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Microbiological profile of leucorrhoea in reproductive age group

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Abstract

Background: Women frequently complain of abnormal vaginal discharge, which can be caused by vaginal diseases such as trichomoniasis, candidiasis, and bacterial vaginosis.

Methods: 120 sexually active women (15–45 years old) were enrolled in the Department of Obstetrics & Gynecology, between November 2018 to October 2019. The women were examined physically after an interview. To confirm the diagnosis of trichomonal vaginitis, Candidal vulvo vaginitis, and bacterial vaginosis, vaginal swabs are collected and processed.

Results: Among the study group of 120 women, majority of women belongs to urban area (70.8%), low socio-economic group 66.6%, illiterates 62.5% and 21-30 years of age (27.4%). Among the study group 29.6% were having bacterial vaginosis, 16.6% have vulvo vaginal candidiasis, and 9.1% 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.

Conclusion: The prevalence of each causal agent varies on age, sexual activity, number of sex partners, other STDs, sexual customs, menstrual cycle phase, examination, specimen collection, and laboratory procedures. Clinical presentation is unreliable for diagnosis. Lab diagnosis is needed to confirm clinical diagnosis.

Keywords: Leucorrhoea, reproductive age group, gardenella vaginosis, nonspecific vaginosis

1. Introduction

Excessive vaginal discharge, or leucorrhoea, is a common occurrence in females during the reproductive age range of 15 to 45 years. It can be seen in physiological states such as ovulation, pregnancy, and the premenstrual period. One to fourteen percent of women in the reproductive age group experience pathological vaginal discharge, which accounts for five to ten million outpatient department visits annually worldwide ^[1]. *Trichomonas*, candidial vulvo vaginitis, and bacterial vaginosis are the three primary causes of pathological leucorrhoea. The most frequent cause of symptomatic vaginal discharge is bacterial vaginosis (33–47%) ^[2], which is followed by candidiasis (20–40%) and trichomoniasis (8–10%) ^[3].

In the female reproductive system, it usually has no symptoms at first. However, if treatment is not received, it can result in severe outcomes such as pelvic inflammatory disease (PID), infertility, ectopic pregnancy, and constant pelvic discomfort. According to Fitz Hugh Curtis syndrome, it can lead to peritonitis, inflammation of the tubes, and endometritis ^[4]. *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Trichomonas vaginalis*, *Gardnerella vaginalis*, candidiasis, *Treponema pallidum*, HIV, Hepatitis B virus (HBV), Hepatitis C virus (HCV), Herpes simplex virus (HSV), and other bacterial infections are among the common etiological agents that cause RTI.

RTI in women might present with symptoms or not. Symptoms such as dyspareunia, lower abdomen discomfort, burning micturition, ulcer in and around the genital area, and atypical vaginal discharge with bad smell and itching are prevalent ^[5]. RTIs and other STIs without symptoms may serve as a hidden reservoir that fuels the current pandemic of STIs with symptoms, including HIV. RTIs can have a major negative impact on a woman's ability to conceive, increasing her risk of experiencing infertility, ectopic pregnancy, preterm labor, miscarriage, stillbirth, low birth weight baby, pelvic inflammatory disease, cervical cancer, and

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other pregnancy-related complications. Furthermore, among young women, having a STI increases the chance of HIV transmission by three to four times [6].

Methodology

The purpose of the current study was to look into the prevalence of different causes of vaginal discharge in women who were sexually active. For this study, 120 female patients in the 15–45 year age range who were seen in the outpatient gynecology & obstetrics Department, Surabhi Institute of Medical Sciences who complained of vaginal discharge were chosen. Every case was thoroughly examined, and a thorough clinical history was recorded. Following the clinical diagnosis, the necessary tests were carried out to diagnose trichomoniasis, bacterial vaginosis, and candidiasis.

To view the vagina and cervix, a sterilized Cusco's speculum was put into the vagina. It was remarked how much color, personality, and scent the vaginal discharge had. The pH of the discharge was measured using a pH paper with a restricted range (2-10.5). Three vaginal swabs were taken from the lateral and posterior fornix of the vagina and processed at the Guntur Medical College's microbiology department.

Vaginal secretions were prepared in KOH for a wet smear and viewed under a microscope. Vaginal swabs were handled as follows. For 1-2 days, one swab was used to inoculate on SDA and incubate at 25 to 48 degrees Celsius. In order to inoculate Mac Conkey's sheep blood agar for non-specific pyogenic organisms, a second swab was used.

Gram staining was done using the third swab to create a smear. Immediately after, one swab was used to prepare a wet mount on a glass slide with one to two drops of normal saline. The motility of the trichomonal vaginalis was then assessed using light microscopy. In the same wet mount, pus cells, budding cyst cells, pseudohyphal cells, and clue cells were also searched for.

