

SYPHILIS IN A NIGERIAN PARAMILITARY AGENCY: NEED FOR TREATMENT POLICY

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Key words: Syphilis, sexually transmitted diseases, seroprevalence

Abstract

Background: 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. The aim of this study was to determine the seroprevalence rate of syphilis among newly recruited senior cadres of a Nigerian Security Agency.

Method: Eight hundred and fifteen newly recruited men and women sent for serological test for syphilis (STS) in our laboratory were all screened accordingly using Rapid Plasma Reagin (RPR) test. All those that were positive were confirmed using treponema pallidum haemagglutination (TPHA) test.

Results: The seroprevalence rate of treponema pallidum infection was 4.0% (95%CI = 2.8% -5.6%). The rate was significantly higher among women (8.0%) compare to men (3.4%) ($X^2 = 5.3$ df = 1 P = 0.02). Considered by age, the highest seroprevalence of 6.7% was seen among oldest recruits (30-39) years age group compared to 4.2% among the younger ones. This trend was however, not statistically significant ($X^2_{trend} = 1.6$ df =3 P = 0.20).

Conclusion: Syphilis seropositivity is highly prevalent among the paramilitary population hence the need for prophylactic treatment with benzathine penicillin to be instituted for seropositive individuals as a matter of policy by the government. This could reduce the incidence of HIV infection among Nigerians.

Mots clés: Syphilis, maladie sexuellement transmissible, séroprévalence

Résumé

Contexte: Les maladies sexuellement transmissibles sont largement répondues dans les pays en développement et constituent un problème majeur de santé publique en Afrique sub-Saharienne. Plus récemment il y'a recrudescence de la syphilis. Le but de cette étude était de déterminer le taux de séroprévalence de la Syphilis chez des cadres supérieurs nouvellement recrutés au sein d'une Agence Nigériane de Sécurité.

Méthodes : Huit cents quinze hommes et femmes nouvellement recrutés ont bénéficié d'une sérologie syphilitique dans notre laboratoire en utilisant le test rapide RPR (Rapid Plasma Reagin). Tous les tests positifs ont été confirmés par le test de treponema pallidum haemagglutination (TPHA).

Résultats: Le taux de séroprévalence de l'infection à treponema pallidum était de 4,0% (95%CI=2,8%-5,6%). Le taux était significativement plus haut chez les femmes (8,0%) comparé aux hommes (3,4%)($X^2 = 5.3$ df = 1 P = 0.02). Concernant l'âge, les taux de séroprévalence les plus élevés étaient retrouvés parmi les sujets les plus âgés (30-39) comparés à 4,2% chez les sujets les plus jeunes. Cette tendance n'est pas toutefois pas statistiquement significative ($X^2_{trend} = 1.6$ df =3, P = 0.20).

Conclusion: La Séropositivité syphilitique a une grande prévalence dans la population de paramilitaires, d'où la nécessité d'une prophylaxie par de la benzathine penicillin, qui doit être instituée pour les sujets séropositifs devant l'absence de stratégie gouvernementale. Cela pourrait réduire l'incidence de l'infection à VIH au Nigeria.

Introduction

Sexually transmitted infections continue to constitute a major public health problem, particularly in the developing countries. The world health organization estimates that there were 12million cases of syphilis globally in 1999. In the United States, 31,575 cases were reported in 2000, including 5,979 cases of primary and secondary syphilis and 529 cases of congenital syphilis.¹ Syphilis is a traditionally recognized cause of genital ulceration. It is generally believed to be on the decline due to reduced number of patients seen in urban hospitals, falling seropositivity rates and the rarity of cardiovascular and neurosyphilis. For Nigeria however, this picture may be deceptive, for instance, a study² of 920 antenatal clients in Lagos found 10.3% to be seropositive for syphilis, while Ekweozor and colleagues³ in Ibadan reported a treponemal seroreactivity of 2.8% among 15,399 hospital patients, 5% among blood donors and 6% among antenatal patients. In Zaria² and Lagos,² the reported rates were 1.2% and 1.45% respectively.

In this era of Human Immunodeficiency Virus (HIV) infection, genital ulcers are known to increase transmissibility of HIV. The aim of this study was to establish the seroprevalence of syphilis in a group of newly recruited, young, sexually active senior cadres in a security outfit referred for routine fitness medical examination in a tertiary hospital in Northern Nigeria.

Materials and Methods

The study population consisted of a cross-section of 815 newly recruited senior cadres of a Nigerian security outfit. They were referred to the Microbiology laboratory of a Teaching hospital in Northern Nigeria. The requested investigations included Rapid Plasma Reagin (RPR) test. Recruited from all states of the Nigerian federation, they were all graduates with a Bachelors degree or Higher National Diploma (HND) and have completed the

mandatory national youth service corps (NYSC) scheme.

