SERO-PREVALENCE OF HEPATITIS B AND C VIRUS IN PATIENTS WITH HEPATOCELLULAR CARCINOMA.

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Objective: To know about the sero-prevalence of hepatitis B and C virus in patients with hepatocellular carcinoma (HCC).

Study design: Descriptive observational Study.

Place and Duration of Study: This study was conducted in Medical units of Naseer Teaching Hospital and Khyber Teaching Hospital, Peshawar from June 2012 to June 2013.

Materials and Methods: A total of 100 diagnosed cases of hepatocellular carcinoma were studied. A detailed history and clinical examination was performed in each case. Serological assessment for hepatitis B, hepatitis C and delta virus was carried out through ELISA. Liver function tests (LFTs) were performed in all patients.

Results: A total of 100 diagnosed cases of HCC were enrolled comprising 62 male and 28 female. Mean age was 55.4± 12.35 years with age range of 20 to 75 years. HCV infection was found in 52%, HBV infection in 28%, both HCV and HBV infection in 10%, alcoholism in 6%. No cause found in 4% of patients. 48% of patients presented in Class A, 30% in Class B and 22% in Class C according to Child-Pugh Classification.

Conclusion: Chronic Hepatitis B and Hepatitis C are the most common causes of cirrhosis and HCC.

Keywords: Sero-Prevalence, Hepatitis B virus, Hepatitis C virus, Hepatocellular Carcinoma.

INTRODUCTION

Hepatocellular carcinoma (HCC) is a primary malignancy of the hepatocytes. It is a common disease worldwide. Most of the patients present in advanced disease state. It carries a poor prognosis. It is sixth most common cancer worldwide with about 600 000 deaths per year. HCC represents a major health challenge with significant and increasing global impact.[1,2] HCC is the third most common cause of cancer-related death and the leading cause of death among patients with cirrhosis in Europe and in the US.[3,4,5] The most relevant and well described risk factors for HCC includes chronic hepatitis C (HCV) infection, hepatitis B (HBV) infection, alcoholic cirrhosis and non-alcoholic steatohepatitis. The highest incidence rates are in Western and Central Africa and East and South-East Asia. The incidence of HCC in the developed world is comparatively low, apart from high rates in Japan, but there has been a steady overall increase across most Western nations over the last two decades.[6] In Pakistan its projected incidence is 8/100,000 per annum.[7]

Cirrhosis is the strongest and the most common known risk factor for HCC particularly cirrhosis related to HCV and HBV infections.[8] Global incidence of chronic hepatitis B virus infection is estimated to be 400 million persons. It is estimated that 75% off all HCC cases are due to infection with HBV or HCV.[6,9,10]

About 7 million Pakistanis are carriers of Hepatitis B and approximately 10 million are affected by hepatitis C.[11] Several researchers have found that hepatocellular carcinoma in Pakistan occurs more commonly in middle aged males who are infected with hepatitis B or hepatitis C.[12]

This study was carried out with the intention to better understand the contributing factors for the development of HCC and may help in drawing recommendation for screening and prevention of hepatitis B and hepatitis C virus infections.

MATERIAL AND METHODS

This descriptive observational study was conducted in medical department s of two teaching hospitals of Peshawar, Khyber Pukhtunkhwa Khyber Teaching Hospital and Naseer teaching Hospital Peshawar from June 2012 to June 2013. A total of 100 consecutive diagnosed cases of hepatocellular carcinoma were selected for this study. Detailed clinical history was taken from each patient including age, sex and demographic information after informed consent on proforma devised according to the objective of the study. A thorough clinical examination was performed including presence of jaundice, ascites, hepato-splenomegaly and hepatic encephalopathy. Various investigations were performed including Hepatitis B Surface Antigen, Hepatitis C virus antibodies, Delta virus antibodies in the serum y ELISA, total serum bilirubin, serum level of aspartate

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aminotransferase (AST), alkaline phosphatase (ALP), gamma glutamyl transferase (GTT), prothrombine time (PT), international normalization ratio (INR) and serum alpha feto protein levels. All investigations were performed from same hospital laboratory free of cost. Investigations which were not available in the hospital laboratory were performed from well reputed laboratory outside. Patient welfare fund was used for this purpose.

Presence of underlying cirrhosis was assessed clinically and radialogicaly. All patients were categorized according to Child–Pugh classification into class A, B and C.

Mean±SD and percentages were calculated for the presence of hepatitis B virus, Hepatitis C virus and other variables.

RESULTS

This descriptive observational study reveal that 68 were male and 32 were female with male to female ratio of 2.1: 1. Mean age was 55.4±12.35 years (Range 20-75 years). The age distribution is shown in Table 1.

Hepatitis were found in majority of patients with hepatocellular carcinoma. 52% of patients were positive for sero-markers of hepatitis C virus. Sero-markers of hepatitis B virus was detected in 28 (28%) of patients. HCV and HBV co-infection was present in 10 (10%) of patients. Six (6%) of patients gave history of alcoholism. No cause could be identified in 4 (4%) of patients. The results are shown in Fig. 1

Table 1. Age Distribution

No	Age range (In years)	Total No (n)	Percentage (%)
1	20-35	3	3
2	36-50	31	31
3	51-65	48	48
4	66-75	18	18

Table 2. Child-Pugh Classification

Class	Total no of patients (n)	Percentage (%)
A	48	48
B	30	30
C	22	22

All patients were classified according to Child-Pugh classification in Class A, Class B and Class C as shown in table 2.

