

## Clinical profile and sociodemographic aspects of trichomoniasis among females in the Western province of Sri Lanka

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*Sri Lankan Journal of Infectious Diseases* 2013 Vol.3(1);26-31

DOI: <http://dx.doi.org/10.4038/sljid.v3i1.4690>

**Key words:** *Trichomonas vaginalis*, sociodemographic aspects

### Abstract

The objective of this study was to describe the sociodemographic aspects, presenting symptoms and findings of clinical examination of laboratory confirmed cases of trichomoniasis. Cases of trichomoniasis were studied, focusing on the sociodemographic aspects and presenting symptoms and signs at clinical examination. There were 29 laboratory confirmed cases of trichomoniasis. The infection was prevalent in equal proportions in all age groups (36-45, 15-25, 26-35 years- 38%, 31%, and 31%). The majority (76%) were married. There were 35% house wives and 28% sex workers. Contraceptives were not used by 48%. Only 41% were symptomatic at the time of detection. Out of those with a vaginal discharge, 50% complained of greenish yellow discharge and 34% a whitish thick discharge. In addition to the discharge, 7% had itching. None of the patients who were positive complained of dysuria. Findings at the clinical examination were mostly different to the symptoms described by the patients. On examination, the majority (81%) of *T vaginalis* infected women had a serous vaginal discharge and 14% a greenish yellow discharge. Twenty eight percent of infected females did not have any discharge. Presence of typical symptoms or type of vaginal discharge on examination cannot be used as the sole criterion for the diagnosis of trichomoniasis. These results indicate that treatment of patients based on symptoms per se can lead to over usage of metronidazole. This also shows the importance of laboratory support to diagnose *T vaginalis* infection.

### Introduction

Trichomoniasis is the most common non viral sexually transmitted disease in the world. The World Health Organization estimates that the global incidence is 174 million cases per year, 44% (76.5 million) of which occur in South and South East Asia.<sup>1</sup> In the female,

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trichomoniasis is an infection of childbearing age. Although it often causes an inflammation of the vaginal epithelium and exocervix in women and the urethra in men,<sup>2</sup> inflammatory changes may be absent in some. During the past decade, *Trichomonas vaginalis* infection has been linked to a number of serious consequences. The correlation between trichomoniasis and increased risk of acquiring HIV has been firmly established.<sup>3</sup> This hypothesis makes diagnosis and treatment of trichomoniasis a matter of urgency. Vaginal trichomoniasis has been linked with premature rupture of membranes, low birth weight, premature delivery, stillbirth, and neonatal death.<sup>4-5</sup> *T vaginalis* can act as a predictor for cervical neoplasia.<sup>6</sup> A significant risk of pelvic inflammatory disease (PID) has been documented in studies done among patients with Trichomoniasis.<sup>7-8</sup> Soper<sup>9</sup> states that infection with *T vaginalis* can reduce the chances of conception for both females and males and should be considered in the diagnostic work up of infertile couples.

Trichomoniasis is a disease that has been largely under diagnosed and under treated by the medical community. Studies carried out in Sri Lanka show prevalence of disease ranging from 4.4%-7.2% in clinic based populations.<sup>10-12</sup> Women show more symptoms than males when infected, although the asymptomatic group may vary from 50% to 85%.<sup>4</sup> The sociodemographic factors of patients diagnosed as having trichomoniasis is important in planning preventive actions. The knowledge of symptoms of *T vaginalis* amongst the Sri Lankan female population would be of advantage during treatment provided by the Health care providers, especially in instances where laboratory diagnosis facilities are unavailable. The objective of this study was to describe the sociodemographic aspects, presenting symptoms and findings at clinical examination of laboratory confirmed cases of trichomoniasis selected from females attending several health care clinics in the Western Province.

