PREVALENCE OF HEPATITIS B AMONG CLIENTS THAT ACCESSED ANTIRETROVIRAL THERAPY IN NIPRD RESEARCH CLINIC FROM JUNE –AUGUST 2019

 **BY**

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 CERTIFICATION

This is to certify that this research work was done by **Asigo Godsgift Onyinpreye** a student of Afe Babalola University Ado Ekiti from the Department of Pharmacology and Therapeutics with Matric No:**16/MHS07/007.**

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 **TABLE OF CONTENT**

Title page

Certification

Acknowledgement

 CHAPTER ONE: INTRODUCTION

 Introduction -----------------------------------------------------------------------1

Mode of transmission ---------------------------------------------------------- 3

Symptoms of hepatitis B--------------------------------------------------------- 3

Treatment of hepatitis B --------------------------------------------------------- 5

 CHAPTER TWO: AIMS AND OBJECTIVES---------------------------------------7

CHAPTER THREE: MATERIALS AND METHOD ------------------------------- 8

Study area --------------------------------------------------------------------------- 8

Study population -------------------------------------------------------------------8

CHAPTER FOUR: PROCEDURES FOR TESTING -------------------------------9

CHAPTER FIVE: RESULTS---------------------------------------------------------10

CHAPTER SIX: DISCUSSION OF RESULTS ------------------------------------ 12

CHAPTER SEVEN: RECOMMENDATION AND CONCLUSION -------------13

CHAPTER EIGHT: REFERENCES------------------------------------ -------------14

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 **INTRODUCTION**

Hepatitis is an inflammation of the liver. The condition can be self-limiting or can progress to fibrosis (scarring), cirrhosis or liver cancer. Hepatitis viruses are the most common cause of hepatitis disease in the world but other infections, toxic substances (e.g alcohol, certain drugs),and autoimmune disease can also cause hepatitis.There are five main hepatitis viruses, referred to as types A, B,C,D and E. These are RNA viruses except HBV which is DNA viruses and are the 5 types of greatest concern because of the burden of morbidity and mortality they cause to humans (WHO 2019).

Hepatitis B is a serious and common infectious disease of the liver, affecting millions of people throughout the world.The severe pathological persistent HBV infections include the development of chronic hepatic insufficiency. Cirrhosis and hepto cellular carcinoma (HCC).

Hepatitis B previously known as serum hepatitis is an infectious liver disease caused by hepatitis B virus. HBV is a partially double-stranded circular DNA virus belongs to the hepadnaviridae family. Hepatitis B virus infection is more communicable disease than HIV and HCV infection. It is 50 - 100 times more infectious than HIV and 10 times more infectious than hepatitis C virus. HBV is a silent killer disease of the liver with many HBV patients do not know that they are infected with the virus.

**AIMS AND OBJECTIVES**

1. To examine the prevalence of Hepatitis B among ART clients that attended NIPRD research clinic from June-August, 2019.

2. To compare the effect of Age and Sex of the ART clients on the HBV prevalence.

**STUDY AREA** – This work was carried out in NIPRD (National institute for pharmaceutical Research and Development) using the people living with HIV and are on ART.

**STUDY POPULATION** – ART Clients that attended NIPRD from June -July 2019 for their HIV monitoring and support program.

**MATERIALS**

Cotton wool.

Alcohol 75%.

Pasteur/precision pipette.

Centrifuge.

PRO-MED Rapid Diagnostic Test Kits (HBsAg).

Blood of serum of HIV clients.

**PROCEDURE FOR HBV TESTING**

Clients bio-data were documented in the general register and laboratory kits were assembled and labelled accordingly with clients’ identification number. The blood sample collected from the client’s vein was centrifuged for 15minutes at a speed of 2.5 rcf.

After centrifuging the whole blood, the plasma was separated using a pipette into a cryotube. Then the rapid test kit was placed inside the serum and was read after 15 minutes.

**MODE OF TRANSMISSION**

Hepatitis B is spread when blood or other bodily fluids that have hepatitis B virus enter the body of a person who is not infected.

Here are the common ways hepatitis B in spread.

* Through unprotected oral, vaginal or anal sexual intercourse with an infected person.
* By sharing syringes or other drug injection equipment.
* Sharing razors or toothbrushes with an infected person.
* Contact with hepatitis B infected blood or open sores.

