

FREQUENCY OF DIFFERENT INFECTIONS IN PATIENTS WITH HEPATIC ENCEPHALOPATHY DUE TO CIRRHOSIS LIVER

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ABSTRACT

Objective: To determine frequency of different infections in patients with hepatic encephalopathy due to cirrhosis liver.

Study Design: Cross sectional descriptive study.

Place and Duration of Study: The study was conducted in the Department of Medicine, Combined Military Hospital, Peshawar over six months from April to October 2013.

Patients and Methods: All patients with cirrhosis of liver of more than 18 years of age, manifesting signs of hepatic encephalopathy (HE) were included in the study. Detailed history, clinical examination and thorough investigations were done to look for different infections and the findings were recorded on a proforma. Descriptive statistics were used for data analysis.

Results: One hundred and eighty five patients (70.81% males and 29.19% females) were enrolled. The mean age of the study subject was 49.2 ± 3 years. Frequency of infections in the studied population was, spontaneous bacterial peritonitis (31.94 %), UTI (25.00 %), pneumonia (20.83 %), sepsis (8.33%) and others infections (13.90%) like cholangitis, bronchitis, endocarditis, meningitis, and gastroenteritis.

Conclusions: This study concluded that a substantial number of patients with hepatic encephalopathy due to cirrhosis liver have infections.

Keywords: Cirrhosis liver, Hepatic Encephalopathy, Infection.

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INTRODUCTION

Cirrhosis liver is a common cause of mortality amongst Pakistani population and frequent cause of admissions to hospitals¹. Cirrhosis of liver is becoming an epidemic in Pakistan because of moderate prevalence of hepatitis C and B in our community². Appearance of hepatic encephalopathy(HE) in patients with liver cirrhosis indicates poor prognosis³. Approximately 30% of patients with cirrhosis die in hepatic coma⁴. Well recognized factors which tend to precipitate HE include gastrointestinal bleeding (38%), infection (44%), constipation (38%), electrolyte imbalance (12%) and high protein diet (12%)⁵. Cirrhosis liver is associated with defects in the immune system, which increase the risk and severity of infections. Both humoral and cell-mediated immunity are depressed in patients with cirrhosis liver. Infections are highest

amongst factors precipitating HE⁵. Spontaneous bacterial peritonitis (SBP), urinary tract infections, respiratory infections, dermatologic infections, and bacteremia are some of the common bacterial infections seen in patients with cirrhosis liver⁶.

This study was carried out to determine frequency of various infections in cirrhotic patients.

MATERIAL AND METHODS

This cross sectional descriptive study was conducted at the Medicine Department, Combined Military Hospital (MH) Peshawar, a tertiary care Military hospital from April to October 2013. One hundred and eighty five consecutive patients of hepatic encephalopathy due to liver cirrhosis aged 18 years or above from both genders were included in the study. All patients with cognitive impairment due to neurological disease, lateralizing signs or neck rigidity on examination, chronic kidney disease and chronic obstructive airway disease were excluded from study.

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Administrative permission was taken from concerned authorities. Approval of the ethics committee was sought. Patients were taken from indoor department admitted at hospital. Informed consent was taken from patients next of kin (NOK). A proforma was designed and used for data collection. A detailed clinical history of the patients about fever, vomiting, blood in vomiting or stool, constipation, urinary problems, cough and diarrhea was taken. All

version 10). Descriptive statistics were used to describe the data.

RESULTS

A total of 185 consecutive patients with hepatic encephalopathy were included. The mean age of the study subject was 49.2 ± 3 years. Out of 185 patients 131(70.81%) were male and 54 (29.19%) were female. Out of 185 patients, 72(38.9%) were found to have

Table-1: Frequency of different infections in patients with hepatic encephalopathy due to cirrhosis liver.

