



EPIDEMIOLOGICAL STUDY ON *TRICHOMONAS VAGINALIS* AMONG THE WOMEN WHO ATTENDED THE HOSPITALS OF BASRA PROVINCE

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ABSTRACT

600 samples of vaginal discharge and urine were collected from women who visited Basrah Teaching Hospital, Basrah Maternity and Children teaching Hospital and Al-Faihaa Hospital in addition to some private medical clinics in Basrah Province, southern Iraq, during the period from January 2019 to December 2019. The diagnostic technique that was used for each sample is microscopic examination (wet preparation). Results revealed that 1.6% women were infected by *Trichomonas vaginalis*. The occurrence of the infection was only among married women. The highest rate of infection was recorded in non-pregnant women and it was found that there are significant monthly distribution differences in the infection of the parasite. The highest infection rate appeared in September was 3.44%, Nor significant differences in prevalences were found according to age, occupation, education, location and economic status, the differences were significant in terms of clinical symptoms and PH status.

Keywords: *Trichomonas vaginalis*, Infection percentage, Epidemiology, Women, Wet mount

INTRODUCTION

Trichomonas vaginalis is a parasitic protozoan that causes trichomoniasis. It is a cosmopolitan, sexually transmitted disease (STD) with important health implication and which may be relatively common in females (1). The epidemiology of trichomoniasis is influenced by a complex of interacting factors, such as personal hygiene, sanitation and good use of water (2). Approximately 180 million people worldwide may be infected with *T. vaginalis* (3, 4). Prevalence estimates vary between population studies, but ranging from 5-74% in women to 5-59% in men, with the highest rates reported in either sex from sexually transmitted infection (STI) and other high risk populations (5). This infection has been associated with vaginitis, urethritis and pelvic inflammatory disease (PID). Trichomoniasis also impacts on birth outcomes and has been mentioned

to be a co-factor in human immunodeficiency virus (HIV) transmission and acquisition (6). Symptoms in women with trichomoniasis include vaginal discharge, dysuria and pruritus. In men, on the other hand, symptoms are less apparent, including urethral discharge, urethral pruritus and dysuria (7). The diagnosis of *T. vaginalis* depends on the microscope observation of the motile trophozoites in fresh vaginal discharge.

In Iraq, studies are recommended to assess the epidemiological situation of this disease in the way to implement appropriate control measures where needed. The present study aim to throw more light on the epidemiological of Trichomoniasis in women who visited Basrah Province hospitals and to use this information in disease control programs.

Materials and methods

Sample and data collection and statistical analyses

Vaginal swab were collected from 600 women attended the Major hospitals in Basrah Province during the period from January 2019 to December 2019, with and without symptoms, after speculum insertion (8). More than one vaginal swab were taken from each patient, these swabs were used to obtain microscopic preparations and measurement of acidity of the vaginal fluid. About 5-10 ml urine samples were also collected from each women. Additionally, data on the following aspects were also obtained from each female subject: age, occupation, marital status, economic status, education, pregnancy and the use of contraceptive. Results were analyzed by means of the Chi-square test using SPSS program (Version -24).

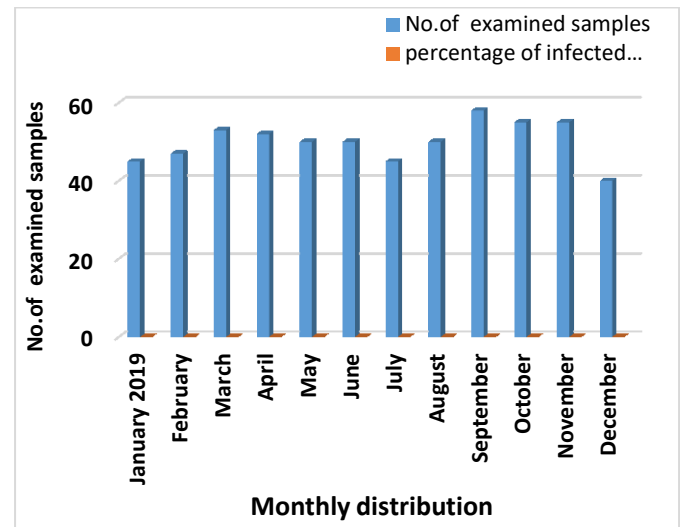
Diagnostic methods

The pH of the vagina was measured using the special pH detection strips, making it in direct contact with the vaginal fluid of the sample and the result color is compared to the standard colors (9). Wet mount preparations were obtained by mixing of the vaginal fluid with a normal saline drop and directly examined microscopically at 40x to the observation of trophozoite movement. Urine examination involved the centrifugation of urine at 1000 rpm for 5 min and final microscopic examination of sediments under 40x (10).

