International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2023; 7(6): 01-05
Received: 02-08-2023
Accepted: 08-09-2023

Osita Celestine John
Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers state, Nigeria

Justina Omoikhefe Alegbeleye
Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers state, Nigeria

Corresponding Author:
Osita Celestine John
Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers state, Nigeria

Seroprevalence and pattern of HIV infection in pregnancy at the University of Port Harcourt Teaching Hospital

Osita Celestine John and Justina Omoikhefe Alegbeleye

DOI: https://doi.org/10.33545/gynae.2023.v7.i6a.1398

Abstract
Background: There were 38.4 million persons infected with HIV in the world by the end of 2021 according to WHO. HIV infection in pregnancy is an important public health issue as it has serious medical, social and economic consequences. In Nigeria sero-prevalence rates in pregnant women varied from 1.8% in 1991 to 5.8% in 2001, this was followed by a slow decline to 5% in 2003, 4.1% in 2010 and further to 3% in 2014. Data in pattern of HIV prevalence remains a critical source to inform trends in generalized epidemics in developing countries.
Methods: Data of pregnant women who had HIV test as part of antenatal care at UPTH between October 2019 to September 2021 were prospectively recorded and analyzed to determine the period HIV prevalence and trends.
Results: A total of 1695 women attended antenatal within said period. Eighty nine (89) women of the total population tested positive to HIV. The seroprevalence of HIV among these pregnant women was 5.25%. They were 53 (59.55%) new HIV diagnoses.
Conclusion: There is a decline in the antibody seroprevalence of HIV infection among pregnant women attending Antenatal clinic at UPTH.

Keywords: HIV, seroprevalence, pregnant women

Introduction
The Human Immunodeficiency Virus (HIV) is a virus that is known to attack cellular immunity in humans and can cause an Acquired Immunodeficiency Syndrome (AIDS) [1]. Since its emergence and discovery by Luc Montagnier and colleagues at the Pasteur Institute France in 1983 [2], HIV infection has remained a disease of public health importance as it affects different strata of the world's population.
By World Health Organization's (WHO) assessment there were 38.4 million people living with HIV in the world at the end of 2021 [3]. Africa is most severely affected by HIV infection and it has 3.4% of its adult population living with the disease [3]. Nigeria ranks 4th in the world HIV burden and has a current prevalence of 1.4% [1].
HIV infection in pregnancy has important medical, social and economic consequences. WHO noted that an estimated 1.3 million women and girls who are living with HIV get pregnant each year [4]. Without any form of intervention, the transmission of HIV from a mother to child during pregnancy ranges from 15% to 45% [4]. This underscores a need to have prompt commencement of measures for prevention of mother to child transmission of HIV among pregnant women living with HIV, in order to guarantee reduction in associated perinatal morbidity and mortality.
In Nigeria there was a rise in HIV sero-prevalence rates in pregnant women from 1.8% in 1991 to 5.8% in 2001, which was followed by a gradual reduction to 5% in 2003, 4.1% in 2010 and further to 3% in 2014 [5]. This was revealed in the National HIV Sero-prevalence Sentinel Survey. This also revealed a 10% mother to child transmission rate in new HIV infections annually [5]. However there is a variation in the prevalence of HIV infection in pregnant women which is seen from state to state and centre to centre. A systemic review and meta-analysis by Ozim CO, *et al*. showed that an overall gathered prevalence of HIV in pregnancy in Nigeria was 7.22% [5]. There were variations seen in the different geo-political zones and also between tertiary centres and those that offer only antenatal care.

An estimated 180,000 children were newly infected with HIV in 2017, with majority of these infections emanating through mother to child transmission (MTCT) [6, 7]. In Nigeria there were 37,000 new HIV infection occurring in children through MTCT in 2017 [8]. This happens to be one of the highest in the world.

