

Hepatocellular cancer Surveillance in Nigeria: The time for action is now!

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Abstract:

Hepatocellular cancer(HCC) is the 6th most common cancer in Nigeria and the 4th leading cause of cancer-related mortality in Nigeria. Globocan, estimates that the incidence of HCC was over 75,722 cases in Nigeria. Survival from liver cancer has been a dismal 2 months from diagnosis to time and death and the mortality from liver cancer is expected to rise to over 50% from the current numbers over the next 20 years.

Liver cancer surveillance is the defining intervention that can modify the landscape of liver cancer survival in Nigeria and hence concerted effort is required to reverse the trend of poor survival and the incidence to mortality ratio which approaches one.

Introduction

Hepatocellular cancer(HCC) is the 6th most common cancer in Nigeria and the 4th leading cause of cancer-related mortality in Nigeria(1). In 2020, according to Globocan, there were over 75,722 new cases of liver cancer in Nigeria.(2) Mortality from liver cancer is on the rise, with the number of new cases expected to rise over 50% in the next two decades.(3)

Globally survival in HCC patients who present with advanced liver disease is poor. In Nigeria, survival from the time of diagnosis of HCC to death is 2.5 to 3 months and is even shorter in the setting of HIV infection.(4,5) Compared to survival in patients from Egypt who have an average survival of 10-15 months from diagnosis to the time of death.(4) Furthermore patients in the USA and the united kingdom have a 5year survival rate above 70%.(6)The main identifiable reason for such a contrast in survival, is “time of diagnosis” Egypt for instance had over 70% of patients diagnosed at a very late stage compared to less than 7% with late diagnosis in Taiwan.(4,7) Although Hepatocellular cancer (HCC) has very high mortality globally, the

introduction and implementation of surveillance have been demonstrated from several other studies to improve detection of tumours at an early stage, receipt of treatment, and the overall survival of this patient.(8–10) Hepatocellular cancer surveillance aims to identify liver cancer at an early stage to implement curative strategies. This paper seeks to demonstrate that implementing structured HCC surveillance will improve the early detection of liver cancer and survival in Nigeria.

Disease surveillance refers to the continuous scrutiny of disease events which enables prompt intervention for disease control.(11) This usually involves systematic collection of data and dissemination of the information obtained from the data for public actions. Liver cancer surveillance consists of the application of six-monthly screenings for liver cancer using a liver ultrasound scan and alpha-fetoprotein (AFP) in all patients at risk of liver cancer. These at-risk individuals include all patients infected with hepatitis B virus (HBV), and all patients who have liver cirrhosis from any other cause. Liver cirrhosis is a premalignant condition that

predisposes and serves as a nidus for the initiation and propagation of hepatocellular cancer. The problem of HCC in Nigeria stems from the fact that the country is hyperendemic for hepatitis B which is responsible for over 80% of liver cancer and aflatoxins which contaminates a lot of the staple cereals that are consumed as food.(12) In addition to this, presentation in the early stage of the disease is usually asymptomatic and people who are affected are unwary of the danger looming ahead. Because of the silent nature of the early stages of disease patients do not seek help until it becomes too late . Time and time again, it has been shown that the implementation of liver cancer surveillance has ensued in the detection of liver cancers at an early stage where they are amenable to curative therapies. A landmark study that has served as the key evidence for the benefit of HCC surveillance was done in Japan, where the implementation of liver cancer surveillance demonstrated improvement in survival from the average four months to about four years over time.(13) This was a dramatic improvement in survival in the era when there were no systemic therapies for liver cancer treatment. With the increasing availability of diverse and effective systemic therapies for the management of people living with advanced liver disease, it is plausible to think that a combination of liver cancer surveillance, locoregional and systemic therapy will lead to longer survival.

