

Original Research Article

A study of incidence of *Trichomonas vaginalis* and its association with other pathogenic organisms causing vaginitis

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ABSTRACT

Out of a total of 150 vaginal swabs, 100 were from patients suffering from vaginitis and 50 from control group. The incidence was higher among rural areas 79%, and from low income groups 50% respectively. In age group 21-30 years vaginitis was 46%, followed by 23% in 11-20 years. The incidence of vaginitis in non pregnant women in study group and control group was 85% and 88%. And in pregnant group with vaginitis in study group and in control group was 15% and 12% respectively. The incidence of *Trichomonas vaginalis* with 24% was observed in study group which was identified by wet mount microscopic examinations in saline preparation. Among these cases a majority of 22% incidence was of sole *trichomonas vaginalis* infection which was identified without any associated organisms like candida spp and bacteria. In one instance there was an association with *candida species* 1% and one with bacteria 1%. The *candida* spp isolated was *candida albicans* and the bacteria were *Escherichia coli*. There was no *trichomonas vaginalis* identified in control group.

Keywords

Trichomonas,
Vaginitis,
Incidence,
Group

Introduction

Vaginal discharge is a common presenting symptom of gynaecological problems. It is often a pathogenic sign of underlying pathology. It is said that the disease is easy to cure at the beginning but difficult later (JW Mahadani, 1998). The causative agents of vaginal infection are fungus, bacteria and parasites like *Trichomonad vaginalis*. Genital infection in women with *candida* species is common and few women escape without such an infection at sometime in their lives (J.S Bingham 1999). Vaginal candidiasis is mostly endogenous (known- Chung, 1992).

The profuse curdy discharge, intense pruritus and dyspareunia trouble the patient (Shaw, 1996). Acute episodes of the candidal vulvovaginitis respond rapidly to treatment. Unfortunately, some women are subject to frequent recurrences and to chronic infection (Milne J.D, 1979). Recurrent vulvovaginal candidiasis occurs in certain well established situations such as pregnancy, with the use of broad spectrum antibiotics, in those on oestrogen or corticosteroid therapy (+/- oral contraceptives) and in uncontrolled diabetes mellitus (J.S.Bingham, 1999).

There is availability of a number of antimycotic antibiotics to treat vaginal candidiasis. But possibility of innate or acquired resistance by a number of *Candida* species to several antimycotic drugs has emphasised the importance of in vitro antimycotic susceptibility testing. (Topley, Wilson 1998). Hence the present study was undertaken to find out the incidence of *Trichomonas vaginalis* along with other pathogenic organisms in association causing *vaginitis*.

Materials and Methods

Vaginal swabs were collected from 100 patients attending obstetrics and gynaecology outpatient department, complaining of abnormal vaginal discharge and pruritus which were taken as study group and from 50 patients without complain of vaginal discharge and pruritus were taken as controls. 3 vaginal swabs were collected from vagina from each case under aseptic conditions. One of the swabs was kept in 0.5 ml of saline physiological saline. The other two swabs were kept in a sterile container with cotton plug and transferred immediately to the microbiology laboratory for processing.

Microscopy

Specimen was examined by doing wet mount, KOH mount and gram's staining for presence of *Trichomonas vaginalis*, fungal elements and clue cells.

Wet mount: A drop from from the saline containing swabs was taken over a clean dry glass slide and was examined under high power objective For presence of motile trophozoites of *Trichomonas vaginalis* by their characteristic motility. The KOH mount was done to see for presence of pseudohyphae and budding yeast cells, clue

cells and bacteria. Each specimen was inoculated on nutrient agar, blood agar, MacConkey agar and Sabourds agar. *Candida* species was identified by KOH mount, colony character on Sabourds dextrose agar, Gram staining, germ tube test, Dalmou culture technique on corn meal, sugar fermentation test, carbohydrate assimilation test and urease test was done. Antifungal sensitivity pattern of *Candida* isolates was done by disc diffusion method.

