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Spectrum of hepatocellular carcinoma: study from a tertiary care centre

Abstract

Hepatocellular carcinoma (HCC) is the most common primary hepatic malignancy. In India there is extreme paucity of data on HCC. Aim of this study was to review the risk factor, clinical feature and tumor characteristics from northwest part of India. This study concluded that phenotype of HCC in northwest India is very similar to that described in other region of India. Hepatitis B infection is the most common risk factor of HCC and most of the patients present in advance stage of disease.

Keywords: Hepatocellular carcinoma; Hepatitis B infection; HCC; Patients; HCV; Hepatitis B virus; HBV

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Abbreviations: HCC, hepatocellular carcinoma; HBV, hepatitis B virus; EASL, European association for study of liver; BCLC, Barcelona clinic liver cancer

Introduction

Hepatocellular carcinoma (HCC) is the most common primary hepatic malignancy. HCC is the fifth most common cancer worldwide in men and the second most frequent cause of cancer death, with an annual incidence of 0.5 million worldwide.[1] Majority of HCC occur in Asia and Africa. With the rising number of cases of HCC, the incidence of HCC is expected to reach a peak in the United States around year 2015.[2]

In India there is extreme paucity of data on HCC. The mean incidence of HCC (per 100,000 populations) in four population-based registries was 2.77 and 1.38 for male and female respectively.[3–6] Based on autopsy studies prevalence of HCC in India varies from 0.2 to 1.6%.[7] One of the studies from India has shown HCC incidence rate of 1.6% per year in cirrhotic patients.[8] Hepatitis B Virus (HBV) infection is the most common risk factor of HCC in India.[9–11] Most of the patients in India present during advance stage of HCC with majority of patients having underlying cirrhosis at time of diagnosis.

There is a considerable geographical variation in risk factor, clinical feature and survival in HCC. There are only few studies from different regions of India. There is paucity of data regarding demographic profile, risk factor and clinical feature of HCC from northwest part of India. Aim of this study was to review the risk factor, clinical feature and tumor characteristics from a tertiary centre of northwest part of India.

Material and method

Medical College Jaipur, were reviewed. Cases with incomplete records were excluded from the study. Clinical, Biochemical, Radiological and Histological details were reviewed. Proper consent was taken prom patient wherever possible.

HBsAg, HBeAg, Anti HBe and Anti HCV was accessed in each patient. Cutoff for alcohol induced liver disease was taken as >80gm/day for 5years.HBV DNA,HCV RNA ,Autoimmune markers, serum cerruloplasmin and 24 hour urinary copper was also accessed. Diagnosis of HBV was made when viral marker or HBV DNA was positive.

Diagnosis of underlying chronic liver disease was based on Ultrasound abdomen, Doppler ultrasound and Endoscopy findings. Severity of cirrhosis was graded according to CTP score. HCC was diagnosed according to Modified European Association for study of Liver (EASL) criteria[12] which includes either FNAC or any two of the following three:

a. AFP>300ng/dl

b. Arterializations of mass on TPCT

c. MRI. Staging of HCC was done according to Barcelona Clinic Liver Cancer (BCLC) classification[13] which was found good in Indian cohort.[14]

Results

Records of 130 patients with diagnosis of HCC in last two year were reviewed. Six patients were excluded due to incomplete records. Total 124 patients were included for analysis. Demographic profile and clinical feature were analyzed. Mean age at presentation was 55.1+13.1years range (27-71years). 98(79.0%) were males and 26(21.9%) were females. Majority of patients were symptomatic at time of diagnosis with abdominal pain in 96(77.4%), as cites 74(59.6%), weight loss 72(58%), jaundice 25(20.1%), fever 12(9.6%) and only 11(8.8%) were asymptomatic at diagnosis. Underlying cirrhosis was present in all the patients. Hepatitis B was the most common risk factor and was seen in 81(65.3%) followed by Hepatitis C in 14(11.6%), Ethanol in 10(8.0%) and unknown in 19(15.3%) of our patients.

CTP score was used to access the severity of underlying cirrhosis. Child's status was A in 21(16.9%), B in 71(57.2%) and C in 32(25.8%). Alpha fetoprotein level >300 was present in 58(46.7%) of patients. BCLC staging was used to stage HCC and BCLC stage A was present in 7(5.6%), stage B in 31(25%), stage C in 56(45.1%) and stage D in 30(24.1%). Lesions were solitary in 30(24.1%) and multiple in 94(75.8%). Portal vein invasion was present in 48(38.7%).

Discussion

There is no previous study on HCC from northwest part of India. This comprehensive study of HCC provides the Clinical feature, Risk factors and Tumor characteristic from a tertiary care centre of western part of India.

