VOLUME-8, ISSUE-12, DECEMBER-2019 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Microbiology



ABSTRACT BACKGROUND: HBV infection can lead to variable clinical outcomes, ranging from self-limiting acute hepatitis to active chronic hepatitis, cirrhosis and hepatocellular carcinoma.

AIMS: To study the evaluation of abnormalities liver function test and etiologies of hepatitis B Virus at a tertiary care center Jaipur Rajasthan.

MATERIAL AND METHODS: A total of 147 patients with the clinical diagnosed with HBV positive patients with a liver function test. This is a record-based study from April 2019 to November 2019. Data on clinical characteristics, laboratory parameters, immediate outcome, and analysis was performed in the department of biochemistry and microbiology.

RESULTS: A total of 147 patients were positive by the hepatitis B virus. Out of these, Total males were 66.0% and female 34.0%. The mean age of patients with hepatitis B was 31-45 years is most predominant, in the female is 38% and 30% in males. Clinical Risk value of liver function test were serum Bilirubin >5 mg/dl (15.6%), SGOT & SGPT is >500 IU/L (17.6%) and ALP is (49.7%). Clinical features were similar without any complications or mortality. Significant elevations in hepatic enzymes were seen in mixed infection due to HBV.

CONCLUSION: While LFTs abnormalities in HBV are common, HBV infection was associated with increased risk in liver diseases. So LFTs are a helpful screening tool to identify risk factors of the liver in patients of the hepatitis B virus.

KEYWORDS : Liver Function Test, Serum Bilirubin, Hepatitis B Virus

INTRODUCTION

Hepatitis B virus (HBV) affecting about 350 to 400 million population and approximately 1 million mortality rates annually across the worldwide. Viral hepatitis is the most frequent cause of acute hepatic failure (AHF)¹. Hepatitis B virus leads to a wide spectrum of clinical presentations ranging from acute hepatitis, asymptomatic chronic hepatitis B (CHB) and chronic carrier state with prolongation to liver cirrhosis and hepatocellular carcinoma. In approximately 95% of adults, exposure to Hepatitis B virus leads to an acute infection which usually gets resolved in about 6 months without long-term consequences, although the remaining 5-10% fails to control the viral infection, leading to chronic illness². In India, Hepatitis B virus infection is an intermediate endemicity, with nearly 4% of the population being chronic carriers [9]. Most cases of acute hepatitis due to Hepatitis B virus are subclinical and less than 1% of symptomatic diseases are fulminant³⁻⁴. In addition to liver disease, Hepatitis B virus infection has been associated with extra-hepatic complications. For example, various forms of kidney-related disease to Hepatitis B virus, including membranous nephropathy, membranoproliferative glomerulonephritis, and polyarteritis. Liver disease has now become a leading cause of death with HBV patients⁵.

MATERIAL AND METHODS

This was an observational record-based study. The study was carried out among HBV infected persons seen at and a NIMS medical college and hospital, Jaipur from January 2019-August 2019 attending outpatient or inpatient care.

INCLUSION CRITERIA:-

All patients' age/sex groups and screened HBV positive

METHODOLOGY:-

HBV serologic testing, by Hepa Card & J-Mitra Company kit used for HBsAg serology test, was performed in the department of microbiology, NIMS medical college, and hospital. And fully automated HumaStar 200 wear used for Liver function tested such as Serum Bilirubin, SGOT, SGPT and ALP in the Department of biochemistry in NIMS Hospital.

Other Hepatitis strains A, C, E and D patients were excluded in

patients were included in this study.

EXCLUSION CRITERIA:-

RESULT:-

this study.

A total of 147 positive cases with the clinical diagnosis of HBV were admitted during the period of this study, we found hepatitis B virus was seen to be more common in male 97 (66.0%) as compared to female 50 (34.0%) Figure No.1. Age of the patients ranged from all the age groups. Female is more prevalent than male and the high-risk age factors of male and female between 31 to 45 age, male patients were 30 (30.9%) & female patients were 19 (38%) is more predominant Figure No.2. A total of hepatomegaly condition was seen in 33.33% cases and liver enzymes are divide through as well as normal condition is SGOT, SGPT, Bilirubin Total, Bilirubin direct and Alkaline phosphates were (36.1%, 36.7%, 40.8%, 47.6% & 50.3%) And increase level of liver enzymes are continued as were SGOT, SGPT, Bilirubin Total, Bilirubin direct (55.1%, 54.5%, 49.0%, 47.0%) and last is risk level and hepatomegaly condition is SGOT, SGPT, Bilirubin Total, Bilirubin direct and Alkaline phosphatase (8.8%, 8.8%, 10.2%, 5.4% & 49.7%) were patients risk condition is high Figure No.3. All of them had clinical hepatitis B viral disease and liver disease with jaundice at the admission in IPD patients. There were complications or mortality due to the hepatitis B virus and biochemical parameters in liver enzymes are observed in viral hepatitis.



Figure No.1:- Distribution between Male & Female in Positive Hepatitis B Virus.



Figure No.2:- Distribution of age wise in male & female.



Figure No.3:- A distribution of Value wise in liver enzymes.

DISCUSSION

In this study, we sought to determine the Liver function ft abnormalities and their causes amongst HBV infected. Most of the subjects were found out to be HBV in Male (66.0%) were more commonly affected than females (34.0%) in enterically and parenterally transmitted infections. Similar findings were reported by other studies from India and outside⁶⁻⁸. A maximum number of females (38%) affected by hepatitis B were in the age group of 31-45 years. In this study, we found mostly hepatomegaly is (31-45 years) were affected with HBV in 49 (33%) cases. This study is compared by Kamath et al showed 41.6% and 25.9% of subjects were in the age group of 31-45 years, respectively⁸. The older age group involvement could be due to the shifting of the epidemiological pattern of HBV infection¹⁰. Although very high serum AST and ALT levels ($\!>\!500\,IU/L\!$) was seen in 26 (17.6%) cases, serum Bilirubin level more than 5 mg/dl was found in only one case 23 (15.6%). Serum alkaline phosphatase levels were found to be a risk level in 72 (49.7%) cases. The rest of them recovered with conservative management. Interestingly, we compared HBV to be the second most common cause of AVH .perilously some studies shown that HBV infection is most increases the risk level of liver enzymes is 20.2% ¹¹⁻¹³. This can be contributed to the following factors. First, many of the poor immunity, socioeconomic status, and local communities. Poor coverage of vaccination programs, high endemicity in certain groups,

limited knowledge of preventing programs and lack of education may have contributed to it. Some studies have shown very high HBsAg positivity among the tribal population of India¹⁴. Male predominance, similar presenting symptoms as the other two groups, good recovery without any complications were the characteristic features. However, these patients need regular follow-up for the development of chronic hepatitis or carrier state.

It was also seen that there was a significant in liver function test levels with the HBV.

CONCLUSION

From the present study, it was concluded that there is a high serum Bilirubin, SGOT, and SGPT level seen among HBV Patients. Hepatitis B Virus is a major public health problem in India. Female is most prevalent in this study and can cause sporadic or epidemic. The most affected organ is liver and liver enzymes are mostly elevated in hepatitis viral disease. Better sanitation, provision of clean drinking water, proper hand washing advice for medical health workers, and public education are the mainstays for the prevention of Hepatitis B Virus infection. Universal vaccination against Hepatitis B Virus should be the focus of authorities to prevent morbidity and mortality due to these common pathogens.

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