Full Length Research Paper

Urinogenital trichomoniasis in women in relation to candidiasis and gonorrhoea in University of Port-Harcourt Teaching Hospital

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This study was conducted to identify and estimate the proportion of patients who had trichomoniasis in relation to gonorrhea and candidiasis in two hundred and twenty (220) women aged between 18 and 55 years from the month of February to June 2005. High vaginal swab (HVS) samples from symptomatic and asymptomatic women in University of Port-Harcourt Teaching Hospital were examined in antenatal, gynecology, family planning and sexually transmitted diseases clinics. Statistical analysis of the data revealed a significant differences (p<0.05) with lower prevalence of gonorrhea co-infected with trichomoniasis among the categories of women examined. Out of two hundred and twenty (220) women examined, 10 (4.5%) were found to be positive for trichomoniasis. The latter percentage was also positive for candidiasis and gonorrhea. From these 10 (4.5%) women, 3 (1.4%) were for gonorrhea in addition to trichomoniasis while 7 (3.2%) out of the 10 (4.5%) examined were positive for both trichomoniasis and candidiasis. Observation showed the most infected women were between ages of eighteen and thirty. In conclusion, this study has shown that co-infection with trichomoniasis and candidiasis is more prevalent in the University of Port Harcourt Teaching Hospital (UPTH).

Key words: Prevalence, Trichomonas vaginalis, Neisseria gonorrhoea, Candida albicans, sexually transmitted infection (STI), women.

INTRODUCTION

Trichomonas vaginalis is a sexually transmitted parasitic protozoa known to be responsible for an estimated 180 million new infections per year, making it the most prevalent nonviral sexually transmitted pathogen worldwide (Abdurehman et al., 2013). T. vaginalis is a flagellate which belongs to the order trichomonadida, having three to five flagellae and recurrent flagellum which may be attached to the body to form an undulating
infected men appear to be asymptomatic and the higher, up to seventy percent. Fifty to seventy percent of by deduced that the infection rate of trichomoniasis caused coital bleeding might occur.

appearance of vaginal and cervix yielding classic discharge. It causes Puntate hemorrhages and granular causes frothy, foul smelling greenish grey vaginal discharge. It has been suggested that the parasite's pathogenicity is associated with endocin or other charges resulting in variation in the normal bacterial flora of the vaginal, leading to a reduction in the acidity of its contents from the usual pH 4.5 to 5.5. The organism can survive at neutrality (pH 7) (ACOG 1996).

Evans (1976) and Sobel (1997) stated in their investigations that T. vaginalis does not invade tissue, but causes frothy, foul smelling greenish grey vaginal discharge. It causes Puntate hemorrhages and granular appearance of vaginal and cervix yielding classic strawberry appearance of trichomonal cervicitis, post coital bleeding might occur.

From the work of Kreier and Baker (1987) it was deduced that the infection rate of trichomoniases caused by T. vaginalis among those with vaginal upsets was higher, up to seventy percent. Fifty to seventy percent of infected men appear to be asymptomatic and the infection may be self-limited. Juliano et al. (1986) stated that the clinical manifestation range from asymptomatic carriage to severe vaginitis, there is usually intense inflammation with itching and copious discharge called leucorrhea.

Rosemarie (1985) emphasized the etiology and prevalence of vulvovaginitis and stated that prevalence ranges from as low as 5% of private gynaecologic patients to as high as 50 to 75% of prostitutes. Neisseria gonorrhoea causes the sexually transmitted disease gonorrhoea, the most frequently reported communicable diseases in the United State of America. Barnes and Holmes (1984) and Benenson, (1985) worked on candidiasis, which is caused by Candida albicans saprophytic in the gastrointestinal tracts in 25 to 50% of the population and in the vaginal of 25 to 50% asymptomatic women. The clinical presentation in the vulva is usually erythematous and edematus (Tanb, 1976). Vaginal discharge may be thick and white, resembling cottage cheese. Occasionally, discharge is thin and watery satellite lesions may spread to the groin. Many women have no symptoms; sexual partners may develop balantidies or cutaneous lesion on penis.

This work is thus undertaken to identify and estimate the proportion of patients suffering from trichomoniasis in relation to gonorrhoea and candidosis. This is to enable us know the incidence and prevalence rates and thereby enhance proper treatment given by health care providers to the patients.

MATERIALS AND METHODS

Sampling method

High vaginal swabs (HVS) were taken from women attending University of Port-Harcourt Teaching Hospital from antenatal, gynecology, family planning and sexually transmitted disease clinics from February to June, 2002. The samples were randomly sampled every 3rd day from February to June 2002. A week each was used for each department in a month which means 1 week was used for antenatal patients, the 2nd week for gynecology department, the 3rd week for family planning section, and the 4th week for sexually transmitted disease department in the month of February 2002. The same process was performed in the months-March, April and June 2002. The swabs were examined for T. vaginalis, cultural method for C. albicans and N. gonorrhoea. A total of 220 women examined.

