

FREQUENCY OF HEPATOCELLULAR CARCINOMA IN PATIENTS WITH LIVER  
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## ABSTRACT

**Background:** According to American institute of cancer research, Hepatocellular Carcinoma is the 6th most common cancer in the world and 4th most common cause of death due to cancer. Hepatocellular Carcinoma is one of the complication of liver cirrhosis resulting mainly due to chronic infection by Hepatitis B Virus, Hepatitis C Virus and excessive alcohol consumption. Its incidence is increasing in Pakistan and might represent the most common cancer in adult males. **Objective:** Purpose of this study is to determine the frequency of hepatocellular carcinoma in patient with liver cirrhosis. **Methodology:** It was a cross sectional study, conducted at Oncology department, Nishtar Hospital Multan for duration of 6 months from August 2016 to January 2018. We enrolled 55 patients with liver cirrhosis from either gender with age ranges from 35 to 75 years. A detailed history, examination, relevant laboratory investigation i.e. CBC, LFTs, PT, aPTT, serum AFP, viral markers, ascetic fluid examination etc., and ultrasonography was performed on every selected patients. The diagnosis of liver cirrhosis was made on the basis of shrunken liver, with or without associated portal hypertension and ascites. The child pugh class was assessed by detailed clinical examination, USG and liver function tests. Patient having mass lesion on USG in liver with serum alpha fetoprotein level more than 200ng/ml was labelled as case of Hepatocellular carcinoma. In some patients HCC was further confirmed through triphasic CT scan. Data was analyzed by using SPSS version 20. **Results:** We evaluated 55 patients of liver cirrhosis with mean age of 50.80±13.11 years. There were 33 (60%) males and 22 (40%) females. HCC was seen in 7 (12.7%) out of 55 patients. HCC was significantly high in males where it was seen in 5 (9.09%) of patients with p=0.04. We observed that the ratio of HCC was high in patients with age above 50 years. Hepatocellular carcinoma was mostly associated with patient having child pugh class C. **Conclusion:** We concluded that Hepatocellular Carcinoma was significantly high in males with age above 50 years and fall in child pugh class C.

**KEYWORDS:** HCC, Liver cirrhosis, Child Pugh class. Hepatitis B, Hepatitis C.

## INTRODUCTION

Liver cirrhosis results from the wound healing response to chronic liver injury that causes fibrosis, distortion of the liver parenchyma, nodule formation, alterations in blood flow and functional abnormalities in liver. Liver cirrhosis is progressive disease and Liver transplantation is the only possibility of cure for liver cirrhosis and can improve quality of life in patients with end-stage liver disease. Hepatitis B and Hepatitis C are the most common causes.<sup>[1,2]</sup> In USA, alcohol and HCV are the most common cause of liver cirrhosis.<sup>[1,2]</sup> Liver cirrhosis results in multiple life threatening complications i.e. ascites, portal hypertension, variceal bleeding, caput medusa, spontaneous bacterial peritonitis, hypersplenism and ultimately hepatocellular carcinoma.<sup>[3,4]</sup> Hepatocellular carcinoma (HCC) usually found incidentally on Ultrasonography (USG) as the signs and symptoms are same as that of liver cirrhosis. Computed tomography (CT) scan helps us to reveal the underlying

involvement of the surrounding structures. Raised Alpha fetoprotein further helps us in formulating definite diagnosis of HCC because of its high sensitivity and specificity.<sup>[5,6]</sup> Hepatocellular carcinoma as per world health organization (WHO) statistics is ranked 6<sup>th</sup> most common cancer in the world.<sup>[7]</sup> In Pakistan prevalence of HCC varies from 3.7%-16% of malignant tumors and most common cause of HCC is viral hepatitis B and C related cirrhosis. This study was conducted to determine the frequency of hepatocellular carcinoma in liver cirrhosis patients.

## METHODOLOGY

It was a cross sectional study, conducted at Oncology department, Nishtar Hospital Multan for duration of 6 months from August 2016 to January 2018. We enrolled 55 patients with liver cirrhosis from either gender with age ranges from 35 to 75 years. A detailed history, examination, relevant laboratory investigation i.e. CBC,

LFTs, PT, aPTT, serum AFP, viral markers, ascetic fluid examination etc., and ultrasonography was performed on every selected patients. The diagnosis of liver cirrhosis was made on the basis of shrunken liver, with or without associated portal hypertension and ascites. The child pugh class was assessed by detailed clinical examination, USG and liver function tests. Patient having mass lesion on USG in liver with serum alpha fetoprotein level more than 200ng/ml was labelled as case of Hepatocellular carcinoma. In some patients HCC was further confirmed through triphasic CT scan. Data was analyzed by using SPSS version 20.

