

Original Research Article

MICROBIOLOGICAL PROFILE OF LEUCORRHOEA IN REPRODUCTIVE AGE GROUP

J.K. Hemalatha¹, D. Lavanya², R. Pallavi³, G. Israel⁴, K. Parameswari⁵

¹Post Graduate 3rd year, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

²Assistant Professor, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

³Assistant Professor, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

⁴Assistant Professor, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

⁵Professor and HOD, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

Received : 28/11/2023
Received in revised form : 02/01/2024
Accepted : 19/01/2024

Corresponding Author:

Dr. D. Lavanya

Assistant Professor, Department of Microbiology, Guntur Medical College, Guntur, Andhra Pradesh, India.

Email:

lavanyadevarakonda22@gmail.com

DOI: 10.5530/ijmedph.2024.1.20

Source of Support: Nil,

Conflict of Interest: None declared

Int J Med Pub Health

2024; 14 (1); 106-109

ABSTRACT

Background: Leucorrhoea or vaginal discharge is one of the very common problem or complaint among female of reproductive age group (15-45) attending to Gynecology and Venereology outpatient department and it is associated with STI/HIV and adverse birth out comes. Objective of the study was isolation identification and to assess the frequency of occurrence of various microbial agents.

Materials and Methods: Between July 2023 to December 2023, 125 sexually active women (15-45) age were enrolled from two reproductive health clinics (Gynecology and Venereology) in Government General Hospital, Guntur. The women underwent an interview followed by physical examination. Vaginal swabs are taken and processed for confirmatory diagnosis of Bacterial vaginosis, trichomonal vaginitis and candidal vulvo vaginitis.

Results: Among the study group of 125 women, majority of women belongs to urban area (70.4%), low socio-economic group 66.4%, illiterates 62.4% and 21-30 years of age (27%). Among the study group 30.4% were having bacterial vaginosis, 22.4% have vulvo vaginal candidiasis, and 10.4% have vaginal trichomoniasis.

Conclusion: Microbial infections of lower genital tract are very common in sexually active women in reproductive age group. Nonspecific vaginosis mostly associated with *Gardenella* vaginosis, specific vaginosis with *Trichomonas* vaginosis, candidiasis are very frequent. These infections in pregnancy cause adverse birth outcomes. Early and proper diagnosis and timely treatment of infected women including sexual partners is essential in cases of vaginal infections which requires laboratory assistance.

Keywords: Leucorrhoea, Reproductive age group.

INTRODUCTION

Leucorrhoea is one of the common problem or complaint among female of reproductive age group (15-45yrs) attending to Gynecology and Veneriology outpatient departments. Leucorrhoea is white discharge where the vaginal discharge is excessive associated with or without any obvious local pathology. Excessive vaginal discharge is white purulent, yellow or watery but not blood stained is termed as leucorrhoea. Leucorrhoeas are physiological and pathological.

Physiological leucorrhoea's can vary with age, use of contraceptives menstrual cycle and with estrogen

level. Pathological leucorrhoea means running of white vaginal substance.^[3] Vaginal flora is a dynamic ecosystem protected from infecting agents by lactobacillus, but that can easily altered.^[7] The vagina, ectocervix, endocervix are susceptible to various pathogens depending upon the type of epithelium present and other factors in the microenvironment.^[7]

The squamous epithelium of vagina is susceptible to infections with candida species, *Trichomonas vaginalis* and *Gardnerella vaginalis*. Three causes of pathological leucorrhoea are bacterial vaginosis, candidal vulvo vaginitis and trichomoniasis. Bacterial vaginosis is termed vaginosis rather than

vaginitis because this associated with alteration in normal flora rather than due to any specific inflammations. There is considerable decrease in number of lactobacilli in the vagina and altered the pH and characterised by increased growth of other bacteria. Common agents of bacterial vaginosis include Gardnerella vaginalis, mobilincus, bacteroides, saprophytes and mycoplasma hominis, etc.^[9] Vulvovaginal candidiasis is characterized by pruritis and cotton cheese like discharge caused by candida species.^[8]

Vaginal trichomoniasis is associated with a copious yellow or green sometimes frothy discharge caused by trichomonas vaginalis.^[8] Differential diagnosis of these infections requires a through history vulvovaginal examination simple laboratory tests including microscopy of the vaginal discharge.

