Human immunodeficiency virus types 1 and 2 infection in some rural areas of Nigeria

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Abstract. The prevalence of human immunodeficiency virus types 1 and 2 in rural areas of Nigeria was estimated using 1089 sera collected in 18 locations from 1992 to early 1994. The sera were tested with Enzyme linked Immunosorbent Assay (ELISA) and confirmed by Western Immunoblotting technique.

Overall, 13 (1.2%) of the 1089 sera were positive for antibodies to HIV-1 and HIV-2. Prevalence of 0.6% and 0.8% were obtained for HIV-1 and HIV-2 respectively. The highest prevalence of HIV-1 and HIV-2 (50.0%) were found in Zuhlrrua and Umubuzu. A seroprevalence of 1.2% was obtained for both male and female groups tested. The highest prevalence of HIV was found among individuals 30–39 years age group. An overall increase in prevalence of HIV-1 and HIV-2 infection was obtained over the three years during which samples were collected for this study (0.7% in 1992, 1.0% in 1992 and 3.4% in 1994). In addition, two sera were positive for both HIV-1 and HIV-2.

The detection of antibodies to HIV-1 and HIV-2 in the rural areas where blood samples were collected for this study shows that both viruses are widespread in the rural communities of Nigeria.

Key words: HIV seroprevalence, rural areas, Nigeria.

INTRODUCTION

Human Immunodeficiency Virus (HIV) is the aetiological agent of Acquired Immuno-Deficiency Syndrome (AIDS). Antibodies to HIV-1 have been reported in virtually all parts of the world (14) while antibodies to HIV-2 have been found predominantly in West Africa (2; 16; 9). As of 1 July 1996 a total of 28 million people have been infected with HIV (12).

Until recently, it has been assumed that Nigeria and some other West African countries have been spared of the problems of AIDS. Contrary to that belief, the viruses have spread to these countries (16; 14) and the prevalence is actually an on rapid increase (15). Athough the first case of AIDS in Nigeria was reported in 1986, seroprevalence studies have shown that infection with both HIV-1 and HIV-2 has increased more than 10-folds between 1986 and 1990 (17; 9). Since 1986 a total 105,000 HIV cases has been reported from Nigeria (15).

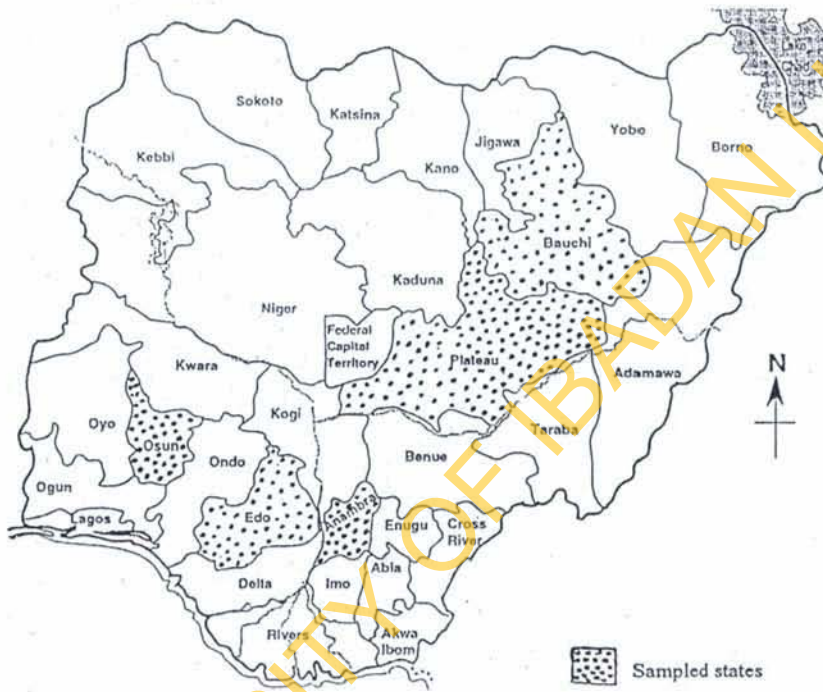Fig. 1 – Map of Nigeria showing the states where residents of rural communities were tested for antibody to HIV-1 or 2.

Sampled states

DISCUSSION

As far as we can establish, this is the first study that determined the prevalence of HIV infection in rural areas of this country. Our data showed an overall prevalence of 1.2% of HIV infection among residents of some rural communities in Nigeria. The result of this study suggests an extensive HIV-1 and HIV-2 infection in the rural areas of Nigeria.

Table 2

Prevalence of HIV-1 and HIV-2 infections by age among residents of some rural areas of Nigeria

Age (Years)	No. tested	No (%) WB positive 95% CI			Total WB* positive	95% CI
		HIV-1	HIV-2	Dual		
0– 9	123	0(0)	0(0)	0(0)	0(0)	0–1.6
10–19	259	1(0.2) 0–0.5	4(0.8) 0–1.6	1(0.2) 0–0.5	4(1.8)	0–1.6
20–29	194	1(0.5) 0–1.5	1(0.5) 0–1.5	0(0)	2(1.0)	0–1.5
30–39	144	3(2.1) 0–4.3	3(2.4) 0–4.3	1(0.7) 0–2.1	5(3.5)	2.7–4.3
40–49	48	1(2.1)	0(0)	0(0)	1(2.1)	0–4.9
50	51	0(0)	1(2.0) 0–5.8	0(0)	1(2.0)	0–3.1
Total	1089	6(0.6) 0.1–1.1	9(0.8) .03–1.3	2 0–0.5	13 0.6–1.8	

Higher prevalence of HIV-2 infection (0.8%) than HIV-1 infection (0.6%) found in rural areas of Nigeria in this study is similar to the situation in Côte d'Ivoire where higher prevalence of HIV-2 infection than HIV-1 had been reported (1). This is however contrary to higher prevalence of HIV-1 than HIV-2 infection previously found in most urban areas of Nigeria (17, 9). This observation therefore suggests that HIV-2 infection has also become widespread in Nigeria than earlier thought.

The increasing pattern in the prevalence of HIV infection over the three years when samples were collected for this study (0.7% in 1992; 1.0% in 1993 and 3.4% in 1994) supports earlier reports that HIV infection is increasing in Nigeria (9). This is consistent with previous reports based on sera collected from individuals resident in many urban areas of Nigeria (17; 9) and other parts of the world (14).

The age group with the highest prevalence of HIV infection in this study (30–39 years old) is in agreement with previous reports in Nigeria (9) and other parts of Africa (5; 2; 1). Individuals in this age group are in their sexually active

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