

Original Research Hepatitis B Infection among rural dwellers in Central Nigeria

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Abstract

Hepatitis B is a vaccine-preventable disease of public health concern with a high burden of this disease in Africa and Nigeria. In the rural setting, the high prevalence is further complicated by poor access to both immunization and treatment. The study explores the prevalence of hepatitis B in Jengre, a rural community in central Nigeria, with the aim of highlighting its problems and stimulating action.

It was a retrospective study utilizing secondary data from all 1,347 patients tested for hepatitis B in Jengre SDA Hospital over a one-year period.

The prevalence of hepatitis B in Jengre was found to be 12.2%. Among the prospective blood donors alone, the prevalence was 11.7%.

It was concluded that the village of Jengre is hyperendemic for hepatitis B. Governments and international agencies therefore need to prioritize hepatitis B control systems in endemic rural locations like Jengre to ensure the elimination of hepatitis B as a public health concern by 2030 is realized.

Keywords

Hepatitis, Nigeria, epidemiology, prevalence, HBV

Declaration of Conflict of Interest

The author declares no financial or personal relationship(s) which may have inappropriately influenced this paper.

Introduction

Hepatitis B (HBV) is one of the most important viral diseases affecting humans today. It is particularly of concern because of the high burden worldwide and the likelihood for mortality from its complications. The United Nations recognized the threat from this disease and included targets for its control in the Sustainable Development Goals of 2015. It is planned that by 2030, hepatitis in general would have been wiped off the list of diseases of public health concern.

Progress has been made in this regard in the developed nations of the world. In Europe, the prevalence is reported to be 0.1 to 4.4%. In the United States of America, 0.3% of the population have hepatitis B virus infection. Japan, South Korea and Australia have national prevalence of 0.3%, 2-7%, and 2.1% respectively.

In Africa, however, the situation is direr. The WHO estimated prevalence is 6.1% across the continent, a much higher prevalence than the worldwide levels of

3.5%. This is greater than the figures in the more developed climes as well. Several factors contribute to the higher prevalence including poor health systems, poor knowledge of the disease by the populace, poverty, low political will, and risky sexual and cultural behaviours. Several other studies in Africa found similar or higher prevalence to the WHO estimates. Studies for hepatitis B infection in Ghana reported a prevalence of 12.3% with 13.3% among blood donors. In Kenya and South Africa, 2.1% and 6.7% of their respective population have chronic hepatitis B viral infection. The disease is even more endemic in Nigeria compared with most other African nations. Nigeria is classified as a HBV-highly endemic country. A systematic review by Musa et al (2015) reported a pooled prevalence of 13.6% in the population and 14% among apparently healthy blood donors. The first national prevalence study for hepatitis B by Nejo et al (2018) found a prevalence of 12.2% and attributed the high percentage to poor knowledge of hepatitis among the

people as well as poor immunization coverage. Other studies in Nigeria have reported prevalence of between 10.4 and 25.9%.

Hepatitis B is a vaccine-preventable disease and is part of the National Programme on Immunization in Nigeria but the uptake is still below expectation. This, in part, accounts for the high prevalence of hepatitis B in Nigeria. In addition, although viral suppression and clinical recovery are achievable with pharmacotherapy, the situation in Nigeria is one in which the drugs are either unavailable or unaffordable to the largely poor masses. This means that several of the infected individuals do not have access to treatment and form the reservoir for the continuous propagation of the virus through contact with body fluids of such infected persons. The natural course, in these individuals, could lead to the main complication of chronic liver disease which accounts for most of the mortality and morbidity.

This research therefore explored the peculiar situation of hepatitis B infection in rural dwellers of Nigeria with the aim of drawing attention and stimulating response in this vulnerable population that will most likely remain a reservoir.

Materials and Methods

This was a retrospective study carried out in the Seventh-day Adventist Hospital, Jengre. It is a secondary level health facility serving the village of Jengre and surrounding settlements. Jengre is a village in Plateau State, central Nigeria, about 60 km northeast of Jos, the state capital. It is a rural setting with a population of less than 6,000. The inhabitants of Jengre are predominantly small scale farmers with little or no education.

Data from a total of 1,347 subjects were included in the study. It involved all clients who had hepatitis B testing in the hospital over a one-year period. Data was accessed from the hospital laboratories on all individuals who had HBV testing including sick and healthy individuals. All these information were filled into a pretested proforma.

Data obtained were analysed using Microsoft excel and Epi info version 7.1. Approval for the research was obtained from the review board of the hospital.

Results

Table 1: The socio-demographic distribution of studied subjects

Socio-demographic Characteristics	
Age	
Less than 18 years	11(0.8%)
Greater than 18 years	1336(99.2%)
Sex	
Male	466(34.6%)
Female	881(65.4%)
Reason for testing	
Ill health	732(54.3%)
Blood donors	615(45.7%)

Table 2: Prevalence of HBV

	HBV Positive	HBV Negative
Cumulative	165 (12.2%)	1182 (87.8%)
Subjects who were ;		
Ill	93 (12.7%)	639(87.3%)
Healthy	72 (11.7%)	543(88.3%)
Sex		
Male	120(13.6%)	761(86.4%)
Female	45(9.7%)	421(90.3%)

Discussion

Children constituted only 0.85% of the 1,347 data analyzed. Even though children constitute the majority of the patients seen at Jengre SDA Hospital, the low number in the study sample may be due to the fact that they are less frequently screened for hepatitis B infection.

Most of those usually screened are either blood donors, who are usually adults, or patients suspected to have complications of hepatitis B. Children do not commonly develop these symptoms as the chronic complications usually occur after many years of the infection.

Females accounted for 65.4% of the study sample reflecting the general trend of a better health seeking behaviour compared to the males. Healthy people screened for HBV accounted for 45.7% of the sample population. This provides the picture in the non-symptomatic population.

The prevalence of hepatitis B from the study is 12.2%. This figure is high and indicates that the village of Jengre has a high endemicity for hepatitis B infection. The finding is strikingly similar to the reports of several studies from other parts of Nigeria. The study by Musa et al. reported that 13.6% of those sampled were infected while the national prevalence study found 12.2% just like in the index study. It indicates that like other parts of Nigeria, Jengre is hyperendemic. Most of the studies are hospital-based and may account for the similarly high prevalence. The study by Olayinka et al(2016) found a similar prevalence of 14% among blood donors. Among asymptomatic healthy undergraduate students in Zaria, Nigeria, a similar prevalence of

12.5% was reported. The finding among the healthy subjects in the current study (11.7%) is also in concordance as it is not too dissimilar to the 12.2% general prevalence reported in the index study.

These figures are almost double the Africa-wide prevalence of 6.1 % and more than 5 times the prevalence in Europe, Japan, USA and Australia. Factors that have been identified to account for the high prevalence such as poor health systems, low political will, risky sexual and cultural behaviours and low uptake of immunization, may still explain our findings.

The prevalence in children is quite high at 18.2% but considering that only 11 children's data were analyzed in the study, not much should be inferred from this. Other studies concentrating more on children have reported prevalence of 4.3% in Nigeria. More males (13.6%) were found to have hepatitis B infection than females (9.7%). This picture is similar to that in the study by Olayinka et al. It reflects the better health seeking behaviour of females and the greater awareness of health and illness.

In conclusion, Hepatitis B is highly prevalent in Jengre, Central Nigeria. Being a rural setting with indigent residents, it is recommended that government and the international community should pay more attention to HBV infection in the rural areas. This would help to curtail the epidemic and bring us closer to controlling hepatitis by 2030 as planned by the United Nation's Sustainable Development Goals.

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