

Vaginal Inflammation due to overgrowth of naturally occurring flora in healthy and sexually active women of reproductive age: A cross sectional study

Munawar Afzal¹, Shumaila Yasin², Ammara Sadaf³, Sabeena Umer⁴, Shazia Roman⁵, Faiza Irshad⁶

¹Associate professor of Gynae & Obs, Sahara medical college Narowal, Sughra Shafi Medical Complex Narowal

²Assistant Professor of Gynae & obs, DHQ teaching hospital Gujranwala

³In charge DC Health Center, DC Colony Gujranwala

^{4,5}Assistant Professor Gynecology, Sialkot Medical College Sialkot

⁶Anatomy Department, M.Islam Medical and Dental College Gujranwala

Correspondence to Dr. Munawar Afzal

ABSTRACT

Background: Females frequently experience vaginal discharge. A vaginal imbalance can result in bacterial overgrowth and discharge from the vaginal area. Despite extensive knowledge of the illness, it primarily affects women who are sexually active. Bacterial vaginitis is a kind of vaginal infection (BV). Several species of *Gardnerella vaginalis*, *Mycoplasma hominis*, *Mobiluncus* species, *Bacteroides* spp., *Prevotella* spp., *Peptostreptococcus* spp., *Fusobacterium* spp., and *Porphyromonas* species have taken the place of the vaginal lactobacillus species in this study.

Aim: We were interested in seeing how many sexually active ladies with vaginal discharge presented to emergency department.

Methods: The participants in the trial were 88 women of reproductive age who complained of profuse vaginal discharge. Women who are married, women who have skin disorders, and women who have reached menopause are forbidden from participating. Normal Trichomonads were discovered on wet-mount slides made of saline. A grame coloured smear of blood Nugent classification was utilised in the scoring. Pseudohyphae and/or budding yeast cells are used to test for *Candida albicans* infection.

Results: The average age was 30 years old. The most prevalent reason for this was vaginosis (29.54%). *Trichomonas* (1.13%) and candidiasis (10.22%) are the most common pathogens. There is no reason for vaginal discharge. It is possible that almost half of the ladies will be fired. Infected as opposed to reactive. TPHA and VDRL are two acronyms that stand for Transparency, Transparency, and Reliability.

Conclusion: It is also necessary to upgrade the laboratory services network in order to supply accurate data. More cases of bacterial vaginosis were discovered as a result of the investigation. An STD, RTI, VDRL, and HIV positive individuals were all shown to be substantially associated.

Keywords: Vaginal discharge, sexually active females, intrauterine contraceptive device

INTRODUCTION

Gardnerella vaginalis, *Mycoplasma hominis*, *Mobiluncus* spp., *Bacteroides* spp., *Prevotella* spp., and other anaerobic flora are responsible for the transmission of BBV (BV).

In women of reproductive age, vaginal discharge is a common problem to deal with. Many women are bothered by vaginal discharge, which lowers their quality of life and wastes their resources. Variations in vaginal discharge are caused by changes in oestrogen levels, the menstrual cycle, and the passage of time. The vaginal flora is always changing. The most common causes of vaginal discharge. A woman's vaginal discharge can be caused by a number of factors. A variety of infections, including Trichomoniasis and bacterial discharge. The vast majority of discharge therapy is syndromic and empirical in nature, relying on naked eye evaluation, which is unsatisfactory owing to the loss of diagnostic accuracy that occurs along the process.

Modern vaginal discharge therapy makes use of both visual and laboratory examinations. When many rounds of empirical therapy fail, it is necessary to seek laboratory aid. It not only has a negative financial and social impact on people, but it also promotes resistance. It is estimated that BV accounts for one-third of all vulvovaginal infections in women of reproductive age. BV is a multi-pathogen illness that affects several different organs. *Bacteroides saprophytes* and *Gardnerella vaginalis* are two further species to look out for. *Candida* infection is linked to a variety of factors, including antibiotic abuse, diabetes, and pregnancy. Itchy discharge from the vaginal area. The presence of vulva and vaginal erythema is common.

Trichomonas Vaginalis, a flagellated protozoa that causes Trichomoniasis, is the cause of the disease. Trichomoniasis is a disease that affects women in America. Over 170 million people

are infected with trichomoniasis worldwide. It's thin and has a tendency to pool. On examination, erythema is seen. Colposcopy reveals the strawberry cervix in the case of trichomoniasis. BV is associated with a high number of sexual partners, recent antibiotic usage, and passive smoking, among other risk factors. Despite this, bacterial vaginosis is a condition that affects both men and women. Bacterial vaginosis is characterised by the presence of an odour and a thin, white discharge. Three of the four songs are present in bacterial vaginosis (Ames Criteria)

1. Presence of clue cells.
2. Homogenous white, non-inflammatory discharge that adheres to the vaginal walls.
3. The pH of vaginal fluid is more than 4.5.
4. The presence of a fishy odour in vaginal discharge, either before or after the addition of 10% potassium hydroxide. Bacterial vaginosis is the most common cause of miscarriage. This includes procedures such as gramme staining and biochemical indicators, among other things. Gram staining of vaginal discharge is a quick, objective, and low-cost method of diagnosing vulvar infection. It makes it possible to diagnose someone after the fact. The same may be said for Nugent's score.