Standard aseptic techniques were observed in sample venepuncture, collection, transportation, storage and processing. Rapid plasma reagin tests were done on the samples according to the manufacturers instructions (Macro-Vue™ RPR kits, New Jersey, U.S.A) using the method described by Larsen and colleagues.⁴ Those sera that were seroreactive were then confirmed using treponema pallidum haemagglutination (TPHA) as stipulated by manufacturers (TPHA-kit Biometricux, Marcy-Letiol France).

Data was analysed using Epi-Info version 6.0 statistical software.⁵ Absolute numbers and simple percentages were used to describe categorical variables. Similarly, quantitative variables were summarised using mean and standard deviation. The Chi-square test was used in assessing the significance of associations between categorical groups. A P-value of 0.05 or less was considered statistically significant.

Results

There were 703 (86.3%) males and 112 (13.7%) females giving a sex ratio of 6:1 in favour of males. The age of the recruits ranged from 23 to 39 years with a mean age (\pm SD) of 29.0 \pm 2.3 years. Out of 815 recruits studied, 33 (4.0%) of them were seropositive for treponema pallidum (95%CI = 2.8%-5.6 %). Considered by gender, 24 (3.4%) of the 703 males were seropositive compared to 9 (8.0%) of the 112 females. This difference was statistically significant ($\chi^2 = 5.3$ df = 1 P = 0.02) as shown in table 1.

Table 2 shows the seropositivity by age groups. It can be seen that the seropositivity was highest among older recruits (30 – 34) years and (35 – 39) years. There was a rising trend in seropositivity from 4.2% in the youngest group with a slight decay in the 25-29 years age group and peaking in the age range 30–39 years. This trend as shown in Figure 1 was however, not statistically significant ($\chi^2 = 1.6$ df =3 P= 0.20).

Table I: Seroprevalence of treponema pallidum and sex among 815 apparently healthy young paramilitary recruits

Sex	Seropositive (%)	Seronegative (%)	Total (%)
M	24(3.4)	679 (96.6)	703 (100.0)
F	9(8.0)	103 (92.0)	112 (100.0)
Total	33 (4.0)	782 (96.0)	815 (100.0)

Table 2: Distribution of seroprevalence of treponema pallidum by age

Age (years)	Seropositive (%)	Seronegative (%)	Total (%)
20 – 24	11 (4.2)	251 (95.8)	262 (100.0)
25 – 29	8 (2.3)	336 (97.7)	344 (100.0)
30 – 34	12 (6.7)	167 (93.3)	179 (100.0)
35 – 39	2 (6.7)	28 (93.3)	30 (100.0)
Total	33 (4.0)	782 (96.0)	815 (100.0)

Discussion

The serological testing of syphilis (STS) using treponema pallidum haemagglutination test (TPHA) techniques is characterized by its sensitivity even though a positive result may refer to an active, latent, complicated or treated syphilis. In all these phases, there must have been a contact with treponema. The positivity of 3% in males and 8.0% in females with an overall positivity of 4% was lower than the 11.0% reported by Okwori et al.⁶ In contrast, the respective positivity rates of 10.8% and 13.8% reported by Wasserheit⁷ among Ugandan and Cameroonian populations were higher than our values. However, our rate of 4.0% is comparable to the findings³ in Ibadan of 5% among blood donors and 6% among antenatal patients.

The highest rate of 6.7% in the age range 30-34 years and 4.2% in the 20-24 years age group are higher than the value obtained during the 2001 National Sentinel Survey from all geopolitical zones.⁸ The sentinel survey report showed rates of 0.3% in the South East, 1.5% in the South-South, 1.7% in the North-East and 1.9% in the North-West of Nigeria. Our subjects were a group of young men and women that were highly mobile, sexually active and possibly adventurous. The seropositivity to treponema pallidum among our subjects showed an upward trend with age with a trough at the age range 25-29 years which is of significance because of the facilitation of transmission of HIV infection by ulcerative syphilitic lesions.⁹⁻¹¹ Conversely, early diagnosis and treatment of other STIs especially genital ulcers will reduce the transmission of HIV infection.¹² A higher seroprevalence rate among women of 8.0% is a worrying observation because of the risk of congenital syphilis and the transmission of HIV infection from mother to child. It is our considered opinion that mass screening of young officers and recruits; detection of seroreactive cases and treatment might reduce the high prevalence of HIV infection in the Nigerian population. Prophylaxis would be cost-effective compared to the cost of managing late complications of syphilis or HIV infection and its consequences. These include man-hour loss to absenteeism, frequent admission, early retirement or death.

In conclusion, syphilis is highly prevalent among recruits of senior cadres of this paramilitary agency. These young graduates are very mobile and sexually active. Prophylactic treatment with benzathine penicillin for those that are positive should be instituted as a matter of policy.

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