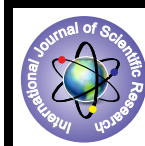


Incidence of various causes of vaginal discharge based on simple laboratory methods on OPD bases in pregnant & nonpregnant women of 11-60 year age group



Medical Science

KEYWORDS : vaginal discharge, laboratory tests, pregnant and nonpregnant women

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ABSTRACT

Vaginal discharge is the commonest problem faced by women, presenting with itching, pain &/or irritation of the vulva, main causes are candidial, bacterial and trichomonal infection. 272 women with vaginal discharge were included in the study who attended skin OPD. Commonest age-group with vaginal discharge was 20-40 years(83%), among these 21% patients were pregnant. 55% referred by gynecology department & 45% directly attended skin OPD. According to our assessment, based on laboratory tests, causes of vaginal discharge were candidial(46%), trichomonal(31%), bacterial(13%), mixed(5%) infections & 5% patients presented with physiological discharge. Candidial infection was associated with pH≤4.5, for this 10% KOH test (sensitivity=0.47, specificity=0.93, ppv=0.86); for bacterial vaginosis pH>4.5, whiff test(sensitivity=0.68, specificity =0.98, ppv=0.86) and for trichomonas vaginalis pH>4.5, wet mount(sensitivity= 0.46 specificity =0.98, ppv=0.85)

Introduction:

Vaginal discharge is a common clinical problem with many etiologies. In the past vague terminology such as “non-specific vaginitis” or “nonspecific lower genital tract infections” was often used to describe conditions that produce vaginal discharge. Recently, careful definition of clinical syndromes and increased knowledge about the specific agents that cause genital infection in women have made more precise diagnosis possible.[1]. [2]

Vaginitis resulting from bacterial, fungal or protozoal infections can be associated with altered vaginal discharge, odour, pruritus, vulvovaginal irritation, dysuria or dyspareunia depending on the type of infection. Bacterial vaginosis which is primarily characterized by a malodorous discharge is common in women with multiple sex partners and is caused by the overgrowth of several facultative and anaerobic bacterial species. Vulvovaginal candidiasis is characterized by pruritis and cotton cheese like discharge. Vaginal trichomoniasis, is associated with a copious yellow or green, sometimes frothy discharge. Differential diagnosis of these infections requires a thorough history, vulvo-vaginal examination, simple laboratory tests, including microscopy of the vaginal discharge.[3] Useful tests for etiological diagnosis include pH analysis of vaginal fluid, the “whiff test”, KOH mount, wet mount examination, culture and Gram’s stain.[1]

Aims:

- To correlate the sign, symptoms & clinical diagnosis in women with vaginal discharge with the help of simple laboratory test on OPD base.
- To determine incidence of vaginal discharge in pregnant & nonpregnant sexually active females.

Materials and method:

Women presenting to the skin OPD with vaginal discharge were interviewed, history was taken and vaginal discharge examined for quantity, consistency, odour, colour, and appropriate tests for diagnosing candidiasis, trichomoniasis, bacterial vaginosis and gonorrhoea like pH with a narrow range pH paper, Wet smear, 10% KOH mount and gram stain preparation of vaginal secretions were made and examined under microscope. This discharge collected from the upper part of the posterior fornix and lateral vaginal wall.

* Candidiasis:

KOH preparation: A drop of 10% KOH was added to the vaginal

secretions taken on a clean glass slide and mounted with a cover slip. Candida was identified as highly refractile, round or oval budding yeast cells.[2]

* Trichomonas vaginalis:

Specimens for the wet smear examination were taken from the posterior fornix and vaginal discharge with a sterilized cotton swab which was mixed with a drop of normal saline taken on a clean glass slide. A cover slip was mounted on the glass slide and the wet film was examined immediately under microscope for flagellate organisms. [2]

* Bacterial vaginosis:

a) Wet mount

The discharge from posterior fornix was taken with a sterilized cotton swab and mixed with a drop of normal saline taken on clean glass slide. A cover slip was mounted on the glass slide. The wet film was examined under microscope for the presence of clue cells which are vaginal epithelial cells with granular surface and blurred margins because of attached bacteria.

(b) Whiff test

A drop of 10% KOH was put on vaginal secretions taken on a glass slide and presence of ammonical odour was noticed.

