

Spontaneous Bacterial Peritonitis: Treatment with Oral and Intravenous Antibiotics

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ABSTRACT

Aim: To examine the efficacy of oral versus intravenous medicine in treatment of spontaneous bacterial peritonitis.

Study design: Comparative/Observational study.

Place and duration: This study was conducted in a Rural Area of Lahore at Rehber Medical and Dental College, Lahore from 01-01-2017 to 31-12-2017.

Methods: 160 patients of both gender having SBP due to cirrhosis was included in this study. Patient's ages were ranging from 20 to 70 years. Patients' detailed medical history, including age sex socio-economic status was examined after taking informed consent from all the patients. Patients were equally divided in two groups, i.e. (Group O) oral and (Group IV) intravenous. Strong follow-up was taken from all the patients.

Results: From all 160 patients, 100(62.5%) patients were men while 37.5% patients were women. 42(26.25%) patients had ages 20 to 34 years, 54(33.75%) patients were ages between 35 to 49 years, 45(28.13%) patients were ages between 50 to 64 years and 19(11.86%) patients had ages greater than 64 years. 90(56.25%) patients had rural residency. There were 80 patients in each group. In Group O, there were 52 males and 28 females while in IV group, there were 48 males and 32 females. Spontaneous bacterial peritonitis eliminated in 72(90%) in oral antibiotics treated patients and 76(95%) in IV treated patients. Mortality found in 2(2.50%) patient in oral group and 3(3.75%) in IV group.

Conclusion: It is concluded that the efficacy and mortality rate of oral and intravenous antibiotics for treatment of spontaneous bacterial peritonitis was similar. No major difference was observed.

Keywords: Spontaneous Bacterial Peritonitis, Oral Antibiotics, Intravenous Antibiotics, Cirrhosis.

INTRODUCTION

Spontaneous bacterial peritonitis is the most frequent bacterial infection of ascites found all over the world. Globally, it has been observed that the patients having ascites infection and have been followed for a year resulted having spontaneous bacterial peritonitis and estimated approximately 10-30% and the mortality rate in hospital due to SBP reported 20-40%¹⁻³. The prevalence of SBP in cirrhotic outpatients is 1.5 to 3.5% and among inpatients is approximately 10%. In most instances, Spontaneous bacterial infection results from translocation of bacteria from the intestinal lumen⁴⁻⁶. Many of risk factors involves in the development of Spontaneous bacteria; peritonitis includes Ascitic fluid, cirrhosis and total protein <1g/dL and total serum bilirubin >2.5mg/dL, previous history of spontaneous bacterial infection and variceal hemorrhage. Risk factors associated with the development of SBP include cirrhosis, ascitic fluid total protein less than 1g/dL, total serum bilirubin greater than 2.5mg/dL, variceal hemorrhage, and a previous episode of SBP⁵⁻⁸.

Use of antibiotic drugs for the treatment of SBP patients and ascitic fluid PMN greater than or equal to 250 cells/mm³ (0.25x10⁹/L) is commonly performed therapy in

health care centers. Patients with culture-negative neutrocytic ascites have similar mortality rates as patients with confirmed spontaneous bacterial peritonitis and benefit from antibiotic treatment, which should not be delayed while awaiting bacterial culture results⁹⁻¹². This study was conducted to examine the role of oral and intravenous antibiotics for the treatment of spontaneous bacterial peritonitis SBP. Study also aimed to provide better treatment and to reduce the mortality rate.

METHODS

This observational study was conducted at Department of Medicine at Rehber Medical and Dental College, Lahore from 01-01-2017 to 31-12-2017. This study was approved by the institutional Ethical Committee. In this study, 160 patients of both gender having SBP due to cirrhosis was included in this study. Patient's ages were ranging from 20 to 70 years. Patients' detailed medical history, including age sex socio-economic status was examined after taking informed consent from all the patients. Patients had previous failed treatment of ascetic infection and those whom had other anomalies were excluded from this study. Patients were equally divided in two groups, i.e., (Group Oral) oral and (Group Intravenous) intravenous. In group O patients were given oral antibiotics and in group IV patients

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were given intravenous antibiotics. Strong follow-up at 3 months was taken from all the patients.

RESULTS

In this study we included one hundred and sixty patients. Out of all 160 patients, 100 (62.5%) patients were men while 60 (37.5%) patients were women. 42 (26.25%) patients had ages 20 to 34 years, 54 (33.75%) patients were ages between 35 to 49 years, 45 (28.13%) patients were ages between 50 to 64 years and 19 (11.86%) patients had ages greater than 64 years. 90 (56.25%) patients had rural residency while 70 patients had urban residency.