 **SYMTOMS OF HEPATITIS B**

The symptoms of acute hepatitis B include:

* Abdominal pain, especially around the liver
* Dark urine and/or pale stool
* Feeling tired and rundown (fatigue)
* Fever
* Joint and/or muscle pain
* Loss of appetite
* Nausea
* Vomiting
* Yellowing of the skin, whites of the eyes and under the fingernails (jaundice)

If the immune system is not able to control acute HBV infection within six months, symptoms of chronic hepatitis B are possible. Not everyone with chronic hepatitis B experiences symptoms. Some people with chronic hepatitis B experience occasional symptoms, while others experience symptoms that never seem to go away. Symptoms of chronic hepatitis B can include those typically seen in acute hepatitis B. They tend to be mild to moderate in intensity and typically come and go.

**TREATEMENT FOR HEPATITIS**

People with acute hepatitis B do not require treatment. Bed rest, drinking lots of fluids, and over-the-counter pain relievers (products containing ibuprofen, such as Motrin and Advil, are considered to be safer than products containing acetaminophen, such as Tylenol, in people with acute hepatitis) are usually all that is needed for someone who is experiencing symptoms because of acute hepatitis B.

Treatment is only recommended for people with chronic hepatitis B. The goal of therapy is to reduce HBV viral load to undetectable levels and to return liver enzymes to normal levels, with the intent of getting rid of both HBeAg and HBsAg. If these antigens are cleared from the bloodstream, the virus is less likely to rebound once treatment is stopped.

Although a number of medications are used to treat hepatitis B, some specific treatments are recommended for people who are coinfected with HIV. The latest hepatitis B practice guidance published in 2018 by the American Association for the Study of Liver Diseases, advise the following treatment guidelines for people coinfected with HIV and hepatitis B:

* “All patients with HBV and HIV coinfection should initiate antiretroviral therapy (ARVT), regardless of CD4 count. The ARVT regimen should include 2 drugs with activity against HBV. Specifically, the backbone of the ARVT regimen should be tenofovir disoproxil fumarate (TDF) or tenofovir alafenamide (TAF) plus lamivudine or emtricitabine.
* Patients who are already receiving effective ARVT that does not include a drug with antiviral activity against HBV should have treatment changed to include TDF or TAF with emtricitabine or lamivudine. Alternatively, entecavir is reasonable if patients are receiving a fully suppressive ARVT.
* When ARVT regimens are altered, drugs that are effective against HBV should not be discontinued without substituting another drug that has activity against HBV.”

Here are the preferred medications used to treat HBV when coinfected with HIV:

* Emtricitabine (Emtriva): Emtricitabine is a nucleoside analog reverse transcriptase inhibitor. It is used with ARVT along with either, tenofovir disoproxil fumarate or tenofovir alafenamide in people who are coinfected with HBV and HIV.
* Lamivudine (Epivir,Epivir-HBV) : lamivudine is a nucleoside analog reserve transcriptase inhibitor .it is used with ART along with either tenofovir disoproxil fumerate or tenofovir alafenamide in people who are coinfected with HBV and HIV .
* Tenofovir alafenamide (vemlidy): tenofovir alafenamide (TAF) is the newest drug to be approved by the FDA for the treatment of chronic hepatitis B infection in adults with compensated liver disease .it is a nucleoside analog reserve transcriptase inhibitor.TAF is used along with either emtricitable or lamivudine,and ARVT in people who are coinfected with HBV and HIV.
* Tenofovir disoproxil fumerate(viread): Tenofovir disoproxil fumerate (TDF) is a nucleoside analog reserve transcriptase inhibitor .it is used with either emtricitable or lamivudine,and ARVT ip people who are co infected with HBV and HIV.
* Entecavir (baraclude): entecavir is a nucleoside analog reserve transcriptase inhibitor. it may be used in people who are not taking TDF or TAF but are receiving a fully suppressive ARVT.

**RESULTS**

Out of the 500 samples collected and examined for hepatitis 145 were male while 355 were female, and out of the 145 male 40 (27.48%) were positive while out of the 355 females 20(5.63%) were positive which means that hepatitis is higher in male than female.

