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# Study on Infection in Women with Vaginal Discharge of Reproductive Age Group attending OPD at Tertiary Care Centre

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**Abstract:** ***Aim: Aim of the present study is to find the incidence of various causes of vaginal discharge in females of reproductive age group (20 - 45 years) attending OPD at tertiary care center. Material & Methods: The present study was conducted between June 2020 and August2020. The respondents were females in reproductive age group (20 - 45 years) attending Obstetrics and Gynecology OPD with history of vaginal discharge. After detailed clinical examination of the patient, the posterior fornix was swabbed with a cotton tip applicator. Swab was sent for whiff test, wet mount examination, gram's stain and culture. Results: A total of 100 women with vaginal discharge were studied, of which 77 were diagnosed with pathogens. The most common form of infection was mixed infection which was diagnosed in 36 patients (36 %). As a single pathogen, the next most common infection was Bacterial vaginosis seen in 24 patients (24%), Vulvovaginal candidiasisin 15patients (15%) and Trichomonasvaginalis seen in 2 patients (2%). Conclusion: The clinical manifestations of vaginits may vary. After getting the microbiological investigation of vaginal flora, we could come to the conclusion of the etiology of vaginitis. Clinical Significance: The identification of incidence of various causes of vaginitis in women of reproductive age group and its definitive treatment reduces further medical morbidity and complications in these women.***

**Keywords:** vaginal discharge, Vaginitis, Bacterial vaginosis, Vulvovaginitis candidiasis, Vaginal candidiasis, Trichomonas vaginalis, trichomoniasis, Chlamydia trachomatis, Gonorrhoea, PID, reproductive age group

## 1. Introduction

- Vaginal discharge is a common presenting complaint among women of all ages attending the health care centers and clinics. The healthy vaginal tract of reproductive - aged women is colonized by normal microbiota dominated by lactobacilli, which protect against pathogenic bacterial species when present in sufficient numbers [1]. Normally the ph of vagina is - 3.8 - 4.4 and prevent infection. Therefore, depletion of lactobacilli distorts the balance of the vaginal microbiota and leads to an increase in anaerobic organisms, contributing to BV [2, 3]
- Normal physiological vaginal discharge is white, non offensive and vary in consistency and amount over time. It is thick and sticky for most of menstrual cycle due to estrogen but becomes thin, clear and stretchable around the time of ovulation due to decrease estrogen level.
- Abnormal vaginal discharge is characterized by change in consistency, color, volume or odour and may be associated with symptoms like itching, pain, soreness, intermenstrual/postcoital bleeding. It usually happens when there is change in the balance of bacteria or in yeast that resides in vagina.
- Good understanding of normal physiological discharge and causes of abnormal discharge is thus important for proper management.

**Causes for vaginal discharge**

**1) Physiological**

- Newborn infants: due to high level of circulating maternal estrogen.
- In reproductive years fluctuating level of estrogen and progesterone throughout menses affect quality and quantity of cervical mucus.

**2) Pathological**

- Bacterial vaginosis (BV)
- Vulvovaginitis candidiasis (VVC)
- Trichomonas vaginalis (TV)
- STIs: Chlamydia Gonorrhoea
- Foreign body: retained tampons
- Irritants: perfumes, deodorants
- Atrophic vaginitis
- Fistulae
- Tumours of vulva, vagina, cervix and endometrium
- Trauma (recent perineal repair or vaginal surgery)

The most common causes of infectious vaginitis are bacterial vaginosis (BV), vulvovaginal candidiasis (VVC) and trichomonal vaginitis (TV) [4].

**History and examination**

- History and examination of the patient should be carried out before deciding whether investigations and treatment are required.
- ***Features of vaginal discharge to be elicited include***:
- Onset, Duration
- Timing related to menstrual cycle
- Odour, Colour, Consistency
- any exacerbating factors