A suspension of cells from an overnight culture was made in sterile distilled water. Suspension of cells from an overnight culture was made in sterile water. Suspension was diluted to a fixed concentration of approximately 1×10^8 cells per ml. Sensitivity to commercial discs Amphotericin B (100 units / disc), Nystatin (100 units disc), Cotrimazole (10 Micro grams) and flucanazole (10 micro gram / disc) tested by incubating at 30°C. Results were interpreted after 24 hours incubation.

Result and Discussion

A total number of hundred and fifty vaginal swabs were processed for *vaginitis* which formed the study group and 50 were control group. Among *vaginitis* cases 79 (79.0%) were from rural area and 38 (38%) were from urban area Table.1. Similarly 38 (76.0%) belonged to rural area and remaining 12 (24.0%) were from urban areas among control group. 506 46(46%) patients with *vaginitis* belonged to age group of 21-30 years, 23 (23%) belonged to 11-20 years age group, 15 (15.0%) belonged to 41-50 age group 14 (14.0%) belonged to 31-40 years age group and only two cases (2.0%) belonged to above 50 years age groups, the youngest in the study group was 16 years and the oldest was 53 years. The incidence of non pregnant women with *vaginitis* among study group and control group was

15.0% and 2.0% respectively. Table 2 the incidence of *Trichomonas vaginalis* alone, *Trichomonas vaginalis* along with *candida* and *Trichomonas vaginalis* along with bacteria in study group was 22.0%,1.0% and 1.0% respectively. Among control group *Trichomonas vaginalis* incidence was 0.0%. For *Candida albicans*, anti fungal susceptibility testing was done for Amphotericin B, Nystatin, Cotrimazole, Fluconazole and the results were analysed.

The study was conducted among 100 patients suffering from *vaginitis* which constituted the study group and 50 patients without vaginal infection which constituted the control group. Inhabitation of the patients influenced the incidence rate of *vaginitis* which was more in rural area 79(79%) than in urban (21.0%). Similarly in control group 28(76.0%) were from rural and only 12(24.0%) were from urban areas. Majority of the patients with *vaginitis* in study group belonged to 21-30 yrs which was 46(46.0%) followed by 23(23.0%) in the age group of 11-20 years. In age groups of 31-40 years and 41-50 years almost equal number of cases were recorded as 14(14.0%) and 15 (15.0%) respectively. only least number of 2

cases (2.0%) were in the age group of 51-60 years . The incidence of *vaginitis* was more common in women who belonged to fertile age group and with active sexual life (topley and wilson ,1996). All 100 cases of *vaginitis* were as ,distributed in relation with pregnancy in study group were 85 (85%) non pregnant women and remaining 6(12.0%) were pregnant women . The incidence of *Trichomonas vaginalis* was 24(24%). which coincides with Podia .v. c. et. al. (1989) 20% .

The control group had no evidence of *Trichomonas vaginalis*. Among these, *Trichomonas vaginalis* infection alone without any other associated organisms was 22 cases with 22.0% incidence, followed by 1 case (1%) associated with *candida albicans*, considering both were pathogens in development of mixed infection and again only 1 case (1.0%) was associated with bacteria, i.e *Escherichia coli* which may be a faecal contaminant or a contributing organism for the development of mixed infection. For the *candida albicans* isolate the antifungal susceptibility pattern was 100%, followed by nystatin 80.0%, clotrimazole 80.0%, and fluconazole 76.6%

Table.1 Inhabitants of the patients with vaginitis in study and control group

S.no	Area	No. of cases in study group	No. of cases in control group
1	Rural	79 (79%)	38 (76%)
2	Urban	21 (21%)	12 (24%)

