



TRICHOMONAS VAGINALIS AMONG PREGNANT WOMEN ATTENDING NEW NYANYA GENERAL HOSPITAL, NASARAWA STATE, NIGERIA

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ABSTRACT

Trichomoniasis is of medical concern among the pregnant women, which if detected can be treated. We investigated the occurrence of *Trichomonas vaginalis* among pregnant women attending New Nyanya General Hospital, Nasarawa State. Urine and vaginal swab samples of 960 pregnant women were collected and examined by wet mount and Giemsa stained smears. The overall prevalent rate of trichomoniasis was 7.5% among the studied subjects. The infection occurred more frequently among age group 46-45 years with prevalent rate of 25.0%. Observation of motile form of the parasite in both urine deposit and vaginal swab wet mounts is a more reliable mode of diagnosis than the use of Giemsa stained smears when the parasite is dead. The implication of trichomoniasis in pregnant women was discussed.

KEYWORDS: Trichomoniasis, Pregnant women, Prevalence, Urine and Vaginal swab.

INTRODUCTION

Trichomoniasis is a sexually transmitted disease caused by *Trichomonas vaginalis*, a parasitic flagellated protozoan. This parasite has an oval or pear-like shape in appearance, but can assume an amoeboid form when attached to vaginal epithelial cell. Trichomoniasis has a worldwide distribution, not especially common in tropical countries. Although global distribution differs from one report to another; while some authors estimated 170 million per annual infection (Cudmore *et al.*, 2004), others estimated 180 million per annual infection (Brown, 1972 and WHO, 1995). The infection is more common in women than men, and older women are more likely to be infected than younger women (Johnson, 2008). The parasite is passed from an infected person to an uninfected person during unprotected sex. In women, the most commonly infected part is the lower genital tract (vulva, vagina or urethra). It is not common for the parasite to infect other parts of the body, like the hands, mouth or anus (Dinop *et al.*, 1998; Hobbs *et al.*, 2008). The main symptom of the disease in women is a vaginal discharge, typically greenish-yellow and frothy, with small bubbles. In some women the infection results in burning sensation when urinating, pain during sexual intercourse or abdominal discomfort. About 50% of infected women do not have any sign or symptom. Trichomoniasis can increase the risk of getting and spreading other sexually transmitted infections such as gonorrhoea, chlamydisis, syphilis and HIV/AIDS (Peterman *et al.*, 2006). In pregnant women, trichomoniasis can be serious. It has been reported that infected women were 40% more likely to have infants who are both preterm and of low birth weight (Forna and Galmezoglu, 2002). Preterm childbirth is the leading cause of illness and death in newborn babies (Forna and Galmezoglu, 2002). *Although the disease is*

quite common, particularly among women, it has not been the focus of intense study nor of active control programmes. Such neglect is likely to be a function of the relative mild nature of the disease. This study aims to determine the occurrence of trichomoniasis among pregnant women attending the new Nyanya General Hospital, Nasarawa State, Nigeria.

MATERIALS & METHODS

This study was carried out on the pregnant women attending New Nyanya General Hospital, a secondary healthcare service to people of New Nyanya. New Nyanya is a new satellite settlement developed during the movement of the Federal Capital to Abuja, a new capital of Nigeria. Ethical clearance for this study was obtained from the Hospital ethical committee. Patients that reported to the ante-natal clinic that consented to give their specimens for examination were included in the study. The vaginal swabs were collected at the clinics and brought to the laboratory in Stuart transport medium. The patients were given sterile plastic universal bottles to bring early morning midstream urine to the laboratory. Biodata of the patients were obtained from the request forms that accompanied the specimens. Both urine and vaginal swab samples were processed within one hour after collection. About 10 ml of the urine was centrifuged at 1,500 rpm for 5 minutes, supernatant discarded and the deposit was mixed, two drops were placed on two clean slides, one was used for wet mount examination while the other was allowed to air dry, fixed and stained with Giemsa stain. Vaginal swabs were examined by wet mount method as well as Giemsa staining method. In both urine and vaginal swabs *Trichomonas vaginalis* was detected and identified as previously described by Cheesbrough, (1987).

Statistical analysis of the result was done using Chi square and SPSS software.