MATERIAL AND METHODS

The present study was carried out to investigate incidence of various causes of vaginal discharge among sexually active females. One hundred and twenty-five females in the age group (15-45 yrs) with complaint of vaginal discharge attending to gynaecology, obstetrics and veneriology outpatient departments in Govt. General hospital, Guntur, were selected for this study. A detailed clinical history and through examination of all cases was done. After making the clinical diagnosis, appropriate tests for diagnosing candidiasis, trichomoniasis and bacterial vaginosis were done.

A sterilized cusco's speculum was inserted into the vagina to visualize the vagina and cervix. The amount of colour, character and smell of the vaginal discharge in the vagina were noted. pH of the discharge was noted with a narrow range pH paper (2-10.5). Three vaginal swabs were collected from posterior and lateral fornix of vagina and processed in Microbiology department, Guntur Medical College, Guntur.

Wet smear, KOH preparation of vaginal secretions were made and examined under microscopy. Vaginal swabs were processed as under. One swab was used to inoculate on SDA incubate at 25 to 480c for 1-2 days. Second swab was used to inoculating on Mac Conkey's, sheep blood agar for nonspecific pyogenic organsisms.

Third swab was used for making smear for gram staining. One swab was used immediately to prepare a wet mount with one to two drops of normal saline on a glass slide and was examined by light microscopy for motility of trichomonal vaginalis. The pus cells budding cyst cells, pseudohyphal and clue cells were also looked for in the same wet mount.

The other swabs was immediately send to the laboratory for culture and gram staining reaction. The swabs are inoculated on SDA and incubate at 35°c±20cfor 48 hrs for the growth of candida saprophytes. The growth was later examined for Candida albicans by germ tube test.

Trichomonal vaginalis was identified by characterised morphology in wet mount. All specimens were processed by standard procedures. Bacterial vaginosis was diagnosed by standard criteria as follows.

1. Characteristic homogenous white adherent discharge
2. Vaginal fluid pH >4.5
3. Whiff test positive (release of fishing or amine odour from vaginal fluid mount with
4. 10% KOH.
5. Presence of clue cells.
6. Presence of three or four of the above following determinations.

RESULTS

Table no.1 showing number of cases in the study.
Table no. 2 showing urban and rural distribution in the study group

Talbe no. 3 showing catergorising of cases by soci-economic status in the study group and also show literacy.

Table no. 4 showing the prevalence of different etiological agents of abnormal vaginal discharge in relation to age group of the patient

Table no. 5 showing analysis of specific pathogenic organisms in wet film, gram stain and culture.

Bacterial vaginosis positive results are 30.4%

Fungal – Candida species 22.4%

Protozoal trichomonas vaginosis 10.4%

Table-I Total number of cases in the Study

Table 1: Total number of cases in the Study

S. No.	Outpatient department	No. Of cases
1	Gynaecology	58
2	Obstetrics	10
3	Veneriology	30

Table 2: Urban-Rural Distribution

	Number	%
Urban	88	70.4
Rural	37	29.4
Total	125	100

Table 3: Categorization of cases by Socio-Economic status

Categorization	Study group	
	Number	%
Low	83	66.4
Middle	42	33.6
Total	125	100
Leucorrhoea cases based on literacy		
Categorization	Study group	
	Number	%
Literate	47	37.5
Illiterate	78	62.4
Total	125	100
Leucorrhoea cases based on literacy		

Table 4: Age-wise distribution of Leucorrhoea cases

Age in group	Study group	
	Number	%
16-20	15	12.12
21-25	35	28
26-30	33	26.4
31-35	16	12.8
36-40	15	12
41-45	11	8.8
Total	125	100

Table 5: Analysis of Specific Pathogenic organisms in wet film, Gram's stain and culture

	Organism	Study Group	
		Number	%
Bacterial	Bacterial vaginosis (Clude cell positive in Gram stain)	38	30.4
	Gardenerella vaginalis cultre positive	16	--
Fungal	Candida Albicans	20	22.4
	Candida non albicans	8	
Protozoal	Trichomonas vaginals (in wet film)	13	10.4
Total		79	

DISCUSSION

Present study showed maximum incidence of bacterial vaginosis 30.4%. A total number of 125 cases were taken for the present study. National and international comparisons are tampered because of the different methodology of the studies. The majority of the studies investigated the prevalence of each organism separately.

Among the study group majority of the woman belonged to urban population (70.4%) table II. The incidence was more in low socioeconomic group (66.4%) table III due to poor hygienic conditions educated patients are more likely to be better informed. Majority of the women in the present study were illiterates 62.4% table no III and leucorrhoea was more common in age group of 21-30 years table IV because high sexual activity.

