PREVALENCE OF *TRICHOMONAS VAGINALIS* IN NEPALESE WOMEN

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A prospective analytical study among women with symptom vaginal discharge, pruritus, itching, burning; visiting at Tribhuwan University Teaching Hospital, Gynaecology Department were examined during the month of August-October & March. A total of 100 samples of vaginal discharge from 100 women were collected and microscopical examination was done preparing the wet mount. This study revealed that among 100 cases total 3% incidences of *T. vaginalis* were found. Infection was common among women from rural area, illiterate and with copious discharge. All the cases were observed among the most active reproductive age group 30-31 years.

Keywords: *Trichomonas vaginalis,* vaginal discharge, STDs.

INTRODUCTION

Nepalese women communities compared with the male communities are more prone to different diseases especially STDs like gonorrhea, syphilis, trichomoniasis, candidiasis including AIDS which have become a great challenge in developing countries like Nepal due to several socio-economic and cultural factors. The prevalence of STDs besides AIDS has further made the women communities more susceptible and has taken the vigorous form. Vaginal discharge is a common symptom of female genital tract infection in women and it is the second most gynaecological problem after menstrual disorder (Yudkin, 1988).

A large variety of organisms can infect the female genital tract and in total account for considerable suffering and morbidity. Some such as Candida infections trichomoniasis and Gardnerella are extremely common and may cause significant discomfort with no serious sequelae. Others such as gonorrhea and *Chlamydia* are major causes of female infertility and others such as Mycoplasma infection are implicated in spontaneous abortion viruses principally the human papilloma viruses appear to be involved in the pathogenesis of vulvar and cervical cancer (Robins, 1974).

Excessive vaginal discharge, which is purulent or abnormal in character, is a common complaint especially in sexually active women and accounts for a large proportion for genital tract infection. A wide range of organisms may be associated with leucorrhea but the roles of some are uncertain. In acute vaginitis the squamous epithelial lining of vaginal wall is invaded and inflamed causing discomfort, pruritus or pain in addition to discharge. It is mostly caused by *T. vaginalis* or *Candida albicans* or other yeasts such as *Torulopsis glabrata.* Infection with *T. vaginalis* is the most common form

of vaginitis. It is found in approximately 50% of women complaining vaginal discharge (Cartney, 1989).

Trichomoniasis is the most common curable sexually transmitted infection. The World Health Organization estimates that 170 million new infections occur each year (Gerbase *et al.* 1998). With the exception of human papilloma virus, infection with *T. vaginalis* is the most common sexually transmitted infection in USA accounting for 1/3rd of an estimated 15 million annual incident cases of sexually transmitted infections each year (Cates, 1999).

MATERIALS AND METHODS

A prospective analytical study was carried out to analyse the prevalence of *T. vaginalis* in women in Tribhuvan University Teaching Hospital Maharajgunj, Kathmandu, Nepal. 100 women complaining of vaginal discharge attending gynaecology OPD of TUTH were considered for the study during the months of Aug-Oct and March. Basic information and specific history was recorded from the selected women before they were subjected to clinical examination. Per speculum examination was done. Vaginal swab was taken from posterior fornix of vagina with two cotton tipped sterile swab sticks and kept in sterile test tubes. Wet mount preparation was done and was immediately observed under microscope. *T. vaginalis* was identified by its pear-shaped jerky rotatory movement.

Inclusion Criteria: - Women of reproductive age group, perimenopausal and postmenopausal with symptoms like vaginal discharge, pruritus, itching, burning.

Exclusion criteria: - Patients with peri-vaginal bleeding and pregnant women.

RESULTS

Among 100 women complaining of vaginal discharge, *T. vaginalis* infection was found in 3 cases i.e. the incidence being 3%.

Table 1 Demographic Profile:

	Total samples examined	Trichomo-niasis Positive	Percentage (%)
Religion			
Hindu	98	3	3.06
Muslim	2	0	0
Area			
Urban	88	0	0
Rural	12	3	25
Caste			
Brahmin	45	0	0
Chettri	12	1	8.33
Newar	21	0	0
Gurung	13	1	7.69
Others	9	1	11.11
Literacy			
Literate	56	1	1.78
Illiterate	44	2	4.54

Religionwise distribution of the female during the study period showed Hindu 98% and Muslim 2%. Among 98 Hindu women 3.06% of them were found positive with trichomoniasis while none of the Muslims were positive. Among them 45 were Brahmin followed by 12 Chettri, 21 Newar, 13 Gurung and 9 others. There was no +ve trichomoniasis case from Brahmin and Newar, from Chettri incidence was 8.33%, Gurung 7.69% and

others 11.11%. Among 100 women studied, 88 came from urban area and 12 from rural area. There was no positive case from urban area but from rural area incidence being 25%. On the basis of literacy rate, women visiting during study period 56 were literate and 44 illiterate with +ve case of trichomoniasis as 1.78 %and 4.54% respectively.

