Immunological Diagnosis for Trichomonasis in Women in Al-Muthanna Province

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Abstract This study was carried out in Al-Muthanna province during the period from October 2015 till April 2016 to detect *Trichomonas vaginalis.* A total of (220) blood and vaginal swab were taken from women aged between (20-45) Years. And it examined by Microscope examination and ELISA assays. The results were divided based on age, a number of children, the residence area, education level, take contraceptives and repeat secretions .the result of the present study showed that the higher percentage of *T. vaginalis* infection in age group (20-25) which was36.23% while the lower percentage in age group (41-45) which was10.87% , A number of children the higher percentage in number of (3) children were (24.64%) while the lower percentage were in number of five children were (13.04%) , the residence area the higher percentage of infection in rural regions than urban regions were 77.54 % and 22.46 % respectively, The present study showed that the highest percentage in not to use contraceptive while the lowest percentage was in use contraceptive which was 85.51%,14.49% respectively, The present study showed that the highest percentage was in Unenlightened women while the lowest percentage was in Educated women at a rate was 73.19% ,26.81 %, respectively, The present study showed that the highest percentage was in repeat of the secretion while the lowest was in none of repeat of the secretion at a rate was 92.75% ,7.25% respectively. The control samples were diagnosed in the ELISA technique and no parasitic infection was recorded for all indicater.

Keywords :*T*richomonas, vaginalis ,ELISA assays

1. Introduction

Trichomonas vaginalis is an anaerobic, flagellated protozoan parasite and the causative agent of trichomoniasis. Trichomonas vaginalis infect the urogenital tract of a human, It is one of the most common causes of non-viral sexually transmitted diseases in the world [1].Trichomoniasis has important medical, social, and economical implication[7]. It is the most common pathogenic protozoan infection of human in industrialized countries[11].

Infection rates between men and women are similar with women being symptomatic, while infections in men are usually asymptomatic, In women, common symptoms include vaginal discharge and vulval irritation. Complication of T.vaginalis infection can occur in untreated women and include endometritis, infertility and cervical erosion [9]. in pregnant women ,T.vaginalis infections can lead to severe complication including premature rupture of membranes[10]. preterm deliveries and low-birth-weight infants

[13].Transmission usually occurs via direct, skin-to-skin contact with an infected individual, most often through vaginal intercourse, the WHO has estimated that 160 million cases of infection are acquired annually worldwide[5] .Assay (ELISA) technique, This test is used to diagnosis Trichomonas vaginalis in serum samples, Using a whole-cell antigen antibody to Trichomonas vaginalis was measured by an enzyme-linked immune sorbent assay (ELISA), has been used to study and diagnose many parasitic diseases and has proved to be a rapid and sensitive technique have developed an ELISA for detecting antibodies to T. vaginalis and have found IgG and IgM antibodies in the sera [12].

2. Materials and Methods

2.1.Patients A total of 200 women suspected of T.vaginalis, and 20 control of women, aged between 20-45 years old, clinically diagnostic by gynecological physician as infectious vaginitis with discomfort, itching ,redness ,fishy odor and abnormal discharge in vagina, who attended consultation clinic at teaching during the period from October 2015 to April 2016,Hospitals in Al- Muthanna Province from the Education Maternal and children teaching hospital province and healthy center and outpatient department then it examined by microscope and ELISA technique.

2.2.Enzyme linked immuno sorbent assay (ELISA)

This assay was performed by using two kits, one for detection of IgG antibodies, and the other for detection of IgM specific antibodies against *T. vaginalis* antigen in the patient's serum.

3.Results and Discussion

3.1. ELISA diagnosis

When used ELISA technique to measure antibodies (IgM and IgG) found in most sample (146 samples) have infection (positive) and there are no significant difference between (IgM and IgG),So it has been integrated into a table and divided by (age, number of children, residence area, repeat of secration, education and contraception).

3.1.1.The infection percentage of *T. vaginalis* by ELISA diagnosis according to age groups

Table (3.1)Show the infection percentage of *Trichomonas vaginalis* by ELISA diagnosis according to age group the highest rate in age group (20-25) (36.23%) and lowest rate in age group (41-45) (10.87%) , and there are significantly differences by sing Chi-square analysis($P \leq 0.01$). this result agree with [8], Baghdad /Al-Karkh, has been found the highest rate infection in young age (16-25 years) so the high incidence of infection occurs between the ages of greatest sexual activity . At this ages (reproductive age) the estrogen hormone level is higher than other ages so that vaginal environment more suitable for the growth of *T. vaginalis* Whereas the lowest infection rate showed at

old ages of (46-55) years, this may be related to the menopause, during this time, there are fluctuations in the amount of estrogen production in the body. Also, the pH begins to fluctuate back and forth causing an imbalance. Glycogen and lactic acid production also begin to dwindle, all that changes in the vaginal environment lead to lack the suitable condition for *T.* vaginalis growth

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Table (3.1):The infection percentage of *Trichomonas vaginalis* by ELISA diagnosis according to age groups

Age groups	**Patients**		**Control**
	Number	**Percentage**	**Number**
20-25	50	36.23%	10
26-30	28	20.29%	6
31-35	27	19.57%	2
36-40	18	13.04%	1
41-45	15	10.87%	1
Total	138	100%	20

$x^2 = 28.3, df = 3$

$p < 0.01$

3.1.2.The infection percentage of *T.vaginalis* by ELISA diagnosis according to number of children

Table (3.2) show the infection percentage of *T. vaginalis* by ELISA diagnosis according to number of children , the highest rate in number of three children 24.64% and lowest rate in number of five children 13.04% and there are significantly differences by using (Chi-square) analysis($P \leq 0.01$).

