# Hepatocellular Carcinoma In North- Eastern Nigeria: A Prospective Clinical Study Of 100 Cases

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**Abstract**

Objective: The aim of the study is to assess the clinical presentations, outcome and risk factors associated with hepatocellular carcinoma (HCC) in patients seen at the University of Maiduguri Teaching Hospital.

Method: The study was prospective. Patients with histologically confirmed HCC admitted under the gastroenterology unit of the Department of Medicine were studied.

Result: A total of 100 patients were studied, consisting of 79 males and 21females giving a male to female ratio of 4:1. Their mean age was 48.6 years (SD±14.7). The highest incidence of the disease was found among those aged 40-59 years. The mean duration of symptoms before presentation was 18 weeks (SD±15.1). Significant risk factors found were past history of jaundice (58%), abuse of medicinal herbs (56%) and scarification marks (21%). HBsAg was positive in 67% of the patients and HCV antibody in 18%. The mean interval from onset of symptoms to death was 15 weeks (SD±12). Hepatic failure was the commonest cause of death (64.3%)

Conclusion: HCC affects mainly middle aged Nigerians, principally males. Most patients present with advanced disease and the prognosis is very generally poor.

## INTRODUCTION

Hepatocellular carcinoma (HCC) is the fourth most common cancer in the world[1]. Sub-Saharan Africa is one of the areas of with a high incidence of the tumour with hepatitis B virus (HBV) infection being the most important aetiologic risk factor[2]. Other risk factors include afltoxin contamination of foods, hepatotoxic medicinal herbs and hepatitis C virus infection[3, 4, 5].

The prognosis of HCC in Sub-Saharan Africa is generally poor with patients usually presenting late with advanced disease[4, 6]. This is in contrast to what obtains in Western countries where the disease is increasingly being diagnosed at an early stage (when it is amenable to treatment), though regular screening of those at risk.

This study was carried out to assess the clinical presentations, outcome and risk factors associated with HCC in patients seen at the University of Maiduguri Teaching Hospital.

The hospital serves as a referral centre for the Northeastern region of Nigeria.

## METHODOLOGY

Patients with clinical diagnosis of HCC admitted under the gastroenterology unit of the department of Medicine University of Maiduguri Teaching Hospital from January 2002 to December 2006 were prospectively studied. The diagnosis of HCC was confirmed histologically in all cases, following a Menghini needle biopsy or fine needle aspiration cytology (FNAC).

Information on risk factors for chronic liver disease and HCC such as blood transfusion, previous jaundice, scarification mark and alcohol consumption, were obtained using a structured questionnaire. Alcohol intake of 40g/day for males and 20g for females for at least 10 years was considered significant, while for cigarette smoking 10 sticks per day for at least 10 years. Regular intake of native herbal preparations for more than 10 years was considered herbal abuse.

Hepatitis B surface antigen (HBsAg) and anti-hepatitis C virus (HCV) antibodies were tested for in the sera of patients using ELISA (Murex Diagnostic Ltd, UK).

Relevant clinical findings were noted and recorded for each patient. The patients were then followed up until discharge or death.

## RESULTS

A total of 100 patients were studied, consisting of 79 males and 21 females giving a male to female ratio of 4:1. Their ages ranged from 21 to 75 years with a mean of 48.6 years (SD±14.7.0). The highest incidence of the disease was found among those aged 40-59 years (Table 1).

The main presenting complaints of the patients were right hypochondrial pain (86%), weight loss (85%) and abdominal swelling (62%). Duration of symptoms before presentation ranged from 2 to 56 weeks with a mean of 18 weeks (SD±15.1). The major clinical findings on examination were wasting (85%), pallor (79%), hepatomegaly (79%), ascites (62%) and jaundice (47%). Hepatic arterial bruit was heard in only 13% of the patients with hepatomegaly. The ascitic fluid was haemorrhagic in 19 (30.6%) of the 62 patients with ascites.

Coagulopathy, as manifested by prolonged prothrombin time, was the commonest complication occurring in 55% of the patients, followed by hepatic encephalopathy (Table 2). Distant metastases were documented 15 (15%) of the patients with the lung being the most frequent site (8%). Other sites include bones (vertebral spine, skull and ribs)[4%] and the skin(3%).

HBsAg was positive in 67 (67%) of the patients while anti –HCV antibody was detected in 18 (18%). Eight patients (8%) had dual infection.

Analysis of risk factors for HCC showed that 58% of the patients had a past history of jaundice, 21 % had scarification marks and 5 % had blood transfusion in the past. The use of traditional herbal concoctions was documented in 56% of the patients, while significant alcohol ingestion and cigarette smoking were documented in only 9% and 6% of the patients respectively.

Because all the patients presented with advanced disease only symptomatic treatment could be given, except in one patient in whom chemotherapy with intravenous 5-fluorouracil was started. The patient was however lost to follow up after the first course of treatment.