Results

Results obtained with the direct microscopic examination showed a prevalence of *T. vaginalis*

infection of 1.6% in vaginal samples and of only 0.5% in urine samples. Significant monthly distribution variation was found with the highest rates detected in September 3.44% (Figure 1).

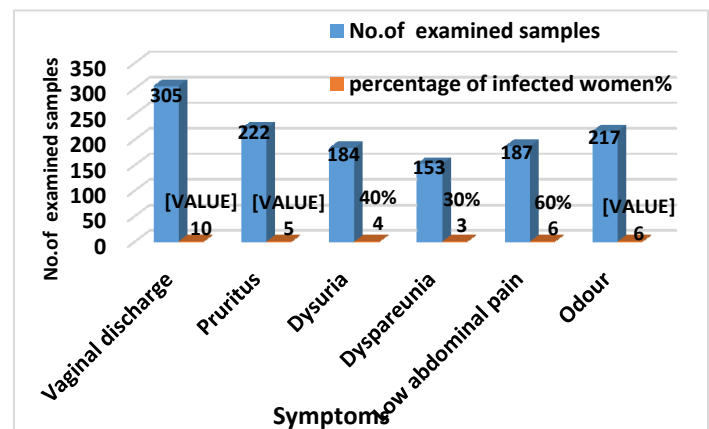


($P \leq 0.05$, $\chi^2 = 18$)

Figure 1. Monthly distribution of infection by *Trichomonas vaginalis* in women from Basrah province.

The colour of the vaginal discharge was more frequently yellow (six positive samples, infection rate 9.52%) and greenish yellow 3, 7.17%, then white to creamy 1, 0.95%, and more rarely normal (0, 0%)

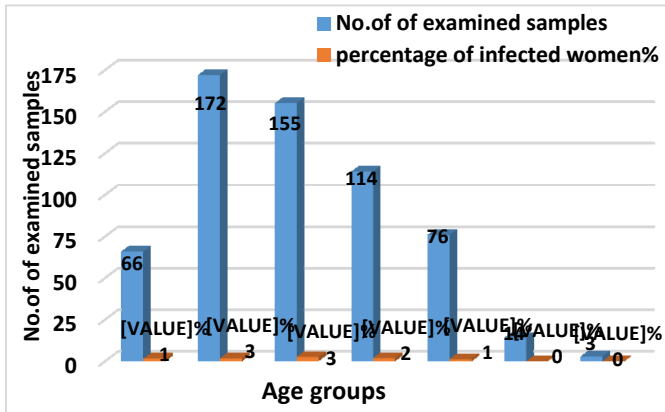
Infected women were suffering from different symptoms, including mainly vaginal discharge (100%), lower abdominal pain 60%, odour 60%, pruritus 50%, dysuria 40% and lastly dyspareunia 30%, significant differences were observed between Trichomoniasis infection and symptoms (Figure 2).



($\chi^2 = 309$, $P \leq 0.05$)

Figure 2. Association between infection by *Trichomonas vaginalis* and symptoms

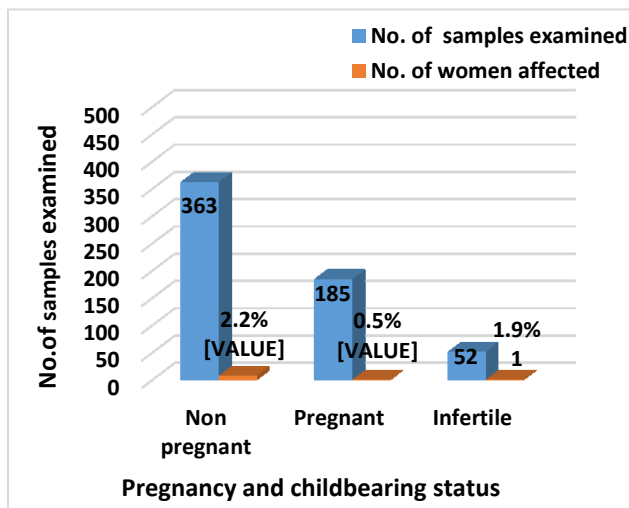
No significant differences according to age were found (Figure 3).