Table (3.2):The infection percentage of *T.vaginalis* by ELISA diagnosis according to number of children

Number of Children		Patient	Control
	Numb	Percenta	Number
1	29	21.01%	15
2	27	19.57%	4
3	34	24.64%	1
4	30	21.74%	0
5	18	13.04%	0
Tota	138	100%	20

3.1.3. The infection percentage of *T. vaginalis* by ELISA diagnosis according to the living area

Table (3.3) reveals the distribution of trichomonas seropositivity in women in rural and urban area by using ELISA technique in AI-Muthana province, the highest rate seropositivity in rural area (77.54%) and lowest rate in urban area (22.46%), and there are significant differences by using (Chi-square) analysis ($p \leq 0.01$). the present study agrees with [3],Hue city, Vietnam, has been noted the highest rates in a rural area(26.6%) and the lowest rate in the urban area 14.6%.

Also, [2], Mosul City has been found higher infection rate in the rural area and lower infection rate in the urban area. The difference was also significantly among geographic areas (urban vs. rural) probably because of the difference in lifestyle between the city and countryside

Table (3.3): The infection percentage of *Trichomonas vaginalis* by ELISA diagnosis according to the living area

Living area	Patients		Contr
	Number	Percentage	Number
Rural	107	77.54 %	6
Urban	31	22.46 %	14
Total	138	100%	20

3.1.4. The infection percentage of *T. vaginalis* by ELISA diagnosis according to use or not to use contraceptives

Table (3.4) show the percentage of infection with trichomoniasis in women according to use or not use contraceptives by using ELISA technique, the highest rates of infection with trichomoniasis in Not to use contraceptives (85.51%) and the lowest rates of infection in use contraceptives (14.49%),and there are significant differences by using (Chi-square) analysis as($P<0.01$). These results may be due to the effect of estrogen & progesterone which can enhance or suppress the growth of vaginal flora and influence transmission of *T.vaginalis*.

3.1.5. The infection percentage of *T. vaginalis* by ELISA diagnosis according to educational level

Table (3.4): The infection percentage of *Trichomonas vaginalis* by ELISA diagnosis according to use or not to use contraceptive

Contraceptives	Patients		Control
	Number	Percentage	Number
With use	20	14.49 %	0
Without use	118	85.51%	20
Total	138	100%	20

$x^2 = 49, df = 1$

$p < 0.01$

Table(3.5)reveals the distribution of *trichomonas vaginalis* seropositivity according to educational level by using ELISA technique ,The highest rates of infection with trichomoniasis in unenlightened as (73.19%),and the lowest rates of infection in educated level as (26.81%) and have significant differences by using (Chi-square) analysis($p \leq 0.01$). the present study agree with [3], Hue city, Vietnam, has been noted the highest rates in low level education 17.6% and the lowest rate in high level education 22.2%.

Table (3.5): The infection percentage of *Trichomonas vaginalis* by ELISA diagnosis according to educational level

Educational Level	Patients		Control
	Number	Percentag	Number
Educated	37	26.81 %	13
Unenlightened	101	73.19%	7
		1	

3.1.6.The infection percentage of *T. vaginalis* by ELISA diagnosis according to repeat of the secretion

Table (3.6)show the infection percentage of trichomonas vaginalis by ELISA diagnosis according to repeat of the secretions, The highest rates of infection with trichomoniasis in YES of repeat of the secretions(92.75%) and the lowest rates of infection in NO of repeat of the secretions(7.25%) and have significant differences by using(Chi-square) analysis ($p \leq 0.01$). the present study agree with [4], Vietnam , the highest rates of infection with trichomoniasis in repeat of the secretions31.3% and the lowest rates of infection in not of repeat of the secretions13.3%. the present study agree with [4],Vietnam , the highest rates of infection with trichomoniasis in repeat of the secretions31.3% and the lowest rates of infection in not of repeat of the secretions13.3%.

Table (3.6): The infection percentage of *T. vaginalis* by ELISA diagnosis according to repeat of the secretion

Repetition of the secretions	Patients		Control
	Number	Percentage	Number
Yes	128	92.75%	0
No	10	7.25%	20
Total	138	100%	20

$x^2 = 73.96, df = 1$
$p<0.01$

5.References

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