Forty two of the patients died in the hospital while the remaining were discharged or left on their own. The time interval from onset of symptoms to death ranged from 6 to 58 weeks with a mean of 15 weeks (SD±12). Hepatic failure (64.3%), manifested by deepening jaundice and coma was the commonest cause of death. Table 3 shows the causes of death among the 42 patients.

### Figure 1

Table 1: Age and Sex Distribution of 100 HCC Patients

| Age groups(years) | Sex | | Total | % |
|---|---|---|---|---|
| | Male | Female | | |
| 20 – 29 | 17 | 1 | 18 | 18 |
| 30 – 39 | 12 | 3 | 15 | 15 |
| 40 – 49 | 17 | 8 | 25 | 25 |
| 50 – 59 | 18 | 5 | 23 | 23 |
| 60 – 70 | 11 | 2 | 13 | 13 |
| ≥ 70 | 4 | 2 | 6 | 6 |
| Grand Total | 79 | 21 | 100 | 100 |

### Figure 2

Table 2: Complications among 100 patients with HCC

| Complication | No (%) |
|---|---|
| Coagulopathy | 55(55) |
| Hepatic encephalopathy | 32(32) |
| Intraperitoneal haemorrhage | 19(19) |
| Upper gastrointestinal haemorrhage | 8(8) |
| Bacterial peritonitis | 8(8) |
| Acute renal failure | 2(2) |
| Septicaemia | 2(2) |

**Figure 3**

Table 3: Causes of death among 42 patients with HCC

| Cause of death | No (%) |
|---|---|
| Hepatic failure | 27(64.3) |
| Massive intraperitoneal bleeding | 6(14.3) |
| Massive upper GI bleeding | 5(11.9) |
| Septicaemia | 2(4.8) |
| Acute renal failure | 2(4.8) |

## DISCUSSION

Our study showed that HCC predominantly affects males in their third and fourth decades, with a male to female ratio of 4:1. This is similar to earlier findings reported from Southern Nigeria and other African countries[2, 4, 6].

Chronic HBV infection is a major aetiological factor for HCC in Africa and Southeast Asia. In Nigeria, the seroprevalence of HBsAg in the general population averages 10-15% [6, 7]. Factors responsible for the high endemicity of HBV include low socioeconomic status leading to overcrowding and poor sanitation; socio-cultural practices such as scarification and tribal/tattoo marks often made with unsterilised instruments[8] . This study showed that 67% of the HCC patients were positive for HBsAg which is consistent with the findings of other studies in Nigeria[6, 7]. On other hand, only 13% of the patients were positive HCV antibody which indicates that HCV is not as important as HBV in the aetiology of HCC in this environment. This is contrary to what obtains in the United States, Europe and Japan where 50-75% of patients with HCC had evidence of HCV infection[10, 11, 12].

The ingestion of herbal preparations for various ailments is widespread in Nigeria. More than 50% of the patients in this study abused various herbal preparations. The use of medicinal herbs was reported as an important co-factor with aflatoxin in the development of HCC in Ethiopia[4].

Cigarette Smoking, alcohol consumption and a history of blood transfusion have been found to be significant risk factors for HCC in the United States[13]. However, this appears not to be the case here, as our study found that only 6%, 9%, and 4% respectively of the HCC patients had a history of cigarette smoking, alcohol consumption and blood transfusion. This supports an earlier finding in Nigeria that alcohol consumption and cigarette smoking may not be important risk factors for HCC in Nigerians[14].

Right hypochondrial pain, weight loss and abdominal swelling were the commonest symptoms with which our patients presented. This is in agreement with the findings of other authors[4, 6]. Hepatic bruit over an enlarged liver is considered a reliable diagnostic sign. However, this sign was elicited in only 13% of he patients which is similar to what was reported by Ndububa et al[6] in Southwestern Nigeria.

Distant metastases were documented in only 15% of the patients. The lung was the commonest site for metastasis. This is consistent with other reports[4, 6, 9].

All the patients seen presented with symptomatic disease. The mean duration of symptoms before presentation was 12 weeks. Because of the late presentation all the patients received only symptomatic or palliative treatment. Coagulopathy was the commonest complication seen, occurring in 55% of the patients. This makes it important to do the clotting profile of all HCC patients especially if needle biopsy of the liver is being contemplated in order to ovoid continuous bleeding from the biopsy site.

The mean duration from the onset of symptoms to time of death was 15weeks, which is in agreement with the findings from other studies[6, 15, 16]. Hepatic failure and intraperitoneal haemorrhage were commonest causes of death.

In conclusion, HCC principally affects middle-aged men, majority of whom present with advanced disease and the prognosis is abysmally poor. Emphasis should therefore be placed on prevention. To achieve that, high risk behaviour should be discouraged through health education. People at high risk for HCC such as those with chronic HBV or HCV infection and those with cirrhosis should be regularly screened by liver ultrasound scan and alpha-fetoprotein assays for early detection of malignant changes. In addition, early HBV immunization of all children will go a long way towards reducing the incidence of HCC in later life.

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