$X^2=1, P \leq 0.05$

Figure 3. Distribution of infection by *Trichomonas vaginalis* according to age groups

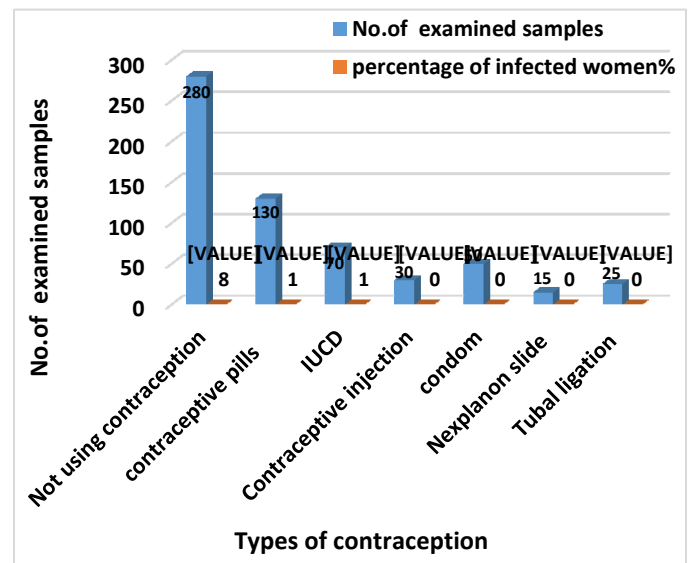
All infected patients were married women 10 among 549 studied, infection rate 4.6%, whereas no positive samples were found among single women 7 subjects, widows 14 and divorced women 30. Significant differences between Trichomoniasis infection and pregnancy did not appear either, since non-pregnant women were the great majority of the infected women 2.2% followed by infertile ones (Figure 4).



$(X^2=4, P \leq 0.05)$

Figure 4. Association between infection by *Trichomonas vaginalis* and pregnancy

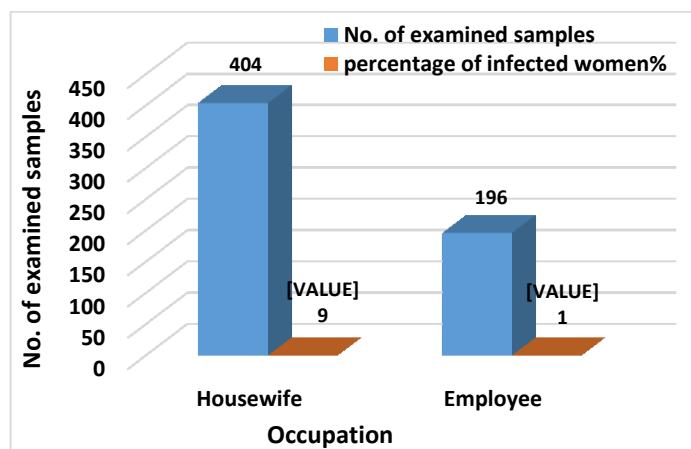
Infection was detected with regard to the use of contraceptions, women who were not using it appeared to be those more infected 8 positive among 280 studied, infection rate 2.85%, followed by women using intrauterine contraceptive device (IUCD) 1 among 70 studied, infection rate 1.74%, and women using contraceptive pills 1 among 130 studied, infection rate 0.76% whereas no infection was found in women using other contraceptive methods such as condom 50, injection 30, nexplanon slide 15 or tubal ligation 25. (Figure-5).



$(X^2=1.60, P \leq 0.05)$

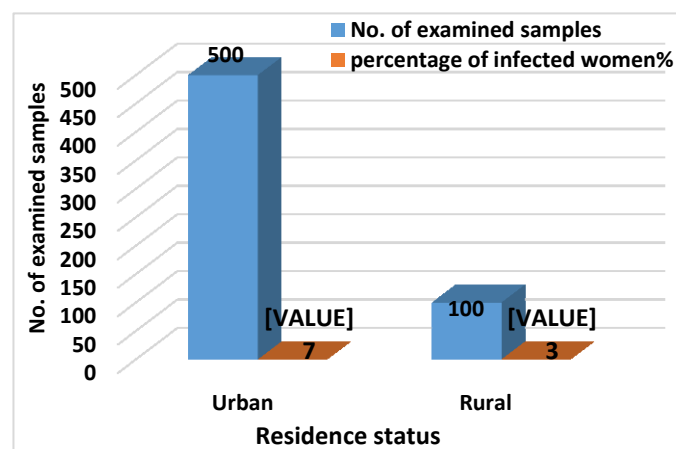
Figure 5. Association between infection by *Trichomonas vaginalis* and types of contraception.

No significant differences were found when analysing infection with regard to occupation, education and economic status (Figure 6, 7, 8,) respectively, similarly as when comparing with locality although a higher infection rate in rural women 3.1% than in women living in urban areas 1.4% was observed (Figure 9).



