



Frequency of *Trichomonas Vaginalis* Among Women Having Vaginal Discharge, in Izmir, Turkey

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Introduction: Trichomoniosis is one of the most common sexually transmitted diseases. In order to determine the incidence of *Trichomonas vaginalis* infection in Izmir, Turkey, vaginal smears were obtained from posterior fornix of the vagen of women who had vaginal discharges.

Materials and Methods: Vaginal specimens were obtained from the posterior fornix of the vagina of 1613 women. The smears were examined by Wet-mount and Giemsa stained preparations and CPLM cultivation methods.

Results: *T. vaginalis* was present in 248 of 1613 smears (15.37%). We detected the parasite in 212 patients by three methods. We could detect the parasite in 36 patients by only CPLM medium cultivation method.

Conclusion: In this study, we compared our results with the results of previous studies in Turkey. The higher frequency than some studies from the other countries was attributed to the low socio-economic and cultural levels of these patients.

Key Words: *Trichomonas vaginalis*, vaginal discharge, vaginal smear

İzmir'de Vaginal Akıntılı Kadınlarda *Trichomonas Vaginalis* Sıklığı

Giriş: Trichomoniosis, seksüel yolla bulaşan hastalıkların en yaygın olanlarından birisidir. İzmir de *Trichomonas vaginalis* insidansını belirlemek için vaginal akıntısı olan kadınların vagen arka forniksinden vaginal akıntı alındı.

Materyal ve metod: 1613 kadının vagen arka forniksinden alınan vaginal örnekler direkt olarak, Giemsa yöntemiyle boyayarak ve CPLM besiyerine ekim yapılarak incelendi.

Bulgular: 1613 vaginal örneğin 248 (%15.37)'sinde *T.vaginalis* saptandı. Her üç yöntemle 212 hastada parazit bulunurken, 36 hastada sadece CPLM kültür yöntemi ile saptanmıştır.

Tartışma: Bu çalışmada, trichomoniosis insidansı Türkiye'de daha önce yapılmış olan çalışmaların sonuçları ile karşılaştırıldı. Çalışmamızda elde edilen prevalansın diğer bazı ülkelerde yapılmış olan çalışmalarda elde edilenlerden daha yüksek olması, hastaların düşük sosyo-ekonomik ve kültürel düzeyine bağlanmıştır.

Anahtar kelimeler: *Trichomonas vaginalis*, vaginal akıntı, vaginal simir

Trichomoniosis is one of the most important sexually transmitted disease in the world. *Trichomonas vaginalis* commonly causes vaginitis and perhaps cervicitis in women, as well as urethritis in both sexes.¹ Symptomatic women with trichomoniosis usually complain of vaginal discharge, vulvovaginal soreness and irritation.

Trichomoniosis can be both acute and chronic. In acute cases, vaginal secretions have been described as greenish or yellowish, sometimes frothy and foul smelling. The vaginal mucosa can be diffusely hyperaemic with bright red punctuate lesions; it can be patchily hyperaemic and not infrequently quite normal in appearance.²⁻⁴ Punctuate haemorrhages including the so-called strawberry cervix can be observed by vaginal examination. In chronic cases

discharge with or without symptoms can occur.^{5,6} *T. vaginalis* is usually transmitted sexually from infected men and women. The parasite can survive for several hours in moist environments, including moist cloths. A relationship between this infection and cervical carcinoma has been suggested.³⁻⁶ In pregnant women, trichomonads may be associated with the premature rupture of membranes, premature delivery, and delivery of low-birth weight infants.⁷

Trichomoniosis occurs in 66-100 % of female partners of infected men and 30-80 % of male sexual partners of infected women.^{4,6} Epidemiological studies of trichomoniosis suggest that this disease is seen in 5-10 % of women.^{4,8,9} Studies showed that the percentage of infection is about 6-71% in West Turkey.¹⁰

In this study, our aim is to discuss the frequency of trichomoniosis in İzmir and its surrounds and the diagnosis methods between this study and previous studies.

