitive to, Ceftriaxone, Ciprofloxacin, Cefuroxime Piperacillin+tazobactam, Amikacin, and Imipenem¹⁰. Gram positive isolate *Staphylococcus aureus* was sensitive to cefuroxime, cefpodoxime, cefoxitin, amoxicillin-clavulanic acid, ciprofloxacin, linezolid^{10,11}.

Table: Frequency of bacterial isolates

Species	Frequency	Percentage
<i>E.coli</i>	20	33.33
<i>Klebsiella Spp.</i>	16	26.66
<i>Staphylococcus aureus</i>	12	20.0
<i>Pseudomonas spp.</i>	7	11.66
<i>Acinetobacter baumannii</i>	5	8.33
	60	100

DISCUSSION

Most common cause of SBP in ascitic fluid patients in our hospital was chronic liver disease¹⁰. In earlier retrospective, prevalence of spontaneous bacterial peritonitis (SBP) in hospitalized patients range between 10%-30%^{12,13}. The early diagnosis of the disease with appropriate antibiotic and prompt management, in house patient morbidity and mortality has been reduced¹⁴. We found spontaneous bacterial peritonitis (SBP) in 40% of all ascites cases admitted over last two years. Most common causative microorganisms in spontaneous bacterial peritonitis (SBP) are *E. coli* and *Klebsiella spp* followed by Gram positive cocci. We also had *E. coli* in 33.33% of culture positive isolates followed by *S. aureus* in 20% while *Klebsiella spp.* 26.66%, *Pseudomonas spp.* were 11.66 % and *acinetobacter baumannii spp.* is 5% each. Commonest etiology of SBP in our setting was chronic liver disease with included cases of alcoholic liver disease, HBV and HCV related cirrhosis^{14,15}. The antibiotic sensitivity pattern shows that most gram positive and *pseudomonas spp.* isolates were sensitive to amikacin followed by amoxycylavulnic acid and most of them also sensitive to Ciprofloxacin.

CONCLUSION

In our study spontaneous bacterial peritonitis (SBP) in case of chronic liver disease with ascites were most commonly caused by gram-negative bacteria. *Escherichia coli* is the most common microorganism isolated in 33.33% of positive ascitic fluid cultures. All Chronic liver disease with ascites should undergo diagnostic ascitic fluid examination during admission because the chance of bacterial infection is high in cases of spontaneous bacterial peritonitis (SBP).

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