The World Health Organisation has adopted the Integrated Disease Surveillance and Response (IDSR), which is a strategy to promote rational use of resources by integrating and streamlining commitment to disease surveillance activities.(11) Nigeria had adopted this strategy since the year 2000 and it can be leveraged upon to implement a surveillance programme for liver cancer.(11) With a population of over 200 million people and a prevalence of hepatitis B at the rate of 13.6% of the population, Nigeria has one of the largest pool

of persons at risk of liver cancer in the world.(14)Worthy of note, is the reality that hepatitis B virus infection in Nigeria has unique attributes such as predominant genotype E, very low levels of HBV DNA. (15)Therefore, some of HBV patients are not eligible for treatment based on current guidelines. Consequently, HBV-induced HCC occurs at a much lower age group in those infected with hepatitis B virus.(16)This makes surveillance for HCC in this group of patients a high yield target for early diagnosis and appropriate intervention.

It is not uncommon for a patient with liver cancer to see a physician for the first time when they present with HCC. This happens for so many reasons. Inadequate screening for risk factors is an important element and this may be related in part to prohibitive costs associated with screening tests for HCC such as liver ultrasound and assay for AFP, the two tests which HCC surveillance is hinged on. In our practice, healthcare financing is largely out-of-pocket. It will cost a patient in a public hospital 6,000 to 10,000 naira (\$14 - \$24) to complete these tests. According to the national bureau for statistics, over 83 million Nigerians live below the country's poverty line.(17) Relative to the average daily income and expendable income of the general population, it is evident, the cost of screening is beyond the reach for a vast majority of patients, especially for an initially asymptomatic suspected disease. In addition, there is a paucity of knowledge among health caregivers about surveillance and its importance in the at-risk population.(18) Furthermore, an absence of a structured screening and surveillance program for liver cancer plays a key role in patients presenting for the first time with terminal liver cancers.

A concerted effort must be put in place if the fight against HCC must be won in Nigeria. Intensive and universal screening for people at risk is a necessity. In the case of Nigeria, all Nigerians are

at risk because we live in an endemic area for an important risk factor; hepatitis B. Every Nigerian should have one screening for viral hepatitis in their lifetime and all those who are found to be infected must be linked to appropriate healthcare providers. Screening for risk factors will be a crucial step in establishing a surveillance cohort. Nigeria should borrow a leaf from Egypt where a large-scale population screening is carried out for hepatitis C and efficient linkage to care was carried out(). The feat accomplished by Egypt with a population of 100million and prevalence of hepatitis C that is 14.5% can also be achieved by Nigeria with a population of 200 million and prevalence rate of hepatitis that is 11%.(19) Then a surveillance program should be put in place for all patients infected with HBV in Nigeria when they are linked to care. It is important to point out that hepatitis B is also a notifiable disease in Nigeria and this can serve as one source for establishing a pool of patients that will be included in the liver cancer surveillance program. Primary health care centers can serve as surveillance stations where all at-risk individuals can go to the nearest surveillance station and get their 6 monthly ultrasound scans done and have AFP assay. The AASLD has previously made a recommendation for an Ultrasound only screening program; this looks attractive to us as a tool that can easily be deployed leveraging on the wide availability of ultrasounds, access and relative ease of scaling up across the nation.(20) Besides screening and surveillance for HCC, linkage to care and availability and accessibility to tertiary treatment centers is another factor that needs consideration in this action plan. The goal of surveillance will be defeated if after early tumour diagnosis, there is either unavailable or unaffordable effective treatment. Therefore, a framework that links patients who are diagnosed to definitive treatment is required to complete the loop of care. If Nigeria considers HCC outcomes

as a national emergency , the sourcing for funds to embark on a surveillance and screening program from the world bank or funding agency will be pursued.HCC has been demonstrated from several studies to be cost effective in the long run and will be a wise public health investment.(21) Training centers can be established where community health extension workers under supervision of medical officers can be trained to carry out focused ultrasound scans on the liver to look for liver tumours and point of care devices can be deployed for instant AFP results. The community health workers who work in primary health care centers can be linked to secondary and tertiary health care centers for direct referrals of suspected cases for diagnosis and treatment.Certainly this will only be feasible if there is health insurance coverage and people do not have to worry about how much they have to pay for such services.

In conclusion, despite the huge promise shown by HCC surveillance for detection and management of liver cancers, this strategy is largely not available in mainly developing countries including Nigeria. Identifying the challenges and possible ways to mitigate these as suggested in this commentary will hopefully stimulate conversations and policy shift that will significantly improve detection and surveillance of liver cancer in Nigeria.

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