

Prevalence of Hepatitis B and C Virus Infection Among Pregnant Women with HIV/AIDS Attending Antenatal Clinic in Health Facilities in FCT: A Retrospective Study

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Abstract:- Hepatitis B virus, Hepatitis C Virus and Human Immunodeficiency Virus are global health problems that have negative effects in Sub-Saharan Africa. The co-existence of HBV, HCV and HIV is life threatening, with a high fatality rate especially in gestation, where transmission occurs vertically and this gives rise to fatal and neonatal hepatitis. There is paucity of data on these viral infections among HIV pregnant women with HIV/AIDS. The study was set out to retrospectively determine the prevalence of HBV and HCV infection among pregnant women with HIV/AIDS attending antenatal clinic in FCT using selected secondary hospitals comprising of all pregnant women that attended antenatal clinic from January, 2019 to December, 2021. The study population comprised of 686 HIV pregnant women seen within the period, out of 27,013 women that attended antenatal clinic. Their data were extracted, which include their age, level of education, occupation, HBV and HCV status, religion. The study showed intermediate endemicity for HBV as 3.9% with no positive result for HCV. 83.0% were negative for HBV, while 13.0% had no records. The age group of 31 – 35 had the highest number of population (39%), and highest number of HBV positive women while 20 -25 had the lowest (7.7%) with no HBV positive, others are 36 -45 (5), 26 – 30 (7).. Out of the total number that are HBV positive, all are married, with 13 having passed through tertiary education, while 14 stopped at secondary level. Majority of the women are business women (58.1), while housewife, teachers, students, civil servants and others are 19.1%, 2.9%, 3.3%, 16.1% and 0.3% respectively with a majority being Christians (84.0%), others are Islam (15.9%). The findings of this study indicates that infections with viral hepatitis is a common public health concern therefore should not be overlooked as there is need for a continuous campaign to enlighten and reduce the spread.

Keywords:- Hepatitis B Virus, Hepatitis C Virus, Human Immunodeficiency Virus, Pregnant Women, HIV/AIDS, Health.

I. INTRODUCTION

Globally, it has been recognized that co-infection with the Hepatitis virus (HBV and HCV) and HIV in pregnancy is a common public health issue. (Mutagoma et al., 2017). And these viruses are among the most frequently identifiable viruses and are known to be significantly standing out among other diseases causing agents, also the leading causes of infectious disease death around the globe. (Cheemerla et al., 2021). With many risks of mother-to-child transmission, since the viruses are causative agents of diseases, present in the blood and share the same route of conveyance. (Khetsuriani et al., 2022). As at 2019, at least 296 million people (3.8%) of the population in the world had chronic Hepatitis B viral infection with an additional case of another 1.5 million of acute Hepatitis B infection (WHO, 2021) with a regional prevalence worldwide ranging from around 7.5% in Africa to 0.5% in the Americas (WHO, 2021).

In populations where Hepatitis B viral infection rates are up to 8% or higher, classified as high prevalence, vertical transmission which usually occurs during birth, is known to be most common, though the rates of early childhood transmission can also be significant among these populations. Studies have shown that 19 African countries had infection rates ranging from 8 – 19 % in 2021, placing them in the high prevalence category. (WHO, 2021). In areas where there is moderate prevalence (2 – 7%) of population that are chronically infected, there is predominantly an horizontal or vertical spread among children. More so, in 2021, according to WHO reports, 58 million people worldwide were living with chronic HCV as of 2019, with about 15 million being infected per year and also about 290,000 people dying annually from Hepatitis C related diseases, either due to liver cancer or liver cirrhosis. (WHO, 2020). Studies have shown that there is a high percentage of people with Hepatitis C infection in some countries in Africa and Asia (Edrees, 2022)