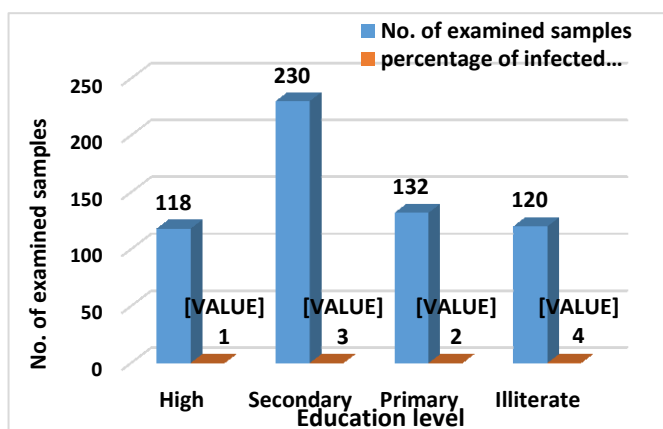
($X^2=0.33$, $P\leq 0.05$)

Figure 6. Association between infection by *Trichomonas vaginalis* and occupation status



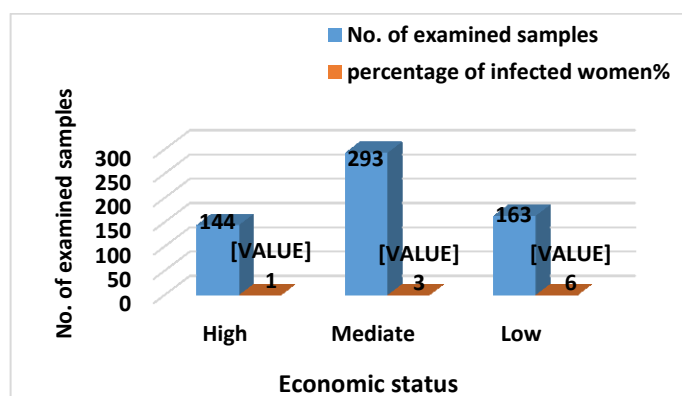
($X^2=3$, $P\leq 0.05$)

Figure 9. Association between infection by *Trichomonas vaginalis* and Residence status



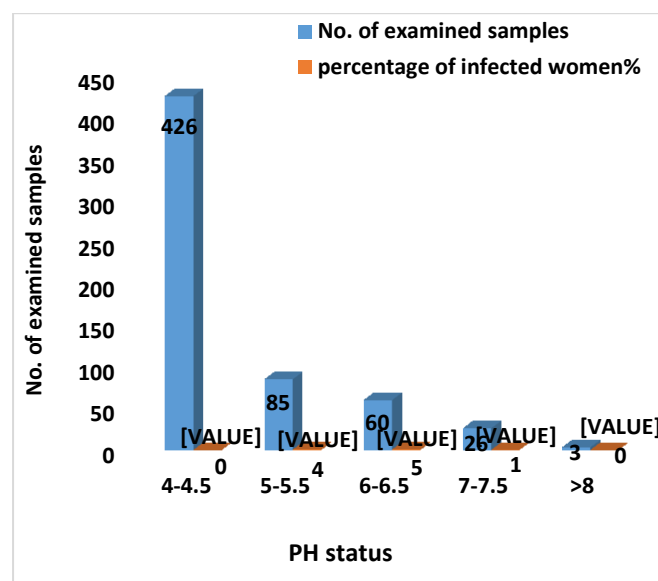
($X^2=6$, $P\leq 0.05$)

Figure 7. Association between infection by *Trichomonas vaginalis* and education level



($X^2=5$, $P\leq 0.05$)

There were significant differences between Trichomoniasis infection and pH value, a higher infection rate in pH 6-6.5 50%, followed by women pH5-5.5 40% and a low infection rate in PH 7-7.5 10%, whereas no infection was found in women pH4-4.5 and pH >8 (Figure 10).



($X^2=99$, $P\leq 0.05$)

Figure 10. Association between infection by *Trichomonas vaginalis* and PH status

Discussion

Epidemiological characteristics

This study offers useful data on the epidemiology of urogenital trichomoniasis and determine the nature of the clinical symptoms accompanying the infection in Basrah province to be considered for control initiatives. The 1.6% trichomoniasis prevalence found in a one-year survey of the women who visited the major hospitals and some private medical clinics in Basrah province, southern Iraq, similar to the prevalences found in other localities of Iraq: 8.05% in Al- Najaf city (11) 1.66% in Arbil city (12).) 2.4% in Duhok city (13). These prevalences appear to be low when compared to those reported in other countries, as 78- 26.6 % in Polska (14), 25% in New York (15) and 10.4% in South Korea (16), or even in Arab populations such as the 28.1% in Saudi Arabia (17) and the 36% in Egypt (18). Islamic rules and habits prevent non-marital sexual relationship this may be related to the lower rates of this sexually transmitted protozoan infection when compared to the more permissive non-Islamic countries. A higher rate of infection among sexually active women has been reported (19), multiplicity of sexual partners and life style leading to an increase of transmission (20).

