Trichomoniasis Among Females With Vaginal Discharge in Baghdad Medical City

Original Article

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Summary:

Background:

Trichomonas vaginalis is a pear shaped parasite, with a short undulating membrane, lined with a flagellum and four anterior flagella. It is one of the most common organisms causing infection in the female genital tract, which is normally limited to vulva, vagina and cervix. It doesn't usually extend to the uterus. The mucosal surface may be tender, inflamed and covered with a frothy yellow or cream colored discharge.

Aim:

To evaluate the infection rate of *Trichomonas vaginalis* among females complaining of vaginal discharge with or without pruritis vulvae, and to isolate the parasite by different laboratory methods, such as wet mount method, culture on special media and staining by special stains e.g. Leischman's stain, Giemsa's stain and Papanicolaou's stain.

Methods:

The study was conducted in the period from November 1992 to August 1993 on 480 female patients presented with vaginal discharge with or without prurits vulvae attended the Gynecological and Antenatal Outpatient Clinics in Medical City in Baghdad, compared to 50 females complaining of gynecological problems other than infection attended the same clinic.

Investigations carried out during this work include:

Wet mount examination ,Culture on artificial media ,Examination of fixed stained smears with: Gram's stain , Leishman's stain ,Giemsa's stain, Papanicolaou's stained smear.

Results:

Among 480 females presented with vaginal discharge with or without pruritis vulvae, an infection rate of (19.16%) was reported. Females subjected to this study were classified into different groups, non-diabetics, diabetics, workers in hospital and control group, giving an infection rates of (20.5%), (2.5%), (33.33%) and (8%) respectively. Evaluation of the rate of infection among different age groups revealed that the highest infection rate was in the ages of greatest sexual activities from (14-39) years old. The signs of *Trichomonas vaginalis* infection were those of vulvar, vaginal and cervical erythemae. The presenting symptoms were those of discharge, discharge & itching, discharge & dysuria, itching, discharge & itching & dysuria. However (12.5%) of the patients were asymptomatic. The discharge was of different characters and the patients presented in different stages of the disease.

Conclusion:

Trichomonas vaginalis is a common cause of vaginits , most frequently seen at the ages of greatest sexual activity where the patient usually presents with vaginal discharge of different character which may or may not be associated with itching.

It has been noticed that clinical judgement alone is unsatisfactory for the diagnosis of trichomoniasis and it must be aided by laboratory examination.

Key Words: *Trichomonas vaginalis*, vaginitis, trichomoniasis.

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Introduction:

Vaginal discharge is an abnormal vaginal secretion which is a very common gynecology complaint and is usually associated with vaginitis,oneofthemost common causes of vaginitis is *Trichomonas vaginalis* (1,2,3).

Trichomonas vaginalis is a pyriform, fusiform or oval parasite having four flagella of equal length and a fifth flagellum directed posteriorly along the free edge of an undulating membrane. The organism is enclosed in a delicate pliable membrane, with a single nucleus found in the anterior portion of the body. The parasite is seen only in Trophozoite stage, it is a motile organism moves with a characteristic rotating motion (4). Different studies have been conducted to detect the infection rate of this parasite (5,6,7,8).

Patients and Methods:

The study was conducted in the period from November 1992 to August 1993 on 480 female patients complaining of vaginal discharge with or without pruritus vulvae. The patients were subjected to careful examination using various methods for the detection of the parasite from the infected organs.

The group of population included in this study:

1. Three hundred sixty eight females who attended the Gynecological Out Patients Clinic in Baghdad Medical City. They were complaining of vaginal discharge with or without pruritus vulvae.
2. Forty diabetic females attended the same Clinic and were complaining of pruritus vulvae with or without vaginal discharge.
3. Sixty six females attended the Antenatal Out Patient Clinic in the same hospital and were complaining of vaginal discharge with or without pruritus vulvae.
4. Six female working as assistant laborers or workers at the Gynecological and Obstetrical Department. They were responsible for changing the bed sheets' after "labor or minor operation Tike curettage and cleaning gloves or other instruments which are used for different purposes in the department.
5. Fifty female representing the control group were complaining of gynecological troubles other than infection. Full informative history was taken directly from the patient and information was arranged in an informative clearly detailed formula sheet.

The females were then examined gynecologically in lithotomy position under a good source of light (9).

Swab collection:

Through the sterile vaginal speculum two samples of the vaginal discharge were taken from the posterior fornix of the vagina by mean of sterile cotton swab, one was immersed immediately into a sterile test tube containing I ml of sterile normal saline covered with sterile cotton plug (10&1l), this tube was kept warm as far as possible till the time of examination. The second swab was put in a sterile empty test tube which was covered with sterile cotton plug as well.

Swabs with transport media were used when available. In virgins the examination was restricted to the discharge which appeared at the vaginal introitus by the aid of sterile cotton swab (9).The sample in the sterile test tube containing normal saline or that taken by the transport swab were examined for the presence of *Trichomonas vaginalis* by:

1. Wet mount examination.
2. Culture in artificial media / ready made Difco-Bacto Kupferberg Trichomonas medium.

A smear was made from the second vaginal swab and stained with the following stains to be examined as fixed stained smears.

A. Gram's stain.
B. Leishman's stain.
C. Giemsa's stain.
D. Papanicolaou stained smears.

Sample was taken with Ayre wooden spatula.

Results:

Among 434 female patients (excluding the diabetics and those who are workers in hospital). 89 patients showed positive results of trichomonal infection giving an infection rate of (20.5%).

In 40 diabetic patients who attended the gynecological outpatient clinic and were complaining of pruritis vulvae with or without discharge, *T.vaginalis* was reported in only one of them (2.5%). In another group of patients, comprising of 6 workers in the

Gynecological and Obstetrical Department, T. vaginalis was recorded in two of them (33.33).