Table.2 Showing the incidence of *Trichomonas vaginalis* by wet film examination

S.no.	Organism isolated	Study group(100 cases)	Control group (50 cases)
1	<i>Trichomonas vaginalis</i> alone	22	0
2	<i>Trichomonas vaginalis</i>	1	0
3	<i>Trichomonas vaginalis</i> along with bacteria	1	0
	Total	24	0

Fig.1 The Age Prevalence

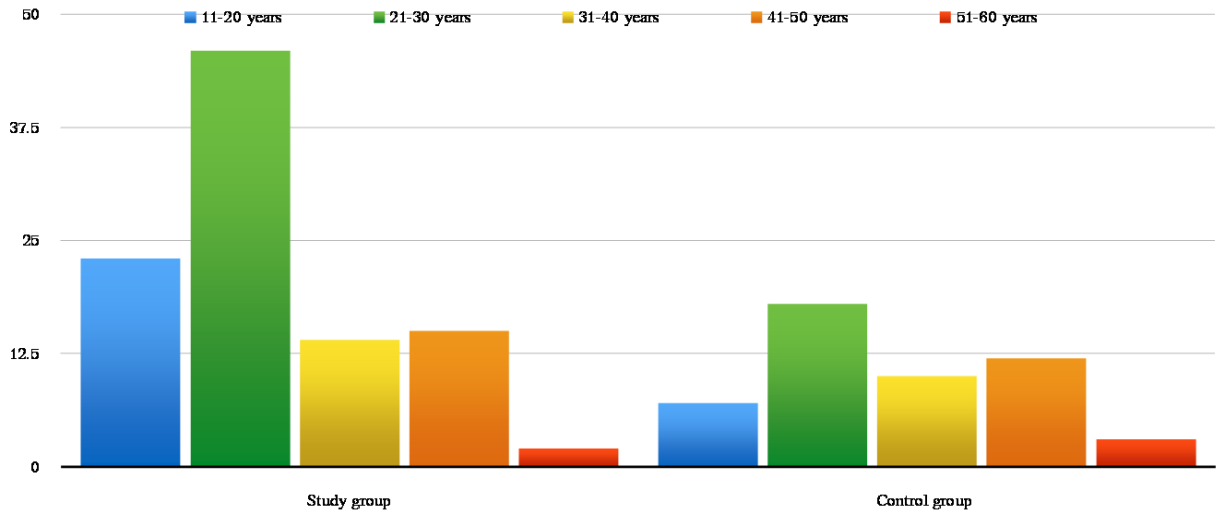


Fig.2 Study Group

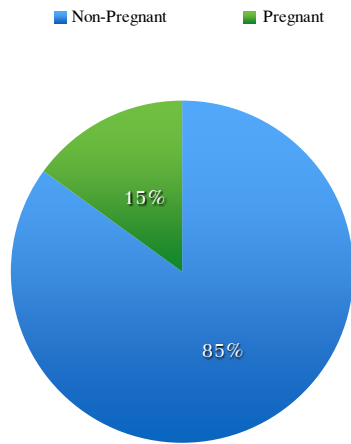


Fig.3 Control group

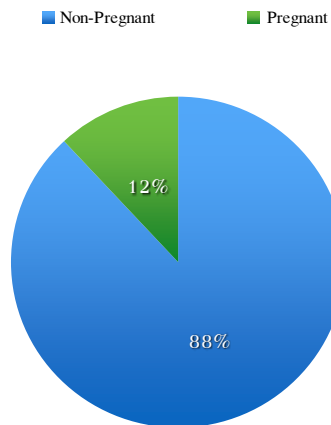
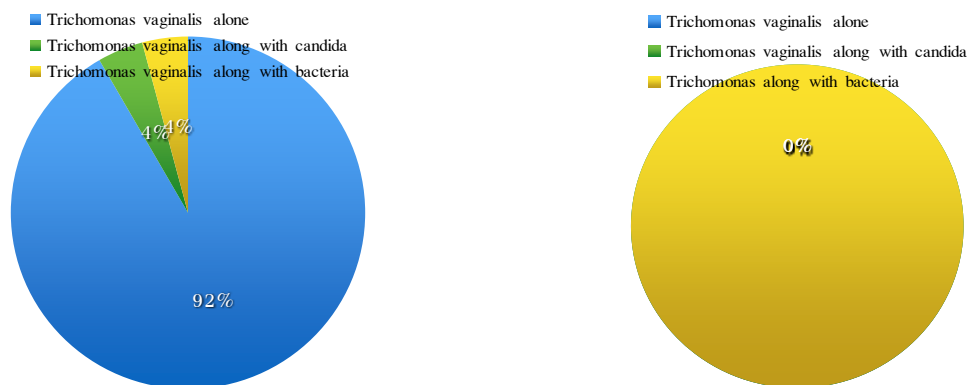