Although trichomoniasis is present in all climates, *Trichomonas vaginalis* parasite can flourish in humid environments and thus can survive for 45 minutes on wet clothes contaminated from shower and toilet seats (21; 22). However, monthly distribution variations were found in our year-long survey.

Abnormal vaginal discharges appear with different colour such as yellow and greenish yellow, with offensive odors. The high percentages of cases found with yellow discharge may be explained by the heavy infection and huge number of trophozoites in the vagina. This leads to stain increases due to cell lysis, (23) mentioned during verified in a long-term examination of patients: the vaginal discharge was normal in samples containing small numbers of parasites, whereas the colour changed from normal to yellowish and

finally greenish when the number of parasites increased. However, it should be considered that the colour of vaginal discharge may also be modified by another infection, such as that by *Candida albicans*. Therefore, trichomoniasis diagnosis should not only depend on vaginal fluid colour.

Among the main clinical signs found, there was abnormal vaginal discharge containing a large number of pus cells and microorganisms such as trichomonadid trophozoites infecting the vagina and utilizing iron and lipids during red blood cell lysis (24). Abnormal discharge proved to be a serious problem due to its high prevalence (100%), similarly as reported in the Auckland sexual health clinics in New Zealand (7).

Pruritus should also be highlighted with 50%. This may be due to infection by other microorganisms such as *Gardinnella vaginalis* and *Candida albicans*, or it returns to the parasitic rapid and rotational movement due to the movement of its flagellum and its peripheral extension from the axo style (25). Even to diabetes, using of drugs and contraceptions by women (26,27). Dyspareunia 30%, low abdominal pain 60% and disuria 40% also appeared associated with trichomoniasis. These signs have been already described in trichomoniasis (7). The results of our survey show that symptoms may only be considered a mere guide suggesting infection, but definitive diagnosis of trichomoniasis requires parasitological confirmation by finding of the characteristic trophozoite in vaginal discharge or urine.

Trichomonas vaginalis specifically inhabits the vaginal tissues. Anyway, it has been mentioned that *T. vaginalis* is able to reach and infect the urinary tract (28). The presence of the parasite in urine may be due to the contamination of urethra with vaginal discharge due to increasing trophozoite numbers during their multiplication inside the vagina. However, the chemical composition of urine may not allow the protozoan for a normal development and multiplication. All this agrees with the results of the present study in

which higher infection rates were found in vaginal samples 1.6% than in urine samples 0.5%.

As a sexually transmitted disease, trichomoniasis may be detected in sexually active adolescents and adults. However, infections were also reported among newborn (29) and children (30). In the present study, no infection was found among postmenopausal women, and the infection appeared in married women aged 16-40 years but not in single, widows and divorced women. This may be attributed to social habits.

Trichomoniasis is known to be a risk factor for pregnant women. Several studies suggest that there is an association between infection and abortion, preterm labor and infertility (31). In Basrah, a high rate of infection was detected among non-pregnant women 2.2% followed by infertile women 1.9%. Pregnant women showed a lower infection rate 0.54 %. There are many justifications attributable to the lack of infection among pregnant women, including: visiting hospitals, private clinics and health centers regularly for the purpose of periodic checks, this shows the importance of clinical examination to diagnose the disease early and to treat it (32). Some studies indicated that the epithelial cells of the uterine wall constitute a protective layer against pathogenic microorganisms, which works to regulate the physiology of the reproductive system, especially during pregnancy and thus regulate the immunity of the pregnant mother or blocking of the cervix during pregnancy preventing the parasite and other microorganisms from reaching the reproductive system. Moreover, the cutout of menstrual blood during pregnancy which is an important source for the parasite to survive (33, 34). Infertile women have been mentioned to also show high rates of infection, infertility being due to that protozoan can weaken the ability to bear children as a result of the abnormalities that it causes in the genital tract, which leads to difficulty in conception. Also,

the arrival of the parasite to the fallopian tube causes blockage and thus leads to infertility (35). It has flagellates that help it move within the vagina (circular motion) and this trait impedes and inhibits the movement of sperm and thus weakens the fertilization process (36, 37).