***Associated symptoms including***

- Itch, Discomfort, Pain
- Dysuria

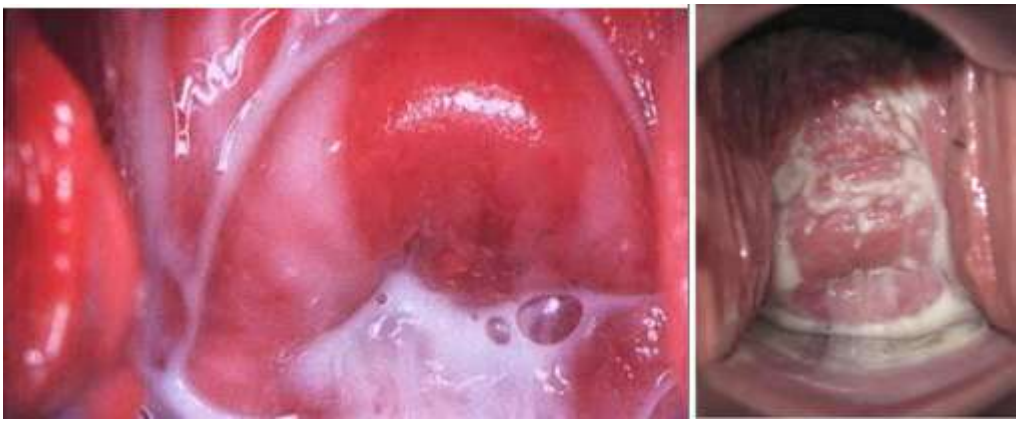
- Dyspareunia
- Irregular bleeding should be enquired.
- ***A routine gynaecological history should also be obtained including***
- Parity,
- Smear history,
- Sexual history
- Current contraception.
- Sexual history should include the need for discussion regarding full STI screening.

**Examination consists of**

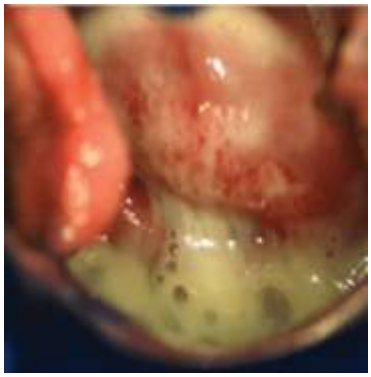
- **Inspection includes -** a general external inspection of the vulva and perineal region followed by inspection of the vagina and cervix with the aid of a speculum
- **bimanual examination -** will give the examiner an idea about the position, size and mobility of the uterus as well as the presence of any adnexal masses
- **Vaginal swab** - Vaginal swab will help in the diagnosis of pathogens that may be responsible for the abnormal discharge

Look for characteristic signs that may indicate an infective cause of vaginal discharge Table No.1

| Type | Characters |
|---|---|
| Bacterial Vaginosis | • Thin White/ grey |
| | • Fishy Odour |
| | • No Vaginal or Vulvul inflammation or Soreness |
| Vaginal Candidiasis | • Odourless |
| | • White Curdy discharge |
| | • Vaginal erythema fissuring and/ or oedema |
| | • Exocriation of the vulva |
| Trichomoniasis | • Yellow- green |
| | • Frothy discharge |
| | • Fishy odour |
| | • Inflammation of the vulva and vagina |
| | • Strawberry appearance of the cervix |
| Cervicitis caused by Chlamydia | • Inflamed cervix which bleeds easily |
| | • Associated with a mucopurulent discharge |
| PID caused by Chlamydia | • Lower abdominal pain |
| | • With or without fever |



*Vaginal Candidiasis*



*Trichomoniasis*

## 2. Methods

This was a hospital based longitudinal study conducted between june 2020 and August 2020. The study was done on 100 female patients, who attended the Obstetrics and Gynaecology outpatient's department, with complaints of vaginal discharge. Informed consent was taken from the patients identified to be part of this study.

**Inclusion Criteria**

Sexually active women of age between 15 and 45 years presenting with vaginal discharge.

**Exclusion Criteria**

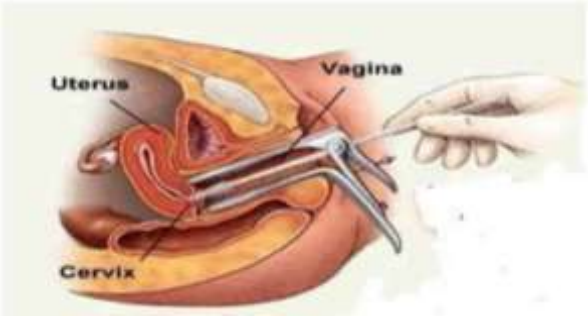
- Women older than 45 years
- Unmarried women
- Pregnant women
- Postmenopausal women
- Patients who have delivered or aborted six weeks prior
- Patients with vaginal bleeding.
- A detailed history was recorded and a thorough genital examination was done to look for any abnormalities in the vulva, vagina and cervix. The amount, odor, color and consistency of vaginal discharge were noted. A bimanual examination was done to look for any Adnexal tenderness.