In pregnancy the risk of transmission of HIV from mother to child transmission has been shown to be effectively reduced in women who received antiretroviral therapy. New maternal infection with HIV in pregnancy has a significant contribution to a higher risk of maternal to child transmission [9]. Another factor which increases the risk of maternal to child transmission is high viral load at the point of HIV diagnosis [10, 11]. This is why it is recommended that women be offered screening for HIV infection routinely during the antenatal period.

The determination of sero-prevalence in this study is geared towards drawing attention to the burden of HIV in pregnancy and adding to the available knowledge needed for local, regional and national planning for HIV/AIDS intervention.

Materials and Method

Study Area

The study was carried at the antenatal clinic of the University of Port Harcourt Teaching Hospital, in Rivers state, Nigeria.

Study Population

Pregnant mothers visiting the Antenatal clinic at the UPTH between October 2019 to September 2021.

Sample Size and HIV screening

All women who registered for antenatal care at the UPTH within the period under review were tested using an 'opt out' strategy. A total of 1695 were recruited into the study. The women were screened for HIV infection by using rapid enzyme-linked immunosorbent assay (ELISA) kit. Prevalence of HIV infection in was calculated using the formula below:

Prevalence = Number of patience having the disease/ total number of patients diagnosed.

Further social demographic and clinical information were gotten from the patients by using a self-administered questionnaire. The data was entered into a spread sheet and analyzed using the IBM SPSS 28. Results are presented in tables and figures in frequencies and percentages.

Results and Discussion

The age distribution of women who came for antenatal in UPTH from October 2019 to September 2021 are within the age range 15 – 80, with 30-34 being the top age class of pregnant women followed by 25-29 and 35-39. A total of 1695 women attended antenatal within said period.

Table 1: Age distribution of participants

Variable	Frequency N= 1695	Percentage %
Age Range		
15-19	18	1.06
20-24	113	6.67
25-29	442	26.08
30-34	591	34.87
35-39	405	23.89
40-44	110	6.49
45-49	11	0.65
50-54	2	0.12
65-69	2	0.12
75-80	1	0.06
Total	1695	100.00

Eighty nine (89) women of the total population tested positive to HIV. That is about 1 in 20 women are HIV Positive. The seroprevalence of HIV among these pregnant women was 5.25%

Table 2: Test result of participants

Variable	Frequency N= 1695	Percentage %
HIV Result		
Negative	1606	94.75
Positive	89	5.25
Total	1695	100.00

