



***Trichomonas Vaginalis* infection among women in Ikwuano Abia State Nigeria.**

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ABSTRACT: A study on Trichomoniasis was conducted to determine the prevalence, symptoms and factors that promote the transmission of *Trichomonas vaginalis* among women of Ikwuano in Abia State using high vaginal swab and urine samples. A total of 600 women aged between 14-60 years were examined and 112 (18.67%) were infected with Trichomoniasis. The highest prevalence of *Trichomonas vaginalis* infection (20.57%) was observed among the age group of 21-30 years, the least (7.8%) was observed among those of 41-50 years while 51-60 age group had no infection at all. Occupational related prevalence revealed that traders had the highest (30%) followed by students (19.78%), civil servants (15.66%) and house wives had the least (8.33%). In relation to marital status, single women had the highest (19.72%). While widows had the least (9.09%). Symptomatic individuals had characteristic symptoms such as itching/rashes (3.83%), Genital sores (2.88%), Hot feeling sensation (4.50%), Greenish yellow discharge (6.00%), while very few had no symptom at all. Lack of hygiene, ignorance poverty, promiscuity and factors influencing the transmission. *Trichomonas vaginalis* is a common sexually transmitted disease among women in Ikwuano Abia State. Proper sex education especially for the adolescent and youths should be intensified so as to ensure a population fully aware of the medical implications of STD and hence reduce the spread and other health complications as a result of the infection. ©JASEM

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Trichomonas vaginalis is a parasitic protozoan that causes trichomoniasis, a sexually transmitted disease (STD) of worldwide importance and one of the most prevalent causes of non-viral sexual transmitted disease (Schwebke, 2002). Trichomoniasis occurs in females (Males rarely exhibit any symptoms) if the normal acidity of the vagina is shifted from semi-acidic PH (3.8-4.2) to a much more base form (5.0-6.0) that is conducive to *T. vaginalis* growth (Swygard *et al.*/2004). The disease is characterized in female patients by frothy-greenish yellow foul smelling vaginal discharge accompanied with vulvo-vaginal irritation, dysuria and lower abdominal pains (Workowski *et al.*, 2006). Moodley *et al.*, (2002) reported that *Trichomonas vaginalis* is also associated with a condition known as strawberry cervix, an inflammatory reaction that mimics the cervical tenderness associated with pelvic inflammatory disease (PID). Complications of *Trichomonas vaginalis* reported in pregnant women include: premature rupture of membrane, premature labour, slow labour, low birth weight and post abortion infections (Soper 2004). According to Sobel (2005), trichomoniasis is also linked to increased mortality as well as predisposing factor to HIV infections and cervical cancers. Cervicitis due to trichomoniasis is characterized by purulent discharges in the endocervical canal and induces early endocervical bleeding (Workowski 2006). Studies reveal that *T. vaginalis* induces immune activation specifically Lymphocytes activation, replication and

cytokine production leading to increased viral replication in HIV infection cells (Smith and Ramos 2010). Symptomatic trichomoniasis is more common in women than in men but when parasitic organism is found in the anterior urethra, external genitalia, prostrate, epididymis causes infertility in men (Smith *et al.*, 2010). Factors such as poor personal hygiene, multiple sex partners, low socio economic status and under development are documented to be associated with high incidence of infection (Crosby *et al.*, 2002). Over 180million people are infected annually worldwide and 5million in America (Bowden and Garnett 2000. WHO, 2004). In Nigeria cases of *Trichomonas vaginalis* has variously been reported by Nmorsi *et al.*, (2001), konye *et al* (1991) Okonofua (1995), Wokem, G.N. (2006). The aim of this study is to investigate the status of trichomoniasis in Ikwuano Abia State, provide a base line data and create awareness on its public health implication.

MATERIALS AND METHODS

A total of 600 urine specimens and vaginal swabs were collected from women of different age groups, socioeconomic status and students from a tertiary institution using sterile bijou bottles and Evapon swab sticks respectively. Questionnaires were administered to collect data on their age, marital status, occupation, available toilet facilities. Volunteers were adequately educated on how to complete the questionnaire and the illiterate ones

were assisted to complete theirs on collection of their specimen. These samples were labeled and transported immediately to the laboratory to minimize contamination and were examined for the presence of *Trichomonas vaginalis* using the methods of Ogbonna *et al*, (1991) and Njoku *et al*, (2000). The urine specimens were spun at 3,500.ppm for 5 minutes using electrically powered centrifuge. The supernatant fluid was decanted and the deposits of each sample was examined microscopically using both low power (x10) and dry high power (x40) objectives Njoku, A.J. *et al*,

Two drops of Normal saline were introduced to each container of the vaginal swab mixed by shaking properly a drop of the mixture of each sample was placed on clean glass slide, covered with cover slip and examined under a light microscope using low power (x10) and dry high power (x40) magnifications respectively. Stained smear of the vaginal swab were made using safranin and papanicolaou and examined for *Trichomonas vaginalis* using oil immersion objective (x100).