The goal of this study was to determine the prevalence of bacterial vaginosis in sexually active females who presented to the OB/GYN outpatient department.

MATERIALS AND METHODS

Obstetrics and Gynecology is the branch of medicine that deals with women's health. The participants in the trial were 88 women of reproductive age who complained of profuse vaginal discharge. Patients who are menopausal or married should be avoided.

Every patient had a thorough history taking, physical examination, and laboratory testing, all of which were documented in a proforma. The pH was determined on the same day that the discharge was taken. To avoid contamination with secretion, pH

Received on 11-07-2021

Accepted on 22-12-2021

paper was dipped into the vaginal discharge using forceps to prevent contamination with secretion. The Whiff or Amine test is performed on a glass slide using vaginal discharge in conjunction with 10% KOH. Each patient received two sterile cotton wool vaginal swabs to use as a cleaning agent. After that, rub and rotate the fornix.

The menstrual discharge of married women between the ages of 18 and 36 was investigated. With their approval, everything was carried out. The tests were carried out in the Department of Microbiology. At 100x and 400x magnification, this microscope was used to investigate trichomonads and yeast cells on saline wet-mount slides. Nugent's standard quantitative and morphological categorization system was used to assess these samples. According to the amount of Lactobacillus morphotypic bacteria found in each oil immersion field, the morphotype was assessed. Gardnerella morphotypic bacilli concentrations ranged from 0 to 1, 4, 530, and more than 30 micrograms/mL. The morphotypes of Mobiluncus were categorised as 0, 1, or 2 based on the number of morphotypic bacilli present. B. vaginosis was found to be positive in seven cases, intermediate in four, and negative in four. The presence of WBC was determined in 15 Gram stained vaginal discharge smears. Pseudohyphae and/or budding yeast cells were shown to be Candida indicators. Three milliliters of blood were centrifuged at 3500 rpm for 5 minutes to separate sera, which were then kept at 2-8C until needed. The experiment was carried out by the Research Laboratory. These were then tested quantitatively for VDRL using two-fold serum dilutions in 0.9% saline, which were subsequently analysed qualitatively. The Treponema pallidum Haemagglutination Test (TPHA) was performed on all sera that tested positive in the qualitative VDRL test to confirm the presence of specific anti-treponemal antibodies.

RESULTS

A total of 88 ladies visited the OB/GYN. The research comprised 88 women who met the eligibility requirements throughout the course of a year. The majority of these 88 ladies (39.5%) were from the (Table 1). It was 28 years old at the time (range 18-36). Women were ignorant, and only a small number had graduated (Table 2).

Table1. Age distribution of study population (n=88)

Age Group (in Years)	n	%age
≥25	6	6.8
26-35	44	50
36-40	38	43.2

Table2. Vaginitis/vaginal discharge: etiological diagnosis in patients managed according to syndrome

	n	%age
Bacterial vaginosis:	26	29.54
Vaginal candidiasis	9	10.22%
Trichomoniasis	1	1.13
Total	36/88	4.90%

It was discovered in nearly 36 of instances that they had bacterial vaginosis, with 29.54% of those cases being of moderate severity. Another prevalent cause was candidiasis of the vaginal mucosa (Table 2). In 36 Gram stained smears, 7 pus cells per oil immersion field were seen (1000x magnification). Approximately half of the ladies did not have an etiologic diagnosis. No lady tested positive for HIV. Individuals experiencing vaginal discharge or lower abdomen discomfort were treated in accordance to recommendations.

DISCUSSION

It is second only to menstrual abnormalities in terms of prevalence among women. First and foremost, a primary care physician must

determine if the vaginal discharge is natural or pathological. Although the illness is not life threatening, it can have a negative impact on a woman's quality of life. Gardnerella, Candida, and Trichomonas are the bacteria that cause vaginitis the most frequently. Bacterial vaginal infections are the most common type of infection. Gardnerella and anaerobes are present, and the environment smells. Amsel, Spiegelella, and Nugent are only a few of the diagnostic indicators. The most common vaginal infection, bacterial vaginal infection (BV), varies depending on the community. The researchers looked at 88 married women of reproductive age who had vaginal discharge. Only approximately a third of the cases, on the other hand, were infectious (bacterial vaginosis, vulvovaginal candidiasis, and trichomoniasis). Women with moderate BV accounted for 19.5% of the total. This low test confirmation rate in syndromically treated individuals is not a novel phenomenon. In sexually active females who had vaginal discharge, 29.2% had bacterial vaginosis, 11.5% had Candida albicans, and 3.8% had Thermococcus vaginalis, according to the study¹⁸. A research conducted on 183 women with vaginal discharge syndrome discovered that 38(20.7%) of those who had the condition tested positive in the lab¹⁹.

