

RESEARCH NOTE

TRICHOMONIASIS IN COSMOPOLITAN MALAYSIA: IS IT UNDER CONTROL OR IS IT UNDER DIAGNOSED?

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Abstract. In a prospective, observational study, 380 women attending a family planning (LPPKN) clinic and Sexually Transmitted Diseases (STD) clinic in Kuala Lumpur between January 2008 and November 2008 were enrolled. Patient information was obtained from the medical records and patients voluntarily completed questionnaires. Three vaginal swabs from the posterior fornix were taken from each patient examined. Different staining methods and cultivation in Diamonds medium were performed on the collected samples. Study subjects recruited in this survey were mostly young, with a geometric mean ages of 37.31 years (LPPKN clinic) and 32.06 years (STD clinic). Malay, Chinese, Indians and others ethnic groups accounted for 91, 4, 2 and 3%, respectively, at the LPPKN clinic. At the STD clinic, almost all subjects were Chinese. The prevalence rate of trichomoniasis was 0.36% at the LPPKN clinic and 0.0% at the STD clinic. Our findings suggested no association between contraceptive methods used and trichomoniasis infection at the LPPKN clinic. At the STD clinic, it was found a high risk for STD acquisition was not associated with trichomoniasis positivity. The data demonstrated the prevalence of trichomoniasis was very low at LPPKN clinic and absent at STD clinic. The high prevalence rates of other STD among sex workers found in this survey suggest the need for more active interventions focused on this group.

Key words: trichomoniasis, prevalent survey, Malaysia

INTRODUCTION

Trichomoniasis is caused by the flagellated eukaryote *Trichomonas vaginalis*, one of the most common sexually trans-

mitted infections (STI's) in humans (Mashburn, 2006).

The World Health Organization found that out of 340 million new cases worldwide of sexual transmitted infections, 174 million cases of trichomoniasis were detected (WHO, 2005). *T. vaginalis* infection is strongly associated with the presence of other STI's, such as gonorrhoea, chlamydia, and HIV. Past history of STI is an important indicator of trichomoniasis infection among adolescents (Richard *et al*, 2000)

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and improved STI treatment can reduce the incidence of HIV infection (Piper, 2008).

Women are more likely to develop symptoms than men, yet nearly three quarters of infected women remain asymptomatic, increasing the risk of disease transmission (Pavletic, 2004).

The current Centers for Disease Control and Prevention (CDC, 2006) guidelines recognize that typical diagnosis is made by microscopic examination of vaginal discharge and the measurement of vaginal pH. When there is a high index of suspicion for *T. vaginalis* infection unconfirmed by microscopy, vaginal secretions should be cultured (Owen and Clenney, 2004).

The aim of this study was to survey the prevalence of trichomoniasis at two different clinics in Kuala Lumpur, Malaysia, using different diagnostic methods and to relate the acquisition of this infection with different risk factors.

MATERIALS AND METHODS

This was a prospective, observational study carried out between January 2008 and September 2008. Three hundred eighty non-pregnant women from two different clinics, the family planning (LPPKN) clinic and the Sexually Transmitted Diseases (STD) clinic in Kuala Lumpur were enrolled in this study.

The study was approved by the Ethics Committee of the Universiti Kebangsaan Malaysia (UKM). Written consent was obtained from each subject prior to participation in this study.

Patient information was collected with a standardized medical record form. Each patient voluntarily completed a questionnaire before examination.

From each patient examined, three

samples of vaginal discharge from posterior fornix were collected. The wet mount method was carried out on the spot by placing one drop of the sample onto a microscope slide covered by a cover slip. The smears were examined microscopically in order to detect motile trophozoites of *T. vaginalis*.

The second specimen was placed in transport medium and taken to the laboratory of the Department of Parasitology, UKM for further processing using different staining methods (Giemsa stain and acridine orange stain).

Immediately after the third specimen was collected, the swab was placed in 5 ml of Diamond's medium, which was prewarmed to 37°C and kept in screw-capped tubes. Cultures were incubated at 37°C for 7 days and examined using the wet mount method every day in order to detect motile trophozoites of *T. vaginalis*.

RESULTS

The number of subjects enrolled in this study was 380. None (0.0%) of the cases at the STD clinic were positive for trichomonas while 0.36% of the cases at the LPPKN clinic were positive.

DISCUSSION

There is a paucity of literature on STI prevalence in Malaysia. A previous study during 2000-2005 was carried out among patients attending a genito urinary medicine clinic. No cases of trichomoniasis were seen during the study (Lim *et al*, 2006). In 1999 a survey was conducted by the Division of Disease Control, Ministry of Health of Malaysia to determine the prevalence rates of laboratory-confirmed STI in two different communities. About 1% of sex workers were positive for trichomonas

infection. While at an antenatal clinic, 0.5% of women were positive for *T. vaginalis* (WHO, 2000).

The low incidence rate of trichomonas infection in this study and the decrease of this infection during the past two decades may be related to many factors. Most of the sex workers at the STD clinic were Chinese. Among the Chinese community, it is common to use herbal and traditional medications for prophylaxis and treatment of STI. The medications may be used for external washing or as internal vaginal suppositories, which could make it difficult to detect *T. vaginalis*. There was possible mishandling of the culture and the transport medium. It is unclear whether the instructions given to the team members were strictly followed or not. Medications taken for other STI may have had an affect on the identification of *Trichomonas vaginalis* or resulted in false negative results on culture.

Study subjects recruited in the survey were mostly young, with a geometric mean age of 37.31 years (range: 23-66) among women attending the LPPKN clinic, and 32.06 years (range: 17-48) among those attending the STD clinic.

The Malay ethnic group accounted for 91% of women attending the LPPKN clinic, followed by 4% Chinese, 2% Indians and 3% others, mainly Indonesians. At the STD clinic almost all the subjects were Chinese.

Our study does not show any relationship between contraceptive method used and the acquisition of STI. Although we did not specifically examine the interactions between cervical ectopy, oral contraceptive use and STI, a previously published meta-analysis concluded that women using oral contraceptives were more likely to have cervical ectopy, and

women with cervical ectopy may be at higher risk of having STI (Morrison *et al*, 2004). Another study suggested hormonal contraceptive and IUCD users were at higher risk for acquiring a STI than non-users for these methods (Kirsten *et al*, 2008). Often it is not always true contraception use has a relationship with trichomoniasis; conflicting reports have been published. Some findings suggest no association between hormonal contraception use and STI acquisition (Baeten *et al*, 2001; Lavreys *et al*, 2004). The Expert Working Group determined there should be no restriction on the use of any of the hormonal contraceptives for women who are at high risk for STI (WHO, 2005b) and determined no change in current guidelines was warranted. Regarding the evidence and WHO guidelines, the association between contraceptive method used and STI acquisition has already been documented and can be found at http://www.sciencedirect.com/science?_ob=RedirectURL&_method=externObjLink&_locator=url&_cdi=5008&_plusSign=%2B&_targetURL=http%253A%252F%252Fwww.who.int%252Freproductive-health%252Ffamily_planning%252Fdocs%252Fhormonal_contraception_sti_acquisition.pdf

Our results were surprising since hospitality girls usually have high rates of infection with *T. vaginalis*. The present study also showed that factors such as longer sex work duration and having a higher number of sex partners, were not significantly associated with being positive for trichomoniasis. However, the small sample size in this study could result in a higher false-negative rate. Univariate analysis has limitations in concluding significant associations. Therefore, results regarding associations should be considered with caution. Further studies involving communities having a high risk are needed to corroborate such findings.

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