According to age distribution women visiting with the age equal to or above 19 was 1, from the age of 20-30 were 44, 30-40 were 35 and 40-50 were 20. None of the age group had trichomoniasis except the age group 30-40 with 3 women i.e. 8.57%. *T. vaginalis* was most commonly seen in 30-31 years age group.

Table 2 Age Distribution

Age	Total Sample Observed	Trichomoniasis positive	Percent
=<19	1	0	0
20-30	44	0	0
30-40	35	3	8.57
40-50	20	0	0
Total	n = 100	3	3

Table 3 Vaginal discharge: Amount

Discharge	Total Sample	Trichomoniasis	Percent
Scanty discharge	6	0	0
Copious discharge	94	3	3.19%

Majority of the cases (94) had copious amount of vaginal discharge and 6 had scanty amount of vaginal discharge. Among scanty discharge none of them were infected with *T. vaginalis.* There were 3 cases of trichomoniasis among 94 copious discharge cases i.e. 3.19% incidence.

DISCUSSION

T. vaginalis infection among the average Nepalese women visiting Tribhuwan University Teaching Hospital, Gynaecology Department was found to be 3%. The incidence of *T. vaginalis* seems relatively less in this study when compared to the study done by Thapa (1993) where only sex workers of Nepal were included. He found that nearly 1/4th of them were infected with trichomoniasis.

Similarly *T. vaginalis* was mostly found among Hindu people. The positive case of *T. vaginalis* was from Chettri, Gurung and others each with 1 case, i.e. trichomoniasis is more or less distributed equally among different castes.

Most of the women visiting in outdoor patients department (OPD) were literate with I +ve case out of 56 i.e. 1.78% and illiterate cases were 44 with 2 positive cases i.e. 4.54%. The questionnaire survey indicated knowledge regarding STDs among illiterates was found to be nil. They don't know about safe measures applied during coitus. Literate know about the STDs and about the safe measures. They read different articles, books about sex and sex-related problems. They are conscious about different diseases transferred through sex.

All the infection was found among the rural women none from the urban area. The result indicated that the infection is related to the low-socio-economic conditions as well as health services facilities.

Observed peak age of having *T. vaginalis* infection in this study was 30-40 years (30-31 yrs) with 8.57% cases. There is more chance of having infection during increased reproductive period due to the increased sexual activity. *T. vaginalis* is highly

prevalent in sexually active population. Crosby *et al.* (2002) studied 512 women and found that 66 of them (12.9%) had *T. vaginalis* and they were within the age of 14-23 yrs. Soper *et al.* (2004) found the peak age for having *T. vaginalis* ranges from 18-25 yrs. Dhall (1990) did a study in Chandigarh, India among gynae OPD patients and family planning clinic attenders. He found that 78% *T. vaginalis* was identified among 20-35 yrs age group. The above mentioned studies by different scientist also indicate that 14-35 yrs age women are more susceptible to *T. vaginalis* which is also in agreement with the present study.

In this study *T. vaginalis* was mostly seen in women with copious discharge. Although 96.8% cases had copious vaginal discharge but without any infection of T. *vaginalis*, this could be probably because of other infections like *Candida albicans, Gardnerella vaginalis*, which are also responsible for copious discharge and these were not investigated in this study.

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REFERENCES

Cartney Mc and Mackie. 1989. "Practical Medical Microbiology, 14th Edition, Churchill Livingstone, pp-73.

Cates, W. 1999. "Estimates of the incidence and prevalence of sexually transmitted disease in United States." Sex Transm. Dis, **26**: S 2-7.

Crosby R, R. J. Didemente, G. M. Wingood. 2002. Predictors of infection with *Trichononas vaginalis:* a prospective study of low-income African-American adolescent females. Sex Transm. Infect, **78**: 360-364

David, S. 2004. Trichomoniasis: under control or uncontrolled? A Journal of obstetrics and gynaecology; **190**:281-290.

Dhall K. 1990. Isolation of Gardnerella vaginalis in cases attending the GOPD and family planning clinic of PGIMER, Chandigarh J of OBG of India; Vol. 40 **3**: 414-417.

Gerbase A.C., J. T. Rowley, D.H.L. Heymann. 1998. "Global prevalence and incidence estimates of selected curable STD's." Sex Transm. Infect., 74 (suppl-1): 12-16.

Robins, Cotran Kumar. 1974. "Pathologic basis of disease", 5tn Edition, W.B. Saunders Company. pp. **1037-1038.**

Thapa S. 1993. Commercial sex workers in Kathmandu valley; their health profile and health status. AIDS and STDs prevention network. Dec., 30-31

Yudkin G. 1988. "Vaginal Discharge" 2nd Edition Oxford: Oxford University Press, pp. 44