

SERO-PREVALENCE OF SYPHILIS AMONG PREGNANT WOMEN IN OSOGBO IN SOUTHWESTERN NIGERIA

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ABSTRACT

Syphilis screening tests using VDRL antigen were carried out on two hundred pregnant women attending antenatal clinic in Osogbo, the capital city of Osun State, southwestern Nigeria. The overall prevalence of infection was 10.0%. Infection was highest (7.0%) among pregnant women in the age group 21 – 30. Although there was no significant difference between age group and syphilis infection ($P = 0.523$).

Key words: Prevalence Syphilis VDRL Pregnancy.

INTRODUCTION

Syphilis is one of the most fascinating diseases of human and is an important cause of morbidity and mortality in pregnancy. The seroprevalence is often around 10% in African women who book for antenatal care (Scultz *et al.*, 1987). Without appropriate treatment, 58% of all pregnancies in a study in rural south Africa was reported to have an adverse outcome mainly due to syphilis (Wilkinson *et al.*, 1997). Syphilis in pregnant women may result in stillbirth, premature birth and complications in the neonate. Genital ulceration due to syphilis may increase the risk of transmission of Human Immunodeficiency virus (Fleming and Wasserheit, 1999).

Syphilis is caused by a spirochate *Treponema pallidum*. Other members of this family that can infect human are *Treponema pertenue*, the causative agent

of yaws (a disabling cutaneous disease of the tropics), *Treponema carateum*, the causative agent of pinta (a less destructive cutaneous disease found in certain parts of rural, central and South America) and *Treponemama bosinia*, the causative agent of non-venereal syphilis (found in parts of far East and surrounding territory) as reported by Schell (1982). All treponematoses are merely variants of a single disease, the expression of which has been modified by environmental factors, especially temperature (Fieldsteel, 1983). Syphilis infection may cause secondary bacteremia or it may be disseminated and accompanied by generalized mucocutaneous lesions and lymphadenopathy which lead to variable systematic illness often characterized by low grade fever, malaise, sore throat, headache, lymphadenopathy, cutaneous or mucosal rash and a rare form of nephritic syndrome (Gamble, 1995).

Syphilis is acquired by sexual intercourse and can be transmitted vertically from mother to baby or foetus shortly after onset of infection (Temmerman *et al.*, 1999). Transmission to the foetus in-utero can occur as early as the ninth week of pregnancy (Harther, 1976). Women can remain potentially infectious to the foetus for many years, although the risk of infecting a foetus declines gradually after about eight years of untreated illness (Watson-Jones *et al.*, 2002).

Serological screening for syphilis in antenatal patients in different parts of the world showed the prevalence of the disease vary (Temmerman *et al.*, 2000; Miranda *et al.*, 2001; Wheeler *et al.*, 2004). Prevention of congenital syphilis needs to be viewed as much in a public health context as an individual problem, and as such, is best tackled within the context of a district health system which itself has many components. This may require different, tailored intervention for prevention to be most cost effective. Prior to disease control, its epidemiology needs to be clearly understood (David *et al.*, 1997).

MATERIALS AND METHODS

Study Area

The study was conducted in Osogbo, capital of Osun State, Nigeria from January 2006 to June 2006 among pregnant women enrolled at the antenatal care unit of Ladoke Akintola University Teaching Hospital, Idi-Seke, Osogbo, Osun State, Nigeria.

Sample Collection

Two hundred (200) blood samples were collected for this study. Venous blood samples were obtained from each subject

into non-anticoagulated tube, allowed to clot and centrifuged at 2000 revolution per minute (rpm) for 5 minutes to obtain serum for serologic assay.

Serologic Analysis

The VDRL screening kit used in this study was MR CE, LINEAR CHEMICALS, S.L. CROMATEST (SPAIN). The VDRL antigen is a non-treponemal preparation specially developed for the rapid detection and semi-quantitation by flocculation on a slide of plasma reagin, a group of antibodies directed against tissue components produced by almost every patient infected with *Treponema pallidum*.

Data Analysis

The study was carried out and the proportion of individuals with *Treponema pallidum* (syphilis) were calculated. The syphilis among the samples were cross tabulated with age using SPSS 11.0 for windows packages. Relevant chi-square statistics was computed to accompany the cross tabulation.

RESULTS

Two hundred pregnant women attending antenatal clinic were examined in this study as shown in Table 1. Of these, subjects aged 10 – 20 years constituted 24 (12.0%) while those aged 21 – 30 years, 31 – 40 years, 41 – 50 years were 118 (59.0%), 52 (26.0%) and 6 (3.0%), respectively. The prevalence of syphilis overall in this study was 20 (10.0%). The age frequency distribution of infection is shown in Table 1. The results show highest rate of syphilis infection, 14 (7.0%) in the age group 21 – 30 years. The least was in the 31 – 40 years age group, 2 (1.0%) and none in the age group 41 – 50 years.

The computerized chi-square statistics for the test of no association between age and *Treponema pallidum* infection had a value of 2.248 and statistically insignificant at less than 1% level. Thus, the null hypothesis of no association is accepted.

Table 1: Sero-prevalence of syphilis infection among pregnant women

| Age (Years) | Number Tested | Number Tested |
|-------------|---------------|---------------|
| 10 – 20 | 24 (12.0) | 4 (2.0) |
| 21 – 30 | 118 (59.0) | 14 (7.0) |
| 31 – 40 | 52 (26.0) | 2 (1.0) |
| 41 – 50 | 6 (3.0) | 0 (0.0) |
| Total | 200 (100) | 20 (10.0) |

Values in parenthesis are in percentages

DISCUSSION AND CONCLUSION

The overall prevalence rate of syphilis in this study was 10.0% with the highest infection in the age group 21 – 30 years, although, there was no significant difference between the age group and infection. In Lagos, Adeoba (1967) reported similar prevalence rate of 10.3% among antenatal patients.

In other parts of the country in Ibadan (Osoba, 1979; Oyelese *et al.*, 1990; Obisesan and Ahmed, 1999), in Lagos (Rotimi and Somorin, 1980), in Ilorin (Aboyeji *et al.*, 2003) and in Zaria (Bello *et al.*, 1983) recorded a lower prevalence. Elsewhere in Nairobi (Temmerman *et al.*, 1999), Kigali (Leroy *et al.*, 1995) and South Africa (Wilkinson *et al.*, 1997) a lower prevalence were also recorded. However, in Ethiopia (Azeze *et al.*, 1995), a higher prevalence of 13.7% was recorded among the pregnant women attending antenatal clinic.

The higher prevalence in this study needs

further investigations especially in other parts of this country and, the world in general, to adopt preventive and control strategies to reduce the current trend of syphilis. Also, there was no previous recorded prevalence in this study area and this could contribute to higher prevalence due to public unawareness of the disease.

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