RESULTS

Nine hundred and sixty (960) urine and vaginal swabs each was collected from the patients. The pregnant women were mainly within the ages of 20 to 45 years. All the vaginal swab samples that were positive for *Trichomonas vaginalis* were also positive in the urine samples. Out of the 960 samples collected 72 (7.5%) were positive. However, in the detection of *Trichomonas vaginalis* using Giemsa staining method, two of the samples were negative

in both urine and vaginal swab samples but positive in urine deposit and vaginal swab wet mounts, where the protozoa were seen actively motile.

Considering the age distribution of the infection, most of the pregnant women that attended this ante-natal clinic (66.67%) were within the age group 20-25 years, and they had a prevalence of 8.75%. The pregnant women in the age group 41-45 years constituted the least number (1.67%), but they had the highest prevalence of 25.0%. There was no significant different among the age groups as regards the infection (P > 0.05).

Table 1: The distribution of *Trichomonas vaginalis* among various age groups of pregnant women attending New Nyanya General Hospital (March, 2013 and September, 2013).

Age group	No of samples (N)	Positive (%)	Negative (%)
20-25	640	56 (8.75)	584 (91.25)
26-30	128	8 (6.25)	120 (93.75)
31-35	104	4 (3.85)	100 (96.15)
36-40	72	0 (0.00)	72 (100.0)
41-45	16	4 (25.00)	12 (75.00)
TOTAL	960	72 (7.5)	888 (92.50)

The calculated value is $\chi^2 = 16.63$ while the tabulated is $\chi^2 = 0.711$ at 95% level of significance ($16.63 > 0.711$), which means that age is not significant to the prevalence of *Trichomonas vaginalis* among pregnant women attending New Nyanya General Hospital.

DISCUSSION

Trichomoniasis is a global disease and common among sexually active women and men. The disease has an important medical implication especially among pregnant women. Previous work on this protozoal parasite indicated that in Africa, 2-50% of the population carries the parasite (Mahdi *et al.*, 2001). This study revealed a prevalence of 7.5% among the pregnant women that attended the New Nyanya General Hospital. This result is comparable to other reports from other regions of Nigeria, Africa, and beyond. Opara, *et al.*, (2009) obtained prevalence of 17.7% in Uyo, 12.3% in Abakalika by Okownkwo *et al.*, (2010), and a prevalence of 5.2 % by Usaga (2010), at Calabar (all in eastern Nigeria); Jatau *et al.*, (2006), obtained a prevalence of 18.7% in Zaria (Northern Nigeria); and between 2 to 50% in Africa (Mahdi *et al.*, 2001); while national Institute of Health (United State) estimated prevalence rate of 12.5% among pregnant women (Cotch, 1990). The highest prevalence in this study was among women within age group 41-45 years with prevalence of 25.0%. This is in consonant with previous study that indicated that older sexually active women are more likely to have trichomoniasis than younger sexually active women (Workowski and Berman, 2010). The implication of this finding is that pregnant women that have trichomoniasis are more likely to acquire other sexually transmitted diseases with greater consequences than trichomoniasis alone. Such diseases include HIV and syphilis that affect other organs of the body; Chlamydia and gonorrhoea that can spread to the uterus or fallopian tubes (Peterman *et al.*, 2006). Thus pregnant women should be educated in ante-natal clinic to remain faithful to their partners or take safe precaution

when having sex with other partners. Previous reports have indicated that 40% of pregnant women with trichomoniasis are more likely to have their babies too early (preterm delivery) and babies born to infected mothers are more likely to have a low birth weight (Sutton *et al.*, 2007). Others demonstrated independent association between *Trichomonas vaginalis* infection and preterm births (Cotch and Pastorak, 1991). Subsequent research on pregnant women with trichomoniasis should follow the women up to the point of delivery and carry out the weighing of the babies to establish the African report on this diverse view.

In the present study, we found that pregnant women in New Nyanya General Hospital had a prevalence rate of 7.5% trichomoniasis, a situation needing an urgent attention to stem down the occurrence of the infection in view of its adverse consequences. Also in this report it was clearly indicated that Giemsa stained smear of vaginal swab and urine deposit were inferior to examination of freshly prepared wet mounts of vaginal swab and urine deposit.

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