Results obtained from laboratory findings and questionnaires were recorded and analyzed statistically using chi-square

RESULTS AND DISCUSSION

Of the 600 women examined, 112 (18.67%) were infected with *Trichomonas vaginalis*. Out of the 112 infected women 21(3.50%) respondent had *Trichomonas vaginalis* in urine and none in their vaginal swab. 40(6.67%) had infection vaginal swabs

with no infection in urine samples while 51(9.17%) had *Trichomonas vaginalis* in both urine samples and vaginal swabs Analysis of the data showed that there is significant difference between urine samples and vaginal swabs P<0.05. The highest prevalence of infection 58 (20.57%) was observed among women aged between 21-30years, followed by those aged 31-40 years 23(19.45%). The least prevalence of infection 3(7.89%) was recorded amongst the age group of 41-50years while those between 51-60years 12(0.00%) had no infection at all (table 1).

Occupational related prevalence *T. vaginalis*, it was observed that traders had the highest infection rate (23.07%) followed by students (20.63%), civil servants (15.66%) while house wives had the least (8.33%) (Table 2). In the marital status prevalence of *Trichomonas vaginalis* infection (table 3) showed that single women had a highly prevalence (20.53%) than married women (16.27%). While some women were found be asymptomatic 9 (1.50%), most of the infected women experienced symptoms like itches/ rashes 23 (3.83%) genital/sore 17 (2.88%) hot feeling sensation 27 (4.50%) and greenish yellow discharge 36 (6.00%) (Table 4). Microscopic examination of direct wet smear of the urine deposit and vaginal swabs showed 112 (18.67%) respondents were infected with trichomoniasis while stained smear using Papanicolaou staining technique showed that 84 (14.00%) respondents were infected. 28 smear showing presence of *Trichomonas vaginalis* in direct wet smear did not show presence of *Trichomonas vaginalis* in stained smear.

Table 1 Age related prevalence of *Trichomonas vaginalis* among woman in Ikwuano

Age (Years)	No Examined	No Effectd (%)	Prevalence of infection according to specimen (%)		
			urine only	HVS only	both urine & HVS
14 – 20	150	28(18.67)	7(4.67)	9(6.00)	12(8.00)
21-30	282	58(20.57)	10(3.55)	20(7.04)	28(9.93)
31-40	118	23(19.45)	3(2.54)	7(7.63)	11(9.32)
41-50	38	3(7.89)	1(2.23)	2(4.00)	0(0.00)
51-60	12	0(0.00)	0(0.00)	0(0.00)	0(0.00)
	600	112(18.67)	21(3.50)	40(6.67)	51(9.17)

Table 2 Occupational related prevalence of *Trichomanas vaginalis* among women of Ikwuano

Occupation	No Examined	No Infected	% Infected
Civil Servant	102	18	15.66
Traders	65	15	23.07
Students	349	72	20.63
House wives	84	7	8.33
	600	112	18.67%

Table 3 Trichomoniasis infection in relation to marital status of the respondent in Ikwuano

Marital Status	No Examined	No Infected	Percentage infected
Married	215	35	16.27
Single	375	77	20.53
Widow	10	0	0.00
	600	112	18.67%

Table 4. Symptom associated with trichomoniasis among women in ikwuano

No Examined	Total No infected	No Symptom No infected (%)	Characteristic Symptoms			
			itching/rashes No infected (%)	Genital sores No infected (%)	Hot feeling sensation No infected (%)	Greenish yellow discharge No infected (%)
600	112	9(1.50)	23(3.83)	17(2.88)	27(4.50)	36(6.00)

