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LIVER CIRRHOSIS;

HCV AND HBV INFECTION WITH A COMPARATIVE STUDY TO ASSESS THE POOR PROGNOSTIC FACTORS AND IN-HOSPITAL MORTALITY RATE

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ABSTRACT… Objectives: The aim behind this study was to scientifically assess the poor prognostic factors and in-hospital mortality rate in patients infected with HCV and HBV infection with liver cirrhosis. **Study Design:** Comparative hospital based study. **Setting:** Gastroenterology and hepatology dedicated center, Asian Institute of Medical Sciences (AIMS), Hyderabad. **Period:** Thirty one months from 1st October 2012 to 31st May 2015. **Patients and Methods:** 419 participants between the ages of 20 to 80 years including both male and female and diagnosed either with HCV or HBV infection along with cirrhosis were included. Data were entered and analyzed by using Statistical Package for the Social Sciences version 20.0. **Results:** Out of total 419 patients, the mean age and S.D. of HBV patients were 41.21 ± 11.77 and HCV patients were 50.44 ± 10.07 years. The overall mortality rate was 11.69% (N = 49) among them patients with of HBV infection had a comparatively higher mortality rate than patients with HCV infection, 13.07% and 11.07%, respectively. The most common risk factors observed in our study were Hepatorenal syndrome (41.17%) in HCV cirrhotics and hematemesis (34.37%) in HCV cirrhotic patients. **Conclusion:** Our study shows that overall mortality is greater in HBV cirrhotic patients than with HCV cirrhotics**.** Poor in-hospital mortality factors vary in both HBV and HCV related cirrhotic patients and this discrepancy in the observation is universally observed.

Key words: HBV and HCV cirrhosis, poor prognostic factors, in-hospital mortality rate,

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INTRODUCTION

Hepatitis C virus (HCV) and Hepatitis B virus (HBV) infections are the two most common etiological factors that affect the liver and causes liver cirrhosis and later on hepatocellular carcinoma, if left untreated. The worldwide burden of these two viruses has shown a great discrepancy in developed and in developing world. Globally, an estimated 130-170 million persons are living with HCV infection[1] and more than 350 million people are infected with HBV infection.[2]

Live cirrhosis is an end stage liver disease caused by chronic infection of these two viruses. The rate of conversion into liver cirrhosis among these viruses varies in different population and geographical areas. Patients with liver cirrhosis have a poorer outcome and mortality rate increases when patient develop other infections or liver cirrhosis induced complications.[3]

According to our knowledge, there are no done prior studies that have examined the combined in-hospital mortality rate along with poor prognostic factors for HBV and HCV infected with liver cirrhosis patients in Pakistan. Such prognostic factors could be important in determining which patients might benefit from early liver transplantation.

The aim behind this study was to scientifically observe the in-hospital mortality rate in patients infected with HCV and HBV infections with liver cirrhosis and also which underlying factors are associated with poor in-hospital prognosis among these patients.

PATIENTS AND METHODS

This is a comparative hospital based study carried out in a gastroenterology and hepatology dedicated center, Asian Institute of Medical Sciences (AIMS), Hyderabad between the periods

of thirty one months from 1st October 2012 to 31st May 2015.

Evaluation of a total 419 patients of HCV and HBV liver cirrhosis was conducted, those who were admitted in the ward due to any underlying complain. Patients were labeled HCV and HBV cirrhosis if they had previously available laboratory investigations or radiological evidence proving the presence of underlying disease. In-hospital mortality rate was determined for those patients who died during hospitalization and/or commencement of initial treatment irrespective of their duration of hospitalization.

Common risk factors such as Spontaneous Bacterial Peritonitis, Hematemesis, and/or hepatocellular carcinoma that are associated with poor outcome of patients with HCV or HBV with liver cirrhosis were considered as poor prognostic markers and included to see the effect of these on in-hospital outcome.

A preformed structured questionnaire was used which included age, gender, area of residence, marital status, and mortality rate associated with HCV or HBV liver cirrhosis and associated poor in-hospital prognostic markers.

DATA ANALYSIS

The data were evaluated in Statistical Package for the Social Sciences (SPSS) version 20.0. Quantitative data (numerical parameters) i.e. age in years was calculated as mean ± SD. Qualitative data such as marital status and mortality rates were calculated as number and percentage.

