

# INCIDENCE OF *TRICHOMONUS VAGINALIS* INFECTION AFTER MENOPAUSE AGE OF WOMEN<sup>+</sup>

حدوث الإصابة بالمشعرات المهبليّة بعد سن اليأس في النساء

Saba Fadhil Ali \*

## Abstract:

The aim of the present study is to determine the rate of the women who suffer from disease (Trichomoniasis) after the menopause age and if there is correlation between the rate of the disease and the age of the women.

A hundred vaginal discharge swabs are examined which are taken from hundred women of women attended to the Private Obstetrics and Gynecology Clinics, differed menopause age in order to detect of *Trichomonas vaginalis* (*T.vaginalis*) parasite. The samples are examined in the laboratory by using 0.5% methylene blue with distilled water (wet stained smear). The results showed that rate of parasite presence is (12%), in the group of tested women. And among the positive cases the rate of (50%) of the women who have been married over 10 years and the rate of (33.3%) of the women who have complained from itching and strawberry color in spot. Finally some symptoms, as itching and vaginal secretion are rated (25%). Statistical analysis of the results are showed that there was no correlation between the age and the rate of parasitic infection.

## المستخلص:

تهدف هذه الدراسة إلى التعرف على نسبة النساء المصابات بالمشعرات المهبليّة بعد سن اليأس و فيما إذا كانت هناك علاقة بين الإصابة والعمر. فحصت (١٠٠) مسحة لإفرازات مهبليّة مأخوذة من (١٠٠) من النساء اللواتي بلغن سن اليأس و يترددن على العيادات النسائيّة الخاصّة من مختلف الأعمار للتحري عن وجود طفيلي المشعرات المهبليّة فيها وقد فحصت النماذج مختبريا باستخدام طريقة المسحة الخاضعات في مجموعة النساء أشارت النتائج إلى إن نسبة وجود هذا الطفيلي هي (١٢%). الرطوبة للنساء للدراسة، وكانت بين الحالات الموجبة (٥٠%) للمتزوجات لمدة تزيد على عشر سنوات، (٣٣,٣%) اللواتي يعانين من أعراض الحكّة وإحمرار في المنطقة و أخيرا نسبة (٢٥%) للمصابات بأعراض الحكّة والإفرازات المهبليّة. وأظهر التحليل الإحصائي للنتائج عدم وجود علاقة بين العمر ومعدل الإصابة بالطفيلي.

## Introduction:

*Trichomonas vaginalis* is caused by the parasitic protozoan which affects seven million people each year in South African [1]. *Vaginal trichomoniasis* is recognized

<sup>+</sup>Received on 14/3/2010 , Accepted on 23/8/2011 .

\* Lecturer /Technical Institute/ Babylon

as transmitted sexually disease[2]. Infection rates between men and women are the same with women showing symptoms while infections in men are usually asymptomatic. Transmission takes place directly because the trophozoite does not have a cyst [3], but the parasite in genitourinary tract can remain in actively in persons with out showing any symptoms for along time[4]. Trichomonas infection parasite in women is active during reproductive years but vanishes after menopause (the termination of the reproductive period of life in a women is menstrual periods and is known as the menopause from 47-55 years).[5,6] The post menopausal women who were suffered from a hormonal deficiency disease like estrogen ceases and gonadotrophic hormones is excess, after the menopause there will be gradual atrophy of the genital organs, the uterus diminishes in size ,the vaginal wall becomes thin and smooth with a fall in the acidity of secretion, reduction in vaginal acidity, this may allow organisms to survive their and cause vaginitis and or endometritis[6,7]. Trichomoniasis is a specific infection with *Trichomonas vaginalis* (trophozoite is oval larger than a white blood cell), anaerobic, parasitic flagellated protozoan, patients characteristically present with offensive vaginal discharge and itching or irritation. In women, infection causes vaginitis and cystitis and in men urethritis and proctitis. Infected women or men may also be asymptomatic. The infection is usually transmitted by a male (asymptomatic carriers) during sexual intercourse; woman may infect other by contact or through contaminated toilet, articles, towels, gynecologist instruments and rarely by rubber gloves[7,8], while *T.vaginalis* which does not have a cyst form, organism can survive for up to 24 hours in urine, semen, or even in the water. It has an ability to persist on fomites with a moist surface for 1 to 2 hours [7-10]. Trichomonal infection has spread in every continent, every class, economical and medical importance[10,11].