**Clinical Investigation**

- Two vaginal swabs from the posterior vaginal fornix were collected before bimanual examination for each patient examined during this study. One of swabs was

sent for amine test and preparation of wet mounts. The second swab was sent for Gram staining and Culture.

- The objective of the above tests was as below:
- Amine test: To identify the presence of fishy odor as an evidence of Bacterial vaginosis.
- Wet mount: To identify the presence of the motile Trichomonas and Clue cells.
- Gram Staining: To Confirm the presence of Clue cells, budding yeast cells and psuedohyphae.
- Culture




**Management of vaginal infections**

- Bacterial vaginosis: Metronidazole 2 g as a single oral dose, metronidazole 400 - 500 mg twice daily for five to seven days, intravaginal clindamycin cream (2%) once daily for seven days, [5] Partner treatment not needed
- Vulvovaginal candidiasis: Vaginal clotrimazole preparations, or fluconazole 150 mg orally single dose [6], Partner treatment not needed
- Chlamydia trachomatis: Doxycycline 100 mg twice daily for seven days (contraindicated in pregnancy), azithromycin 1 g orally in a single dose (WHO recommends azithromycin in pregnancy [7], Partner treatment required
- Gonorrhoea: Cefixime 400 mg as a single oral dose or ceftriaxone 250 mg intramuscularly as a single dose [8] Partner treatment required
- Trichomonas vaginalis: Metronidazole 2 g orally in a single dose or metronidazole 400 - 500 mg twice daily for five to seven days [9]. Partner treatment required

## 3. Results

**Table 2**

| Type of Vaginal infection | Incidence | |
|---|---|---|
| | N | % |
| **Overall Incidence (any type)** | 77 | 77% |
| Single Infection | | |
| • B.V. | 24 | 24% |
| • VVC | 15 | 15% |
| • TV | 2 | 2% |
| **Mixed Infection** | 36 | 36% |
| **Secondary Infection** | | |
| • Staphylococcus aureus | 23 | 23% |
| • Escherichia Coli | 9 | 9% |
| • Klebsiella | 7 | 7% |
| • Enterococcus | 1 | 1% |

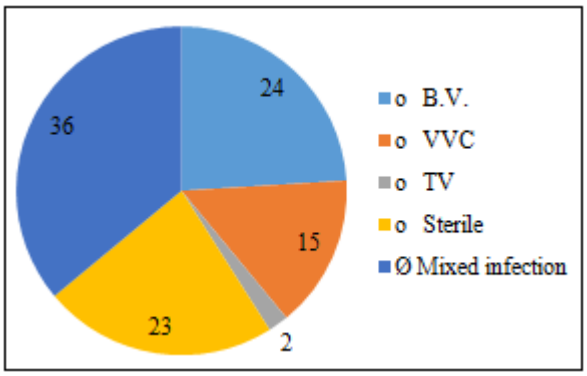



**Table 3:** Characteristics of reproductive aged Women

| Age | |
|---|---|
| <26 year | 28 |
| 26- 35 Year | 61 |
| > 35 Year | 11 |

| Education Level | |
|---|---|
| Illiterate | 49 |
| 5th Standard | 21 |
| Higher Secondary | 25 |
| Graduate | 5 |

| Residence | |
|---|---|
| Urban | 32 |
| Rural | 68 |

| Employment Status | |
|---|---|
| Employed | 9 |
| Unemployed | 91 |

## 4. Discussion

Our study shows most common form of vaginal discharge infection in reproductive aged women was mixed infection diagnosed in 36% cases. As single pathogen most common infection was bacterial vaginosis seen in 24 %, vulvovaginal candiasis in 15%, trichomonas vaginalis in 2%. Our study was comparable to Maha Abdul Aziz et al [10], Sarada Tiyyagura et al [11], Kamya Ramesh Swaminathan et al [12].

## 5. Conclusion

Our findings show that Bacterial vaginosis is the most common single infection; followed by Candidiasis and Trichomonas vaginalis in females of reproductive age presenting with vaginal discharge in OPD. Overall most common cause was mixed infections that were diagnosed.

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