MATERIALS AND METHODS

Patients and diagnostic methods

In our study, *T. vaginalis* was searched in 1613 women aged between 16-49 years who were applied to Ege University, Medical Faculty Gynaecology outpatient clinic and İzmir Obstetric Hospital with vaginal discharge complaints. Vaginal smears were obtained through a vaginal speculum with sterile swabs from the posterior fornix of the vagina. All samples were examined by three methods; wet mount preparations, Giemsa staining and CPLM cultivation methods.

CPLM cultivation method

It was prepared by using 20 gr. bacto liver powder (Difco), 960 ml. ringer solution, 2.4 gr. cystein monohydrochloride, 32 gr. Peptone, 1.6 gr. Maltose, 1.6 gr. bacto agar (Difco), 0.7 ml. 10.5 % Methylene Blue, 2 ml. horse serum and 1000 U/ml. Penicillin G. Vaginal samples were placed in 2-5 ml of CPLM transport medium and these samples were examined at the Parasitology Laboratory of Ege University Medical Faculty. Vaginal discharge samples were immediately cultivated in CPLM media in sealed tubes. The cultivated materials were incubated at 37 °C and their microscopic examination was made after 24 and 48 hours.

Wet mount preparations

Vaginal swab sample was obtained after the insertion of the speculum. It was immediately touched to a

glass slide together with a drop of normal saline for the microscopic wet examination of *Trichomonas* in vaginal fluid. Fresh preparations were made in sterile 0.9% NaCl solution from the samples obtained from patients. The preparations were examined under the light microscope with a X20 and X40 objective.

Giemsa Staining Method

Spreading preparations were prepared using patients' materials of vaginal smears, abandoned to dry, stabilized with methyl alcohol for 3 minutes and stained with Giemsa stain (1 drop for ml). Approximately 25 minutes. The stained preparations were examined under the light microscope with oil immersion objective.

Statistical Analysis

Statistical analysis was performed with SPSS software package (Version 9.0 for Windows). For comparison of the groups independent samples Chi-square test was used. A probability value of $p < 0.05$ indicated a statistically significant difference.

RESULTS

Vaginal smears were examined from 956 women in İzmir Obstetric Hospital and 657 women in Ege University Medical Faculty Gynaecology outpatient clinic totally 1613 patients with vaginal discharge. 212 vaginal smears were positive (13.14 %) by wet mount examination and Giemsa staining method. 248 samples were positive (15.37 %) by CPLM cultivation method (Table 1).

There were numerical difference observed between CPLM cultivation and Giemsa staining / Wet-mount but the difference was not statistically significant ($p > 0.05$).

Table1. Comparison of three methods for the examination of vaginal smears.

Methods	Patients	
	Number	(%)
Wet-mount	212	13.14
Giemsa staining	212	13.14
CPLM cultivation	248	15.37

DISCUSSION

Trichomoniosis that infects the urogenital and reproductive organs in women and men and transmitted mainly by sexual contact is of a worldwide distribution. The infection may show diversities with respect to socio-cultural properties of

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the communities changing from a country to another from a society to another.¹¹

Trichomoniasis was detected from 1.7 to 7.3% in several studies from Australia, South America, Taiwan, Korea and some countries.^{8,9,12-17}

In our study the incidence of *T.vaginalis* was found to be 15.37%. The higher frequency than the other countries was attributed to the low social and cultural levels of these patients.

Our results showed that there is no significant difference between this and previous results. In West of Turkey the findings were 25.74% in 571 women and the other experimental findings were 71% and 6%. The epidemiological studies demonstrated that the incidence of *T.vaginalis* is 5-10% in last years.^{5,10}

In recent years, the using of condoms to prevent HIV transmission and use of metronidazole for bacterial vaginosis has not affected the transmission of Trichomoniasis.¹⁸ In detection of *T.vaginalis*, both microscopic examination and cultivating of the parasite are very important.^{19,20}

Microscopy and cultivation were compared for the diagnosis of *T.vaginalis*, and reported that although most of the positive results were found with microscopic methods, 9% omission were determined by cultivating methods.²¹

Our results showed that better performance was obtained by using of three methods; direct microscopy of wet mount preparations, examination of Giemsa stained preparations and cultivating method.

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