CASE REPORTS

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SOCIAL PROBLEMS OF INDETERMINATE AND FALSE POSITIVE HIV TEST RESULTS AMONG CLIENTS ATTENDING A NIGERIAN HIV TREATMENT CLINIC

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ABSTRACT
Increased availability of Human Immunodeficiency Virus (HIV) screening test and more public enlightenment have resulted in more people coming forward to access counseling and testing at the HIV counseling and testing centers in Nigeria. Some of the clients however obtained indeterminate and false positive results leading to emotional disturbance and occasionally, dilemma to the attending physician. This article/case series looked at some of these situations and discussed how they were attended to.

Keywords: Social problems; Indeterminate results, False positive results

INTRODUCTION
Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) have spread to all the regions of the world with a most devastating effect in sub-Saharan Africa.[1] The first client of AIDS in Nigeria was reported in 1986.[2] Since then the prevalence of HIV infection increased from 1.8% in 1991 to 4.8% in 2003.[2] There was a drop to 4.4 in 2005 with some stabilization at 4.6 in 2008.[2] The Federal government advocates that every Nigerian should know their HIV status and hence established HIV counseling and testing (HCT) centers nationwide.[2,3] These clients usually undergo pretest counseling and when positive to the initial screening test are referred for confirmation at the Antiretroviral clinic (ARV). This frequently leads to fear of uncertainty, stigma and sometimes sudden death from violence experienced by these clients.[4,5,6,7] These situations sometimes also occur in clients with indeterminate and false positive HIV result even after been attended to at the ARV clinic.[8]

Some clients came with the impression that they have AIDS and therefore should access the antiretroviral drugs immediately without undergoing the HIV confirmatory test and further tests. Some presented at the ARV clinic with indeterminate and false positive HIV test results which in most cases had been misinterpreted to mean that they were HIV positive. This made their management sometimes difficult as they expected to be given antiretroviral drugs. We present three clients seen at the ARV clinic with different challenges.

Case 1
A 22 year old married trader was referred by April, 2005 from a maternity hospital at Ibadan on account of being reactive on HIV testing. She was accompanied by her anxious husband who was declared non reactive at the same center. She was 4 months into her first pregnancy and went to book for antenatal care where she underwent HIV counseling and testing. After talking to the couple on the meaning of the reactive screening test she was then referred to the ARV clinic counselor who did a pre-confirmatory counseling and also sent her for bleeding for the Enzyme linked Immunosorbent Assay (ELISA) and confirmatory western blot test. The couple were advised to practice safe sex through condom use and given one week appointment. She was also booked to attend the prevention of maternal to child (PMTCT) clinic the following week.

On the appointment day, the ELISA result was positive while western blot result was negative. She then had post test counseling and was followed up by both the family physician and the PMTCT team. She was suspected to be in the window period and given Zidovudine (AZT) from 28 weeks and single dose Nevirapine 200mg at delivery. She delivered per vaginam at term a life female baby who had a dose of Nevirapine syrup 6mg at birth. She had been followed up for more than 2 years and remains western blot negative. She had counseling on infant feeding after which she breastfed exclusively for 6 months. The baby was western blot negative by 18 months of

life. The couple remained married and was able to cope with this situation.

Case 2

This was a 50 year old Islamic cleric, known hypertensive and diabetic married to four (4) wives. He decided to check his HIV status having learnt on the local radio of the need for everybody to do an HIV test. During a public enlightenment campaign programme in December, 2005, he had HCT and was declared HIV reactive and thereby referred to our clinic. He was counseled on the significance of the screening test before being sent to the counselor for pre-confirmatory HIV counseling. He was also bled for ELISA, western blot, random blood sugar. His presenting blood pressure was 200/110 mmHg. Random blood sugar done was 139mg%. On account of his hypertensive and diabetic state he was given dietary advice. He was advised to bring in his wives for HCT but refused claiming that they might accuse him of infecting them and therefore abandon him. He was counseled that his confidentiality will be respected and that knowing the wives HIV status might help in making accurate diagnosis of the problem. He was offered admission on account of the severe hypertension but he declined opting for outpatient care. Antihypertensive were prescribed and he was advised to continue the oral hypoglycemic he was taking before presentation. He was advised on safe sex with condom and given one week appointment. One week later the western blot result came out and was indeterminate. He had post test counseling and advised to repeat the test in 6 months. The western blot result remained indeterminate for over 2 years and he consistently refused to discuss this situation with his wives despite repeated counseling.