**Table 1: Prevalence by Gender**

AGE Screened male Positive (%) Screened Female Positive (%)

 ≤10 - - - -

11-20 5 - 25 -

21-30 15 33.33 30 20

31-40 35 28.57 130 7.69

41-50 60 33.33 140 12.50

51-60 25 20 30 -

≥61 5 - - -

**Total** 145 29 355 71

**Table 2: Prevalence by Age**

Out of the total 500 samples screened and examined for hepatitis, the disease was higher in clients within the age of (41-50) than other age range.

AGE NO SCREENED POSITIVE PREVALENCE (%)

≤10 - - -

11-20 30 - -

21-30 45 10 22.22

31-40 165 20 12.12

41-50 200 25 12.5

51-60 55 5 9.09

≥61 5 - -

**Total** 500 60 12.0

**Table 3: Prevalence by Occupation**

Out of the total 500 samples collected from the clients from the table above, the disease is higher in clients that do business and clients that are civil servants than other occupations listed above.

OCCUPATION NO SCREENED POSITIVE PREVALENCE (%)

Farmer 40 - -

Business 265 20 7.54

Civil servant 140 20 14.28

Housewife 25 - -

Artisans 30 - -

**Total** 500 40 8.0

 **DISCUSSION**

The study on the prevalence of HBV of ART client that attended NIPRD Research clinic from June – August showed a total prevalence of (12%). All the examined client are actively on ART,this may be the reason for the low prevalence of HBV. Musa (2015) reported (8%) in a similar study. This is in line with the report done by Abiodun *et al*.(2006) in Benin City and Bukbuk *et al*.(2013) in Maiduguri Nigeria.

Sex-based Hbv prevalence gave (33.33%–12.50%) is higher in males than the females. This finding agrees with Adoga *et al*.(2002) but disagrees with Bwogi *et al*.(2009*)* and Sule *et al*.(2006).Multiple sexual partnership and polygamy, men having sex with men, and the care-free nature of men that allows for the sharing of sharps such as nail cutters and barbing clippers may be responsible for the sex-based prevalence recorded. Injectable drug usage is also more prevalent in males than in females. This may also be a contributing factor.

Age group(21–40) years had the highest age based HBVprevalence of (22.22% – 12.12%). This findings are in consonance with Adoga *et al.*(2002)but in contrast to the report of Tula and lyoha.(2006). The highest prevalence of Hbv recorded for the subjects within the 21–40 years group may be attributed to the sexual active nature of this group, illicit drug uses, tattooing, body piercing, etc., which are risk factors associated with HBV transmission and are prevalent among this age group. Age grade 61 and above had no case of HBV infection. This may be explained by the fact that most HBV complications occur within this age group and bulk of them may be dead. The ability of older HBV carriers to achieve viral clearance may also account for this finding.

The study also showed a higher HBV prevalence in civil servants than other occupational groupIndeed, Pietra et al. reported a prevalence of HbsAg of 12.1% in the health professionals of Nanoro district, Collenberg *et al*.(2006) reported an HBV’s prevalence of 14.3% (Nouna) and 17.3% in Ouagadougou in blood donors.

 This study reports an HBV/AIDS coinfection of 22.22%. This is a common coinfection, given the fact that the two viruses share the same transmission routes. The lack of significant difference in the prevalence of HBV among people when considering their health background (blood transfusion, surgery, and hospitalization) can be explained by the improvement of blood safety and the health management system in Nigeria. In fact, HIV, hepatitis B and hepatitis C, and the bacterium*Treponema pallidum* subspecies pallidum are routinely detected in blood donations.

 **RECOMMENDATION**

Though HBV cannot be cured, proper treatment can reduce viral load to an undetectable level (EASL,2012). Improved prevention and expanded access to viral hepatitis treatments could greatly reduce the burden of these infections.

Vaccines are recommended for pregnant women, children and people living with HIV and AIDS, Health workers should adhere to proper laboratory procedures,get vaccinated and avoid reuse of needles.

 **CONCLUSION**

From the result above the disease is observed to be more in male than female as a result of adherence ,female adherence to diseases more than male and also because of the different means of transmission .It was also observed that people living with HIV are also infected with hepatitis and the( anti-retroviral drug ) ART helps in the treatment of hepatitis in people living with the disease condition .

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