In Iraq, many women use pills, injection, nexplanon chip and IUCD as contraceptive methods, whereas men usually resort to condom use (38, 34). Methods noted for the lowering of infection in developing communities include condom use during sexual intercourse and metronidazole treatment for venereal diseases and microorganism infections (39). The study in Basrah shows that the higher rate of infection is among women who do not use contraceptions (2.85%). This may be explained by the thickness of the cervix and its closure during the use of contraceptions, thus preventing *T. vaginalis* from reaching the reproductive system, in addition to decreasing the concentration of Lactoferrin in vagina, which is the primary source of iron that is important for the adhesion of the parasite on the tissues of the vagina (17, 40, 41).

Statistically, no association appeared between using contraceptions and infection by *T. vaginalis* in the women surveyed from Basrah province. Previous studies have shown that *T. vaginalis* infects women in all type of economic status and it has the highest rates in industrial and developing countries (42). This relationship may be linked to low personal hygiene and sanitation, poorness and low use of condom and other contraceptions. In Basrah, non-worker, Low economic status and rural origin women showed higher infection prevalences.

In this study, the highest frequency observed for trichomoniasis in pH between 6-6.5 and this increase is ideal for the action of virulence factors and can facilitate *T. vaginalis* growth (43).

The efficacy of diagnostic technique Wet mount preparation

Wet mount preparation is easy and enables quick results but it requires at least 10³ motile parasites per ml for detection(44).The examination and diagnosis must be done within a maximum period of 10 to 20 minutes after obtaining the samples because changing the temperature and humidity levels lead to the loss of the parasite distinctive movement that depends on it and its form becomes closer to the pus cells that are difficult to distinguish. Moreover, it needs fast performance in order to prevent the parasite's death during transportation (45).

The direct microscopy method is recommended for the diagnosis of trichomoniasis not only in poor and developing countries but also is used worldwide (46).

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References

1. G.E.Garber, The laboratory diagnosis of *Trichomonas vaginalis*, *The Canadian Journal of Infectious Diseases and Medical Microbiology*. 16 (1): 35-38 (2005).
2. A.G. Davis and J.C. Clay, Prevalence of sexually transmitted infection in women alleging rape, *Sexually Transmitted Diseases*. 10: 298-300 (1992).
3. World Health Organization (WHO), Global incidence and prevalence of selected curable sexually transmitted infections -2008, *Geneva Switzerland* (2012).
4. Y. Adu-Sarkodie, B. K. Opoku, K. A. Danso, H. A. Weiss, D. Mabey, *Trichomonas vaginalis* screening goes global, *Sexually Transmitted Infections*.80:201-203 (2004).
5. R.I.Anorlu, A.F. Beyioku and T. Fogorala, Prevalence of *Trichomonas vaginalis* in patients with vaginal discharge in Lagos, Nigeria. *Nigeria Post Medical Journal*. 8:183-186. (2001).
6. H. Swygard, A.C. Sena, M.M. Hobbs and M.S. Cohen, Trichomoniasis: clinical manifestation and management, *Sexually Transmitted Infection*. 80:91-95(2004).
7. M. Lo, M. Reid and M. Brokenshire, Epidemiological features of women with trichomoniasis in Auckland sexual health clinics: 1998-1999, *New Zealand Medical Journal*. 115:119-126 (2002).
8. K. Sowmya and T.D. Mohan, Methods of specimen collection for the diagnosis of STIs, *Indian Journal Dermatology Venereol Leprol*. 73:129-132 (2007).
9. Z.Valadkhani, Role of pH on adhesion of and cervical epithelial change. *Annals Trichomonas vaginalis* isolated from symptomatic and asymptomatic women to vaginal epithelial cells in vitro, *Iranian Journal Medical Sciences*. 29:134-139. (2004).
10. S.M. Finegold and E.J. Baron, Bailey and Scott's, *Diagnostic Microbiology*, CV Mosby, Sant Louis, 8th edition, pp. 645 (1990).
11. J. Naama, F. Hasson, and E. Abdullah Detection of *Trichomonas vaginalis* among women with contraceptive usage in Al-Najaf Al-ashraf city .*The-Qar Medical Journal*, 2:46-50(2008).
12. M.A.Kadir and C.O.D.Fattah, *Trichomonas vaginalis* among women in Sulaimania Governorate-Iraq, *Tikrit Journal of pharmaceutical science*. 6:1-9 (2010).
13. W. M. Al-Saeed, Detection of *Trichomonas vaginalis* by different methods in women from

Dohok province, Iraq. *Eastern Mediterranean Health Journal*. 17 (9):706-709 (2011).