## RESULTS

We enrolled 55 cases of liver cirrhosis, with mean age  $50.80 \pm 13.11$  years. There were 33 (60%) males and 22 (40%) females. HCC was seen in 7 (12.7%) out of 55 cases. HCC was significantly high in males where it was seen in 5 (9.09%) of cases with  $p= 0.03$  as in table I. It was also significantly high in patients with age more than 50 years, where it was observed in 5 (9.09%) cases with  $p= 0.05$ . In terms of child pugh class it was also significantly high in cases with class C where all the 7 cases were seen with  $p= 0.001$ .

**Table I: Hepatocellular Carcinoma versus gender, age and child pugh class. (n=55).**

| Gender               | Hepatocellular Carcinoma |             | P Value |
|----------------------|--------------------------|-------------|---------|
|                      | Yes                      | No          |         |
| Male (33)            | 5 (15.15%)               | 28 (84.84%) | 0.03    |
| Female (22)          | 2 (9.09%)                | 20 (90%)    |         |
| Age Groups           | Hepatocellular Carcinoma |             | 0.06    |
|                      | Yes                      | No          |         |
| 50 year or less (31) | 2 (6.4%)                 | 29 (93.5%)  | 0.06    |
| >50 years (24)       | 5 (20.83%)               | 19 (79.16%) |         |
| Child pugh class     | Hepatocellular Carcinoma |             | 0.001   |
|                      | Yes                      | No          |         |
| B (15)               | 00 (00%)                 | 15 (100%)   | 0.001   |
| C (40)               | 7 (17.5%)                | 33 (82.5 %) |         |

## DISCUSSION

HCC is the most common primary liver cancer and the third most common cause of cancer-related related worldwide.<sup>[8]</sup> Through its complications like ascites, portal hypertension and variceal bleeding etc., it make life very difficult. HCC mostly develops in patients with underlying liver cirrhosis due to Hepatitis B, Hepatitis C and alcohol consumption.<sup>[9]</sup> Liver cirrhosis especially hepatitis C virus infection is strongly associated with its development. The chance of its development after overt cirrhosis is 1-4% per year.<sup>[10]</sup> According to a study done in Hyderabad, Hepatitis C was leading cause of cirrhosis and HCC.<sup>[11]</sup> Hepatitis C leads to hepatocellular carcinoma through liver cirrhosis mostly but Hepatitis B can directly results in HCC.<sup>[11]</sup> In the present study, the HCC was seen in 12.7% of the cases. This was almost similar to the studies done in the past.<sup>[12,13]</sup> The data has also revealed that the incidence is higher in cases of HCV infection as compared to HBV infection and alcoholism. According to a study done by Imberti et al, 200 cases of cirrhosis were followed and HCC was seen in 5.1% of the cases.<sup>[8,9]</sup> In this current study, the HCC was more seen more in males as compared to females. The data from different countries i.e. China and Africa also showed similar ratio as 8:1 male to female.<sup>[13,14]</sup> HCC was also common in cases that had age more than 50 years where it was seen in 5 (9.09%) cases with  $p= 0.05$  cases. This finding was also supported by various studies.<sup>[7,8]</sup> According to a study the median time for diagnosis of HCC is around 65 years and almost negligible before the age of 40 years.<sup>[12]</sup> In underdeveloped Asian countries the risk among young

patients is high as compared to the developed ones which can be explained by the fact that the chances of getting infection at earlier age is common in Asian countries and they has poor the health care facilities; which ultimately results in early progression to liver cirrhosis and HCC.<sup>[14]</sup> HCC was significantly high in cases of child pugh class C where all the 7 (100%) cases were found. This was also seen in the past studies as well.<sup>[7,8,9]</sup> The other data which was found in previous studies was that, the cases that had severe disease and also for longer duration of action, it was more associated with HCC.<sup>[10]</sup> According to a study by Tariq M et al from Karachi, the incidence of HCC was 5% with child class B and 6.7% with class C with an insignificant difference.<sup>[15]</sup>

## CONCLUSION

We concluded that Hepatocellular Carcinoma was significantly high in males with age above 50 years and fall in child pugh class C.

Authors does not show any conflict of interest.

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