## Methods

A total of 601 females of 16-45 years attending sexually transmitted disease clinics, well women clinics or gynaecology clinics at the National STD and AIDS control programme Colombo 8, Colombo South Teaching Hospital and institutional health clinics conducted by various private and government institutions in the western province were screened for *T vaginalis*, irrespective of the presence or absence of symptoms for a period of 18 months in 2007-2009. A consecutive sample of new patients was selected and those who refused vaginal examination, were on antibiotics or having any form of vaginal bleeding were excluded. High vaginal swabs (HVS) were obtained from all 601 participants. Microscopy of saline wet smear and inoculation of *Trichomonas* liquid culture (“*Trichomonas* modified CPLM medium base”) were performed immediately at the bed site for the total 601 HVS samples. The immunochromatographic technique (ICT) for *Trichomonas* antigens (OSOM<sup>®</sup> *Trichomonas* rapid test) was carried out on only 100 out of 601 HVS’s due to financial constraints. The diagnosis of trichomoniasis was made when at least one of the laboratory tests showed a positive result.

Laboratory confirmed cases of trichomoniasis were then studied focusing on the sociodemographic aspects and presenting symptoms and signs at clinical examination. Informed written consent was obtained from the patients using a subject consent form. Their sociodemographic aspects and symptoms were collected using a pre tested, semi structured interviewer administered questionnaire administered by a medical doctor. The questionnaire consisted mainly of close-ended questions and contained components such as background information, symptoms, sexual history and past obstetric history. Each participant was given

enough privacy to answer the sensitive personal questions. The examination findings were recorded from the doctor's notes. In all patients, vaginal examination had been performed inserting the self retained bivalve cuscus speculum to visualize the cervix and the vaginal walls.

The study was approved by the Ethical Review Committee of Faculty of Medical sciences, University of Sri Jayewardenepura.

## Results

There were 29 laboratory confirmed cases of trichomoniasis after screening 601 females in the age group 16-45 years living in the Western Province. The youngest and oldest patients were 18 and 45 years old respectively (mean 31.48, SD-8.875). Trichomonas was detected by at least one laboratory test in 38% of 36-45 year old females and in 31% of the 15-25 and 26-35 year old women. Marital status and occupation of the positive patients are given in Table 1.

Cross tabulation of marital status and occupation showed that married females consisted of 32% each of sex workers and unemployed/house wives. The remaining (36%) married females were employed in other sectors (as shown in table 2).

**Table 1: Socio-demographic characteristics of *T vaginalis* positive patients**

Socio-demographic characteristic	Participants	
	Number	%
<b>Marital status</b>		
Single	4	14
Married	22	76
Separated/widow	3	10
<b>Occupational categories<sup>α</sup></b>		
Manufacturing	2	7
Trade, mechanics-motor and household	1	3
Public administration, defence	2	7
Education	1	3
House hold employed	3	10
Labour work	2	7
Sex worker	8	28
House wives	10	35
<b>Total</b>	<b>29</b>	<b>100</b>

<sup>α</sup> The occupations were classified by the Standard Occupational Classification for Sri Lanka by Industry group based on ISIC third revision-Department of Census and Statistics (2007)

All the females positive for *T vaginalis* were heterosexuals. The last sexual exposure was less than 3 months in 58.6% and more than 4 months in 41.4 %. More than 1 partner was noted in 24% of the patients . Usage of contraceptives was higher (73%) among sex workers than non sex workers. There were 48% who were not on any form of contraceptives. The majority of the patients (86%) had 1 to 4 pregnancies. Ten percent of the patients had never been pregnant and 4% had more than 4 pregnancies.

**Table 2: Cross tabulation of occupational category and marital status**

		Occupational category * Marital status Crosstabulation			Total	(%)
		Marital status (%)				
		Single	Married	Separated/widow*		
Occupational category	Manufacturing	0 (0)	1 (4)	1 (33)	2	(7)
	Trade, mechanics-motor and household	1 (25)	0 (0)	0 (0)	1	(3)
	Public administration, defence	0 (0)	2 (10)	0 (0)	2	(7)
	Education	0 (0)	1 (4)	0 (0)	1	(3)
	House hold employed	0 (0)	3 (14)	0 (0)	3	(10)
	Labour work	0 (0)	1 (4)	1 (33)	2	(7)
	Sex workers	1 (25)	7 (32)	0 (0)	8	(28)
	Unemployed	2 (50)	7 (32)	1 (33)	10	(35)
<b>Total</b>		4 (100)	22 (100)	3 (100)	29	(100)

\*% has been calculated to the closest decimal.

