Original Article

Liver Cancer in Hep B & C

Examine the Incidence of Liver Cancer in Patients Presented with Hepatitis B Virus and Hepatitis C Virus Infection

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ABSTRACT

Objective: To examine the prevalence of hepatocellular carcinoma in hepatitis B virus and hepatitis C virus patients.

Study Design: Prospective study.

Place & Duration of Study: This study was conducted at the Department of Medicine, Amna Inayat Medical College, Sheikhupura from July 2017 to December 2019.

Materials and Methods: One hundred and twenty patients of both genders clinically diagnosed to have Hepatitis B and Hepatitis C virus were included in this study. Patient's demographical details were recorded. All patients were newly diagnosed and free of hepatocellular carcinoma. All the patients were underwent abdominal ultrasound, computerized tomography scan and AFP at every 6 months for diagnosing hepatocellular carcinoma. Mortality was recorded. Final follow-up was taken at 2 years.

Results: There were 75 (62.5%) male patients while 45 (37.5%) female patients. 25 (20.83%) patients were ages 25 to 40 years, 52 (43.33%) patients were ages 41 to 55 years, 30 (25%) had ages 56 to 70 years and 18 (15%) were above 70 years. 56 (46.67%) patients had Hepatitis B virus and 42 (35%) had hepatitis C virus and 22 (18.33%) had co-infection of hepatitis B virus and hepatitis C virus. Hepatocellular carcinoma was diagnosed in 8 (6.67%) cases at final follow-up. 4 (3.33%) patients were died during the study period.

Conclusion: Prevalence of hepatocellular carcinoma in our study was high. Hepatitis B virus and hepatitis C virus and co-infection considered a major cause for developing hepatocellular carcinoma.

Key Words: Liver cancer, Prevalence, Hepatitis B virus (HBV), Hepatitis C virus (HCV)

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INTRODUCTION

Worldwide, liver cancer is the 7th most frequently diagnosed cancer type and this malignant disease is the major cause of deaths among all cancer types.[1] Hepatocellular carcinoma (HCC) is the most common histological type of liver cancer and it accounted 70 to 80% followed by intrahepatic cholangiocarcinoma accounted 10 to 25% globally.[2] Globally, HBV virus and HCV virus infections are the major cause for developing HCC and approx 80% of hepatocellular carcinoma is developed due to HBV and HCV virus infections.[3] Some of researches reported that intrahepatic cholangiocarcinoma (iCCA) is also associated with HBV and HCV infections.[4]

The incidence of HCC among HBV and HCV patients have found to be differ due to different areas and due to different rate of frequency of HBV and HCV in different population.[5] Globally it has been reported that the incidence rate of liver cancer in Southeast and East Asia is High as compared to western countries and HBV virus infection is the leading cause of liver cancer.[6,7] A meta-analysis that included 39 studies performed in China during the years 1954 to 2010, based on the seroprevalence of HBV surface antigen (HbsAg) and antibodies against HCV (anti-HCV) in HCC patients, reported that about 70% of HCC was associated with HBV infection, 5% with HCV infection, and 6% with HBV+HCV co-infection. Up to 19% of HCC cases showed no relationship with HBV or HCV.[8]

It is demonstrated that HBV vaccination is very helpful for reducing the rate of liver cancer in young adults. Better strategies for the treatment of HBV virus infection is also very helpful for decreasing the incidence of HBV surface antigen.[9,10]

Present study was conducted aimed to examine the prevalence of hepatocellular carcinoma in patients presented with Hepatitis B virus and Hepatitis C virus.

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MATERIALS AND METHODS

This prospective/observational study was conducted at Department of Medicine, Amna Inayat Medical College, Sheikhupura from 1st July 2017 to 31st December 2019.. A total of 120 patients of both genders clinically diagnosed to have HBV and HCV infection with ages 25 to 80 years were included. Patients with chronic renal failure, patients with coronary artery disease, other severe diseases in which patients expected survival is very low and those who were unable for follow-up visit were excluded from this study. Patient's demographical details including age, sex, residence, socio-economic status were recorded after informed consent. At the time of enrollment complete blood count, liver function test were obtained. Polymerase chain reaction (PCR) was done to detect the HBV and HCV viruses. These tests were done at every follow-up visit. Serum alpha-fetoprotein (AFP) was estimated using a particle enzyme immunoassay (normal range <20 ng/ml).

At the time of admission abdominal Ultrasound and CT scan was done. Features and findings of liver were recorded. Ultrasound and CT findings along with AFP levels were done to diagnose the presence of HCC. Liver biopsy was done for the histological confirmation of diagnosed HCC patients. These tests were obtained at every 6 months till final follow-up. Follow-up was taken at every 6 months. Final follow-up was at 2 years. All the data was analyzed by SPSS 21.

RESULTS

There were 75 (62.5%) male patients while 45 (37.5%) patients were females. 25 (20.83%) patients were ages 25 to 40 years, 52 (43.33%) patients were ages 41 to 55 years, 30 (25%) had ages 56 to 70 years and 18 (15%) were above 70 years. 70 (58.33%) patients had rural residency while 50 (41.67%) had urban residence. 55 (45.83%) patients had middle socio-economic status and 65 (54.17%) had low status (Table 1). There were 56 (46.67%) patients had hepatitis B virus and 42 (35%) had hepatitis C virus and 22 (18.33%) had co-infection of HBV and HCV (Table 2).