Vaginal trichomoniasis is diagnosed either by the observation of motile protozoa on a wet mount of vaginal or urethral discharge, or by culturing the organism. Some infections are also diagnosed by cervical cytology [12,13]. In Iraq there have been some studies of the infection rate in Basra, Baghdad, Mosul and Arbil (11.3%, 19.54%, 9.6% and 10% respectively) [14–17].

The damage caused by *T.vaginalis* to vaginal endometrial increase the women s' susceptibility to an infection by the HIV virus prostate cancer (in men) [9,13]. It also causes lysis of epithelial cells and RBCs in the area leading to genital inflammation and the leakiness [13,18]. *T.vaginalis* has also been reported in the urinary tract, fallopian tubes, and pelvis and can cause pneumonia, bronchitis, and oral lesion, AIDS, cervical cancer and lesions [19,20].

This study aims to investigate:

- 1- *T.vaginalis* after menopause.
- 2- To found the rate of infection and age and significant difference between them.

### **Materials and methods:**

A hundred women were examined who were attended the Private Gynecology Clinics in Al- Hilla during the period from January to September 2009 who were complained of inflammation, greenish –yellow frothy vaginal secretion, itching, pelvic pain, fever and strawberry area. Then medical history, married history, the usage of antibiotic in past 2 week and other pelvic disorders were recorded. Sample of vaginal discharge was taken from the vaginal with out antiseptic or lubricant. The organism was detected by microscopic examination of saline amount of secretion (1

swab from each woman), then fixation by 0.5% methylene blue in distilled water (wet stained smear)[21,22].The wet preparation are examined microscopically for the presence of pus cell,epithelial cells,*T.vaginalis*(trophozite),monilia and bacteria.The result were analyzed by using Statistical Method: Coefficient of Association in order to find out the rate of infection and age and significant difference between them; then convert the data to table in order to be more clear with detail description as showed in the table(No.1,2).

### **Results and discussion:**

The vagina gets into ceases of estrogen and epithelial cells after the period of menopause. In this period the normal acidity of the vagina is shifted from a healthy, semi-acidic pH (3.8-4.2) to a much more basic one that is conducive to *T.vaginalis* growth [3].

**Table (1) Distribution of the patient women.**

Variables		No .pt*		Infected(T.v)** (positive cases)	
		No. Sample	%	No. pt**	%
Age	> 50 Years	11	11	1	9
	< 50 Years	89	89	11	12
	Total	100		12	
Marital status	Single	18	18		
	Married for less than 10 year	62	62	2	3.2
	Married for more than 10 year	20	20	10	50
	Total			12	
Symptoms	Itching			2	16.7
	Strawberry area and itching			4	33.3
	Vaginal secretion and itching			3	25
	Vaginal secretion and fever			2	16.7
	Vaginal secretion and pelvic pain			1	9
The usage of antibiotic*** in past (2) week		25		2	8

\*patient      \*\* *Trichomonas vaginalis*      \*\*\*all type of antibiotic

The postmenopausal women in this study had an infection rate of 12%. This is lower than Amal study was rated 18% [24],but this study is more than Human study ( i.e. 2.4%) [20]. Thus, the differences in the result between the study and the previous studies are probably related to the differences in the social class, personal hygiene, the mode of living and whether the women involved in the study were patient or not [22].

Table (1) shows that the number of the women below 50 years is (11 pt, 1 positive cases); while the group of the women who their ages more than 50 years is (89 pt,11 positive cases). According to the infection rate of *T. vaginalis* among women involved in this study did not show any statistically significant differences with postmenopausal, this agrees with [26].