Furthermore, viral hepatitis infections, such as Hepatitis B and Hepatitis C viral infections are the frequent causes of chronic hepatitis worldwide. These viruses generate the highest problem for health care systems because it leads to a high rate of death and viral associated

diseases and also, very expensive in its management and treatment. Hence, human immune deficiency virus has also implanted in it, identical characteristics as are prevalent in the hepatitis B virus, having vertical and horizontal transmission, injection drug use, and sexual. Viral hepatitis is liver inflammation due to a viral infection. There is tendency to develop no manifestations while others may come up with yellow skin and white eyes. Other symptoms include pains in the stomach, tiredness, poor appetite, vomiting and diarrhoea. It may present in an acute form as a recent infection with a speedy onset if it resolves within six months or a chronic form, where it is present over a period of time, or if it lasts for more than six months as seen in hepatitis B and C infections. In its acute stage, it can resolve on its own with symptoms that are typically self-limiting (Abdullah , 2018) but when it has progressed to the chronic stage, it may present with similar symptoms as seen in acute stage but with huge manifestations specific to liver dysfunction accompanied with a long standing inflammation and damage to the organ. All these may also lead to acute liver failure or other complications in the body (Dong et al, 2020).

Viral infections such as viral hepatitis during pregnancy are highly associated with high risk of maternal complications and have become one of the leading causes of foetal death. We therefore see the need to determine the proportion of co-infection among pregnant women in attending ANC in FCT and also to identify the risk factors for hepatitis B and C among antenatal women with HIV. This may help to address the burden of the virus and also the gap on awareness and knowledge among both caregivers and health workers.

The main aim of this study is to examine the prevalence of Hepatitis B and C virus infection among pregnant women with HIV/AIDS attending antenatal clinic in health facilities in FCT: A retrospective study.

The specific objectives would be to determine the prevalence of viral infections (HCV and HBV) among pregnant women positive for HIV in Abuja, Nigeria and possible factors associated.

II. METHODOLOGY

This study was a retrospective review of all clinical case records of HIV-positive women who attended antenatal clinics from 1st January, 2019 - 31st December, 2021 in selected General Hospitals in the Federal capital territory, Abuja from 1st January, 2019 to 31st December, 2021, which consisted of three (3) selected secondary hospitals in the Federal Capital area, Nigeria (Nyanya General Hospital, Maitaima District Hospital and Kwali General Hospital). Taro Yamane was used to derive the sample of 686 for the study.

Data was extracted from the antenatal unit of the hospital's medical records and the laboratory department. With the help of the health care providers at the PMPTC clinic, the number of women positive for HIV was retrieved, followed by their demographic information. Data were analysed using simple percentage for basic features of the retrieved data while inferences between variables of interest would be drawn using Chi-Square test at $P < 0.05$,

III. RESULTS

A total twenty seven thousand and thirteen (27, 013) women were recorded that attended antenatal clinic during the period under review (January 2019 to 31st December 2021) was retrospectively reviewed for their Human immunodeficiency virus (HIV) status of the age group of women involved in the study. There was six hundred and eighty six women, 686 (4.01%) was found to be HIV positive, out of which twenty seven women, 27 (3.90%) were Hepatitis B positive, giving a prevalence of 3.9% cases of Hepatitis B status among HIV/AIDS women who attended ANC during the period.

Table 1 Showing the Biodemographic Characteristics of Population Under Study

Variables	N = 686	100 %
Age		
15 -25	51	7.43
26-30	209	30.46
31-35	252	36.73
36-45	174	25.36
Marital Status		
Single	16	2.3
Married	670	97.7
Occupations		
Student	17	2.5
Civil Servant	88	12.8
Business	329	47.9
House Wife	128	18.7
Teacher	15	2.2
Others	109	15.9
Educational Qualifications		
Informal	18	2.60

Secondary	389	56.70
Tertiary	279	40.70

Table 1 shows that 31 - 35 was the age group with the highest percentage 252 (36.7%) while 15 -25 had the lowest percentage 54(7.43%). The percentage and frequency of the Marital status of the women shows that majority of the women are married 670 (97.7%), while 16(2.3%) were single. A breakdown of the occupation of the women involved, shows that majority are business women 329(547.9), while housewife, teachers, students, civil

servants and others are 128(19.7), 15 (2.2%), 17 (2.5%), 88 (12.8%), 2(0.3%) 109 (15.9%) respectively. The percentage and frequency of the level of education of the women shows that the women that stopped at secondary education level had the highest number with a frequency 389 (56.7%), while those with tertiary education and informal education has 279 (40.7%) and 18 (2.60%) respectively.