14. A. Kurnatowska and A.R. Mamos, Prevalence of *Trichomonas vaginalis* Donné in women of Łódź population in 1955-1999 years. *Was Parasitology*. 47 Supply. 1: 9-12(2001).

15. J. Schwebke and D. Burgess, Trichomoniasis, *Clinical Microbiology Reviews*. 17(4):794–803 (2004).

16. J. S. Ryu and D.Y. Min, *Trichomonas vaginalis* and trichomoniasis in the Republic of Korea, *Korean Journal of Parasitology*. 44(2) 101-116(2006).

17. T. A. Madani (2006). Sexually transmitted infections in Saudi Arabia, *BMC Infectious Diseases*. 6:(1) 3-22.

18 M.Aboulghar, O. Aboushady, J. Ahmed and N. Hanafy, Diagnosis of *Trichomonas vaginalis* Infection in Women of Childbearing Age at a University Setting Using OSOM A New Diagnostic Technique, *Egyptian Journal of Medical Microbiology*. 18: 3-15 (2009).

19. F.J. Bowden and G.P. Garnett, *Trichomonas vaginalis* epidemiology: parameter rising and analyzing a model of treatment intervention. *Sexually Transmitted Infection*. 76:248-256(2000)

20. R. Verteramo, E.Calzolari, A.M. Degener, R. Masciangelo and A. Patella, *Trichomonas vaginalis* infection: risk indicators among women attending for routine gynecologic examination. *Journal of Obstetrics and Gynaecology Research* 34:233-237(2008).

21. A. Chalechal, and I. Karimi, The prevalence of *Trichomonas vaginalis* infection among patients that presented to hospitals in the Kermanshah district of Iran in 2006 and 2007. *Turkey Journal Medical Science* 40: 971-975(2010).

22. N. Nanda, R.G.Michel, G.Kurdgelashvili and K. A. Wendel , Trichomoniasis and its treatment. *Expert Reviews Anti Infective Therapy*., 4:35-125 (2006).

23. A. K. Khalaf, Trichomons vaginitis: Epidemiology and diagnosis studies in Basrah Province. Msc Thesis, Faculty of Education, University of Basrah (2008).

24. P.L. Fiori, P. Rappelli, A.M. Rocchigiani and P. Cappuccinelli, *Trichomonas vaginalis* haemolysis: evidence of functional pores formation on red cell membranes. *FEMS Microbiology Letters* 109:13-18(1993).

25 I. A. A. Al-Tikrity and M. M. S. Al-Badry, The Trichomoniasis spread between married women revisions to the health center in Samarra, *Kerbala Journal of Pharmaceutical Science*. 7:271-276 (2014).

26. N.B. Sha, C. H.Wang, Q. M. Zariffard, M.Cohen, and G.Spear ,Utility of Amsel criteria score and quantitative PCR for *Gardnerella vaginalis*, *Mycoplasma hominis* and *Lactobacillus* spp. For diagnosis of bacteria vaginosis in man immunodeficiency virus- infected women. *Journal Clinical Microbiology*. 43:4607- 4612(2005).

27. F.J. Fleury Adult vaginitis, *Clinical Obstetrics Gynecology*. 24:407-421(1981).

28. M. Muller, The hydrogenosome. *Journal Genetic Microbiology*. 30:127-142(1993).

29. F.L. Al-Salihi, J.P. Curran and J. Wang, Neonatal *Trichomonas vaginalis*: report of three cases and review of literature, *Pediatrics*. 53:196-200(1974).

30. N.K. Mahdi and M. Sharief, Vulvovaginitis among female children, *Bahrain Medical Bulletin*. 23:175-177(2001).

31. G. Saurina. And W. McCormack , Trichomoniasis in pregnancy, *Sexually Transmitted Diseases*. 24:361-361(1997).

32. G.Adeoye, A. Akande and J. Pak, Epidemiology of *Trichomonas vaginalis* among Women in Lagos Metropolis, Nigeria.Pakistan, *Journal of Biological Sciences*. 10(13): 2198-201(2007).

33. V. John, M. Todd and S.Charles, Sex hormone modulation of human uterine epithelial cell immune responses, *Integrative and Comparative Biology* 46(6):1082-7(2006).

34. M.Sharief, Genital infections among women using various contraceptive methods in Basra, Iraq. *Eastern Mediterranean Health Journal*, 4 (3): 487-492(1998).