(c) Gram stained smears

These smears were examined for presence of altered vaginal flora in form of Gram negative cocco-bacilli studding vaginal epithelial cells instead of normally predominant Gram positive lactobacilli. The vaginal epithelial cells in cases of bacterial vaginosis were having a granular surface and blurred margins because of the attached bacteria and these cells are called as clue cells. [2]

* Neisseria gonorrhoea:

Gram stained smear of the discharge from cervix and urethra, was examined under microscope for intracellular gram negative diplococci.[2]

Observation and results:

272 women with vaginal discharge were included in the study who attended Skin OPD in Smt. SCL Hospital from April 2012 to December 2012. Commonest age-group with vaginal discharge was 20-40 years(83%), among these 21% patients were pregnant. 55% referred by gynecology department & 45% directly attended skin OPD. In referred cases most common discharge

was physiological(37%).

Chart: 1 incidence of various causes of vaginal discharge in women.

According to our assessment, causes of vaginal discharge were candida species(46%), trichomonas vaginalis(31%), bacterial vaginosis(13%), mixed infections(5%) & 5% patients presented with physiological discharge.

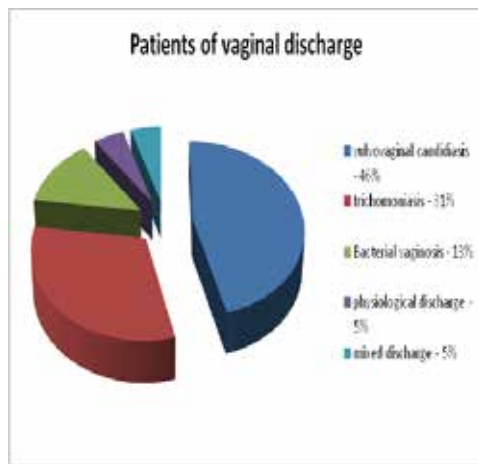


Table: 1 incidence of various causes of vaginal discharge in pregnant and nonpregnant women.

No. of patients	vulvovaginal candidiasis	trichomoniasis	Bacterial vaginosis	physiological discharge	mixed discharge
Total pts	126	84	35	13	14
% of total pts	46%	31%	13%	5%	5%
In non-pregnant women pt no.	97	66	33	8	11
In non-pregnant women pt %	45%	31%	15%	4%	5%
In pregnant women pt no.	29	18	2	5	3
In pregnant women pt %	51%	32%	3%	9%	5%

Clinical presentation of patients of vaginal discharge attending to OPD

In decreasing order of frequency, patients presented with pruritus(83%), dysuria(46%), dyspareunia(44%), lower abdominal pain(36%), erythema(36%), local irritation(15%), satellite lesions(12%), edema(11%), irregular menses(11%), fissures(7%) & punctuate erythema on vagina(4%). Maximum number of patients with bacterial vaginosis had a complaint of foul-smelling discharge (81%) while in cases of vulvovaginal candidiasis, pruritus (87%) was the most common symptom.

Table no. 2 Clinical presentation of patients of vaginal discharge attending to OPD

Symptoms		vulvovaginal candidiasis(126)	Trichomoniasis (84)	Bacterial vaginosis(35)	physiological discharge(13)	mixed discharge (14)
Pruritus	no	110	69	22	8	9
	%	87	82	63	62	64
Dysuria	no	63	37	17	3	5
	%	50	44	49	23	36

Dys-pareunia	no	55	34	18	3	4
	%	44	40	51	23	29
Abdominal pain	no	52	24	14	-	3
	%	41	28	40	-	21
Irregular menses	no	14	5	4	2	2
	%	11	6	11	15	14
Erythema	no	46	29	11	1	5
	%	37	34	31	8	36
Local irritation	no	11	19	4	-	4
	%	8	22	11	-	29
Satellite lesions	no	15	12	4	-	2
	%	12	14	11	-	14
fissures	no	6	8	2	-	2
	%	4	10	6	-	14
edema	no	16	11	4	-	-
	%	13	30	11	-	-
Punctuate erythema	no	4	5	2	-	-
	%	3	6	6	-	-

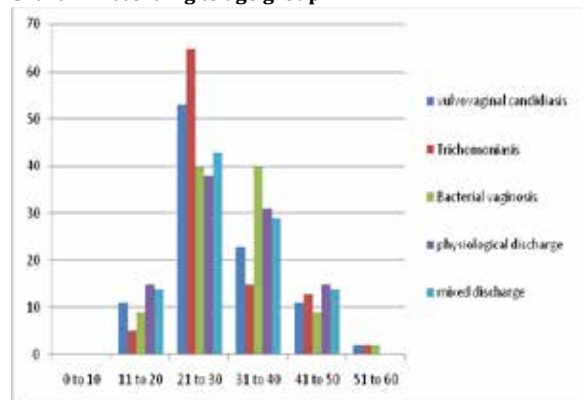
Pruritus is most common presentation in vulvovaginal candidiasis and trichomoniasis.