Table 2 Showing Data from the Three Selected Hospitals used for the Study

Facility	Total N = 27,013 (100%)	HIV Positive N = 686 (4.01%)	HBsAg Positive N = 27 (0.010%)
Maitama District Hospital	6,370 (23.60)	257 (4.03)	11 ((0.17)
Nyanya General. Hospital	17,082 (63.24)	326 (1.91)	10 (0.57)
Kwali General Hospital	3,561 (13.18)	116 ((3.26)	6 (017)

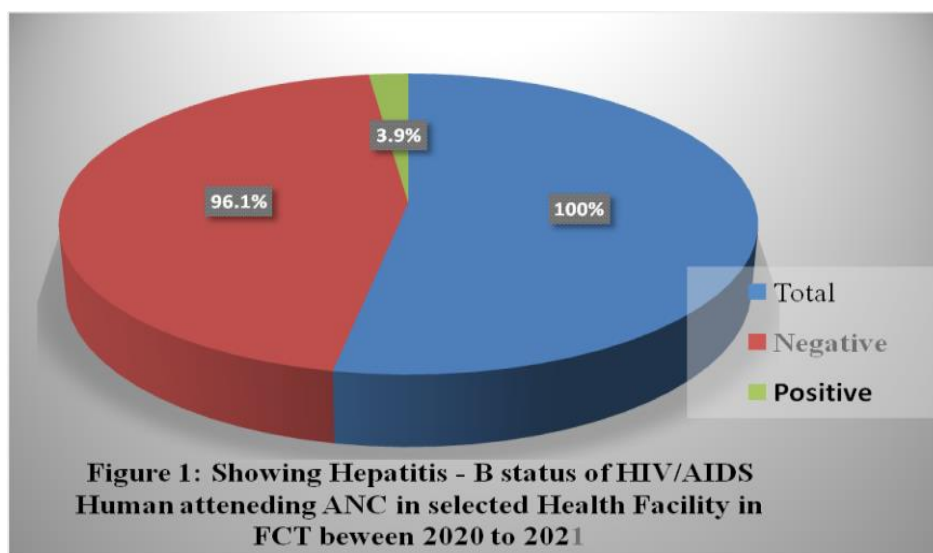


Fig 1 Showing Hepatitis B Status of HIV/AIDS Women

Table 3 Mean and Standard Deviation of the Ages, Gestational Age, Parity, and Viral Load of the Population with Hepatitis B

Variables	HBsAg Status	N = 686	Mean	P.Value	±SD	95% CI	
						Lower Bound	Upper Bound
Age	1	27	2.26	0.998	0.656	2.00 - 2.52	
	2	659	2.23			2.21- 2.30	
Gestational Stage	1	27	2.22	0.906	0.577	1.99 - 2.45	
	2	659	2.22			2.20 - 2.27	
Gestational Stage	1	27	2.22	0.906	0.577	1.99 - 2.45	
	2	659	2.22			2.20 - 2.27	
Parity	1	27	1.52	0.181	0.975	1.13 - 1.90	
	2	659	1.30			1.24 - 1.36	
Viral Load	1	27	1.22	0.728	0.698	0.95 - 1.50	
	2	659	1.27			1.22 - 1.32	

IV. DISCUSSION

Hepatitis viral infections are significant health issues and are found worldwide. They are one of the commonest cause of hepatic dysfunction in pregnancy. In this study, a total number of six hundred and eighty six (686) HIV infected pregnant women’s data were collected among twenty seven thousand and thirteen (27,013) that attended

antenatal clinic for a period of three years retrospectively from three selected secondary hospitals in FCT .

