

# PREVALENCE OF *TRICHOMONAS VAGINALIS* IN SOME FILIPINO WOMEN

VIRGINIA BASACA-SEVILLA, JOHN H. CROSS,\* LILY ALQUIZA,\* and TERESITA LACAP

Bureau of Research and Laboratories, Ministry of Health, and \*U.S. Naval Medical Research Unit No. 2 Manila, Philippines.

## INTRODUCTION

*Trichomonas vaginalis* is an ubiquitous parasite reported everywhere in the world in which it has been looked for. The parasite is found in both males and females particularly among the sexually active age groups and is considered the most highly prevalent of the sexually transmitted diseases. Although the parasite is reported from Southeast Asia, there is a paucity of information available from most of the countries in the area. In the Philippines there are only a few reports (Arambulo *et al.*, 1977) in which results obtained were based upon the examination of direct or wet smears made from vaginal swabs. Since information obtained by this method result in under-reporting, a study was carried out in which a cultural method was used. The results are presented herein.

## MATERIALS AND METHODS

Three Filipino women population groups were surveyed in this study. One group consisted of sexually active hospitality girls seen at a social hygiene clinic at Angeles City, Pampanga Province and another group of

hospitality girls seen at the social hygiene clinic in Olongapo City, Zambales Province, Luzon Island. The third group consisted of pregnant females seen at a prenatal clinic in Davao City, Davao Province, Mindanao Island. A vaginal speculum was inserted and samples collected by swabbing the posterior fornix with a sterile cotton-tip applicator. The cotton-tip swabs was immediately placed into 1 ml of culture medium contained in a screw-capped tube and the cultures transported on ice to the Bureau of Research and Laboratories (BRL) in Manila. In Davao, the 1 ml of medium containing the cotton-tip applicators were shipped by air to the BRL in Manila the same day of collection.

In the laboratory 1 ml of medium was centrifuged and a sample of sediment collected by a sterile capillary pipet and examined microscopically for motile *T. vaginalis* trophozoites. The remaining medium was then poured aseptically into another tube containing 4 ml medium. The cultures were incubated at 37°C for 3 to 5 days. Following incubation the tubes were chilled in an ice bath, centrifuged and the sediment examined microscopically for trophozoites.

The medium used was that originally described by Feinberg and Whittington (1957) and was prepared as follows: Panmade, proteolysed liver powder 25 g; sodium chloride 6.5 g; glucose 5 g; penicillin 1,000,000 units; streptomycin 500,000 units; nystatin 1:10,000 final concentration. These were dissolved into one liter of water and 80 ml of inactivated horse serum added. The pH was adjusted to

This study was supported by the Philippine Ministry of Health and through funds provided by the U.S. Naval Medical Research and Development Command for Work Unit No. 3M161102BS10.AF429.

The opinions and assertions contained herein are those of the authors and are not to be construed as official or reflecting the views of the Philippine Ministry of Health or the U.S. Navy Department or the Naval Service at large.

Reprint requests to Publications Office, U.S. Naval Medical Research Unit No. 2, Accelerando Bldg., 395 Sen. G. Puyat Ave., Makati, Metro Manila, Philippines or APO San Francisco, California 96528.

6.4 with normal sodium hydroxide solution (9 ml/liter). Sterilization was by membrane filtration. The medium was dispersed in one ml and 4 ml aliquotes in screw capped tubes and refrigerated until needed. The medium were warmed to room temperature (27°C) prior to use and once inoculated in the laboratory, incubated at 37°C.

## RESULTS

Three separate groups from the Angeles City social hygiene clinic totaling 926 females, two groups of 358 females from Olongapo City and one group of 87 mothers from Davao City were examined. *T. vaginalis* was found in 247 (27%) of the subjects from Angeles City by examination of the 1 ml suspension of culture and 387 (42%) were positive after incubation of cultures for 3 to 5 days. Only 63 (18%) of the first material examined from subjects from Olongapo City were positive but following incubation 25% were positive. Only 3 mothers from Davao City were positive on the initial examination, 4 (5%) of the cultures were positive following incubation. In total 24 % of the hospitality girls were positive on first examination and 37% positive after the cultures were incubated for 3 to 5 days. Only 5% of the Davao City mothers were found infected.

## DISCUSSION

The results obtained are not surprising in that internationally it is well recognized that hospitality girls usually have high rates of infection with *T. vaginalis*. This is the first time, however, that such a high infection rate has been reported from the Philippines. In the previous report by Arambulo *et al.*, (1977) the parasite was found in only 15 % of the waitresses/hostesses population examined while in housewives only 2.7% were found infected. The total number examined in their

study was on 560 and the overall infection rate was 5.9%. Only wet smears and Giemsa stained smears were examined. Had cultural methods been used their rates would most probably have been higher. In another survey done by Valayo in 1977 from the University of the Philippines Institute of Public Health in Manila as cited by Arambulo *et al.*, (1977), similar results were reported; the rates were lower among housewives (1 to nearly 3%) than among hospitality girls, approximately 3%.

In the present study it was clearly shown that cultural methods were far more sensitive. The prevalence rate on first examination of vaginal specimens from hospitality girls was 24% compared to 37% after cultures were incubated for a few days. The cultural method permitted the organisms to rapidly increase in numbers enabling easy identification of the organisms upon microscopic examination of sediment.

The hospitality girls at Angeles City and Olongapo City service mostly U.S. military personnel stationed at Clark Air Force Base and Subic Bay Naval Base. No unusual reports of trichomoniasis have been reported in the U.S. personnel at these bases but it is most likely that some of these males are acquiring the parasitosis and may be actively involved in the transmission of the disease.

## SUMMARY

Vaginal specimens obtained from 1,284 hospitality girls and 87 expectant mothers were examined for *Trichomonas vaginalis* by first examining material collected from vaginal swabs and after incubation in Feinberg and Whittington culture medium. Twenty-four percent of the specimens examined, shortly after the cotton-tip swab was placed into 1 ml culture medium, were positive by direct

microscopic examination and 37% positive following 3 to 5 days incubation at 37°C. Only 3 of the specimens from mothers were positive after the first examination and 4 positive after culture. These high prevalence rates are expected among hospitality girls and are the highest rates thus far reported from the Philippines. These results provide convincing evidence of the value of using cultural methods in determining prevalence rates for *Trichomonas vaginalis* infections in females.

#### REFERENCES

- ARAMBULO, P.V., CABRERA, B.D., OSTERIA, T.S. and BALTAZAR, J.C. (1977). A comparative study of *Trichomonas vaginalis* prevalence in Filipino women *Southeast Asian J. Trop. Med. Pub. Hlth.*, 8 : 298.
- FEINBURG, J.G. and WHITTINGTON, M.J. (1957). A culture medium for *Trichomonas vaginalis* Donne and species of *Candida*. *J. Clin. Path.*, 10 : 327.