Fig.4



References

- Al-Rawi N, Kavanagh K, 'characterisation of yeasts implicated in vulvovaginal candidosis in Irish women' Br.J.Biomed.Sci.1999;56(2):99-104
- Anaissie EJ, Karyotakis NC et al 1994, Correlation between in vitro and in vivo activity of anti fungal agents against candida species J infect dis.170:384-9
- Ananthanarayana. R. Jayaram Paniker. C.K. Text book of Microbiology, 6th edition, P.570, 2000
- Arzeni D, Del poera M, Simonetti O, Offidani AM, Lamura L, Balducci M, Cester N, Giacometti A, Scalise G, 1994 'prevalence and antifungal susceptibility of vaginal yeasts in outpatients attending a gynaecology center in Ancona, Italy
- Bandana Mallick Thesis on Gardnerella vaginalis submitted at erhampur University, Berhampur, 2000
- Barberis IL, Pajaro MC, Gogiono .S, Pascual L, Albasa L, 'Clinical and microbiological evaluation of bacterial vaginosis in women in a hospital from Riocuarto, Argentina' Enferm infec. Microbiol.clin 1996 Dec:14(10):611-3
- Barry A.L and S.D Brown. 1996. Fluconazole disc diffusion procedure for determining susceptibility of candida species J.Clin.Microbiol.34:2154-2157
- Batura-Gabryel H, Wiczorek. U, Mlynarczyk. W "Invitro susceptibility to antifungal agents of candida strains isolated from patients with various diseases of respiratory tract" Pneumonol alergol Pol 1997;65(5-6).355-9
- Berardinelli S, Opheim DJ, 1985. New germ tube induction medium for identification of *Candida albicans*, J.clin Microbiol, 22:861-2.
- Bhalla P, Alka kaushika 'cervical cytology in women with bacterial vaginosis' IJ patrol Microbiol 41(3) 271-275 1998.
- Bille J. 1997 When should candida isolates be tested for susceptibility to sole anti fungal agents? Eur.J.clin.Microbiol.Infect.Dis.16:281-282.
- Bingham J.S. 'Recurrent vulvovaginal candidiasis' Indian J sex Transm Dis 1999;20 No.1:33-34 Brewer JL, Halpren B, Thomas G:

Haemophilus vaginalis baginitis.
Am.J.Obstetr and Gynaecology
74(1):834-843 1957.

Brijinder K.Gupta, Raj kumar, R.Sofat,
S.khurana and Deepinder 'The role
of *Gardnerella vaginalis* in Non
specific vaginitis in intrauterine
contraceptive device users Indian
J.Pathol.Microbiol.41(1):67-
70,1998.

Candido RC,Toloi MR,Franceschini
SA,Garcia FR,Minto EC'Invitro
activity of antimycotic agents
determined by E-test method against
vaginal candida species'
Mycopathologia 1998-
99:144(1):15-20

Chakrabarti A,Ghosh A,Kanta A,kumar P
'Invitro antifungal susceptibility of
candida ' Indian J Med Res 1995
Jul:102:13-9