Case 3

This was a 34 year old accountant whose appointment was recently terminated as a result of HIV screening test conducted for all workers at his workplace. His wife was a trader and they had 2 children. He was referred to our clinic in February, 2006 for treatment. His wife was not aware of the screening result. He appeared depressed but became cheerful after being counseled and told that he might not be infected. He had pre confirmatory counseling and blood was taken for western blot. He was also counseled on importance of safe sex and condom use. He agreed to bring his wife at the next appointment. He was then given one week appointment.

On the appointment day, his western blot result was indeterminate while his wife HIV screening result was negative. He agreed that the result be discussed with his wife. Safe sex with condom was re-emphasized. The client was then asked to report for a repeat western blot test in 6 months. However 2 months later the client reported marital disharmony as his wife had refused to have sexual relationship with him because of fear that the condom might tear. The wife was invited for counseling but she refused to accept the situation and decided to allow the man to have extramarital relationship. At 3 months, the western blot was repeated with the result negative but the wife felt the clinic staff were not truthful with the husband's status. The result remained western blot negative for more than 2 years. He got another job and lives with his wife and 2 children.

DISCUSSION

The enzyme linked immunosorbent assay (ELISA) is one of the common serological tests to detect HIV antibodies while western blot assay is regarded as the gold standard for confirmation of HIV serostatus [9]. Non specific reactivity on western blot can occur with HIV negative specimens leading to inconclusive or indeterminate results [9]. In the majority of clients the western blot results are either clear-cut positive or negative. Positive samples give many bands, indicating the presence of antibodies to most or all the major viral proteins coded by the env gene (gp160, gp120, gp41), the gag gene (p55, p24, p18), or the pol gene (p66, p51, p31). Negative samples give no bands at all. Occasionally, incomplete patterns of bands corresponding to viral proteins are obtained (e.g., p24 alone, or p55 and p51 only, etc.). Such patterns constitute indeterminate results according to one or all of the guidelines most commonly used for the interpretation of the Western blot.[10,11] One of the most common causes of an indeterminate result is if the person tested is in the window period.[9,11] Other causes include HIV-2 cross reaction, Human T cell lymphotropic virus I/II (HTLVI/II), auto antibodies, pregnancy, and abnormal bilirubin levels.[9,12] The recommended and widely used algorithm for the confirmation of an indeterminate result is to retest the patient after 3-6 months.[9] It is accepted to confirm western blot indeterminate result with immuno-fluorescence and polymerase chain reaction where available.[9]

HIV diagnosis and treatment is becoming increasingly available to all Nigerians due to the combined effort of the Federal Government of Nigeria and funding agencies like President Emergency Plan for AIDS Relief (PEPFAR) and Global funds for HIV, Tuberculosis and Malaria.[2,4] Many Nigerians do come forward for the HIV screening tests usually rapid kits mostly Determine, Stat pak, Unigold and Double check gold [2,4]. Due to the availability and accessibility of rapid test kits and ease of use of these kits by lay counselors,

more people are getting tested and clients of indeterminate and false positive HIV results might result.[9,13] Indeterminate results must be properly managed to prevent situations such as marital problems, rejection by family members, stigma, suicidal ideation, other psychosocial problems and the cost associated with retesting. [9,14] The first case presented emphasized the need to assume that the pregnant client could be in the window period which explains the positive ELISA and negative western blot result. This enabled her to access PMTCT services.

The second case presented showed high level of fear of stigma and abandonment. This put his wives at risk of infection. Even though he was counseled on safe sex and given condoms, there was no way to ensure compliance since he was not ready to bring his wives for HIV screening. This brings into focus the right of women to know the status of their husbands and vice versa.

