

RESEARCH ARTICLE

Etiological study of vaginal discharge syndrome in RTI clinic attendees in a tertiary care hospital

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ABSTRACT

Objective: The aim of the study is to observe the prevalence and the common causes of vulvovaginitis in the reproductive tract infection (RTI) clinic attendees. **Methodology:** A total of 2342 patients attending RTI clinic in a tertiary hospital in a period of one year were included in the study. Three vaginal swab were collected. *Trichomonas vaginalis* is diagnosed by wet preparation and culture in kuperberg medium. Bacterial vaginosis is diagnosed according to nugen's criteria. Once growth of *Candida* is obtained on sabouraud's media, species is identified by conventional method and use of chrome agar medium. **Results:** Out of 2342 cases, 1053 (44.96%) cases were confirmed in laboratory means syndromic validations were possible in 45% cases. Out of these 1053 cases bacterial vaginosis were seen in 454 (19.38%), *Candida* in 567 (24.2%) and *Trichomonas vaginalis* in 32(1.3%) cases. Most common species of *Candida* were *C. albicans* 275(48.5%), *C. parapsilosis* 79 (13.9%) and *C. glabrata* 72 (12.6%). About 101 *Candida* species were not identified by chrome agar so reported as *Candida* species. **Conclusion:** Most common cause of vaginitis was candidial infection followed by bacterial vaginosis in RTI clinic attendees.

Keywords: Vulvovaginitis, vaginal discharge syndrome, candidiasis, *Trichomonas vaginalis*, bacterial vaginosis.

Sexually transmitted diseases (STDs) are very much prevalent, it is estimated that 340 million new cases occur among adults worldwide.¹ These conditions are also regarded as an important public health problem for its medical, social and economic implications. Vaginal infection is one of the most common gynecological affections and vaginal discharge is one of the most common reasons for which women seek medical attention.² Vulvo-vaginitis is a usual cause of genital infection in women. Bacterial vaginosis, *Candida*

albicans genital infection and trichomoniasis are considered the main etiologies of vulvo-vaginitis.³

Bacterial vaginosis is a dysbiosis, in which a decrease in resident vaginal lactobacilli is associated with a growth of anaerobic polymicrobial flora.⁴ Furthermore; bacterial vaginosis has been associated with increased susceptibility to HIV-AIDS and other STD.⁵

Candidial genital infection is the leading cause of fungal vulvo-vaginitis. Described important risk factors

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for Candida genital infection are pregnancy, broad-spectrum antibiotic use, diabetes mellitus and immune – deficiency. However, asymptomatic microorganism colonization can occur in 25 to 50% of the cases.^{3,6,7}

Trichomonas vaginitis is often transmitted by sexual intercourse. It is the most common sexually transmitted pathogen, accounting for 180 million infections annually worldwide.⁸ Vulvovaginitis is a common problem in clinical practice and vaginal discharge along with itching, pain etc. are commonest presenting symptoms. Management is often complicated by a long history of inappropriate treatments based on tentative diagnoses after an incomplete diagnostic workup. This study was done to find out the most common causes of vulvovaginitis; their prevalence in the reproductive tract infection (RTI) clinic attendees to establish a diagnosis for proper treatment of patients.

Materials and Method

A total of 2342 patients attending RTI clinic in a tertiary hospital in a period of one year from January 2015 to December 2015 were included in the study. Vaginal swabs were collected from the patients diagnosed with vaginal discharge syndrome (VDS) in RTI OPDS. Three vaginal swab were collected, one for slide microscopy (Gram’s stain and wet preparation) collected in the sterile saline bottle, and second one in Kupferberg’s medium for *Trichomonas vaginalis* and third one on Sabouraud’s media for growth of Candida.

Without applying any antiseptics, analgesics or lubricants the specimen is collected while wearing sterile gloves. The speculum is moistened with luke warm water. The sterile vaginal speculum is inserted in the vagina and inspected exocervix. Cleaned the exocervix with a sterile cotton wool swab. Another cotton wool swab is inserted in the vagina and the posterior fornix is swabbed for a few seconds. Collect it immediately in the Kupferberg’s medium. Swab is dipped well in the medium. Second vaginal swab is collected for microscopy in sterile normal saline while third swab for culture in Stuart’s transport media. The pH paper then touched to the tip of the vaginal speculum after removing it from the vagina for testing

the vaginal pH. Normal adult vagina has an acid pH of 4.0-4.5 but in bacterial vaginosis the pH is raised to 4.5 or more. Swab for microscopy is used for preparation of smear on a clean slide for gram’s stain (for bacterial vaginosis and candida) and wet preparation for motility of *Trichomonas vaginalis*. Bacterial vaginosis is diagnosed according to nugent’s criteria. Kufperberg’s medium is kept at 37°C for incubation at least for one week. Sabouraud’s medium is kept at 25 and 37°C for incubation.⁹ Once growth of Candida is obtained species is identified by conventional method and use of chrome agar medium.¹⁰