**Table (2): The no. Infection and no infection women with *T.vaginalis* according to the age**

Age	>50	<50	Total
-----	-----	-----	-------

Infected	11	1	12
Non infected	78	10	88
Total	89	11	100

ASS. Coeff = 0.17  
Coefficient of Association

On the other hand, women who have been married for more than ten years (i.e. 50%) that is meant asymptomatic women, that agrees with Ohlemeyer *et.al* study [9]. The high infection rate in married women is probably related to the higher level of sexual activity in these women and may be due to transmission from their husbands. However, the infection may also be acquired from toilet facilities, medical instruments or the exchange of underclothing [1, 14].

The results show that, the rate of women who are complained from vaginal secretions is (33.3%) and strawberry area (i.e.25%), but the itching and fever are about (16.7%) of patient women, this is agrees with [21,25].

After menopause, the vaginal mucosa can become easily abraded and infected (atrophic vaginitis). Trichomonads can survive in the glycogen-poor atrophic vagina without causing symptoms, and infection may only appear when these women are treated with oestrogen or undergo a vaginal surgical procedure [2].

Those who were used of antibiotic (any type of antibiotics) in general or any specific antibiotic in past 2weeks are not found to be at risk for *T.vaginalis* [26,27]. The positive result of this organism in this group is (8%).

### **As conclusion:**

*T. vaginalis* is an important protozoan which can be transmitted by sexual intercourse or by non venereal means, and which can be responsible for specific vaginitis and lower urinary tract infection. The infection rate with *trichomonias vaginalis* is (12%) among the women in our study which indicates that this infection is concerned public health .

- 1- The results referred that there is a high percentage women who are suffered from vaginitis which is resulting from *T.vaginalis* infection especially in symptomatic women group.
- 2 - The infection decreases after menopause age.
- 3- The most common symptom in women was strawberry area and itching.
- 4-there are no significant differences are observed between the age and the rate of infection.

### **Recommendations:**

- 1- more studies about the infection of *Trichomonus vaginalis* according to different age.
- 2- Do researches about the different methods of diagnosis.
- 3- Health education about the prevention and treatment, both partners should receive careful examination and treatment. Furthermore, medical examination instruments must be sterile in order to prevent transmission of the disease. Routinely screening and the women must be treated from *Trichomonus vaginalis* before any reproductive tract surgery and also before pregnancy and after delivery or abortion which may help to prevent the occurrence of infection in both partners. The population must be educated about this disease and the means of its transmission, since education on sexual behavior and genital hygiene may help in its prevention and control.