According to the abdominal ultrasound and CT scan in selected cases along with AFP estimation we found 8 (6.67%) cases had developed HCC. All HCC cases had done biopsy for histopathology confirmation. From all HCC cases 4 had HBV, 2 were HCV and 2 were co infected. In 8 HCC cases 7 patients had AFP level <150 ng/ml and 1 case had >250 ng/ml. 5 patients had small sized HCC <5cm abd 3 patients had sized >5 cm. From all the HCC patients 3 patients had BCLC stage A, 3 patients had stage B and 2 patients had stage C respectively (Table 3). During the study period we found 4 (3.33%) patients were died (Table 4).

Table No.1: Baseline characteristics of all the patients

Variable	No.	%
Gender		
Male	75	62.5
Female	45	37.5
Age (years)		
25 – 40	25	20.83
41 – 55	52	43.33
56 – 70	30	25
> 70	18	15
Residence		
Rural	70	58.33
Urban	50	41.67
Socioeconomic status		
Low	55	45.83
Middle	65	54.17

Table No.2: Types of hepatitis viruses among all the patients

Type of hepatitis	No.	%
HBV	56	46.67
HCV	42	35
HBV+HCV	22	18.33

Table No.3: Characteristics of HCC among all the patients at final follow-up

Characteristics	No.	%
HCC		
Yes	8	6.67
No	112	93.33
Infection Related HCC		
HBV related HCC	4	3.33
HCV related HCC	2	1.67
HBV+HCV	2	1.67
AFP Level		
<150 ng/ml	7	5.83
>150 ng/ml	1	0.83
Tumor Size		
≤5 cm	5	4.17
>5 cm	3	2.5
Tumor Stage		
A	3	2.5
B	3	2.5
C	2	1.67

Table No.4: Mortality rate among all the patients

Mortality	No.	%
Yes	4	3.33
No	116	96.67

DISCUSSION

Hepatocellular carcinoma of liver cancer is one of the most common cancer types in all over the world and approximately 70% deaths were recorded due to liver cancer.[11] Many of studies illustrated that Hepatitis B

and Hepatitis C viruses were the major causes of developing HCC.[12,13] Present study was also conducted aimed to examine the contribution of HBV and HCV for developing HCC. In this study we included 120 cases of HBV and HCV, in which 75 (62.5%) patients were males while 37.5% patients were females. These results were similar to some other studies in which male patients were high in numbers 60 to 70% as compared to females.[14,15] In our study 25 (20.83%) patients were ages 25 to 40 years, 52 (43.33%) patients were ages 41 to 55 years, 30 (25%) had ages 56 to 70 years and 18 (15%) were above 70 years. 70 (58.33%) patients had rural residency while 50 (41.67%) had urban residence. 55 (45.83%) patients had middle socio-economic status and 65 (54.17%) had low status. A study conducted by Javed et al[16] reported mean age of HBV and HCV patients were 45.1±13.1 years.

In present study we found that 56 (46.67%) patients had Hepatitis B virus and 42 (35%) had HCV and 22 (18.33%) had co-infection of HBV and HCV. These results were comparable to many other studies in which patients with Hepatitis B virus were high in numbers as compared to HCV and co-infected.[17,18]

We found from our study that the HCC developed in 8 (6.67%) patients at 9, 17, 21, 26, 28, 31, 33 and 36 moths respectively. These results were comparable to some other studies in which HCC rate was 4.73%, 2.5%.[19,20] Our results showed different values regarding HCC it may be due to atmospheric difference and due to severity of disease. We found that from all HCC cases 4 had HBV 2 had HCV and 2 were co infected. In 8 HCC cases 7 patients had AFP level <150 ng/ml and 1 case had >250 ng/ml. 5 patients had small sized HCC <5cm and 3 patients had sized >5 cm. From all the HCC patients 3 patients had BCLC stage A, 3 patients had stage B and 2 patients had stage C respectively. Many of previous studies reported HBV virus reported as most common cause of hepatocellular carcinoma.[21,22] In our study we found that 4 (3.33%) patients were died at 9, 16, 26 and 32 months respectively. These results were comparable to international literature.[23]

CONCLUSION

Hepatocellular carcinoma is one of the leading causes of morbidity and mortality in all over the world. We concluded from this that prevalence of Hepatocellular carcinoma in our study was high. HBV and HCV and Co-infection considered a major cause for developing HCC. Moreover, better strategies and awareness to this malignant disease may helps to reduce the incidence rate of hepatocellular carcinoma.

Author's Contribution:

Concept & Design of Study:	Syed Waseem Ahmad Mujtaba
Drafting:	Awais Anwar
Data Analysis:	Abdul Matin Qaisar
Revisiting Critically:	Syed Waseem Ahmad Mujtaba, Awais Anwar
Final Approval of version:	Syed Waseem Ahmad Mujtaba

Conflict of Interest: The study has no conflict of interest to declare by any author.

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