Results

In one year, 2342 cases of vaginal discharge syndrome were investigated for etiology. All cases

Table 1: Showing age-wise distribution of cases

Sr. No.	Age in year	Nos	%
1.	≤ 19	60	2.5%
2.	20-24	335	14.3%
3.	25-44	1699	72.5%
4.	≥ 45	248	10.5%

were from age group 19 to 45 and above (table 1) . Maximum cases were from age group 25 to 44 years (86.8%). Out of 2342 cases, 1053

Table 2: Showing etiological distribution of cases

Sr. No.	Etiological agents	Number	Percentage
1.	Candida spp.	567	24.2%
2.	Bacterial Vaginosis	454	19.38%
3.	Trichomonas	32	1.3%

Table 3: Showing Distribution of Candida Species

Sr. No.	Candida Species	Number	Percentage
1.	C.albicans	275	48.5 %
2.	C.parapsilosis	79	13.9 %
3.	C.glabrata	72	12.6%
4.	C.krusei	22	3.8 %
5.	C. tropicalis	18	3.1%
6.	Other species	101	17.8 %

(44.96%) cases were confirmed in laboratory means syndromic validations were possible in 45% cases. Out

of these 1053 cases bacterial vaginosis were seen in 454(19.38%), Candida in 567(24.2%) and *Trichomonas vaginalis* in 32(1.3%) cases (table 2).

Most common species of Candida were *C.albicans* 275(48.5%), *C. parapsilosis* 79 (13.9%), *C.glabrata* 72 (12.6%), *C. krusei* 22(3.8%) *C. tropicalis* 18 (3.1%) and 101 Candida species were not identified by Crome agar so reported as Candida species (table 3).

Discussion

We studied the 2342 cases of vulvo-vaginitis presenting with vaginal discharge. Laboratory confirmation of etiological agents was done in 1053 (44.96%) cases. Byun SW reported slightly higher percentage of confirmation of etiological agent 55.3% (108/195).¹¹ At the other end Narayan Khedkar reported (54/380 -14.2 %) a very low percentage of laboratory confirmation of vaginitis cases.¹² Ana Claudia CC found 16/48(38%) etiological agents in laboratory confirmation which is less than present study.¹³

Most common cause of vaginitis was candidial infection 567 (24.2 %) in present study which was also observed by Ana Claudia CC (23.8 %)¹³, Narayan Khedkar (30 %)¹² whereas Byun SW¹¹ found bacterial vaginosis (37.87 %) to be the commonest cause of vaginitis followed by Candida (14.87 %). Similarly Rita Elizabeth has found the 22 % candidial infection in adolescents from Salvador followed by bacterial vaginosis 20 %.¹⁴ Most common candida species in the present study was *C. albicans* (48.5 %) followed by *C. Parapsilosis* (13.9 %), *C.glabrata* (12.6 %). *C.krusei* and *C.tropicalis* were also isolated in lesser percentages (3.8% & 3%). Narayan Khedkar also found *C.albicans* to be the commonest species (54.5%) followed by other non albicans Candida (NAC 45.5%). NAC include *C. glabrata*, *C. tropicalis* & *C. krusei*. Ana Claudia CC reported *C. albicans* (40.67%), *C. glabrata* (31.2%), *C. parapsilosis* (18.8%) & *C. tropicalis* (9.4%). These facts show that after *C. albicans*, *C. glabrata* *C. parapsilosis* and *C. tropicalis* are most common species isolated from vulvo-vaginitis.

Third important etiological agent of vulvovaginitis is *Trichomonas vaginalis*. In present study only 32

(1.3%) cases were positive for *T. vaginalis*. Other studies also showed the similar findings. Ana Claudia CC did not found a single case of *Trichomonas vaginalis* in vulvovaginitis patient. Narayan Khedkar observed 1.8 % cases of *Trichomonas vaginalis* in infectious vaginitis cases almost similar to present study.

A study on data from the 1960's through to the 1990's demonstrated that there has been a decrease in the frequency of cervicovaginal infection due to *Trichomonas vaginalis* and an increase in vulvovaginitis due to Candida species especially over the last decade.¹⁵ Vulvovaginitis is an important public health problem, not only due to the gynecological and obstetric complications associated with it but also because the inflammation of the vaginal mucosa and the reduction of lactobacilli could facilitate the transmission of STDs, especially HIV infection^{3,6}. The results obtained demonstrated the high prevalence of genital candidiasis followed by bacterial vaginosis in RTI clinic attendees. Low prevalence of *Trichomonas vaginalis* is observed in this region. These conditions if undiagnosed or untreated may lead to major obstetric and gynecological complication which considerably increase treatment cost and hospitalization. Also have a negative impact on female mortality rates.

Conclusion

The results obtained demonstrated the high prevalence of genital candidiasis followed by bacterial vaginosis in RTI clinic attendees. Low prevalence of *Trichomonas vaginalis* is observed in this region. These conditions if undiagnosed or untreated may lead to major obstetric and gynecological complication which considerably increase treatment cost and hospitalization.

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