This correlates with study of Bansal KM (2001) who reported the highest number of leucorrhoea cases in age group 21-30. Among the study group the prevalence of bacterial vaginosis was the predominant (30.4%) followed by vulvovaginal candidiasis (22.4%) and trichomoniasis (10.4%) table no.5. The order is correlated with the following various studies. Bacterial vaginosis was diagnosed based on Ames criteria which is gold stand for the diagnosis of bacterial vaginosis, Jack D Sobel-1997 - Bacterial vaginosis (50%) followed by vulvovaginal candidiasis (25%) and trichomonas

20%. Snehalatha et al - 2000-26%, 25.4%, 10%) Parikips madan A- 2003 (45%, 31%, 2%) PS Rao S et al 2004- 20.05%, 10.69%, 1.18%. Prevalence of bacterial vaginosis according to various authors J.W. Mahadani 1998 (32.9%) Umarani 2006 (32.3%) Bhalla Pehawla 2007 (32.8%), Shazia A Khan et al 2009 (28%) My study (30.4%) was correlated with the above studies. High incidence was reported by Jack D Sobel 1997 (50%) - Madan A 2003 (45%) Gupta et al 2002 (44.6%) Vijay et al 1999 (43.39 %). Low incidence was reported by Sharma AK 2004 (15.77%) Hymavathi et al 2005 (26%), among study group BV amongst is 30.4%, out of them GV isolated from them. Among the study group, Candida species (22.4%) were isolated. Out of them (16%) wee candida albicans, (66%) were non albicans. Prevalence of candida species in various studies were Mendiratta DK 1992 (22.33%) Jack D Sobel 1997 (25%) Snehalatha et al (25.35%). My study was correlated with above studies. Culture for isolation of candida is superior method in detecting vaginal candidal vaginosis was observed in 22.4%. Prevalence of Trichomonial vaginosis in different studies were T.V. Misra 1997 (10.75%) Snehalatha et al 2000 (10%) SR fule et al 2011 (12.6 %). The present studies (10.4%) correlate with this. Overall prevalence of trichomonial vaginosis varies from place to place and from study to study and ranging from 6-14.9%.

CONCLUSION

However, leucorrhoea is caused by different organisms. The prevalence rate of each causative agent depends upon many factors including age, sexual activity, number of sex partners, other STDs, sexual customs, phase of menstrual cycle, techniques of examination, specimen collection and laboratory techniques. Diagnosis based on clinical presentation is not reliable. Therefore, laboratory diagnosis is necessary for the conformation of clinical diagnosis.

REFERENCES

1. Helen Wolrath et al: analysis of Bactrial vaginosis-related amines in vaginal fluid by gas chromatography and mass spectrometry. Journal of Clinical microbiology no. 2001. 4026-4031, vol 39. No.11.
2. Jack D sobel, M.D: Vaginitis - The New England journal of Medicine, Dec 25, 1997.
3. Jeffcoate's Principles of Gynaecology 5th edition-1987 revised by V.r.T. Indall.
4. Jyothi Thulkar, Alkriplani et al. Utility of pH test and Whiff test in syndromic approach of abnormal vaginal discharge (2010) I.J.Med. Res. 131, 445-448.
5. Mendiratta DK et al: Vaginal Candidiasis in symptomatic and asymptomatic women, Indian Practitioner, 1992 May: 45(5): 361-7.
6. P.S. Rao, S.Devi et al: Diagnosis of bacterial vaginosis in a Rural Setup: Comparison of clinical Algorithm, smear, scoring and culture by semi quantitative technique, Ind. Jr.Med. Microbiol 2004, 22(1): 47-50.
7. Puri KIPS et al: Incidence of various causes of vaginal discharge among sexually active females in age group 20-40 years, ind Jr. of Dermatology, Venereology and Leprology, 2003 Mar. 69(2) 122.
8. Shazia A khan Fauzia Amir et al. Evaluation of common organisms causing vaginal discharge. J. Ayob Med Coll Abhohabid. 2009-21-2.
9. Shaws text book of Gyanecology 12th Edition, 1999.
10. Snehalatha Vishwanath et al. syndromic Management of vaginal discharge among women in a reproductive health clinic in India. Sexually Transmitted Infections 76: 303-306 2000 BMJ Publishing group.
11. SR Fule RP Fule NS Tanthlwale et al clinical and laboratory evidence of Trichomonos vaginalis infection among women of reproductive age group in rural area I J MM. 2012 30(3) 314-6.
12. Uma Rani (2006) - Microbiological study of leucorrhoeas