## References:

- 1 -Mavedzeng, Sue Napierata, Van derpol, Cheng ,Helen ,Ramjee, Kelly and Elizabeth " *Epidemiological Synergy of Trichomonas vaginalis and HIV in Zimbabwean and South African Women*" *Sexually Transmitted Disease*,37 (7): 460-6 , 2010.
- 2– Mullah,R. SummaiyaW., Kosambiya,J., Shethwala,F. and Nimished,C. "Sexually transmitted infections and reproductive tract infections in female sex workers" *Indian Journal of Pathology and microbiology*,52(2):198-9,2009.
- 3- Stark, J.R., Judson, D.F. and Kumara,H. Sutcliffe,A.S, "Prospective of trichomonose vaginalis and Prostate cancer Incidence and Mortality: Physicians Health Study" *JNCI Study*". *Journal of the National Cancer Institute*, 9(4): 83-93, 2009.
- 4- Trichomoniasis- *CDC Fact Sheet, Centers for Disease Control and Prevention* ,2007.
- 5- Lewis, T.L.T. and Chamberlains, G.V.P."Gynecology by Ten Teachers" 15th ed, pp.75-80, 1980.
- 6- Ryan,F.J. and Ray, G.G. "Sherries Medical Microbiology"4<sup>th</sup>ed, Mc Grow Hill, 2001.
- 7- Arroyo, R.L. Ladif, A.S. Stevens ,C.E. and Alexander, W.J."Molecular basis of epithelial cell recognition by T.vaginalis" *Molecular Microbiology*, 6(7): 853-862, 2006.
- 8- Carlton,J.M.Hirt,R.P.Pertmant, J. and Kumar, A. "Draft genome sequence of sexually transmitted pathogen *Trichomonas vaginalis*"*Newyork,N.Y*,315(8):207-122, 2007.
- 9-Ohlemeyer, C.L. Hornberger, L. L.Lynth, D.A .,and Swierkor, E.M."Diagnosis of *Trichomonus vaginalis* in adolescent females :In Pouch TV culture versus wet – mount microscopy" *the journal of adolescent health :official publication of the Society for adolescent medicine* ,2(3):205-8,1998 .
- 10- Soper,D. "Trichomoniasis: under control or unde rcontrolled"*American journal of obstetrics and gynecology*, 190(1):280-90, 2004.
- 11- Hook, E.D. "Trichomonas vaginalis-no longer a minor STD "*Sexually transmitted disease*,26(7): 388-90, 1999.
- 12 – Bro, F. "Vaginal microbial flora in women with and without vaginal discharge registered in general practice"*Dan.Med.Bull*, 36(5): 483-485, 1989.
- 13- Sood,S. ,Butel,J.and Morsa,S."In Pouch *Trichomonis Vaginalis* culture for detection of *Trichomonis vaginalis* "*Indian J. Med Res*,125(10):567-571, 2007.
- 14- Mahdi, N.K."Urogenital trichomoniasis in an Iraqi population"*Mediterranean health journal* 2:501-5 ,1996.
- 15-Al-kaisi,A.A."The incidence of *Trichomonas vaginalis* among female with vaginal discharge"*MSc.thesis, College of Medicine ,Baghdad University ,Iraq* .1994.
- 16- AL-Mallah A.R."Studies on *Trichomonas vaginalis* infection in Mosul" *MSc thesis* , ,*University of Mosul, Iraq*, 1981 .
- 17- Kadir, M.A.Salehy,A.M.Hammad,E. F. "Studies on *Trichomonas vaginalis* in Erbil" *Teaching Hospital journal of the Faculty of Medicine, Baghdad* ,30:83-8,1988.
- 18- Mendoza-Lopez, M. R., Kiviat,N.B. and Holmes,K.K."Protein as Involved *T.vaginalis* Cytoadherence " *Infection and Immunity*,68(9): 490-12, 2000.

- 19-Lehker,M.W.and Alderete ,J.K. "*Resolution of six chromosomes of T.vaginalis and conservation of size and number among isolates*"*J.Prasitology*,85(5):976-976,1999.
- 20- Human,M.A"*The incidence rate of genital tract among women attendants Faunally Centers*" *MSc. thesis,microbiology department ,college of medicine ,Baghdad University ,Iraq.1999*
- 21- Omer ,E.E , and El-Naeem , H.A"*Evaluation of the laboratory diagnosis of vaginal trichomoniasis in Khartoum*"*J.Trop Med Hyg*, 91(2):292-295, 2005.
- 22- Spencer, R.C. "*Laboratory diagnosis of vaginal discharge* "*Medicine International*, 73( 2): 3029, 1990.
- 23- Bauer,J.D.Ackermenn,P.O.and Tora,G.B."*Brays clinical laboratory methods*" *10<sup>th</sup> ed st Louse Mouby*:50-1, 1974.
- 24- Aml,H.A."*Incidence of trichomonus vaginalis in different groups of women*" *Evaluated Scientific J.* 20(1):85-88, 2007.
- 25- Real,J.S.and Kelbanoff,N.A. "*Sexual intercourse during pregnancy preterm delivery effect of vaginal microorganism*"*AmJ.Ostet Gynaecol*,168(20):514-519,1993.
- 26- Cudinore, S.L.Delegaty, K.L.and Garber, G.E."*Tretment of infection caused by Metronidazole –Resistant Trichomonas vaginalis*" *clinical Microbiology Reviews* 17:783-93, 2004.
- 27-Khider, M.S."*Candida species and other microorganisms isolation from female genital tract infection*"*MSc.thesis, College of Medicine, Baghdad University, Iraqe.1985.*