35. L. G. Keith, J. Fiberg, N.Fullan, R. Bailey, and G.S. Berger, The Possible role of *Trichomonas vaginalis* as vector for the Spread of other Pathogens, *International Journal of Fertility and Sterility*.31: 272- 277(1986).
36. M. C.Salomaon, N.Martinez, D.Delgado, A. C.Gonzalez, V. Bittar and N. Gonzalez, *Trichomonas vaginalis* prevalence in sex workers, *Medicina (B Aires)*, (2011):71(5):429-431.
37. T. J. David, and A. P. William, *Markell and Voge, s Medical Parasitology*, Elsevier, USA,9th Edition,pp. 56- 59 (2006).
38. T. R. Michelle, M. C.William, M. H. Marcia, D. M. MacDonald, P.A.Leone,J. R. Schwebke and A. C.Seña, The Association between Oral Contraceptives , Depot Medroxyprogesterone Acetate and Trichomoniasis. *Sexual Transmitted Disease*, 36 (6): 336-340(2009).
39. M.J. Rosenberg, A.J. Davidson, J.H. Chen, F.N. Judson and J.M. Douglas, Barrier contraceptive and sexually transmitted disease in women: a comparison of female-dependent methods and condoms, *American Journal Publish Health*.82:669-674(1999).
40. E.J. Saheb, R.H.Kuba, K.H Zghair and I.S. Mosa,A comparison between Trichomoniasis Infection and other Vaginal Infection among Females in Baghdad Governorate-Iraq,Iraqi Journal of Science. 57: 545-551(2016).
41. M. Prakash, S. Patterson and F. Gotch, Ex vivo analysis of HIV-1 co-receptors at the endocervical mucosa of women using oral contraceptives. *BJOG:An International Journal of Obstetrics and Gynaecology*. 111:1468–1470 (2004).
42. F. Sorvillo, L. Smith, P. Kerndt and L.R. Ash *Trichomonas vaginalis*, HIV and African-Americans. *Emerging Infectious Diseases*. 7:927-932(2001).
43. K.J. Al-Khtawi, Z.M. Al-Khafaji and A.S. Al-Shakly, Identification of *Trichomonas vaginalis* using molecular methods in iraqi infected women " *Iraqi Journal of Life Technologies*. 11 (1): 64-51(2012).
44. D. Petrin, K. Delgaty, R.Bhatt and G. Garber, Clinical and microbiological aspect of *Trichomonas vaginalis*. *Clinical Microbiology Revivs*. 11:300-317(1998).
45. H.Banneheke, R.Fernandopulle, U.Gunasekara, A.Barua, N. Fernando, and R.Wickremasinghe,Validation of wet mount microscopy against Trichomonas culture among women of reproductive age group in Western province, *Sri Lanka, Tropical Biomedicine*. 32(2): 192–197(2015).
46. D. Soper. Trichomoniasis: under control or undercontrolled, *American Journal of Obstetrics and Gynecology*. 190(1):281-290(2004).

دراسة وبائية عن طفيلي المشعرة المهبلية *Trichomonas vaginalis* بين النساء المراجعات لمستشفيات محافظة البصرة

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الخلاصة

تم جمع 600 عينة من الإفرازات المهبلية والبول من النساء اللواتي زرن مستشفى البصرة التعليمي ومستشفى البصرة التعليمي للولادة والطفل ومستشفى الفيحاء في محافظة البصرة جنوب العراق بالإضافة إلى بعض العيادات الطبية الخاصة خلال الفترة الممتدة من شهر كانون الثاني 2019 حتى كانون الأول 2019. تم استخدام تقنية تشخيصية واحدة لكل عينة متمثلة بالفحص المجهرى (التحضير الرطب) أوضحت نتائج الدراسة أن معدل انتشار الإصابة الكلي بين النساء بلغ (1.6%) وان ظهور الإصابة كان بين النساء غير المتزوجات فقط، كما سجل أعلى معدل إصابة في النساء غير الحوامل وتبين وجود اختلافات موسمية كبيرة في الإصابة بالطفيلي، اذ تبين ان أعلى نسبة إصابة ظهرت في شهر ايلول بلغت 3.4 % ، بينما لم تظهر هنالك فروق معنوية في معدلات $p \leq 0.05$ في انتشار الإصابة حسب العمر واستعمال موانع الحمل والوظيفة والسكن و التعليم والحالة الاقتصادية اما بالنسبة للدالة الحامضية والاعراض السريرية فكانت الفروق معنوية .

الكلمات المفتاحية : المشعرة المهبلية ،نسبة الإصابة ، علم الاوبئة ،النساء ،التحميل الرطب