



Prevalence Of Hepatitis ‘B’ Among Pregnant Women Attending (Turai Yar’adua Maternal and Child Hospital Katsina)

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ABSTRACT

A study aimed to assess the prevalence of Hepatitis B Virus among pregnant women in Katsina, Nigeria, with two primary objectives: to determine the prevalence of Hepatitis B virus among pregnant women and to identify the most affected age groups. The research employed a survey research design, utilizing a sample of 1,230 patients from Turai Yar’adua Maternal and Child Hospital in Katsina. Data analysis involved the use of simple percentages. The results revealed that, from January to June 2023, 52 pregnant women attending the Turai Yar’adua Maternal and Child Hospital’s antenatal clinic were found to be suffering from Hepatitis B. Furthermore, the study indicated that the age group of 15-20 years was the most affected by the virus. Based on these findings, several recommendations were made. First, it was suggested that the government should organize awareness programs and awareness campaigns about Hepatitis B virus to educate the public. Additionally, patients affected by the virus were advised to incorporate regular exercise into their lifestyles. Lastly, the study proposed legislative action to mandate compulsory Hepatitis B Virus diagnosis tests before marriage as a preventive measure.

Keywords: Hepatitis, Katsina, Virus, Antenatal, Maternal, Child

INTRODUCTION

Clinical and epidemiologic studies began to differentiate among various types of acute hepatitis in the decades following world war II. The groundbreaking studies of (Krugman and Giles, 1972) searching for serum protein polymorphisms linked to diseases identified an antigen (termed Au) in serum from patients with leukemia, leprosy and hepatitis (Prince, 1968). Independently identified an antigen (termed SH), while systematically studying patients with transfusion-associated hepatitis. Further work established that AU and SH were identical. The antigen represented the hepatitis B surface antigen (HBsAg). These studies made possible the serologic diagnosis of hepatitis B and opened up the field to rigorous epidemiologic and virologic investigations (Prince, 1968).

Hepatitis B virus (HBV) is transmitted mainly by the percutaneous routes (e.g., needle sharing, acupuncture, ear piercing, tattooing) and through very close personal contact involving the exchange of blood or secretions (e.g., sexual contact, childbirth). It is also transmitted through other body fluids including semen and saliva. The virus starts to replicate within three days of its acquisition, symptoms may not be observed for 45 days or longer, depending on the infectious dose, the route of virus, and the person (Kao and Chen, 2002). The virus replicates in hepatocytes with minimal cytopathic effects, after which virus proceeds for relatively long time without causing liver damage (i.e., elevation of liver enzyme levels) or symptoms (Blum *et al.*, 1984).

The clinical course of hepatitis B virus is complex and is influenced by several factors classified into viral factors and host factors. The viral factors include level of hepatitis B virus replication (viral load),

hepatitis B virus genotype, and mutations in viral genome. The host factors include age of acquisition of virus, immune status, concurrent virus with other hepatotropic viruses, and alcohol intake (Aggarwal and Ranjan, 2005). Overall, chronic hepatitis progresses to end stage liver disease in 15 to 40 percent of patients (Liaw, 2006).

For a successful virus, Hepatitis B virus requires an infectious source, a susceptible host, and an established route of transmission (Kao and Chen, 2002). The predominant routes of transmission in various locations vary according to the endemicity of HBV virus. The virus is 100 times more infectious than human immunodeficiency virus (HIV) and unlike HIV; it can live outside the body in dried blood for longer than a week (Ott *et al.*, 2012).

The most efficient way to control hepatitis B is to prevent individuals from contracting it rather than treat the virus. Two main approaches lead to achieving this goal: interrupting the virus at the various routes of transmission and immunizing susceptible host. Although immunization is more effective, public health measures should include both approaches. Prevention strategies must include Hepatitis B vaccination of high risk groups and all new born infants, screening of blood and blood products before transfusion, using universal precautions in healthcare settings like avoiding sharing needle among injecting drug users and promote safe sexual practices (Chen *et al.*, 2002). In the early 1980s, vaccination against hepatitis B became available, first with plasma derived vaccines and then with recombinant DNA vaccines. All these vaccines are safe and have a protective efficacy of approximately 95%. Despite this success, the duration of protection afforded by hepatitis B vaccination is unknown (Chen *et al.*, 2002). Detecting persistent antibody is the easiest but not necessarily the most accurate way to measure persistent protection (Chen *et al.*, 2002).

The implications of hepatitis B in pregnancy cannot be over emphasized. Hepatitis B virus can be transmitted from mother to child *in utero*. The sequelae of virus in children can be phenomenal (Owusu *et al.*, 2018). The exact mechanism of perinatal transmission is not clear. It is unusual for infants to be infected *in utero*, cord blood is usually negative for hepatitis B markers; however occasional intrauterine virus does occur (Kao and Chen, 2002).

Hepatitis B virus is a global public health problem with approximately 400 million people chronically infected (Lin *et al.*, 2007). An estimated one third of the world's population has serologic evidence of past virus, and the virus causes more than I million deaths annually (Zuckerman, 1996).

