WHITE DISCHARGE PER VAGINA: A CLINICO–MICROBIOLOGICAL STUDY IN WOMEN ATTENDING GYNAECOLOGICAL OUTPATIENT DEPARTMENT

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ABSTRACT

OBJECTIVE

To study the clinical patterns in patients attending Gynaecology OPD with White Discharge per vagina (WDPV).
To diagnose causative organism using simple microbiological tests.
To develop a diagnostic model based on clinical and microbiological findings.

METHODS

Women attending Gynaecological OPD with excessive WDPV were included in the study. A detailed clinical history and elaborate history of vaginal discharge was taken, associated symptoms like itching vulva, burning sensation in vulva, dysuria and other urinary symptoms, dyspareunia was taken. Detailed General Physical Examination, Per Abdominal Examination was done. Careful vulvo-vaginal examination to look for erythema, oedema, soreness, discharge was done. Per speculum examination to visualise the cervix and vaginal wall done. Following simple tests done.
pH of vaginal secretion using colour coded pH strips (2-10).
Wet mount–Direct microscopy where a loop full of vaginal secretion is mixed with 1-2 drops of normal saline and visualised under high power microscope.
KOH preparation where a loop full of vaginal secretion is mixed with 1-2 drops of 10% KOH and a cover slip is applied and visualised under high power microscope.
Gram stain where the vaginal secretion is made into a smear, air dried and Gram staining done.
Whiff's test/Amine test where a drops of KOH is added to vaginal secretion on speculum and odour noted.

KEYWORDS

White Discharge per Vagina, Wet mount, KOH preparation, Gram stain, Whiff's test.

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INTRODUCTION: WDPV is one of the common complaints in women attending Gynaecology OPD and STD clinics.[1,2,3] With the emergence of HIV infection and rampant spread of STD's the need to treat vaginal discharge assumes more importance. Only 20% of women with complaints of vaginal discharge had normal secretions.[4] About 2/3rd patients with complaints of vaginal discharge have infective cause.[3] Adverse sequelae of infective WDPV include increased susceptibility to HIV infection, Pelvic Inflammatory Disease, infertility, post hysterectomy cuff infections and pregnancy complications like second trimester pregnancy loss, preterm labour, chorioamnionitis, post caesarean endometritis.[1,5]

Random chemotherapy without appropriate microbiological diagnosis may not treat the infectious organism but also lead to resistant organisms. It is common for patients to have visited many health care workers without improvement. Hence microbiological diagnosis is necessary. Bacterial Vaginosis (BV) is the most common cause of vaginitis in women.[1,3] They present with malodourous vaginal discharge, vulval itching or burning.

BV can be diagnosed easily using Amsel's criteria[6] which includes thin homogenous white discharge, vaginal pH>4.5, positive Amine test, presence of clue cells on wet mount preparation. Vulvovaginal Candidiasis (VVC) is another common cause of vaginal discharge with prevalence being 15-50% in various studies. The lady presents with white thick, flaky curdy discharge, vaginal pruritis, splash dysuria and dyspareunia. Candidiasis is diagnosed easily by vaginal pH<4.5, presence of hyphae on wet mount, Gram stain showing strong Gram positive spores. Trichomoniasis is a non-viral STD with high incidence in sex workers.[3] Trichomoniasis often accompanies BV.[1]

Patients present with foul smelling, frothy greenish yellowish vaginal discharge with dyspareunia, external dysuria. Diagnosis is by vaginal pH>4.5, wet mount showing abundance of leucocytes and motile trichomonads. Gonorrhoea is the oldest known venereal disease caused by Neisseria gonorrhoeae. 80% of infectious persons are asymptomatic with incubation period of 10 days. Typical symptoms are vaginal discharge and dysuria. Gram stain of discharge shows presence of Gram negative intra cellular diplococci. Simple tests like vaginal pH, Wet mount, KOH preparation, Amine test have been used effectively on diagnosis of BV, VVC, Trichomonas vaginalis and

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Gonorrhoea. The sensitivity of syndromic approach in targeting vaginal infection was only 50–60%. This can be improved if diagnosis is undertaken with simple tests (Tann Morrison et al).[7]

RESULTS: A prospective clinico-microbiological study consisting of 100 women attending the Gynaecology OPD was undertaken. In our study, the mean age of women was 29.7 years, 83% of women belonged to middle socioeconomic status. 83% of women were currently married, the mean age of marriage being 20 years, 55% of women had 1–2 pregnancies, 4% had >4 pregnancies. 14% reported history of spontaneous abortions, 13% of women reported adverse pregnancy outcomes. History of Diabetes was noted in 6% women. Husband complaints like dysuria and ulcer were reported in 5% and history of multiple sexual partners was given by only one woman. Infective cause of vaginal discharge was found in 70% cases.

