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Original Research Article

Assessment of Infectious Vaginal Discharge and Its Etiologic Profile: An Observational Study

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Abstract

Aim: The aim of the present study is to evaluate the spectrum of various microorganisms responsible for the infectious vaginal discharge. **Methods:** 100 sexually active women in reproductive age group with complain of abnormal vaginal discharge were included in this study. A detailed history of patient was taken regarding nature of discharge, colour, smell along with dysuria, dyspareunia, itching of vulva and lower abdominal pain. Sterile cotton wool vaginal swabs were used to take high vaginal swab by rubbing and rotating in the posterior vaginal fornix. One swab was taken for wet mount and second swab was sent for microbiology for gram stain and culture. Bacterial vaginosis was diagnosed by gram stain, Trichomonas vaginalis was diagnosed by wet smear microscopy and Candidiasis was diagnosed by gram's stain. **Results:** Out of 100, 52% patients presented with pruritus vulva. Characteristic of discharge was different in different patients, Curdy discharge was present in 62% of cases, frothy discharge was present in 18% and homogeneous charge was present in 19%. Dysuria was present in 49% patients. Dyspareunia was present in 28% patients and 57% patients presented with lower abdominal pain. Clinical findings were different in different patients. Regarding changes in vulva, 16 % patients have excoriation and erythema was present in 11 % patients. Cervical changes were present in 7%. Vaginal erythema was present in 11% patients. Regarding nature of discharge, it was excessive in 32% patients with malodour in 20% patients and purulent in 43% patients. Regarding microbiological spectrum of vaginal discharge out of 100 patients 57 patients have bacterial vaginosis. Trichomonas vaginitis was present in 9% patients. Candidiasis was present in 6% patients. Some patients were having more than one infection like Bacterial vaginosis and Trichomonas vaginitis was coexisting in 12%, Bacterial vaginosis + Candidiasis were present in 8% patients. Mixed infection was present in 8%. **Conclusion:** The patients commonly presented with curdy white discharge, pruritus vulva and lower abdominal pain. Erythema and excoriation in vulva were common presentation, followed by erythema of vagina.

Keywords: vaginal discharge, microbes, bacteria

Introduction

Vaginal discharge is one of the common reasons for gynecological consultation. Not all women with vaginal symptoms have vaginitis; approximately 40% of women with vaginal symptoms will have

some type of vaginitis.[1] Despite the control over the vaginal micro-environment exerted by the lactobacilli, many other microorganisms can be cultivated from the vaginal samples of healthy women. These organisms do not trigger a pathological state, but when one class of them dominates, the resulting imbalance precludes to vaginitis/vaginosis. The common infectious causes of vaginitis include anaerobic bacteria causing bacterial vaginosis (BV), vulvovaginal candidiasis and Trichomonas vaginitis.[1] The uncommon infectious causes include atrophic vaginitis with secondary bacterial infection, foreign body with secondary infection, desquamative inflammatory vaginitis (clindamycin responsive), streptococcal vaginitis (Group A), ulcerative vaginitis associated with Staphylococcus aureus and idiopathic vulvovaginal ulceration associated with human immunodeficiency virus (HIV). Identifying the infectious source of vaginal discharge can be challenging, because a large number of pathogens cause vaginal and cervical infection and several infections may co-exist. Patient's history and physical examination findings along with appropriate tests may suggest a diagnosis. Effective treatment of vaginal discharge requires that the etiologic diagnosis be established and identifying the same offers a precious input to syndromic management and provides an additional strategy for HIV prevention. Among infections, vulvovaginal candidiasis (VVC) affects about 75% of reproductive-aged women at least once during their lives, with about 5% of them suffer due to recurrences[2]. VVC is caused by Candida spp. which, in particular conditions, instead of being part of the normal vaginal microflora, become a robust opportunistic fungal pathogen, with a tendency to overgrow[3]. C. albicans is responsible for 80–92% of VVC cases. The causes and phases of the transition from the homeostasis to the pathogenic state of VVC are not clear yet, as well as the impact, if any, on the vaginal microbiome structure and metabolomic profile. Chlamydia trachomatis (CT) represents the most common bacterial STI worldwide, and new infections probably exceed 131 million per year.[4] CT is a Gram-negative, obligate intracellular bacterial pathogen with a unique biphasic developmental cycle.[5] CT serovars from D to K are responsible for common and frequently asymptomatic urogenital infections (i.e. urethritis and cervicitis), that may lead to several sequelae and complications, including pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. Globally, serovars E, F, D, and G represent the most common serovars, accounting for 60–80% of cases.[6,7] Given its high prevalence and sociological impact, correlation of CT infection with the cervico-vaginal microbiome has recently gained particular attention: some cross-sectional studies have been published.[8,9] and vaginal microbiome/metabolome fingerprints have been explored[10].

Materials and methods

A prospective observational study was conducted in the Department of Obstetrics and Gynecology, Patna Medical College and Hospital, Patna, Bihar, India for 1 year, after taking the approval of the protocol review committee and institutional ethics committee. 100 Sexually active women in reproductive age group with complain of abnormal vaginal discharge were included in this study based on following inclusion and exclusion criteria. Patients with age 18 to 45 years, abnormal vaginal discharge as chief complain were included in this study. Patients with bleeding per vagina, malignancy, pregnancy, post partum, postmenopausal, Post-hysterectomy patients and use of antimicrobial agent were excluded from this study.

