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Vaginal Trichomoniasis: A Study of Female Patients Attending Ijebu-Ife General Hospital, Ogun State, Nigeria

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Abstract

Trichomonas vaginalis is an anaerobic, flagellated protozoan parasite and the causative agent of trichomoniasis. Trichomonas vaginalis is thought to be the most common non-viral sexually transmitted infection worldwide. This study investigated the prevalence T. vaginalis infection among female patients age 16-35years attending Ijebu-Ife State Hospital, Ogun State.A cross-sectional descriptive study was conducted among Two hundred (200) female outpatients between the ages of 16-35years attending Ijebu-Ife State Hospital, Ogun State. High vaginal swabs (HVS) and urine samples were collected from consenting female patients and examined for the presence of T. vaginalis using both direct wet mount microscopy and culture. Out of 200 female patients examined, 9(4.5%) and 5(2.5%) were found to be infected with T. vaginalis using High vaginal swabs (HVS) and urine samples respectively. The age group 16-20 years had the highest prevalence of 6(3%) while age group >20 years had the lowest prevalence of 3(1.5%) but the difference was not statistically significant. Results obtained from comparing HVS and urine microscopy in this study showed that HVS had a higher prevalence of 4.5% compared to urine microscopy (2.5%) and the difference in their detection was statistically not significant p=0.0001. These results may be useful for health authorities and protection against sexually transmitted diseases. The higher recovery rate obtained by using HVS microscopy confirms its advantage over urine microscopy. Vaginal trichomoniasis is slightly prevalent among the female patients attending Ijebu-Ife State Hospital, Ogun State.

Keywords: Female patients, HVS, T. vaginalis , Urine microscopy, vaginal trichomoniasis

Introduction

Trichomoniasis is the most prevalent non-viral sexually transmitted infection in the world [1]. Trichomonas vaginalis, the causative agent is a protozoan parasite infecting the urogenital tract of both females and males [2]. It is reported to be 250 million new cases worldwide every year [3] and Trichomoniasis accounts to almost half of curable sexually transmitted infections according to the World Health Organisation [3, 4]. In general, the infection is asymptomatic in men although it can be associated with urethral discharge and dysuria [5], while infected women can have different symptoms consisting in yellowish-green frothy discharge, purities, dysuria, and the strawberry cervix which is recognized by punctuates haemorrhagic lesions [5].

Infection by Trichomonas vaginalis among women can lead to serious complications such as adverse pregnancy outcomes that appear by preterm rupture of membranes, preterm delivery, low birth-weight infants, infertility, and cervical cancer [6]. Moreover, studies have shown an increased risk of HIV

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transmission among individuals infected by T. vaginalis [7]. Trichomonas vaginalis transmission is very heterogeneous and depends on several factors; it is established that socioeconomic status, age, hygiene habits, sexual behaviour, phase of the menstrual cycle, and other concomitant sexually transmitted infection can play a key role on the disease burden [8].

The prevalence and the average duration of Trichomonas infection mainly depend on the health care seeking behaviour of population and their access to health care [9]. Primary prevention of Trichomonas vaginalis infection often relies on health promotion interventions to improve diseases awareness and behaviour change [10]; but male circumcision represents an important means for the prevention of T. vaginalis transmission and several studies have shown that partners of circumcised men are less at risk of acquiring sexually transmitted infections including Trichomoniasis [11, 12]. Oral metronidazole remains the recommended drug regimen for the treatment of trichomoniasis and concurrent treatment of sexual partners is recommended to prevent reinfections [13]. In many settings including Nigeria, patients presenting at primary care units with signs suggestive of STI (urethral discharge, vaginal discharge syndromes) are often being diagnosed and managed presumptively using a syndromic approach based on WHO guidelines [14]. But studies have shown that a syndromic-based approach in some settings may lack sensitivity and specificity and can lead to mismanagement of several STI including trichomoniasis [15, 16]. In addition, biological confirmation of T. vaginalis infection in many primary care units remained at a low level due to lack of appropriate diagnostic tool and community prevalence data remained scarce [17, 18]. Thus, limited data regarding the epidemiology of Trichomoniasis are available especially among at risk population such as women of reproductive age. A better understanding in the epidemiology of T. vaginalis is thus needed and may help shape existing control strategies and treatment practices regarding STI in Nigeria. To overcome these gaps, this research was conducted to provide insight into the prevalence of vaginal trichomoniasis among female patients attending Ijebu-Ife General Hospital, Ogun State, Nigeria.

Materials And Methods

Specimen Collection and Examination

The study population comprises of female patients aged 16-35 years attending Ijebu-Ife General Hospital, Ogun State, Nigeria. A clinical examination of the lower genitourinary tract for signs of infection such as vaginal discharge was carried out by a gynaecologist. Incidental clinical signs, age, marital status and number of sex partners of each of these patients were also noted. High vaginal swab and urine sample were collected from each consenting study participants.

Vaginal exudates were collected using a sterile swab stick aided with sterilized speculum. Wet preparations of the vaginal exudates were made using a drop of normal saline on microscope slide covered with a cover slip and examined immediately under the microscope. Also, each urine specimen was thoroughly mixed and 15mlaliquot was centrifuged at 3,000rpm for 10 minutes. The supernant were discarded and one drop of the sediment was placed on a glass slide and covered with a cover slip. The preparation was examined for the presence of T. vaginalis under the microscope. Trichomonas vaginalis was identified with its characteristic morphology and darting motility movement.