The third case further showed partners response to HIV. Despite being counseled on safe sex and the western blot remaining negative after 2 years, the wife still refused sex with or without condom fearing that she could be infected if the condom got torn during sexual intercourse. It took intense and regular counseling by the clinic staff to ensure that the couple did not divorce because of the perceived HIV status of her husband. There is need for physicians to consider the total profile for the patient after obtaining HIV indeterminate western blot result, reassess risk factors for HIV infection, perform a HIV retesting at 3-month intervals for 6 months or use an alternate HIV antibody confirmatory assay and running antibody tests for other human retroviruses.[8,9,14]

In conclusion, there is need to create awareness and manage properly indeterminate and false positive HIV results to prevent situations which could lead to marital disharmony, rejection by family members, stigma, depression, suicidal ideation and other psychosocial problems.

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REFERENCES

1. UNAIDS/WHO. AIDS epidemic update, December, 2006. http://www.unaids.org.
2. Federal Ministry of Health. Guideline for the use of ARV Drugs in Nigeria. Federal Ministry of Health, Abuja 2007: 10-67.
3. **Olowookere SA,** Fatiregun AA, Akinyemi JO, Bamgboye AE, Osagbemi GK. Prevalence and determinants of nonadherence to highly active antiretroviral therapy among people living with HIV/AIDS in Ibadan, Nigeria. *J Infect Developing Countries* 2008; 2 (5): 369-372.
4. **Idoko JA,** Taiwo B. and Murphy R. Treatment and care of HIV disease. In Adeyi O., Kanki P.J., Odutolu O., and Idoko J.A. AIDS in Nigeria. A nation on the threshold. Harvard Center for Population and Development Studies; 1st Ed. 2006: 390-393.
5. **Duvvury N,** Knoess J. Gender based violence and HIV in Cambodia. Links, Opportunities and Potential Responses. Division 4300. Health, Education and Social Protection. 05-0492.pdf. 2005; 5: 26-30.
6. The President's Emergency Plan for AIDS Relief Report on Gender-Based Violence and HIV/AIDS. United States House Report 109-152, accompanying H.R. 3057 November 2006; 3-16
7. HIV/AIDS and Gender-Based Violence. Literature Review Program on International Health and Human Rights, Harvard School of Public Health August 2006; 4-44
8. **Uneke J,** Alo M, Ogbu O, Ngwu B. Western Blot-Indeterminate Results in Nigerian Patients HIV Serodiagnosis: The Clinical and Public Health Implication. AIDS Patient Care and STDs. March 1, 2007, 21(3): 169-176.
9. **Syed H,** Balakrishnan P, Sunil S, Murugavel G, Kumarasamy N, Vidya S, Martin P, Thyagarajan P, Kenneth M, Solomon S. HIV-1 Western blot assay: what determine an indeterminate status? Indian Journal of Medical Sciences. 2005: 59(10); 443-50.
10. **Jamjoom G,** Maatouk J, Gazal M, Damanhouri L, Awliaa A, Ruwaihi N, Bawazeer M, Halabi H, Adel A, Abdulla A. Follow-up of HIV western blot indeterminate results. Ann Saudi Med 1997; 17(5): 518-521.
11. Centers for Disease Control. Interpretation and use of the Western blot assay for serodiagnosis of human immunodeficiency virus type 1infections. MMWR Morb Mortal Wkly Rep 1989; 38(7): 1-7.
12. **Guan M.** Frequency, Causes, and New Challenges of Indeterminate Results in Western Blot Confirmatory Testing for Antibodies to Human Immunodeficiency Virus. Minireview. Clinical and Vaccine Immunology, June 2007; 649–659.

13. **Meles H,** Wolday D, Fontanet A, Tsegaye A, Tilahun T, Aklilu M, Sanders E, and Tobias F. De Wit R. Indeterminate Human Immunodeficiency Virus Western Blot Profiles in Ethiopians with Discordant Screening-Assay Results. 2002; 9: 160-163.

14. **Richard D,** Denise M, Holodniy M, Mole L, Margolis D, Blattner W, *et al.* Evaluation of Chiron HIV1 HIV2 Recombitant Immunoblot Assay. J. Clin Microbiol 1996: 34; 2650-3.