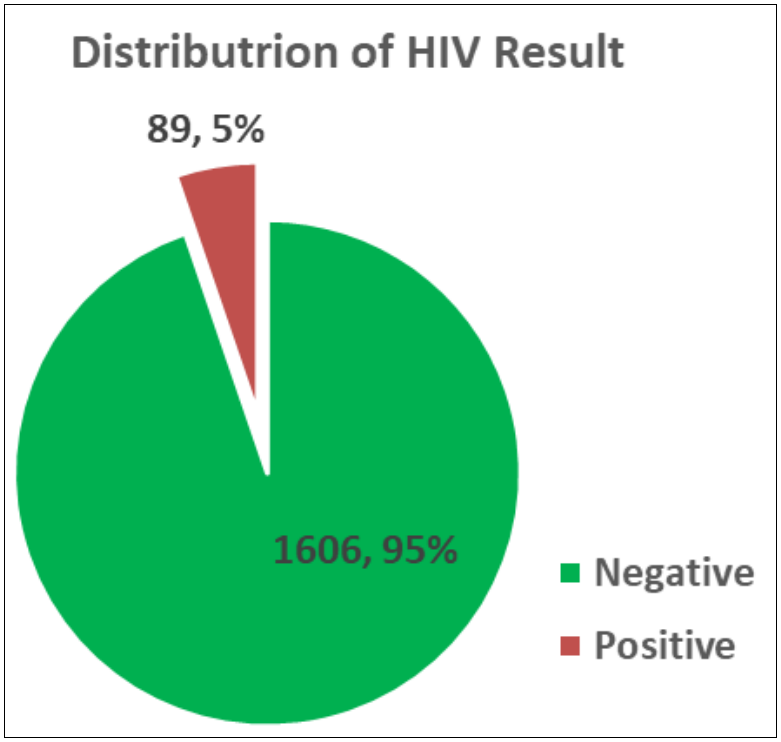

Fig 1: Distribution of screening result among patients

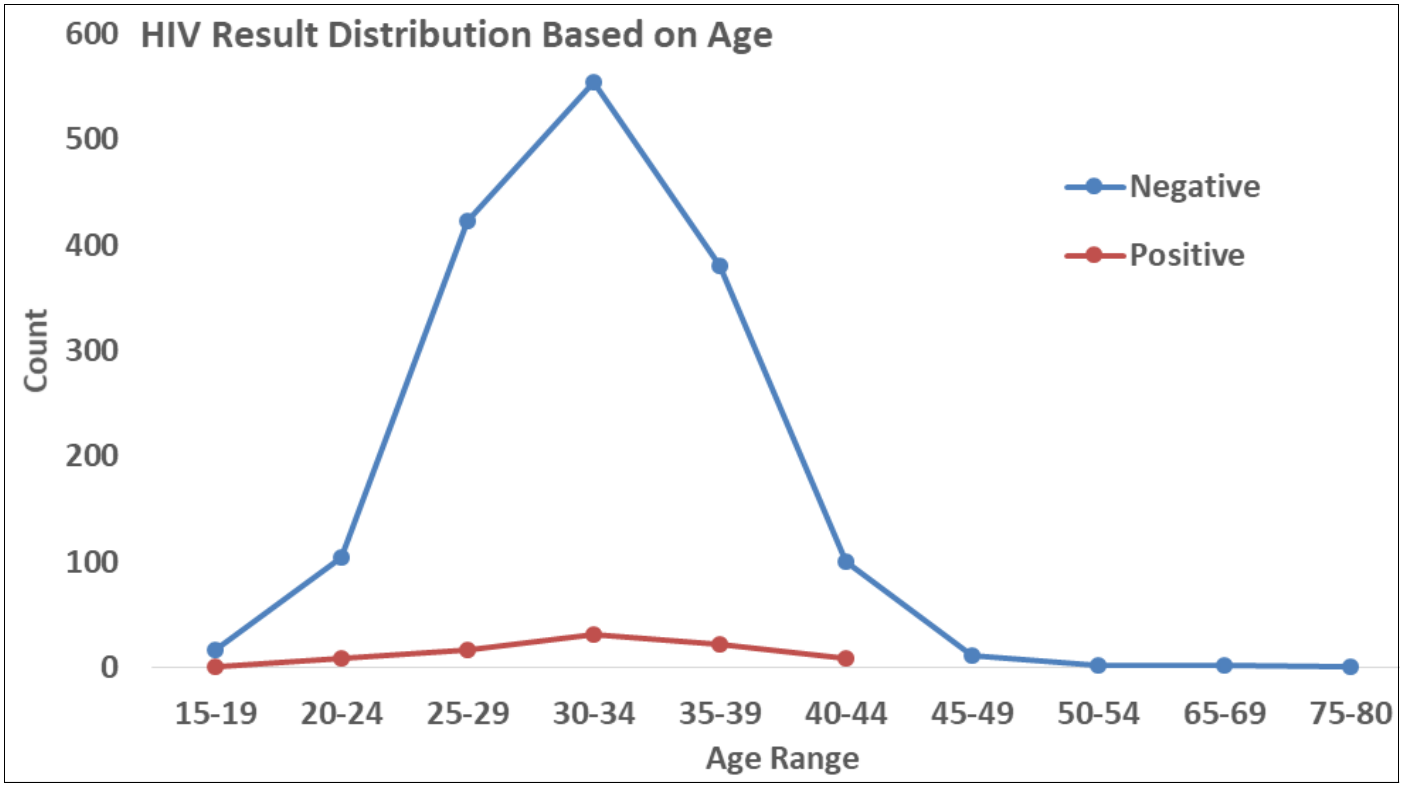

Fig 2: Graphical representation of result distribution according to age.