Mean age of patients in this study was 55.1+13.1years which was similar to earlier series from India. Male were more commonly involved than female in most of the studies. In our study male to female ratio was 3.7:1 which was consistent with other studies.[10] In one of the recent study from India male to female ratio was very high and was 17:1.[11]

The risk of development of HCC is higher in persons with cirrhosis than in those without cirrhosis and is true for both HBV and HCV infection.[15] Underlying cirrhosis was present in all patients in this study. Other studies from India have shown similar finding with underlying cirrhosis ranging from 72.8% to 97.5% in different studies from India.[10,16]

Previous study had shown that significantly higher prevalence of abdominal pain, weight loss and anorexia was seen in patients with cirrhosis and HCC compared to those without HCC.[17] Majority of the patients in this study were symptomatic at time of presentation and only 11(8.8%) of patient were asymptomatic at time of diagnosis of HCC. Abdominal pain was the predominant complain in 96(77.4%) followed by as cites in 74(59.6%).

Raised serum AFP strongly suggests presence of HCC, but it is not essential to carcinogenesis. Not all HCC produces AFP. The levels of AFP are affected by ethnicity, underlying cause of liver disease, and tumor stage.[18-20] AFP was more than 300 in 58(46.7%) patients of HCC (Figure 1) (Figure 2). In a study from India AFP were more than 300 in 36.6% of patients in those with unrespectable HCC.[21]

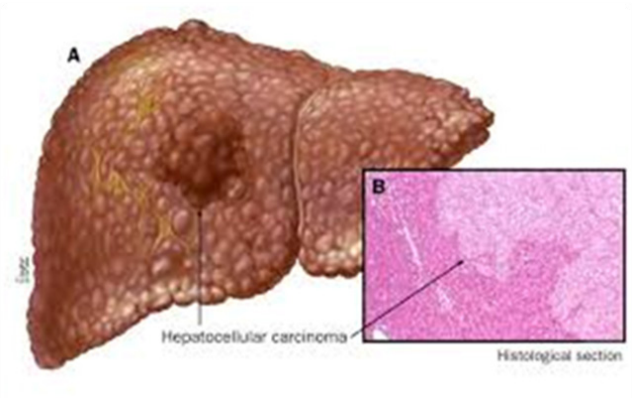

Figure 1 Hepatocellular carcinoma (Morphology and Histology).

Hepatitis B infection increases the risk of HCC manifold. A 10 fold increase risk of HCC occurs among men who are positive for HBsAg alone and a 60 fold risk for those who are positive for both HBsAg and HBeAg compared with those who are HBsAg negative.[22] Hepatitis B infection is the most common risk factor of HCC in India. Hepatitis B infection in Indian HCC patients varies from 50.9 to71%.[9–11] In a recent study from India 62.6% of cases were positive for Hepatitis B and risk of HCC was higher with genotype D.[23] In present study hepatitis B infection was seen in 81(65.3%) of cases although genotype analysis was not done in our study.

Hepatitis C infection was the second most common risk factor in HCC patients and Hepatitis C infection was present in14 (11.6 %) which was also consistent with other previous studies. Previous studies have shown hepatitis C prevalence ranging from 11.7% to 26.7% in different studies.[10,11,23–26]

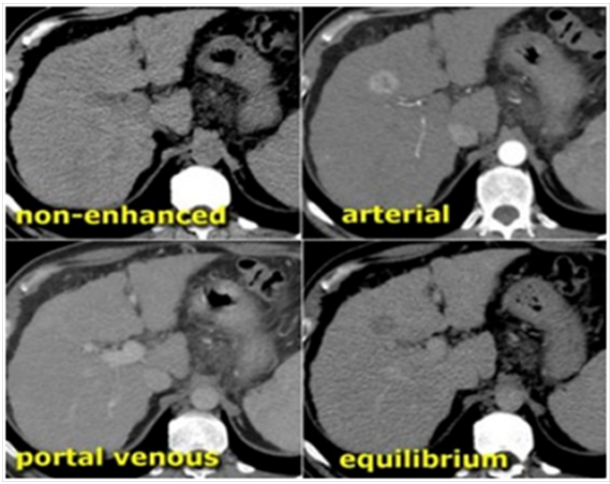

Figure 2 CT imaging of hepatocellular carcinoma.

BCLC stage was used for staging the disease. In a previous study from India seven different staging systems were compared. CLIP, Tokyo score and BCLC staging system showed a significant difference in the probability of survival and found to be most useful staging system in India cohort.[14] In present study majority of the patients were in advance stage of HCC at time of diagnosis. % patients were in BCLC stage C or D at time of diagnosis.[27] In another study from India 44.9% of patient were in stage C or D at time of presentation.[10]

On imaging studies solitary lesion was present in 24.1% and multiple lesions in 75.8 %. Previous study also showed almost similar finding and HCC was solitary in 46.5% and multiple lesions in 53% cases.[10] Portal vein invasion was seen in 40% cases in previous study while in our study it was seen in 38.7% of cases. FNAC was done in ten of our patients in whom diagnosis was not clear after imaging studies and AFP was also non diagnostic.[28–30] FNAC showed high nuclear cytoplasm ratio and trabecular pattern was seen in majority of patients. Most of the patient presented during advance stage of disease so resection of tumor was possible in only five of our patients.[31]

This study results show that phenotype of HCC in this centre from northwest India is very similar to that described in other region of India. Hepatitis B infection is the most common risk factor of HCC and most of the patients present in advance stage of disease. Universal hepatitis B vaccination can be helpful in reducing the burden of HCC in society.

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Conflicts of interest

The authors declare there is no conflict of interests.

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