Statistical Analysis

Data were entered into Microsoft excel and analyzed. Proportions were compared by Chi-square ($\chi 2$) with Yates` correction or by Fisher's exact tests using Graphpad Instat of Graphpad software Incorporation USA. A p-value of <0.05 was taken as significant.

Results

During the period of study, 200 female patients attending Ijebu-Ife General Hospital, Ogun State, Nigeria were screened for T. vaginalis. The demographic presentation of the study participants is shown in Table 1. Table 2 shows the prevalence of Trichomonas vaginalis among the female patients based on demographic presentation. The age group 16-20 years had the highest prevalence of 6(3%) while age group >20 years had the lowest prevalence of 3(1.5%) but the difference was not statistically significant (p=0.0001).

The Marital status of the study participants shows that 4 (2%) were infected among the married while 5(2.5%) were infected among the singles but the difference was not statistically significant (p=0.0001).

Based on number of sex partners, 3(1.5%) of those with single partner were infected with T. vaginalis. 5(2.5%) were among those with two sex partners while 1(0.5%) were infected among those with more than three sex partners but the difference was not statistically significant (p=0.0001).

Vaginal discharge, dysuria and irritations were the clinical symptoms noticed among the patients. All the positive patients presented with at least one symptom. Vaginal discharge was the most frequent symptom observed among the patients and it also had the highest positivity rate for T. vaginalis (Table 3). The difference in their clinical manifestation but the difference was not statistically significant (p=0.0001). Table 4 shows the differences in the results obtained from the two different sample sources (HVS and Urine) used in this study. HVS had a prevalence of 9(4.5%) compared to urine microscopy 5(2.5%) and the difference in their detection rate was not statistically significant (p=0.0001).

Table 1: The demographic presentation of the study participants.

Parameters Age	Number of examined female	Percentage (%)	P-value
16-20 years	79	39.5	
>20 years	121	60.5	0.0001
Total	**200**	**100**	
Marital status			
Married	65	32.5	
Single	131	65.5	0.0001
Divorced	04	2.0	
Total	**200**	**100**	
No of sex partners			
One	147	73.5	
Two	51	25.5	0.0001
➢ Three	02	1.0	
Total	**200**	**100**	

Table 2: Prevalence of Trichomonas vaginalis among the female patients based on demographic presentation

Parameters Age	Number of examined female	Positive Samples		P-value
		High vaginal swabs (HVS)	*Urine microscopy*	
16-20 years	79	6(3%)	3(1.5%)	
>20 years	121	3(1.5%)	2 (1%)	0.0001
Total	**200**	**9(4.5%)**	**5(2.5%)**	
Marital status				
Married	65	4(2%)	2(1%)	
Single	131	5(2.5%)	3(1.5%)	0.0001
Divorced	04	--	--	
Total	**200**	**9(4.5%)**	**5(2.5%)**	
No of sex partners				
One	147	3(1.5%)	2(1%)	
Two	51	5(2.5%)	2(1%)	0.0001
➢ Three	02	1(0.5%)	1(0.5%)	
Total	**200**	**9(4.5%)**	**5(2.5%)**	

Table 3: Evaluation of Trichomonas vaginalis among the female patients by Clinical Manifestation (n=200)

Symptoms	Frequency	Positive	Percentage (%)	P-value
Vaginal discharge	27	5	2.5	
Dysuria	19	2	1	0.0001
Irritation	19	2	1	
Total	65	9	4.5	

Table 4: Evaluation of Trichomonas vaginalis among the female patients by Sampling Method

Specimen	Number Examined	Number Positive	P-value
High vaginal swab	200	9(4.5%)	
Urine	200	5(2.5%)	0.0001

Discussion

Trichomonas vaginalis is one of the most common STI in the world but its prevalence is very heterogeneous across countries [19, 20]. In this study, 9(4.5%) of the female patients attending Ijebu-Ife General Hospital, Ogun State were found to have T. vaginalis infection. The prevalence of T. vaginalis in this current study was greater compared with 4.8% obtained by Roger et al. [21] but the disease distribution across age groups remained heterogeneous; female with age range 16-20 years were the most infected population (3%). These findings are inconsistent with data from other studies that showed that 25- to 45-year-old women are at higher risk of being infected by T. vaginalis [22-23]. Trichomoniasis in that age group is more prevalent due to the fact that it is a sexually active and reproductive age group, which is predisposing factor for infection [23]. Thus, strategies aiming at improving disease awareness in this high-risk group are needed to further improve trichomoniasis prevention.

5(2.5%) of the patients infected with trichomoniasis had vaginal discharge, 2(1%) had pain while passing urine while 2(1%) had irritation while passing urine. Greater observation was recorded by Wolner-Hanssen et al. [24] where 42% had vaginal discharge. Several studies have also associated T. vaginalis with symptoms of yellow vaginal discharge and vulva irritation, as well as signs of purulent vaginal discharge, and vulva and vaginal erythema [24].

Currently, the "gold standard" for the diagnosis of trichomoniasis is culture and traditionally, this has been accomplished though cultivation in Diamond's medium, which is not widely available and thus used mainly for research purposes. However, new commercially available cultural methods have been shown to be as good as the traditional research method [25].

The most common means of routine diagnosis still remains microscopy. This study has demonstrated that HVS microscopy has a better detection than urine microscopy. This result agrees with what has been previously shown by other authors [26-27].

The most important available options for prevention and control is through reduction in the community prevalence of the disease. This may be better achieved through routine STI screening in individual and pregnancy especially among the young people. Routine screening for trichomoniasis should be incorporated into antenatal care. At the same time, there is a need to educate the people on the need for good personal hygiene and safe sex practices.

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