Table no. 3 According to age group

Age		Vulvovaginal candidiasis (126)	Trichomoniasis (84)	Bacterial vaginosis (35)	Physiological discharge (13)	mixed discharge (14)
0 - 10						
11 - 20	no	14	4	3	2	2
	%	11	5	9	15	14
21 - 30	no	67	54	14	5	6
	%	53	65	40	38	43
31 - 40	no	29	13	14	4	4
	%	23	15	40	31	29
41 - 50	no	14	11	3	2	2
	%	11	13	9	15	14
51 - 60	no	2	2	1	-	-
	%	2	2	2	-	-

Most common age group presenting with vaginal discharge is 21- 40 years (sexually active group)

Chart: 2 According to age group



Most common discharge present in 21-30 year age group is

trichomoniasis and in 31-40 year age group bacterial vaginosis.

Discussion

- The present study showed a maximum incidence of vaginal candidiasis (46%) followed by trichomoniasis (31%), bacterial vaginosis (13%), physiological discharge(5%) and mixed discharge(5%).
- The reported incidence of various causes of vaginal discharge in different studies is shown in table no.4
- The incidence of bacterial vaginosis has compared favourably to that of: Ries,[5] 30-35%; Mahadani et al,[6] 44.30%; Fonck et al,[9] 50%; Kamara et al,[10] 44.10%, Puri KJ [2] 45%
- The incidence of vulvovaginal candidiasis in our study has compared favourably to that of Levett,[4] 44.6%; Ries,[5] 20-25%; Kamara et al,[10] 30.7%, Puri KJ [2] 31%
- The incidence of trichomonas vaginalis has compared favourably to that of: Ries,[5] 10%; Mahadani et al,[6] 16.45%; Fonck et al,[9] 23%; Kamara et al,[10] 18%, Puri KJ [2] 2%
- Malla N et al[11] reported that the incidence of trichomoniasis in normal population is approximately 10 percent, though it varies between 0-65 percent in different geographical locations.[2]
- Patients presented with bacterial vaginosis complains mostly yellowish foul smelling discharge, patients of vaginal candidiasis mostly present with whitish curdy, flaky discharge, erythema, satellite lesions and pruritus, while patients with trichomoniasis usually complain of profuse, yellow green frothy discharge and vaginal or vulval irritation with complaints of vaginal odour, itching, dyspareunia and painful urination.[5] [2].

Table no. 4 : Incidence of various vaginal discharge in different studies

		Year	Vaginal candidiasis %	Trichomoniasis %	Bacterial vaginosis%	Other discharge
1	Levett PN [4]	1995	44.6	8.6	28	10 cases
2	Ries AJ [5]	1997	20-25	10	30-35	15-20 % (mixed)
3	Mahadani et al [6]	1998	9.49	16.45	44.30	12 (senile)
4	Alary M et al [7]	1998	-	-	-	(gonorrhoea 5.7 % & Chlamydia 2.1%)

5	Costello daly C et al [8]	1998	-	-	-	(gonorrhoea 17.1% & Chlamydia 3.7%)
6	Fonck K et al [9]	2000	9	23	50	9% Chlamydia 22% HIV
7	Kamara P et al [10]	2000	30.7	18	44.10	-
8	Malla N et al [11]	2001	-	0-65	-	-
9	Puri KJ [2]	2003	31	2	45	3% gonorrhoea, 5% Non specific, 14% other
10	Present study	2013	46	31	13	5% physiological discharge & 5% mixed discharge

Conclusion:

According to our assessment, causes of vaginal discharge were candida species(46%), trichomonas vaginalis(31%), bacterial vaginosis(13%), mixed infections(5%) & 5% patients presented with physiological discharge. Candida infection was associated with pH≤4.5, for this 10% KOH test (sensitivity=0.47, specificity=0.93, ppv=0.86) & for bacterial vaginosis pH>4.5, for this whiff test(sensitivity=0.68, specificity =0.98, ppv=0.86).

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