We divided the entire patient in two groups, 80 patients in each group. In Group Oral (Oral antibiotic treated patients), there were 52 (65%) males and 28 (35%) patients were females while in Group Intravenous (intravenous antibiotics treated patients), there were 48 (60%) were males and 32(40%) patients were females. The mean duration of cirrhosis was 4.53±3.42 in Group O and 5.58±3.74 years in Group IV. Mean BMI was noted in GOUP O and Group IV as 19.48±9.88kg/m² and 21.32±5.41kg/m² respectively. Spontaneous bacterial peritonitis eliminated in 72(90%) in oral antibiotics treated patients and 76 (95%) in IV treated patients after 3 months follow-up. Mortality found in 2(2.50%) patient in oral group and 3 (3.75%) in IV group.

Table 1. Demographically details of all patients.

Characteristics	No.	%age
Gender		
Males	100	62.5
Females	60	37.5
Age-wise		
20 to 34 Years	42	26.25
35 to 49 years	54	33.75
50 to 64 years	45	28.14
> 64 years	19	11.86
Residency		
Rural	90	56.25
Urban	70	43.75

Table 2. Group wise distribution of all the patients

Characteristics	Group Oral	Group I/V
Gender		
Males	52 (65%)	48 (60%)
Females	28 (35%)	32 (40%)
Total	80 (100%)	80 (100%)
Mean Cirrhosis duration in yrs	4.53±3.42	5.58±3.74
BMI in kg/m ²	19.48±9.88	21.32±5.41

Table 3. Findings after 3 months follow-up.

Characteristics	Group Oral	Group I/V
SBP		
Found	8 (10%)	4 (5%)
Not Found	72 (90%)	76 (95%)
Total	80 (100%)	80 (100%)
Mortality		
Found	2 (2.50%)	3 (3.75%)
Not Found	78 (97.50%)	77 (9.25%)

DISCUSSION

Spontaneous bacterial infection is commonly found with cirrhosis and worldwide very few of cases found to have SBP without cirrhosis. SBP is mainly associated with most common factors like cardiac malignancy, renal portal vein thrombosis and autoimmune infections.¹³⁻¹⁶ Cirrhotic patients having ages 20 to 30 years with ascetic fluid PMN counts ≥250 cells/uL should be treated with intravenous antibiotics like cefotaxime 2gm /8 hours¹⁷. Many of studies regarding treatment and management of SBP patients reported that oral drugs like ofloxacin is the best alternate of IV cefotaxime or ceftrexione¹⁸.

In our study, out of all 160 patients, 100 (62.5%) patients were men while 60 (37.5%) patients were women. The study conducted by Muhammad et al¹⁹ regarding spontaneous bacterial peritonitis affected patients and its treatment reported male patient's population rate was high as compared to females. We found that, Spontaneous bacterial peritonitis eliminated in 72 (90%) in oral antibiotics treated patients and 76 (95%) in IV treated patients after 3 months follow-up. The difference was insignificant >0.05. Mortality found in 2 (2.50%) patient in oral group and 3 (3.75%) in IV group. The difference is insignificant >0.05. These results shows similarity to the other studies in which the mortality rate reported 1 to 3% and the eradication of spontaneous bacterial infection resulted 85 to 95%²⁰.

In our study we observed that the role of oral antibiotics and intravenous antibiotics is complicated and dependent due to the less quality of research related to the benefits. IV antibiotics usually performed better when patients had factors like tenderness, cirrhosis and ascites. In this situation, IV antibiotics reported better results as compared to oral. Broad-spectrum antibiotics cephalosporins that belong to third generation group are the perfect choice to control SBP due to its superiority in controlled trials and rare side effects. Also the nephrotoxicity risk became low in when compare to the other antibiotics.²¹⁻²² In this study, we found no significant difference in oral versus Iv antibiotics for treatment of Spontaneous bacterial peritonitis infection. We found better outcomes after 3 months of follow up.

Moreover, the recent research was not sufficient due to number of patients was too small. We should have to do more work for better treatment.

CONCLUSION

Spontaneous bacterial peritonitis is one of the most common malignant disorder found in health care centers. From this study, we concluded that the efficacy and mortality rate of oral and intravenous antibiotics for treatment of spontaneous bacterial peritonitis was similar. No major difference was observed. Moreover, oral drugs can be the best alternate of Intravenous antibiotic therapy for spontaneous bacterial peritonitis.

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