Methodology

As per selection criteria 100 patients with complain of abnormal vaginal discharge attending gynaecology outpatient

department were included in the study. A detailed history of patient was taken regarding nature of discharge, colour, smell along with dysuria, dyspareunia, itching of vulva and lower abdominal pain. After that speculum examination was done to know the nature, colour and measure the PH. Sterile cotton wool vaginal swabs was used to take high vaginal swab by rubbing and rotating in the posterior vaginal fornix. One swab was taken for wet mount and second swab was sent for microbiology for gram stain and culture. Bacterial vaginosis was diagnosed by gram stain, Trichomonas vaginalis was diagnosed by wet smear microscopy and Candidiasis by gram's stain. Syndromic-based management recommended by WHO was used fortreatment.

Statistical analysis

Data were recorded in excel sheet and statistical Analysis was done with software SPSS-14 version. Data were calculated as percentage and proportions.

Results

A total of 100 women with vaginal discharge were enrolled for this study as per exclusion and inclusion criteria. The mean age of women was 33.87+ 5.89 years most of them were married (96%) and belong to upper lower socio-economic group.

Table 1: Symptoms of patients presented with vaginal discharge

Variables		Number(n=100)	Percentage
Pruritus vulva		52	52
Characteristic of discharge	Curdy white	62	62
	Frothy	18	18
	Homogeneous green	19	19
Dysuria		49	49
Dyspareunia		28	28
Lower abdomen pain		57	57

Regarding symptoms of patients presented with vaginal discharge, 52% patients were presented with pruritus vulva. Characteristic of discharge was different in different patients, Curdy discharge was present 62%, frothy discharge was present 18% and homogeneous charge was present in 19%. Dysuria was present in 49% patients. Dyspareunia was present in 28% patients and 57% patients were presented with lower abdominal pain.

Clinical finding was different in different patients. Regarding changes in vulva, 16 % patients had excoriation and erythema was present in 11 % patients. Cervical changes were present in 7%. Vaginal erythema was present in 11% patients. Regarding nature of discharge, it was excessive in 32% patients, with malodour in 20% patients and purulent in 43% patients.

Table 2: Clinical finding in patients with vaginaldischarge.

Variables		Number(n=100)	Percentage
Changesin vulva	Excoriation	16	16
	erythema	11	11
Cervical changes		7	7
Vaginal erythema		11	11
Nature ofdischarge	Excessive	32	32
	malodour	20	20
	purulent	43	43

Table 3: Microbiological spectrum of patients withvaginal discharge.

Variables	Number(n=100)	Percentage
Bacterial vaginosis	57	57
Trichomonas vaginitis	9	9
Candidiasis	6	6
Bacterial vaginosis + Trichomonas vaginitis	12	12
Bacterial vaginosis +Candidiasis	8	8
Mixed	8	8

As per table 3, regarding microbiological spectrum of vaginal discharge out of 100 patients 57 patients have bacterial vaginosis. Trichomonas vaginitis was present in 9% patients. Candidiasis was present in 6% patients. Some patients were having more than one infection like Bacterial vaginosis and Trichomonas vaginitis was coexisting in 12%, Bacterial vaginosis + Candidiasis were present in 8% patients. Mixed infection was present in 8%.

Discussion

In present study we have evaluated 100 patients with vaginal discharge, The mean age of women was 33.87+ 5.89 years most of them were married (96%) and belong to upper lower socio-economic group which is supported by the work of Sivaranjini R, Jaisankar T, Thappa DM, et al.[11,7] In present study 52% patients presented with pruritus vulva. Vijayalakshmi D, Patil Sunil S, Sambarey Pradip has reported that vaginal pruritus was most common presentation in his study and it was present in 36% patients which partially support our study.[12] But our study is supported by Sharon L Hillier, Michele Austin et al.[13] In present study regarding characteristic of discharge, Curdy discharge was present in 62%, frothy discharge was present 18% and homogeneous charge was present in 19% cases. This is supported by the study of Venugopal S, Gopalan K, Devi A, Kavitha A et al.[14]

In our study lower abdominal pain was most common followed by dysuria and dyspareunia which corroborates with the study of Narayankhedkar A, Hodiwala A, Mane A et al and Saidu AD, Tunau KA, Panti AA, Nwobodo EI, Mohammed Y, Amin J, et al.[15,16]

Clinical findings were different in different patients. Regarding changes in vulva, 16 % patients have excoriation and erythema was present in 11 % patients. Cervical changes were present in 7%. Regarding nature of discharge it was excessive in 32% patients, with malodour in 20% patients and purulent in 43% patients. This is supported by the work of Koumans EH, Sternberg M et al and Carr PL, Felsenstein D, Friedman RH et al.[17,18]

In our study bacteria vaginosis is most common followed by Trichomonas vaginitis and Candidiasis which is similar to the work of David A. Eschenbach, Sharon Hillier and Venugopal S, Gopalan K, Devi A, Kavitha A et al.[14,19] Bacterial vaginosis and Trichomonas vaginitis was coexisting in 12%, Bacterial vaginosis + Candidiasis were present in 8% patients. Mixed infection was present in 8% this finding is supported by the work of T. N. Gandhi, M. G. Patel, and M. R. Jain et al and P. Madhivanan, K. Krupp, V. Chandrasekaran et al.[20,21]

Conclusion

The present study concluded that the patients commonly presented with curdy white discharge, pruritus vulva and lower abdominal pain. Erythema and excoriation in vulva were common presentation, followed by erythema of vagina. Nature of discharge was mucopurulent in most patients. Bacterial vaginosis was most common followed by Trichomonas vaginitis.

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