

Bacteriological Profile of Ascitic Fluid in Patients with Chronic Liver Disease Suspected Clinically of Spontaneous Bacterial Peritonitis

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Sir,

Spontaneous bacterial peritonitis (SBP) is an infection of the ascitic fluid in patients with severe chronic liver disease [1]. In adults it occurs most commonly in conjunction with cirrhosis of liver which is frequently the result of alcoholism. This study was carried out to access the bacteriological profile and antimicrobial susceptibility pattern of ascitic fluid, in clinically suspected cases of SBP in the Department of Microbiology of our hospital over a period of one year from August 2010 to July 2011, after getting ethical clearance. Samples were collected from 56 clinically suspected cases of SBP admitted under Medicine and Gastroenterology Departments, after taking written consent.

Those patients with history of antibiotics intake within 3 weeks prior to admission were excluded from the present study. Ascitic fluid were collected by bed side tapping under all aseptic and antiseptic measures in blood culture bottles for aerobic and anaerobic culture. It was also subjected to gram stain, glucose, protein estimation, TLC, DLC and Absolute Polymorphonuclear Leucocyte Count (PMN) detection.

Bacterial isolates were identified as per standard protocol and antimicrobial susceptibility along with MRSA and ESBL detection were done following the CLSI guidelines [2]. Commercially available antibiotic discs were used which were obtained from Hi Media Laboratories, Mumbai. *Escherichia coli* ATCC 25922 and *Staphylococcus aureus* ATCC 25923 strains were used for quality control. The majority of the cases, 25 (44.65%) were in 31-40 years age group followed by 21 (37.5%) in 41-50 years age group, with the male to female ratio being 6:1. 20 (35.7%) out of 56 clinically suspected cases of SBP had ascitic fluid polymorph nuclear count (PMN) \geq 250/cumm and thus were clinically diagnosed as SBP. Agarwal et al., found prevalence of SBP in 34.14% patients of cirrhosis [3]. Of these cases, 13(65%) cases were culture positive with only aerobic organisms isolated. Direct smear (gram stain) was positive in 5 (38.46%) of those 13 culture positive cases.

Similar results were found by Gunjaca et al., with 65.21% cases of SBP culture positive [4].

Gram negative organisms were isolated from 9 (69.23%) cases while gram positive organisms were isolated from 4 (30.77%) cases. Among the organisms isolated, *Escherichia coli* isolated in 6(46.2%), followed by *Klebsiella pneumoniae* in 3 (23%), *Staphylococcus aureus* in 2 (15.4%) and *Enterococcus faecalis* in 2 (15.4%) cases. Similar results were found by Such et al who reported gram negative organisms in 60% culture positive cases of SBP and gram positive organisms in 25% cases [5]. 4 (66.67%) isolates of *Escherichia coli* and all 3(100%) of *Klebsiella pneumoniae* were found to be ESBL producer while all the isolates of *Staphylococcus aureus* were MRSA. The gram negative isolates were 100% sensitive for Imipenem followed by Ciprofloxacin 8(88.89%) and Cefotaxime 7 (77.78%). Gram positive isolates were 100% sensitive to Linezolid and Vancomycin. SBP is potentially preventable and treatable condition, thus it is reasonable to state that routine paracentesis and ascitic fluid analysis including culture of all cirrhotic patients with ascites will be an invaluable measure in improving the overall prognosis of these patients.

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