S.no.	Type of infection	No of patients	Percentage
1.	SBP	23	31.96%
2.	UTI	18	25.00%
3.	Pneumonia	15	20.83%
4.	Sepsis	06	8.33%
5.	Gastroenteritis	06	8.33%
6.	Bronchitis	03	%
7.	Cholangitis	02	%
8.	Endocarditis	01	%
9.	Meningitis	01	%

patients were carefully examined with special attention to fever, anemia, jaundice, dehydration, ascites and astrixis. Hepatic encephalopathy was diagnosed on clinical basis (patient of CLD presenting with altered sensorium, fever and pain abdomen) For each patient, investigations including complete blood count (CBC), random blood glucose, liver function tests (LFTs), serum electrolytes, serum albumin, coagulation profile, urine microscopy, blood urea, serum creatinine, C reactive protein, blood culture, HBSAg and anti-HCV (if not previously diagnosed and not a known case) and chest radiograph were carried out to find infections. An abdominal ultrasound was done to look for liver and spleen size, parenchymal echogenicity, portal vein diameter and ascites. In case of ascites, a diagnostic ascitic tap was also done and was sent to pathology laboratory to look for SPB. All patients were followed for the duration of their stay in hospital by the researcher and findings were recorded in the proforma. Data had been entered and analyzed into Statistical Package for Social Sciences (SPSS

infections. Major infections included SBP (31.94%), UTI (25.00%), pneumonia (20.83%), sepsis (8.33%) and others (13.90%) (table-1).

DISCUSSION

Cirrhosis liver is associated with defects in the immune system, which increase the risk and severity of infections. Both humoral and cell-mediated immunity are depressed in patients with cirrhosis liver. These patients typically have a reduction in serum bactericidal, opsonic activity, complement, and fibronectin levels^{7,8}. Community acquired infections are still the most common source of infections in these patients⁹. SBP urinary tract infections, respiratory infections, dermatologic infections, and bacteremia are some of the common bacterial infections seen in patients with cirrhosis liver¹⁰. However, the increasing use of invasive procedures in the management of cirrhosis liver and its complications have led to the emergence of hospital acquired, resistant infections¹¹⁻¹⁴.

Various studies^{4,15-21} in Pakistan and abroad have shown that substantial number of

patients with hepatic encephalopathy has infections. These studies however do not show pattern of different infections in patients with hepatic encephalopathy due to cirrhosis liver. Mathurin et al²² have shown that different infections like SBP, pneumonia, UTI, skin infections and sepsis are frequent in patients with hepatic encephalopathy due to cirrhosis liver. Most of the patients included in the study were alcoholics. Wang et al²³ studied different infections in cirrhotic patients with hepatic encephalopathy. Patients in this study group had hepatitis B related cirrhosis and alcoholic cirrhosis. Most common infections were respiratory tract infections, intestinal tract infections, peritoneal infections and UTI. Our study also shows that SBP, UTI, pneumonia, sepsis and other infections like cholangitis, bronchitis, endocarditis, meningitis and gastroenteritis are present in patient with hepatic encephalopathy due to cirrhosis liver.

SBP is a potentially life-threatening complication in patients with cirrhosis. Oladimeji et al²⁴ has shown that all patients with cirrhosis and ascites are at risk of SBP. The pathophysiology of SBP is not completely understood. Translocation of bacteria and endotoxins from the gastrointestinal tract to peritoneal fluid is believed to be a key mechanism behind the development of SBP, and is facilitated by impaired defensive mechanisms in cirrhotic patients. Bacteremia from the urine or the respiratory tract can also lead to infection of the ascitic fluid. Mortality is approximately 20% with early diagnosis and treatment.

The prevention of episodes of hepatic encephalopathy is an important goal in treatment of patients with liver disease²⁵. Clinicians should have a low index of suspicion as prompt detection and the use of appropriate treatment can improve survival in these patients. Moreover patients with cirrhosis liver who had frequent hospital admissions for hepatic encephalopathy due to infections, may be considered for antibiotic prophylaxis. It has been shown that rifaximine has protective effect against episodes of hepatic encephalopathy and reduces risk of hospitalization²⁶. However this

will require more studies in our population. There is a definite need for health education in patients and attendants of patients, who are diagnosed as a patient of cirrhosis liver, regarding the risk of HE and its precipitating factors and a constant need and effort to avert them at all costs. Proper dietary advice must be an integral part of all counseling protocols to patients of cirrhosis liver.

CONCLUSION

This study concluded that a substantial number of patients with hepatic encephalopathy due to cirrhosis liver have infections.

CONFLICT OF INTEREST

The authors of this study reported no conflict of interest.

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