Discussion: The findings from this study show that trichomoniasis is present in Abia State particularly in Ikwuano with a prevalence of 18.67%. This is high when compared with findings of Woken, G.N. (2006) in some parts of Niger Delta Region Rivers State but within the levels reported by Ulogu *et al.*, (2007) and Njoku *et al.*, (2000). This high prevalence of trichomoniasis may be attributed to little or no attention given to this disease of public health importance. This observation was also reported by Acholonu (1998) and Petrin *et al.*, (1998). They observed that trichomoniasis is the most prevalent sexually transmitted parasitic infection world wide yet appears to be highly neglected

Trichomonas vaginalis is transmitted from one person to another mainly through sexual intercourse although other means of transmission have been implicated such as toilet seats, contaminated underwears, towels, examination equipment etc. (Smyth 1996, Njoku *et al.*, 2001). Ukoli (1990) stated that other means of vaginal contamination apart from sexual intercourse may be as a result of the non-veneral mode of transmission of the parasite which may remain viable in urine on lavatory seats for 30-45minutes. He exphasized that such agents undoubtedly occurs especially in areas with poor environmental and personal hygiene and women with their open biological nature could easily be infected.

The high prevalence of infection observed among the younger age group (20-29) then the older age group (13-50) agrees with the finding of previous work by Ulogu *et al.*, (2007) he reported that trichomoniasis is more prevalent among sexually active young people.

Women are at greater risk of contracting trichomoniasis than their male counterparts and are mainly reservoirs while males disseminate the parasite. The anatomical structure of women also makes them more vulnerable also factors such as lack of proper parental guidance and hard economic situation in the county expose the young women to see sex as a business and means of using what they

have to get what they lack; getting money and obtaining what they desire from wealthy men and men in authority. This is more especially among students of higher institutions were sex is exchanged for better academic performance and also among junior workers in both public and private sectors for promotion and other favors.

In Nigeria, it has been reported by previous workers that Sexually Transmitted Disease has been blamed on increase in poverty, unemployment and violence among woman and children (Qbiajuru, 2004, Ulogu *et al.*, 2007), among other factors sexual recklessness, lack of awareness, ignorance of the public health implications, poor sanitation and poor personal hygiene are other risk factors of trichomoniasis.

Further findings in this work in relation to occupation related prevalence shows that traders have the highest prevalence (23.07%) followed by students (20.63%) than civil servants (15 . 66%). the house wives had the least (8.33%). He high rate of infection amongst the traders may be attributed to their socioeconomic status. This agrees with previous work by Sary *et al.*, (2000) and Woken (2006) they observed that high prevalence of infection among traders could be as a result of their social life typified with little or no

personal hygiene. There was no infection of *Trichomonas vaginalis* among the widows, However single woman had higher prevalence (20. 53%) when compared to married women (16. 27%).

Among the individuals with symptoms associated with trichomoniasis, very few (1.50%) of the infected persons were asymptomatic while others show symptoms such as itching/rashes feeling of sensation (4.5%) and greenish yellow discharge (6.00%). This finding agree with observation of Wilkinson *et al.*, (1999) and Wendal *et al.*, (1999) they reported that patients infected with type I *Trichomonas vaginalis* have sub-clinical infection or are asymptomatic while those infected with type II often present with genital irritation and greenish yellow vaginal discharge.

Examination of urine samples was able to detect 21 positive cases of Trichomoniasis while vaginal swab was able to detect 40 positive cases this shows that either urine sample or vaginal swab is insufficient for proper diagnosis of *Trichomonas vaginalis* infection. For better results both urine and vaginal swab should be used however, microscopic examination of direct wet mount smears of vaginal swabs and urine deposits revealed prevalence of *Trichomonas vaginalis* than examination of stained smears. This report agrees with the finding of Obiajuru (2000) and Ulogu *et al.*, (2007). Direct wet smear should be better diagnostic approach than stained smear.

Trichomoniasis is not uncommon sexually transmitted disease (STD) among women in Ikwuano Local Government Area of Abia State. There is therefore the need for public health education to enlighten the adolescents and young adults by religious organization, relevant governmental and non-governmental agencies on sex education, public health implication of this infection and the need to use condom as a preventive measure for the disease. There is also need to institute and implement effective screening programme and treatment provided for infected individuals. World Health Organization (1992) report stated that when left untreated, reproductive tract infection represents a vast reservoir of infection with serious short-term and long-term effects on women's overall health status and have impart on a range of issues including maternal functions, fatigue, child survival etc. Njoku *et al.*, (2000). Hence building a sustained culture of restraint and prevention will go a long way to reducing to the bearest minimum if not complete eradication of sexually transmitted diseases.

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