According to Ray K et al., the sensitivity and specificity of syndrome detection of vaginal discharge syndrome are both high. A research conducted in Sub-Saharan Africa discovered no connection between patient symptoms and lab-confirmed sexually transmitted infection testing. This method may result in over diagnosis of STIs, with even normal discharge being labeled as worrisome and requiring treatment. Poor specimen collecting, transportation, and laboratory diagnostic processes are all linked to this problem.

According to our findings, all women who have vaginal discharge should be investigated. It is important to recognize the presence of infectious vaginal secretion causes. Following the receipt of the test results, it appears that a certain medication is the best option. There are certain limitations to our research. First and foremost, because the research was conducted in a hospital rather than a community, the findings may not be genuinely representative of the general public. It also followed guidelines, which may have resulted in a few cases being ignored. It is characterized by a dysbiosis of the vaginal microbiota, particularly lactobacilli, which is a bacterial infection. The presence of BV has been associated to an increased risk of STDs. 25-29Infection with GTB, a kind of extrapulmonary MTB infection, results in infertility in women, particularly in underdeveloped nations.

CONCLUSION

Finally, after syndromic case management has been initiated, it is critical to adjust therapy in response to the findings of laboratory tests. It is necessary to increase the network of laboratory services in order to improve the accuracy of diagnosis. The pH of the vaginal fluid is significantly associated with RTI, VDRL, and HIV positive individuals.

REFERENCES

1. Russo R, Karadja E, De Seta F. Evidence-based mixture containing Lactobacillus strains and lactoferrin to prevent recurrent bacterial vaginosis: a double blind, placebo controlled, randomised clinical trial. *Benef Microbes*. 2019 Feb 08;10(1):19-26.
2. Deese J, Pradhan S, Goetz H, Morrison C. Contraceptive use and the risk of sexually transmitted infection: systematic review and current perspectives. *Open Access J Contracept*. 2018;9:91-112.
3. Javed A, Parvaiz F, Manzoor S. Bacterial vaginosis: An insight into the prevalence, alternative treatments regimen and it's associated resistance patterns. *Microb Pathog*. 2019 Feb;127:21-30.
4. Coughlin G, Secor M. Bacterial vaginosis: update on evidence-based care. *Adv Nurse Pract*. 2010 Jan;18(1):41-4, 53.
5. Han C, Li H, Han L, Wang C, Yan Y, Qi W, Fan A, Wang Y, Xue F. Aerobic vaginitis in late pregnancy and outcomes of pregnancy. *Eur J Clin Microbiol Infect Dis*. 2019 Feb;38(2):233-239.
6. Jain JP, Bristow CC, Pines HA, Harvey-Vera A, Rangel G, Staines H, Patterson TL, Strathee SA. Factors in the HIV risk environment

- associated with bacterial vaginosis among HIV-negative female sex workers who inject drugs in the Mexico-United States border region. *BMC Public Health*. 2018 Aug 20;18(1):1032.
7. Eastment MC, McClelland RS. Vaginal microbiota and susceptibility to HIV. *AIDS*. 2018 Mar 27;32(6):687-698.
 8. Verstraelen H, Swidsinski A. The biofilm in bacterial vaginosis: implications for epidemiology, diagnosis and treatment: 2018 update. *Curr Opin Infect Dis*. 2019 Feb;32(1):38-42.
 9. Secor M, Coughlin G. Bacterial vaginosis update. *Adv NPs PAs*. 2013 Aug;4(8):23-6.
 10. Verstraelen H, Verhelst R. Bacterial vaginosis: an update on diagnosis and treatment. *Expert Rev Anti Infect Ther*. 2009 Nov;7(9):1109-24.
 11. Coleman JS, Gaydos CA. Molecular Diagnosis of Bacterial Vaginosis: an Update. *J Clin Microbiol*. 2018 Sep;56(9)
 12. Brotman RM, Klebanoff MA, Nansel TR, Yu KF, Andrews WW, Zhang J, et al. Bacterial vaginosis assessed by gram stain and diminished colonization resistance to incident gonococcal, chlamydial, and trichomonal genital infection. *J Infect Dis*. 2010;202(12):1907–15. <https://doi.org/10.1086/657320>.
 13. Cohen CR, Lingappa JR, Baeten JM, Ngayo MO, Spiegel CA, Hong T, et al. Bacterial vaginosis associated with increased risk of female-to-male HIV-1 transmission: a prospective cohort analysis among African couples. *PLoS Med*. 2012;9(6):e1001251. <https://doi.org/10.1371/journal.pmed.1001251>.
 14. Masson L, Passmore JA, Liebenberg LJ, Werner L, Baxter C, Arnold KB, et al. Genital inflammation and the risk of HIV acquisition in women. *Clin Infect Dis*. 2015;61(2):260–9. <https://doi.org/10.1093/cid/civ298>.