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Syphilis and Human Immunodeficiency Virus Co-Infection in North-Eastern Nigeria

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Abstract: To determine Syphilis and Human immunodeficiency virus co-infection rate in North-Eastern Nigeria. Hospital-based prospective study. HIV/AIDS clinic of the Federal Medical Centre, Yola Nigeria. From December 2006-2007. Two hundred consecutively recruited HIV/AIDS patients comprising 69 males and 131 females were screened for Syphilis using Rapid Plasma Reagin (RPR) test. All those that were positive were confirmed using Treponema Pallidum Haemagglutination (TPHA) test. The biodata of the patients were obtained. Written informed consent was obtained from each patient. Out of the 200 HIV/AIDS patients tested, 18 were seropositive for Syphilis giving an overall co-infection rate of 9.0%. Of the 69 males who had HIV/AIDS, 7 (38.9%) were seropositive for Syphilis while 11 (61.1%) of the 131 females with HIV/AIDS were seropositive. Co-infection rate was highest in the 30-39 years age group (61.1%), while no case of co-infection was found in the 10-19, 50-59 and 60-69 years age groups.

Key words: Syphilis, HIV/AIDS, co-infection, Human Immunodeficiency

INTRODUCTION

Human Immunodeficiency Virus (HIV), the causative agent of Acquired immunodeficiency syndrome (AIDS) is found in pandemic proportions globally (Osmond and Dennis, 1994). HIV is a scourge, progressing and causing devastation to lives and the healthcare system worldwide (Carpenter *et al*., 2000) HIV accounted for 38.6 million infections worldwide at the end of 2005. As at 2003, there were about 5.8 million people infected with HIV in Nigeria, giving a national prevalence rate of 5.8% (Federal Ministry of Health, 2004). Syphilis is a Sexually Transmitted Infection (STI) caused by the Treponema Pallidum spirochete. The route of transmission of syphilis is almost always by sexual contact, although there may be congenital syphilis via transmission from mother to child in utero. If not treated, syphilis can cause serious effects such as damage to the aorta, brain, eyes and bones. In some cases these effects may be fata (http: //en.wikipedia. org/wiki/Syphilis).

Human immunodeficiency virus and Syphilis have similar routes of transmission namely through blood and blood products, sharing of needles to inject drugs and sexual activity making co-infection of these infections a possible event (http: //en.wikipedia.org/wiki/Syphilis). Seropositivity to syphilis may be used to identify individuals that might have contracted HIV from high risk sexual activity (Syphilis, 2006). HIV-infected patients with early syphilis may have a higher risk of neurological complications and a higher rate of treatment failure with currently recommended regimens (http://en.wikipedia. org/wiki/Syphilis). Sexually transmitted diseases are widespread in the developing countries and constitute a major public health problem in sub-saharan Africa. More recently, there has been a resurgence of Syphilis (2006). Reports regarding Syphilis and HIV/AIDS co-infection in Nigeria is sparse especially in the North-eastern region. We, therefore, investigated the co-infection pattern of Syphilis amongst HIV/AIDS patients in the North-eastern Nigeria.

MATERIALS AND METHODS

The serum samples of all confirmed HIV infected patients referred to the HIV/AIDS clinic were additionally screened for Syphilis using Rapid Plasma Reagin (RPR)

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test. All those that were positive were confirmed using treponema pallidum haemagglutination (TPHA) test. The HIV serology was determined by enzyme-linked immunosorbent assay (GENSCREEN plus HIV Ag Ab BIO RAD, France) and confirmed by Immunocomb assay II (HIV 1 and HIV 2 CombFirm test Orgenics, Israel).

Their bio-data was obtained. Written informed consent was obtained from each patient.

The study was approved by the Ethical and Research committee of the Federal Medical Centre, Yola, Nigeria.

Analysis: The data obtained were analysed using the statistical package for social sciences (SPSS, version 10.0) statistical software.

RESULTS

At the conclusion of the study, 200 confirmed HIV/AIDS patients were screened. Eighteen were seropositive for Syphilis.