In the control group (50 females) who were complaining of gynecological complaints other than infection like cystocele or fibroid , 4 of them showed positive results of vaginal tricomoniasis giving an infection rate of (8%).(table 1).

As shown in table two, different age groups were subjected to this study ranging from (14-70) years. The youngest and oldest patients showing infection were 17 and 50 respectively, with the highest infection rate among females in the ages of greatest sexual activity.

The stages of vaginal trichomoniasis vv-ere studied as shown in table (3).

Patents were divided into 3 groups according to the duration of complaints. Those complaining of symptoms of short period of time (less than one month) were considered to be in the acute stage and those complaining of recurrent attacks of pruritis or vaginal discharge usually of duration more than I month-1 year or more were considered them as chronic, while those discovered to harbor Trichomonas vaginalis during examination without any history were considered as asymptomatic. Signs and symptoms of vaginal trichomoniasis and the characters of vaginal discharge were studied as well, as shown in tables 4, 5&6 respectively.

Table 1: Frequency distribution of cases with *Trichimonas vaginalis* in different groups of population

The Examined Groups	The Examined Number	Positive Cases	Percentage %
Patients with complaints (non-diabetics)	434	89	20.5
Diabetics with complaints	40	1	2.5
***Workers in hospital**	6	2	33.33
Control Group	50	4	8
Total excluding the Controls	480	92	19.16

- Small Sample.

Table 2: Frequency distribution of cases with vaginal trichomoniasis in different age groups

Age Groups	Patients			Controls		
	Total number examined	Number of positive cases	Percentage	Total number examined	Number of positive cases	Percentage
14-19	20	4	20	4	0	0
20-29	192	40	20.83	16	0	0
30-39	182	38	20.87	16	2	12.5
40-49	62	8	12.9	4	2	50
50-59	18	2	11.11	8	0	0
60-70	6	0	0	2	0	0
	480	92		50	4	

Table 3: Stages of the disease among 96 females infected with *Trichomonas vaginalis* (including the control group)

Stages of Infection	Number	Percentage %
Acute Stage	57	59.375
Chronic Stage	27	28.125
Asymptomatic	12	12.500
	96	100

Table 4: signs of vulvar, vaginal and cervical erythema in 95 positive cases with *Trichomonas vaginalis* (including the control group)

Clinical Signs	Number	Percentage %
Vulvar erythema	35	36.45
Vaginal erythema	27	28.12
Cervical erythema	6	6.25

Table 5: The symptoms presented in 96 patients infected with *Trichomonas vaginalis* (including the control group)

Symptoms	Number of patients infected with *Trichomonas vaginalis*	Percentage %
Discharge only	12	12.5
Discharge and itching	30	31.25
Discharge and dysuria	10	10.41
Itching	4	4.17
Discharge & itching & dysuria	28	29.17
Asymptomatic	12	12.5
Total	96	100

Table 6: Characters of vaginal discharge among 96 females infected with *Trichomonas vaginalis* (including the control group)

Character of vaginal discharge	Number of patients	Percentage
Frothy discharge	48	50
White to gray creamy discharge	27	28.13
Purulent homogenous (faint yellow discharge)	10	10.41
Yellow to green thick discharge	7	7.29
Homogenous clear colorless discharge	4	4.17
Total	96	100

Discussion:

This study was conducted to detect the infection rate of *Trichomonas vaginalis* among females with vaginal discharge, which was (19.16%) harboring the parasite, acting as the main reservoir and transmitter to other people suggesting that it is a real problem which should not be neglected and must receive attention from health authorities.

Similar results were obtained by other workers (12, 13). On the other hand lower infection rates were reported by others (5,6,14).

Among different age groups subjected to this study, the highest infection rate was found among patients with complaints which could be compared with those observed by Bro in 1989(15).The high infection rate among six workers investigated in this study considered to be unreliable and cannot be accepted due to the small available number of workers checked. However such infection rate might reflect the level of sanitation and bad protection measures taken by such workers against infection and they may act as a source of transmitting the parasite to the inpatients. This group was investigated by others as well (16).

Concerning different age groups examined in this study, it has been noted that Trichomonas vaginalis infection occur at ages of greatest sexual activity, this may agrees with many workers (9,12,13).

Stages of the disease were investigated in this study which may be compared with those obtained by other investigators (17).It is to be noted here that chronic and asymptomatic type of disease are very important from epidemiological point of view, for these patients are the main source of the spread, of the parasite and these two types may exacerbate at any time producing an acute picture which may be mistaken as recurrent infection (17&18).

During physical examination, signs of vulvar, vaginal and cervical erythema were observed, which were similar to the signs reported by Wolner-Hanssen et al in 1989 (11).The typical frothy discharge was found in (50%) of the infected cases, other types of discharge were also noted. Fouts and Kraus in 1980 reported different types of discharge as well (17). It may be worthwhile, however to compare our study with those investigated the presenting symptoms in females infected with *Trichomonas vaginalis* (11, 17).

It has been agreed by many workers that clinical judgment alone was unsatisfactory for the diagnosis of trichomoniasis and it must be aided by laboratory examination (19j.Some investigators stated that unstained wet preparation were quite useful for the diagnosis

of trichomoniasis and they found that culture of Trichomonas *vaginalis* was not much reliable than wet mount preparation (20). On the contrary other investigators found that the culture method is superior to the wet mount method (21). It is agreed by many workers that culture and wet mount together give better results than each one alone, and the two methods are more effective than the stained smear method (22).

Our results showed that culture method was superior to the wet mount method and both methods together were superior to the cytological methods.

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