Bacterial Vaginosis emerged as most common infective cause of vaginal discharge found in 32% cases. It was associated with Trichomoniasis in 9.37% and with Candidiasis in 3.12% cases. Vaginal pH was >4.5 in 81.25% (26 cases) and Amine test was positive in 78.12% (25 cases). Clue cells were present in 85% (27 cases) and had high specificity of 98.5% and PPV of 96.4%.

Candidiasis was the next commonest infection found in 27 cases. Vaginal pH was <4.5 in 74% cases, curdy white discharge was found only in 51.85% cases. Trichomoniasis was seen in 15 cases. Wet mount can be used as a simple diagnostic test. Vaginal pH was >4.5 in 93.33% and Amine test was positive in 73.33% cases.

Seven pregnant women were in the study, of which 5 cases (71.4%) had Candidiasis, one woman had Trichomoniasis (14.28%).

All pregnant women were treated according to their infectious status and there was no adverse birth outcome. Two women were tested positive for HIV status.

Age in years	Number	%
18–20	6	6.0
21–25	20	20.0
26–30	33	33.0
31–35	21	21.0
36–40	16	16.0
41–45	4	4.0
TOTAL	**100**	**100.0**
Mean±SD	**29.76±5.89**	

Table 1: Age Distribution of Sample Studied

Diagnosis	Number	%
Bacterial Vaginosis	32	32.0
Candidiasis	27	27.0
Trichomoniasis	15	15.0
Gonorrhoea	0	0.0
No Infection	30	30.0
TOTAL	**104**	

Table 2: Frequency Distribution of Various Infections in the Study Sample

Tests	Sensitivity	Specificity	PPV	NPV	Accuracy	P Value
Thin Homogenous Discharge	81.3	72.1	57.8	89.1	75.0	<0.001
Vaginal pH>4.5	81.3	72.7	40.0	82.9	55.0	0.019
Amine Test	78.1	82.4	67.6	88.9	81.0	<0.001
Clue Cells	84.4	98.5	96.4	93.1	94.0	<0.001

Table 3: Diagnostic Performance of Amsel's Criteria in Respect of Bacterial Vaginosis

Tests	Sensitivity	Specificity	PPV	NPV	Accuracy	P Value
Curdy White Discharge	51.9	98.6	93.3	84.7	86.0	<0.001
pH <4.5	74.1	79.5	57.1	89.2	78.0	<0.001
Wet Mount	40.7	100.0	100.0	82.02	84.0	<0.001

Table 4: Diagnostic Performance of the Tests in Candidiasis

Tests	Sensitivity	Specificity	PPV	NPV	Accuracy	P Value
Vaginal pH>4.5	93.3	40.0	21.5	97.1	48.0	0.0126
Amine Test	73.3	69.4	29.7	93.7	70.0	0.0015

Table 5: Diagnostic Performance of Vaginal PH and Amine Test in Trichomoniasis

P value <0.001 is statistically significant

DISCUSSION: The importance of vaginal discharge has been recognised for past two to three decades because of morbidity it causes and also due to its co-association with HIV infection. Hence this study was undertaken to study clinical features of these abnormal discharges and diagnosis using simple, inexpensive tests. In this study of women with symptomatic vaginal discharge, a significant proportion (70%) had vaginal infection and no infectious cause was found in 30%. The results of present study were consistent with other studies.[3,4] Simple tests like vaginal pH, Wet mount, KOH preparation, Amine test have been used effectively in diagnosing Bacterial Vaginosis, Trichomonas Vaginalis and Candidiasis. Vaginal pH is simple, fast, easy

and inexpensive. pH <4.5 are either due to physiological discharge or Candidiasis. pH between 5 and 6 is highly suspicious of Bacterial vaginosis and a few Trichomonas vaginalis. pH >6 is most probably Trichomonas vaginalis. Wet mount provides the most valuable single method of differential diagnosis for vaginitis. Loss of Lactobacilli with presence of clue cells in Bacterial vaginosis. Presence of fungal spores, hyphae in Candidiasis. Presence of Trichomonads is Trichomonas Vaginalis. The use of these simple, low cost tests have increased significantly the specificity and PPV ensuring etiological diagnosis and that no women is incorrectly treated for these infections. Evidence strongly suggests that these infections are involved in pathogenesis of PID and also predispose to preterm delivery and to acquisition of HIV infection. In summary, Bacterial vaginosis, Candidiasis and Trichomonas Vaginalis are often much more prevalent than Gonorrhea and Chlamydia Trachomatis infection and strongly associated with symptoms and signs of abnormal vaginal discharge, can easily be diagnosed by simple low cost tests, also treated effectively and inexpensively. The present study highly recommends etiological diagnosis of vaginal discharge and specific treatment.

CONCLUSION: Empirical treatment of vaginal discharge without examination and etiological diagnosis should not be done. Use of simple tests like vaginal pH, Wet mount, KOH preparation be undertaken. The above methods are simple, they help in easy, accurate diagnosis of common vaginal infections and their appropriate treatment and also prevents development of drug resistance. It is cost effective in that extra costs of overtreatment of women in syndromic management can be utilised for aetiological diagnosis.

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