Age: The age of the patients studied ranged from 18-64years with a mean of 35.4+/-8.7years. There was a steady increase in the age groups of the patients, with a peak in the 4th decade (43.0%) and a decline towards the 7th decade (1.0%). Majority of the patients were in the age group 30-39 years (i.e., 43.0%).

Out of the 18 patients who were seropositive for syphilis, 7 (38.9%) were males while 11 (61.1%) were females. Of the patients with co-infection of HIV and syphilis, majority belonged to the age group 30-39 years age group. None of the patients in the age groups 10-19, 50-59 and 60-69 years had co-infection of HIV and syphilis.

Two out of the 52 patients (3.8%) in the age group 20-29 years were co-infected with HIV and syphilis while 11 out of the 86 patients (12.8%) and 5 out of the 46 patients (10.9%) within the age groups 30-39 and 40-49 years, respectively had co-infection (Table 1).

Table 1: HIV and HBV coinfection rate among various age groups

Age groups (Years)	HIV positive (n)	(%)	Dual HIV/Syphilis positive (%)
10-19	2	1	-
20-29	52	26	2 (11.1)
30-39	86	43	11 (61.1)
40-49	46	23	5 (27.8)
50-59	12	6	-
60-69	2	1	-
Total	200		18(100.0)

Table 2: HIV and HBV coinfection rate according to gender

Sex	Total HIV positive (%)	Total HIV/Syphilis positive (%)
Male	69 (34.5)	7 (38.9)
Female	131(65.5)	11(61.1)
Total	200	18(100.0)

Sex: Out of the 200 HIV/AIDS patients screened, 131 patients (65.5%) were females while 69 patients (34.5%) were males. Out of the 69 males screened, 7 of them (38.9%) had co-infection of syphilis and HIV while out of the 131 females screened, 11 of them (61.1%) had co-infection (Table 2).

DISCUSSION

Sexually transmitted infections (STIs) and HIV/AIDS are widespread in the developing countries and constitute a major public health problem in sub-Saharan Africa (Osmond and Dennis, 1994; Nwokedi *et al*., 2005). The common STIs in Nigeria are gonorrhoea, candida, trachoma vaginalis, genital Chlamydia and syphilis. Studies have shown that patients with co-infection of STIs and HIV/AIDS exists (Obiajuru and Jude, 200; Obi, 2005) and that the current epidemic of HIV/AIDS in Nigeria is being fuelled by ignorance and STIs (Efunsile *et al*., 2007). STIs have been known to increase the risk of HIV infection. STIs are poorly recognized and inadequately treated in Nigeria inspite of the fact that it constitutes a major risk for HIV infection (Kehinde *et al*., 2004; Kehinde and Lawoyin, 2005). Syphilis and HIV co-infection rate of 9% was found in this study. An extensive review of the literature revealed that there is paucity of data on the co-infection of syphilis and HIV with which to compare. Most of the studies looked at HIV infection in patients with STIs (Kehinde *et al*., 2004; Kehinde and Lawoyin, 2005). However a study by Obi (2005) in Abakaliki, Nigeria found that HIV seropositive pregnant women were more likely to have syphilis than those who are HIV seronegative. Another study in Ibadan, Nigeria Kehinde and Lawoyin (2005) showed that amongst the HIV patients studied, none of them was seropositive for syphilis.

From this study, the highest co-infection rate of syphilis and HIV was found in the 30-39 year age group (61.1%), followed by 40-49 year (27.8%) and 20-29 year (11.1%) age groups. These age groups (i.e., 20-49 year) constitutes the sexually active group in the population. Seropositivity for syphilis in them may therefore indicate that HIV in them might have been contracted from high risk sexual activity.

The implication of Syphilis and HIV/AIDS co-infection are many. HIV-infected patients with early syphilis may have a higher risk of neurological complications and a higher rate of treatment failure with currently recommended regimens. Jarisch-Herxheimer reaction, which occurs most often in secondary syphilis and with penicillin therapy, may be more common in HIV-infected patients4. Close serological follow-up of patients is essential.

CONCLUSION

This study confirms the existence of co-infection of syphilis in patients with HIV/AIDS. Therefore there is a need to screen patients with HIV/AIDS for syphilis infection.

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