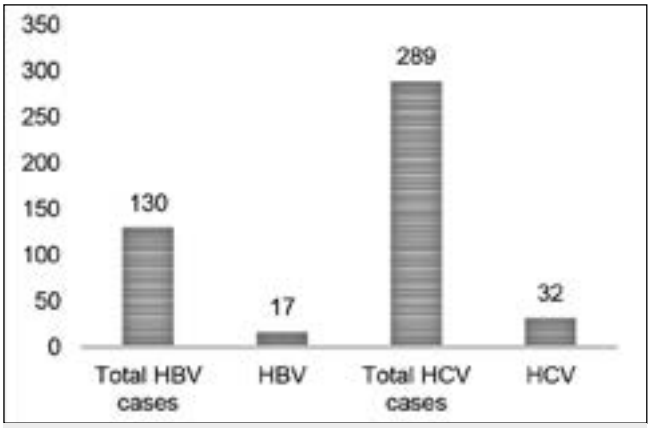
RESULTS

Out of total 419 patients, the mean age and SD of HBV patients were 41.21 ± 11.77 and HCV patients was 50.44 ± 10.07years and the age ranging between 20 to 80 years. Among them, majority were married HBV (83.84%) and HCV (66.43%), resident of urban areas HBV (70.0%) and HCV (55.36%), and comprises of male predominant HBV (65.38%)and HCV (57.43%) population. Table-I.

Characteristics	HBV (N = 130) N (%)	HCV (N = 289) N (%)
Mean age ± SD	41.21 ± 11.77	50.44 ± 10.07
Gender		
Male	85 (65.38)	166 (57.43)
Female	45 (34.61)	123 (42.56)
Marital Status		
Married	109 (83.84)	192 (66.43)
Single	21 (16.15)	97 (33.56)
Area of residence		
Urban	91 (70)	160 (55.36)
Rural	39 (30)	129 (44.63)

Table-I. Baseline Characteristics of Study Participants

The overall mortality rate was 11.69% (N = 49) among them patients with of HBV infection had a comparatively higher mortality rate than patients with HCV infection, 13.07% and 11.07%, respectively. Graph 1.



Graph-1. In-Hospital mortality Rate among HBV and HCV Cirrhotic Patients

Poor Prognostic Factors	HBV (N = 17) N (%)	HCV (N = 32) N (%)
HRS	7 (41.17)	7 (21.85)
HCC	1 (5.88)	3 (9.37)
Hematemesis	4 (23.52))	11 (34.37)
PSE	2 (11.76)	6 (18.75)
SBP	3 (17.64)	5 (15.62)

Table-II. Poor Prognostic Factors among HBV and HCV Cirrhotic Cases

HRS = Hepatorenal Syndrome,
HCC = Hepatocellular Carcinoma
PSE = Porto systemic Encephalopathy,
SBP = Spontaneous Bacterial Peritonitis

Table-II shows the observed in-hospital poor prognostic factors among patients with HBV and/or HCV liver cirrhosis. The most common risk factors observed in our study were Hepatorenal syndrome (41.17%) in HCV cirrhotics and hematemesis (34.37%) in HCV cirrhotic patients.

DISCUSSION

Two most common causes of liver cirrhosis, HBV and HCV when untreated leads to the development of liver cirrhosis and these patients are associated with overall poor outcome and impaired quality of life. Certain co-morbid conditions such as Hepatorenal syndrome, ascites, hematemesis, or Porto systemic encephalopathy are related with an increased in-hospital mortality rates among these patients but these conditions can be different in different cirrhotic patients and available health care system in that particular country.[4] In our study the overall mortality rate observed in both HBV and HCV cirrhotic population was 11.69%. A study conducted in Saudi Arabia in 2009 by Alsultan MA[5] and colleagues showed a very high in-hospital mortality rate (35%).In another study conducted in Tunisa showed a varied distributed mortality rate between 20% and 48%.[6] These higher mortality rates could be due to their increased number of cases and hence number of deaths.

On the other hand, our study shows that in-hospital mortality is greater in patients with HBV liver cirrhosis than those with HCV liver cirrhosis. Our findings are also consistent with the recently conducted study in 2015 by the Rajbhandari R and colleagues.[7]

Several important indicators of poor prognosis were also identified in the current study separately in HBV and HCV related liver cirrhotic patients. The most common poor prognostic factors in HBV cirrhotic patients was those who developed or admitted with Hepatorenal syndrome, hematemesis, or spontaneous bacterial peritonitis and in HCV cirrhotic patients were those who experienced hematemesis or developed Porto systemic encephalopathy. In-hospital poor prognostic factors have shown a great discrepancy in different areas of the world and can vary from one center to another center. A previously conducted study showed the different findings from our study that HBV cirrhotic patients who experienced hematemesis raises the overall in-hospital mortality rate[8] and data from European Association for the study of the liver disease (EASL) has mentioned hepatic encephalopathy, ascites, and development of sepsis the poor in-hospital prognostic factors.[9] While the data is limited regarding determining the factors which are associated with increased in-hospital death rates among HCV cirrhotic patients. International data showed Hepatorenal syndrome is the strongest factor associated with bad in-hospital prognosis.[10] No national data base is present to compare our findings.

CONCLUSION

Our study shows that overall mortality is greater in HBV cirrhotic patients than with HCV cirrhotic**.** Poor in-hospital mortality factors vary in both HBV and HCV related cirrhotic patients and this discrepancy in the observation is universally observed.

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