Test materials and reagents

The following equipment were used - Microscope, microscopy slides, cover slips, cotton wool, sterile swab sticks. Reagents used include physiological saline, Giens a’s stain, absolute method and distilled water.

Preparation of films

Clean grease-free slides soaked in ethanol to reduced contamination to minimum were used and wiped with sterile cotton wool.

Wet preparation

Some drops of sterile physiological saline were added to the swab container, mixing and making a smear with the swab onto a ready for use slide and covered with a cover slip. Some minutes of incubation or warming on a heated microscope stage then followed, especially for samples that have stayed some time outside the
Table 1. Overall prevalence concomitant infections with trichomoniasis, co-incident with candidiasis and gonorrhea

<table>
<thead>
<tr>
<th>Affected patients</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients with <em>Trichomonas vaginalis</em> only</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Patients with <em>Trichomonas vaginalis</em> and <em>Candida albicans</em></td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>Patients with <em>Trichomonas vaginalis</em> and <em>Neisseria gonorrhoea</em></td>
<td>3</td>
<td>30</td>
</tr>
</tbody>
</table>

DISCUSSION

In this study, the occurrence of trichomoniasis in University of Port Harcourt Teaching Hospital in Port Harcourt is low (4.5%) when compared with the work of Abdurehman et al. (2013), in Southwest Ethiopia (4.98%), Ogbona et al. (1991), 37.6% and WHO (2001) 32%, but high in comparison with the work done in Sagamu by Anate (1991), (0%) and Perazzi et al. (2010), in Argentina (4%). It was discovered that none of the ten (10) women had *T. vaginalis* as a single infection but were co-infected with *C. albicans* and *N. gonorrhoea*. Observations also showed that no woman was infected by all three organisms at the same time in University of Port Harcourt Teaching Hospital (UPTH). The prevalence of trichomoniasis co-infected with candidiasis is higher (70%) when compared with trichomoniasis co-infected with gonorrhea (30%). The observed difference in the rate of infection could be due to variation in age distribution, personal hygiene practice, climatic conditions, socio-economic and literacy status of the study women. The co-existence of these diseases in their host body could attribute to the basic origin of the causative agents which is mainly of sexually transmitted origin. Certain hormonal changes could also initiate their co-infection, most especially trichomoniasis and candidiasis according to the findings of Matini et al. (2012), Al-Saeed et al. (2011), Fule et al. (2012) and Rosemarie (1985).

The percentage of trichomoniasis in this study could be attributed to many multiple factors such as awareness of people towards the spread of human immuno-deficiency virus (HIV) due to public campaign by World Health Organization (WHO), National Agency for Food Drug Administration Control (NAFDAC) and some other agencies in Nigeria and abroad. This has led to a change in attitude of people towards unsafe sex and increase in the use of condoms. The use of condoms helps reduce the rate of sexually transmitted diseases and since the organisms especially *T. vaginalis* infects the vaginal mucosa in women asymptomatically and self-limiting in men, this could have attributed to the lower percentage (4.5%) inferred in this study. This is in concordance with the findings of Evans et al. (1995).

Port Harcourt dwellers are medically enlightened; hence they seek medical attention very seriously and practice good hygiene. The women with trichomoniasis that also had candidiasis, could be due to poor hygiene...
Clotrimazole is recommended. Metronidazole (Flagyl) T.D.S for 7-10 days not in early pregnancy (Goyal et al., 2011). Good personal hygiene could have contributed to reducing the occurrence of the infection, and good eating habit according to Rosemarie (1985) investigation that eating of food that does not lower the acidity within the body system helps ward off the infection, and she recommended yoghurt due to its lactobacilli content for women, this helps minimizing trichomoniasis and candidiasis since these infectious organism are associated with a lowered acidity.

In conclusion, trichomoniasis should be treated when noticed immediately to avoid tubal infertility and ectopic pregnancy (Goyal et al., 2011; Anate, 1991). Good hygiene should be practiced among women. Women should also maintain good and healthy eating habit, premarital sex should be discouraged. Use of condom is advisable. Self-medication should be avoided among women, they should seek the help of health care givers where necessary. Through this (Fernando et al., 2011) laboratory investigations are done to detect this organism and appropriate drugs would be administered. Good cleaning and disinfecting habits are advised, especially in the use of toilet and wears, example towels. 200 mg Metronidazole (Flagyl) T.D.S for 7-10 days not in early pregnancy is suggested. Likewise 5 mg pentrance or Clotrimazole is recommended.

Conflict of Interests
The author(s) have not declared any conflict of interests.

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