DISCUSSION

Hepatocellular carcinoma (HCC) is a serious health problem and is responsible for as many as 1 million deaths per year worldwide. Major risk factors for HCC are hepatitis B, hepatitis C, cirrhosis of any kind and exposure to aflatoxin B1. In Africa and Asia, where both the incidence of vertically transmitted hepatitis B and aflaatoxin B1 exposure are high, rates of HCC are nealy 15 times higher than in the United States. If detected early in its course, HCC can be cured with surgical resection, transplantation and possibly by non-surgical ablative therapies. Screening and surveillance strategies to detect HCC at an earlier and more curable stage are being developed and implemented in countries around the world. The effects of such strategies on the natural history of HCC are unknown.[13]

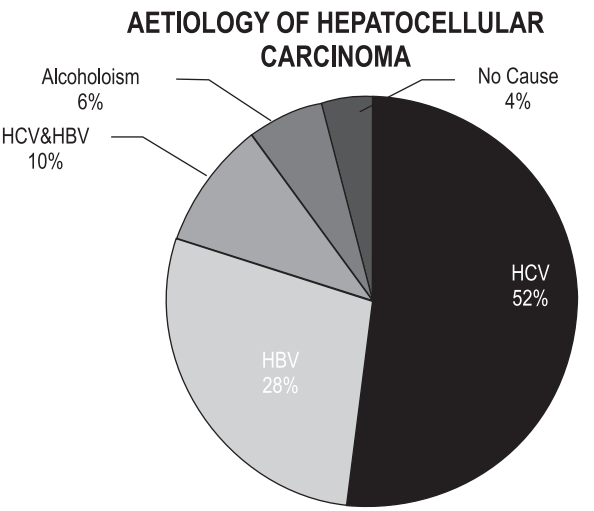

Fig. 1
HCV- Hepatitis C Virus HBV- Hepatitis B Virus

In Pakistan many studies have been published regarding etiology of HCC. In earlier studies, HBs Ag positivity was about 60% and was a major cause of HCC.[14,15] However in latest studies, the positivity of hepatitis C virus has been up to 80%.[16,18]

Males outnumbered females with a ratio of 2.1:1. In our study, 68 (68%) were male and 32 (32%) were female. This male predominance is also evident in other national and international studies. Amin S reported 70% male patients in his study which nearly correlates to our study.[19] 82% were male in study conducted by Ansari S, et al.[20] In another study conducted by Mumtaz MS et al, 89% of patients were male.[21] In a study conducted by Chowdhury OB et al in Bangladesh, 97% were male[22]. This male predominance may be due to high prevalence of HBV and HCV infection in males and more consumption of alcohol by male.

Mean age of patients in our study was 55 years. Nearly the same mean age was recorded in other local studies. A study conducted in Shifa International Hospital Islamabad by Nasir Khokhar N et al[23] reported mean age of 58 years while Abbasi A et al[24] reported 56 years as mean age of patients. Amin S et al reported a slight low mean age of 49 years19.

HCV was present in most patients of hepatocellular carcinoma in our study (52%). HCV infections lead to chronic hepatitis and cirrhosis and ultimately to HCC. It takes long between HCV infection and HCC to develop.[25,26] HCV infection was a major cause of HCC in other national and international studies. Two local studies conducted by Ansari S et al and Abbasi A et al showed that Anti HCV was found in 72% and 44% of HCC patients respectively[20,24]. Another study conducted by Muhammd Idrees showed that HCV infection was found in 63% of HCC patients[27]. An international study conducted in Mexico also showed that HCV infection was the major cause of HCC[28]. Thus all national as well as international studies support our data.

HBV infection was the second most common cause of HCC in our studied population and was found in 28% of patiens. HBV infection was present in 15% of HCC patients in a study conducted by Amin S et al[19] which is lower than our study. It was present in 42% of HCC patients studied by Ansari S et al[20] which is equal our study.

Chronic alcohol use of greater than 80gm/day increases the risk of HCC fivefold[29] in our study 06 (06%) patients were alcoholic and HBs Ag and HCV Ab negative. In a study conducted by Amin S et al, 5% of HCC patients were alcoholic which correlates well with our study.[19] while Ansari S et al study showed that 0.1% of HCC patients were alcoholic which is quite low as compared to our study.[20]

According to Child–Pugh classification, 48 (48%) of patients were in class A, 30 (30%) were in class B and 22 (22%) were in class C. An international study conducted by Rodriguez Diaz in Mexico 56% of patients were in class A, 37% in class B and 19% in class C.[28]

This study nearly correlates with our study.

CONCLUSION

Hepatocellular carcinoma is a major tumor in Pakistan. Chronic Hepatitis B and Hepatitis C are the major causes of cirrhosis which ultimately culminates into HCC. Proper and timely surveillance can detect early and possible treatable HCC. Moreover Hepatitis B vaccination can reduce the frequency of HBV and chronic hepatitis.

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