Positive HIV Patients

Table 3: Age distribution among positive patients

Variable	Frequency N= 89	Percentage %
Age at Visit		
16-20	3	3.37
21-25	11	12.36
26-30	19	21.35
31-35	35	39.33
36-40	17	19.10
41-45	4	4.49
Total	89	100.00

Table 4: Distribution of timing of diagnosis

Variable	Frequency N= 89	Percentage %
Time of HIV Diagnosis		
Booked	1	1.12%
Prenatal	48	53.93%
Previously known HIV positive	36	40.45%
Unbooked	4	4.49%
Total	89	100.00%

They were 53 (59.55%) new HIV diagnoses.

Table 5: Antiretroviral treatment uptake among positive patients

Variable	Frequency N= 89	Percentage %
Currently Taking ARV		
Yes	44	49.44
Lost to Follow-up	45	50.56
Total	89	100.00

Discussion

In this study we determined that the sero-prevalence of HIV infection among pregnant women attending antenatal clinic at UPTH was 5.25%. This study also established that of the 89 patients who tested positive, 53 (59.55%) were newly diagnosed. That is a 3.13% incidence rate in new diagnoses. In a study by Adeyemo *et al*. in Ogun, a higher prevalence was observed but it had a downward trend of 9.1%, 7.6% and 7.1% in 3 years [8]. This study was similar to our study as their sample population was hospital based and drown from a teaching hospital and a local maternity [8].

Our study showed a decline in sero-prevalence in contrast to a previous antibody sero-prevalent done at the UPTH which revealed a sero-positivity rate of 7.3% [12]. Also in another study Yenagoa the seroprevalence of HIV antibodies in the pregnant women population was 4.6%, and it was highest amongst the age range of 20 –29 and 30-39 age group with 40.0% seroprevalence each [13]. This was also similar to findings in our study where the age range of 26-30 and 31-35 constituted 21.35% and 39.33% of the prevalence respectively. In another hospital based study in faraway Damaturu in Yobe state of Nigeria, out of 50 women who were tested, 2 were seropositive while in contrast, a study at University College Hospital Ibadan revealed a rather high prevalence of 26.4% [14, 15]. But there was similar distribution in age prevalence in these studies.

In this study we demonstrate that apart from the patients lost to follow up, all other seropositive patient (44 patients) received antiretroviral treatment. We postulate that most of the patients lost to follow up during this antenatal period had care outside the teaching hospital, because this study was conducted during the covid-19 pandemic era. During this period patient load at the teaching hospital reduced due to fear of local outbreak at the teaching hospital. The use of antiretroviral therapy in pregnancy is recommended by the Centers for Disease Control and prevention (CDC) for all seropositive women [16]. This is known to achieve viral suppression, reduce transmission and prevent mother to child transmission.