Of the study population, 28 % of infected females had a history of abortion. None of the patients had a history of still birth or sub fertility. Only 28% of patients positive for *T vaginalis* had a past history of vaginal discharge. The majority (72%) had their first known episode of vaginal discharge during the study period. Only half of the patients who suffered from vaginal discharges had sought treatment on previous occasions. Out of all patients, 31% had a history of visiting a sexually transmitted disease clinic with 69% of the infected patients never attending a STD clinic.

When symptoms were analysed, only 41% of patients had some kind of a complaint to seek medical advice, the others being incidental findings. In addition to the discharge, 7% of the patients had itching. None of the patients complained of dysuria. However, the type of vaginal discharge detected on examination by the clinician was different to the complaints made by the patients (Table 3).

**Table 3: Type of vaginal discharge as described by the patients (symptom) and detected by the clinician (sign)**

Type of vaginal discharge	Number (%) of participants			
	As a symptom		As a sign	
<b>Present</b>	12	(41)	21	(72)
<b>Absent</b>	17	(59)	08	(28)
Whitish thick discharge	04	(34)	01	(5)
Greenish yellow discharge	06	(50)	03	(14)
Serous discharge	01	(8)	17	(81)
Normal discharge	01	(8)	00	(00)

## Discussion and conclusion

Trichomoniasis is an indicator of high risk sexual behaviour.<sup>4</sup> The study shows that *T vaginalis* infection is prevalent in equal proportions in all age categories indicating that sexual activity is not age dependent. When the occupation of these individuals was considered, apart from the house wives, the proportion of the disease was highest among the

commercial sex workers. Interestingly, the house wives were the category that had the highest incidence of the disease.. When the occupation of these patients were considered, they ranged from beggars to teachers to corporate managers. Three of the 29 positive patients were domestic helpers. Trichomoniasis was higher among married females. This marital category consisted of sex workers and house wives in equal proportions. Hence it is possible that house wives are getting the infection through their married partner or are sexually promiscuous. In Sri Lanka, where pre marital sex is less accepted, it was heartening to note that only 14% of unmarried females were positive. With regards to the sexual history, a direct question on the frequency of sexual encounters was not included considering the difficulty in retrieving correct information on such personal matters in the Sri Lankan social setting. We could not therefore measure the level of sexual activity objectively. Similarly, assessment of the level of personal hygiene was not possible due to the fact that patients make every possible attempt to be at their maximum cleanliness on the day of their visit to the doctor for gynaecological examination.

There are many studies which have demonstrated an association of trichomoniasis with complications such as pre term birth, pre mature rupture of membranes.<sup>10-11</sup> There is contradictory evidence of the association of tubal infertility with previous episodes of trichomoniasis.<sup>12-13</sup> Even though we had more than quarter of our sample giving a history of abortion, we did not attempt to prove or disprove such associations as the positive sample was small. Large studies with control groups are needed to show such associations and future studies are recommended to look for such associations.

When considering the symptoms of patients, it seems that all patients did not report a 'typical' type of discharge for trichomoniasis. There was also a difference between the description of the discharge of the patient and clinician. The majority of patients (95%) positive for *T vaginalis* had a serous or greenish yellow discharge on clinical examination. If the diagnosis was made on the presence of symptoms alone, 59% of patients would have been missed. Diagnosis based on clinical examination findings would overlook 28%. Thus the presence of symptoms alone is the least suitable criterion to diagnose *T vaginalis* infection. It was also seen that disregarding the atypical discharges or attributing them to other infections without laboratory confirmation can lead to missing of trichomoniasis cases. This also shows the importance of laboratory support to diagnose *T vaginalis* infection.

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