The study shows that the prevalence of seropositive for hepatitis B to be 27 (3.9%), those that were negative 581 (83.0%), while 91 (13.0%) had no records on their status. The 3.9% prevalence of hepatitis B virus noted among the pregnant women infected with HIV reveals that its an

intermediate endemicity, because it falls within 2 – 8 % of HBV infection according to World Health Organisation criteria. [WHO, 2019.]. A report from a study carried out in South East of Nigeria by Munoz, et al (Munoz et al, 2019) showed that the occurrence rate of HBV was 2.2% which falls within the intermediate endemicity of our study. A similar study carried out in South South, Nigeria by Obi et al, (Obi et al, 2018), showed 2.9% occurrence rate of HBV among pregnant women in Port Harcourt. However, this is lower than a study finding by Ose Ugbebor et al 2011 in UBTH Benin where the found prevalence of 12.5% and 3.6% of the pregnant women studied were seropositive for hepatitis B and C.

The 3.9% of HBV infection found among HIV infected pregnant women in the selected secondary health facilities falls in the scope of reports found in other studies carried out in some parts of Nigeria, thus our findings has shown that FCT like other areas in Nigeria is within the intermediate endemicity of HBV infection. With the 3.9% of HBV infection among the HIV infected pregnant women found within the period, it shows that the hepatitis virus is prevalent among this population of women and this could be linked to the similar mode by which the viruses (HBV, HCV and HIV) are transmitted, thus getting exposed to any of the viruses (HBV, HCV and HIV) is predictive of a possible exposure to others. Therefore, it is quite evident that this population of women are extremely affected by virus as reported by other studies, indicating that the affected population of women are still within the possibilities of been faced with life threatening challenges, since infections with viral hepatitis have been reported to cause more complications among HIV infected persons than those negative for HIV, thereby leading to liver related problems. Thou this study is contrary to the study carried out at NIPRD with a prevalence rate of 27.3% for HBV, showing high endemicity [Ya'aba et al, 2019]

The study reveals of 148 (21.1%) to be negative for hepatitis C, while 551 (78.7%) had no records of their hepatitis C status in their records. Others were not tested as its not counted as part of the routine test to be carried out during antenatal. We observed that only few going for cesarean procedure were tested for hepatitis C as observed during this study. [Zenebe, et al, (2018). There was no positive outcome of hepatitis C during the review process, which can not be ruled out because hepatitis C testing is not part of the routine test carried out in the secondary health facilities except on special request. Though it has been observed that the prevalence rate of Hepatitis C virus is low, it has been observed too that most patients with HIV are not aware that they may be affected with HCV. Some epidemiological studies have shown that co infection is gaining global recognition because of same mode of transmission [Madhava et al, 2020] and lack of routine testing so there is need to pay attention to the virus to avoid been infected and reduction in its spread.

V. CONCLUSION

This study has shown an intermediate endemicity of HBV, Absence of HCV testing during antenatal and poor documentation of patients' records. The intermediate endemicity could be as a result of the increase in awareness of viral hepatitis in both rural and urban areas of the Federal capital Territory. But being a common and public health concern, there is need to continue and increase the awareness campaigns on the preventive measures through HBV immunization programmes, enlightenment campaigns on sexually transmitted diseases prevention, ensuring that all women are screened for viral hepatitis during antenatal. There is need for routine HCV testing, even with the low outcome, as this could turn out to be a silent killer if ignored. Proper documentation needs to be adhered for the purpose of record keeping

➤ Conflict of Interest Declaration

There is no conflict of interest to declare

➤ Sources of Funding

This work was self sponsored by the researchers.

ACKNOWLEDGEMENT

We acknowledge the staff and managements of Maitama District Hospital, Nyanya General Hospital, Kwali General Hospital for their cooperation and support during the conduct of the study.

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