Conclusion

There is a decline in the antibody seroprevalence of HIV infection among pregnant women attending Antenatal clinic at the University of Port Harcourt Teaching Hospital. This could be as a result of increased uptake of testing and commencement of anti-retroviral therapy for seropositive women.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Okoroiwu HU, Umoh EA, Asanga EE, Edet UO, Atim-Ebim MR, Tangban EA, *et al*. Thirty-five years (1986–2021) of HIV/AIDS in Nigeria: bibliometric and scoping analysis. AIDS Res Ther [Internet]. 2022;19(1):1-15. Available from: https://doi.org/10.1186/s12981-022-00489-6
2. Barré-Sinoussi F, Chermann JC, Rey F, Nugeyre MT, Chamaret S, Gruest J, *et al*. Isolation of a T-lymphotropic retrovirus from a patient at risk for acquired immune deficiency syndrome (AIDS). Rev Investig Clin. 2004;56(2):126-9.
3. WHO. HIV [Internet]. World Health Organization; c2022. [cited 2023 Apr 10]. Available from: https://www.who.int/data/gho/data/themes/hiv-aids#:~:text=Globally%2C 38.4 million %5B33.9, considerably between countries and regions.
4. WHO. Mother-to-child transmission of HIV [Internet]. World Health Organization; c2022 [cited 2023 Apr 10]. Available from: https://www.who.int/teams/global-hiv-hepatitis-and-stis-programmes/hiv/prevention/mother-to-child-transmission-of-hiv#:~:text=Globally%2C an estimated 1.3 million,from 15%25 to 45%25.
5. (NACA) TNA for the C of A. Federal republic of nigeria National HIV and AIDS strategic framework 2017-2021. 2018. Available: [Internet]. 2018. 6–18 p. Available from: https://naca.gov.ng/wp-content/uploads/2018/05/National-HIV-and-AIDS-Strategic-Plan-FINAL1.pdf
6. Kirk AD, Knechtle SJ, Larsen CP, Newell KA, Pearson TC. Miles to go. Am J Transplant. 2011;11(6):1119-20.
7. Fisher R, Kling J. Community Mobilization. Urban Aff Q. 1989;25(2):200-11.
8. UNAIDS. UNAIDS. Nigeria. Geneva27 [Internet]. UNAIDS Switzerland; c2019. Available from: http://www.unaids.org/en/regionscountries/countries/nigeria
9. Woldesenbet S, Kufa-Chakezha T, Lombard C, Manda S, Cheyip M, Ayalew K, *et al*. Recent HIV infection among pregnant women in the 2017 antenatal sentinel cross-sectional survey, South Africa: Assay-based incidence measurement. PLoS One [Internet]. 2021;16(4):1-17. Available from: http://dx.doi.org/10.1371/journal.pone.0249953
10. Fiebig EW, Wright DJ, Rawal BD, Garrett PE, Schumacher RT, Peddada L, *et al*. Dynamics of HIV viremia and antibody seroconversion in plasma donors: Implications for diagnosis and staging of primary HIV infection. Aids. 2003;17(13):1871-9.
11. Peter K, Christopher, Murtaugh M. The New England Journal of Medicine Downloaded from nejm.org on January 12, 2022. For personal use only. No other uses without permission. Copyright © 1991 Massachusetts Medical Society. All rights reserved; c1999.
12. Akani CI, Ojule AC, Opurum HC JCT. Sero-prevalence of HIV Antibodies in Pregnant Women. Niger J Med. 2006;15(1):44-8.
13. ELK DOB. A. HIV Antibody Seroprevalence and Determinants Amongst Antenatal Clients in a Tertiary Hospital in the Niger Delta. Eur Sci Journal, ESJ. 2018;14(9):300.
14. Khanam S. Prevalence of Hiv Infection Among Pregnant Women Attending Ajiko Medical Clinic, Damaturu,

Nigeria. J Clin Res HIV AIDS Prev. 2019;3(4):7-9.
15. Okonko IO, Osadebe AU, Onianwa O, Okereke S. Prevalence of HIV in a Cohort of Pregnant Women Attending a Tertiary Hospital in Ibadan, Nigeria. Immunol Infect Dis. 2019;7(1):7-12.
16. CDC. HIV Treatment as Prevention [Internet]. HIV Risk and Prvention. [cited 2023 Apr 16]. Available from: https://www.cdc.gov/hiv/risk/art/index.html#print

How to Cite This Article
John OC, Alegbeleye JO. Seroprevalence and pattern of HIV infection in pregnancy at the University of Port Harcourt Teaching Hospital. International Journal of Clinical Obstetrics and Gynaecology. 2023;7(6):01-05

Creative Commons (CC) License
This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.