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Seroprevalence of HIV Infection among Pregnant Women Attending Antenatal Clinic in General Hospital Kumo, Gombe State Nigeria

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Abstract **Original Research Article**

Seroprevalence of HIV among pregnant women attending antenatal clinic in Kumo General Hospital was studied in 350 sera. The sera were obtained from women of different age group, occupation, social background including tradition (by tradition we mean people's ways of life common in that locality). Screening was carried out using Abbot determine test strips and Gene 11 HIV 1 and 2. The Bio-data information of the women was gathered through questionnaire administration. Out of the 350 sera collected, 12(3.4%) were reactive for HIV. There was high prevalence among age group 21-30 (2.1%) followed by age group 11-20 (0.9%). High prevalence was also observed among the unemployed pregnant women (2.1%). Women who had no risk factor were also noted to have had high prevalence (1.7%); Spouses of seropositive pregnant women and those with no risk factor had 42% and (33%) prevalence respectively.

Keywords: Prevalence, Women, HIV, Pregnancy.

INTRODUCTION

Human Immune Deficiency Virus (HIV) is one of the most dreaded viruses that attracts global attention. It is the etiologic agent of Acquired Immune Deficiency Syndrome (AIDS) and AIDS Related Syndrome or Complexes (ARC) [1]. The virus was recognized and documented in the USA in Sanfrancisco in 1981 [1]. HIV was diagnosed in Africa (Kenya) first in the year 1984 and in Nigeria the year 1986 from a sexually active thirteen year old girl [2]. HIV infection among pregnant women has been identified as a major cause of Paediatric HIV/AID which leads to death that has now become a global concern [3]. Infection with HIV is now pandemic with over 39.5 million people currently infected world-wide of which over 2.2 million are below the age of 15 years [4].

The study was therefore designed to determine the prevalence of HIV infection among pregnant women attending antenatal clinics in Kumo, Gombe State.

MATERIAL AND METHODS

Sample collection and processing: Five milliliters of blood was collected from each subject allowed to clot and the serum was separated by centrifugation for 5 minutes at 2500rpm. A total of 350 sera were obtained, they were heat inactivated at 56^{O}C for 30minutes and stored at -20^{0}C, ready for laboratory assay. Their bio data was collected with a well-structured questionnaire after ethical and consent approval.

Laboratory Sample Test: The sera were screened using Gene II HIV-I and HIV-2. It is a rapid enzyme immunoassay for qualitative detection of antibodies to human immune deficiency virus types 1 and 2 in human serum or plasma. The sample were further screened with the Abbott determine test strip. The Gene II HIV-1 and HIV-2 has presented 100% sensitivity on true HIV positive and seroconversion panel with specificity of 99.8% [5]. All test procedures and interpretations of results were carried out according to the manufactures instructions and specifications.

RESULTS

All sera samples were reactive to only HIV-1. This implies that HIV-1 type virus was responsible for their HIV infection. Table 1 shows the overall distribution of HIV among the pregnant women screened. Out of the 350 samples, 12(3.43%) were reactive to HIV while 338 (96.57%) were non-reactive.

Table 2 presents the age distribution of HIV among the women. Age group 21-30 years had the highest reactive number (2.0%) followed by ages 11-20 with 0.86% while the age group 31-40 had the least with 0.57%. There was no reaction in age group 41-50 years.

Table-1: Overall Distribution of HIV among the subjects

Total No. of Sample	No. of sample Reactive (%)	No. of sample non-Reactive (%)
350	12(3.4)	338 (96.6)

Table-2: Age Distribution of HIV among the pregnant women

Age Group (yrs.)	No. screened	No. reactive (%)	No. nonreactive (%)
11-20	73	3(0.86)	70 (20.00)
21-30	171	7(2.00)	164 (46.86)
31-40	106	2(0.57)	104 (29.71)
41-50	1	0(0.00)	1 (0.29)
Total	**350**	**12(3.43)**	**338(96.57)**

Table 3 shows the educational status of the pregnant women. The highest reactivity came from women with primary education with 6(1.71%). The secondary, tertiary and informal education had equal reactivity of 2(0.57%). Most of the women (186) had no formal education. The occupational distribution of HIV among the pregnant women screened is presented on Table 4. The unemployed had the highest reactivity with 7(2.1%) followed by the self-employed (5(1.43%) while the civil servant, mechanical staff and military/paramilitary had no reactivity (0.00%) (Table 4).

Table-3: HIV distribution among the women based on their Educational Status.

Education Qualification	No. screened	No. reactive (%)	No. nonreactive (%)
Primary Edu.	104	6(1.71)	98(28.00)
Secondary Edu.	100	2(0.57)	98(28.00)
Tertiary Edu .	60	2(0.57)	58(16.57)
No formal Edu.	186	2(0.57)	184(52.57)
Total	350	12(3.43)	338(96.57)

Key: Edu. = Education

Table-4: Occupational distribution of HIV among the pregnant women

Occupation	No. of sample Screened (%)	No. reactive reactive (%)	No. non-reactive (%)
Unemployed	150	7(2.10)	143 (40.86)
Civil servant	60	0 (0.00)	60 (17.4)
Self Employed	12	5(1.43)	123 (35.14)
Mililitary/Paramil.	2	0(0.00)	2(0.57)
Medical staff	10	0(0.00)	10(2.86)
Total	**350**	**12(343)**	**338(96.57)**

Table 5 presents the distribution of HIV infections. Based on the risk factors among the women. The no risk factor group (186) had the highest reactivity with 6(1.71%) followed by the multiple sex with 5(1.43%) while the blood transfused women had the least with 1(0.29%).

Table-5: HIV distribution among the women based on risk factors.

Risk factor	No. of sample Screened (%)	No. Reactive (%)	No. non-Reactive (%)
Blood Transfusion	50	1(0.29)	49 (14.00)
Surgical staff	20	0.(0.00)	20 (5.71)
Multiple sex	100	5(1.43)	95(27.14)
No risk factors	180	6(1.71)	174(49.71)
Total	350	12(3.43)	338(96.57)

DISCUSSION

Previous studies conducted on HIV have shown that the disease is now endemic in the country. From the first single case diagnosed in 1986 in the country, the disease has assumed an epidemic status [6 7]. This study showed the presence of HIV infections among pregnant women in Gombe State. The 3.4s% prevalence rate obtained in this study although seems to be low is of great medical significance since the disease is a dreaded one. The 3.43% prevalence is in line with the report of [8] who got 3.5% prevalence among pregnant women in Sokoto.

The case of HIV infection in pregnant women is a potential case in offspring and children as 20% of infants born to HIV positive parents are HIV positive [9]. Since most of the women have no formal education, their infections may be due to lack of sufficient knowledge of the disease or lack of good medical facilities to control the transmission and spread. The age distribution showed that ages 21-30 years had the highest prevalence (2.0%). This figure is in line with the report of [10] who reported same figure in Abuja. The infections of this age group may be attributed to active involvement in social life styles, some of which involves having unprotected sex and prostitution early in life (Table 2).

The prevalence among the primary educated women may be attributed to the danger of low level of education in the society and also the high prevalence among the unemployed may influence them to have premarital sex or prostitution in order to survive. In conclusion, this study has revealed the presence and continuous spread of HIV among pregnant women which may result to Paediatric and infant HIV and AIDS. To prevent further transmission and spread, it is strongly recommended that all medical centers and Hospitals should be properly equipped with more sensitive modern equipment and diagnostic techniques.

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