In Sub-Saharan Africa HBV, virus usually is acquired through maternal-fetal transmission or in early childhood leading to a high prevalence of chronic virus (Aggarwal and Ranjan 2005). A proportion of people infected with hepatitis B Virus (5%-10%) among adults progress to chronicity, defined as persistence of virus for more than six months (Aggarwal and Ranjan, 2005). The rate of chronicity is much higher among neonates born to hepatitis B infected mothers and children because they have an immature immune system. Ninety percent of infants infected perinatally progress to chronic virus. Progression to chronic HBV virus occurs in 25 to 30 percent of persons infected before five years of age, and in 3 to 5 percent of those infected later in childhood or as adults (Lok and McMahon, 2007). Once the virus becomes chronic, HBV or part of the viral genome usually persists a lifetime in the liver of the carrier. The carriers are not only reservoirs of the virus but also victims of chronic liver diseases themselves (Kao and Chen, 2002). Thus, control of HBV virus, especially in terms of preventing chronic carrier status of the virus, is extremely important (Ganem and Varmus, 1987).

Moreover, the higher prevalence of chronic virus due to maternal-fetal transmission also translates into higher rates of cirrhosis and cancer in these areas. Treatments are not curative because they rarely produce permanent remission of the disease (Lin *et al.*, 2007).

The objectives of this study are to:

- i. To determine the prevalence of hepatitis B virus among pregnant women in Katsina
- ii. To identify the most affected age group among pregnant women in Katsina

METHODOLOGY

This study was carried out to determine the prevalence of Hepatitis B virus in pregnant women in Katsina metropolis. The study adopted survey research design. The population of this study comprised all pregnant women attending Turai Umaru Yar'adau Maternity and child care clinic (TYMCC) antenatal, a study comprising 1,230 pregnant women conducted between January to June 2023. Overall population was used as sample and the sampling technique used in the study was total population sampling technique. This method was chosen because it gives all the subjects in the population chance of being used. Secondary data of hospital records was used to collect data. The researcher collected the record from the hospital and the pregnant women affected with Hepatitis virus were noted and recorded to calculate the prevalence of the virus among antenatal patients. From the affected pregnant women, the data was further divided to record the most affected age group. The data was treated statistically in accordance with the research objectives generated for the study and simple percentage was used for data analysis.

RESULTS AND DISCUSSION

Table 1 revealed that 1230 pregnant women in the hospital record went for antenatal from January 2023 – June 2023, in which 52 (4.23%) pregnant women from the population were found to be positive while 1178 (95.77%) were negative.

Table 1: Prevalence of Hepatitis Virus among Antenatal Patients in (TYMCC)

Status	No. of individuals	Percentage (%)
Negative	1178	95.77
Positive	52	4.23
Total	1230	100

In this research the most affected age group is 15-20 years, because it has the highest percentage with 32.7% followed by 21-25 years with 26.9% followed by 26-30 years with 15.4% followed by 31-35 years with 13.5% followed by 36-40 years with 7.7% and the least affected range is 40 years above with 3.9% respectively. The detail of the result is seen in Table 2:

Table 2: Determining the Most Affected Age Group among Antenatal Patients in (TYMCC)

Age Range	Female	Percentage (%)
15-20	17	32.7
21-25	14	26.9
26-30	8	15.4
31-35	7	13.5
36-40	4	7.7
40 and above	2	3.9
Total	52	100

DISCUSSION

The data from Table 1 provides a significant insight into the health of pregnant women attending Turai Yar'adau Maternal and Child Hospital in Katsina during the first half of 2023, with 52 cases of Hepatitis B reported. However, the interpretation of this data becomes more intricate when we delve into the age related aspects as presented in Table 2, and consider the existing literature.

Bruner and Saddart's (2015) research is consistent with Table 2, suggesting that a considerable proportion of individuals with hepatitis B, specifically type II hepatitis B virus, are observed in pregnant women above the age of 15. This finding implies a potential risk to pregnant women, especially in the context of Katsina. Furthermore, they note that this type of hepatitis B virus can even manifest during childhood if certain risk factors are present.

On the other hand, the 2014 study by Aliyu proposes a conflicting perspective, indicating that the most affected age group is within the range of 33 years and above. This contradictory information raises several questions regarding the underlying factors contributing to these disparities. Possible explanations

could involve regional variations, changes in the prevalence of hepatitis B over time, or variations in sample size and demographic between these studies.

CONCLUSION

In this research, the following conclusions were made;

- i. The prevalence of HBV infection among pregnant women was high
- ii. The total number of females suffering from the hepatitis B virus is most concentrated in the age group of 15 to 20 years.

This demographic trend suggests that the virus predominantly affects young pregnant women, highlighting a concerning pattern of transmission and potential risks to this specific population

RECOMMENDATIONS

- i. Katsina State Government should organize programs to support all the hepatitis B patients with accessible and affordable drugs, emphasis should be placed on kind of diet and exercise.
- ii. Enlightenments on hepatitis B and nutritional disease should help to greatly reduce the incidence of the diseases. Legislators should pass a law mandating hepatitis B virus diagnostic testing for individuals prior to marriage.

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