The other swabs were sent right away to the lab for gram staining and culture. After being infected on SDA, the swabs are incubated for 48 hours at 35 °C ±20 °C to promote the growth of candida saprophytes. Later, a germ tube test was used to check for Candida albicans in the growth.

Wet mount morphology was used to characterize Trichomonal vaginalis. Every specimen underwent normal processing methods. The following standard criteria were used to diagnose bacterial vaginosis.

- Typical discharge of uniformly white adherents
- pH > 4.5 in vaginal fluid
- Whiff test results in a positive result (odour of fishing or amines released from vaginal fluid mounted in 10% KOH).
- Clue cells are present.
- The existence of three or four of the conclusions listed above.

Results

Bacterial vaginosis positive results are 29.6%, Fungal – Candida species 16.6%, Protozoal trichomonas vaginosis 9.1%.

Table 1: The study's total number of instances

S. No.	Outpatient department	No. Of cases
1	Gynaecology	82
2	Obstetrics	10
3	Veneriology	28

Table 2: Distribution of Urban and Rural Areas

	Number	%
Urban	85	70.8
Rural	35	29.1
Total	120	100

Table 3a: Sorting instances according to socioeconomic status

Categorization	Number	%
Low	80	66.60%
Middle	40	33.30%
Total	120	100%

Table 3b: Cases of leucorrhoea depending on literacy

Categorization	Number	%
Literate	45	37.50%
Illiterate	75	62.50%
Total	120	100%

Table 4: The distribution of Leucorrhoea infections by age

Age in Group	Number	%
16-20	14	11.60%
21-25	34	28.30%
26-30	32	26.60%
31-35	15	12.50%
36-40	14	11.60%
41-45	11	8.80%
Total	120	100%

Table 5: Examining certain pathogenic organisms using Gram's stain, wet film, and culture

	Organism	Study Group	
		Number	%
Bacterial	Bacterial vaginosis (Clude cell positive in Gram stain)	35	29.6
	Gardenerella vaginalis cultre positive	14	--
Fungal	Candida Albicans	20	16.6
	Candida non albicans	8	
Protozoal	Trichomonas vaginalis (In wet film)	11	9.1
	Total	74	

Discussion

The current investigation found that 29.6% was the largest incidence of bacterial vaginosis. For this investigation, a total of 120 cases were collected. Comparisons between countries and regions are distorted due to the disparate study methodologies. Most of the research looked into each organism's prevalence independently.

Of the women in the study group, the majority (70.8%) were from metropolitan areas. Table 2. The incidence was higher (66.6%) in the lowest socioeconomic category. table III because of unsanitary conditions, patients with higher levels of education are probably more knowledgeable. Due to high levels of sexual activity, leucorrhoea was more common in the age range of 21–30 years old (Table 4), and the majority of the women in the current study were illiterate (62.5%).

This is consistent with a study by Bansal KM (2001), who found that the age group of 21 to 30 (7–10) had the greatest incidence of leucorrhoea cases. In the research group, the most common cause of bacterial vaginosis (29.6%) was followed by trichomoniasis (9.1%) and vulvovaginal candidiasis (16.6%) table no. 5. The following several studies are associated with the order. Ames criteria, the gold standard for diagnosing bacterial vaginosis, were used to make the diagnosis. Snehalatha and

associates (2000) - 26%, 25.4%, 10%) A-2003 Parikips Madan (45%, 31%, 2% as of 2004 ^[11-13], PS Rao S *et al.*, 20.05%, 10.69%, and 1.18%. The prevalence of bacterial vaginosis as reported by different writers J.W. Mahadani (32.9%), 1998 Umarani (32.3%), 2006. Shazia A. Khan *et al.*, 2009 (28%) and Bhalla Pehawla, 2007 (32.8%) ^[14]. 29.6% of my study showed a correlation with the previous research. Jack D. Sobel 1997 reported a high prevalence of 50%, while Madan A. 2003 reported 45%. In 2002, Gupta *et al.* (44.6%) In 1999, Vijay *et al.* (43.39%) ^[15]. Sharma AK 2004 reported a low incidence of 15.77%, while Hymavathi *et al.* 2005 reported a 26% incidence. Among the study group, 30.4% had BV, and GV was isolated from them. Twenty-four percent of the study group had isolates of *Candida* species. Of those, sixteen percent were *Candida albicans*, and sixty-six percent were not. Several investigations found that the prevalence of *Candida* species was 22.33% in Mendiratta DK (1992), 25% in Jack D. Sobel (1997), and 25.35% in Snehalatha *et al.* ^[15]. My research and the earlier studies were connected. The rate of vaginal candidal vaginosis was found to be 22.4%, indicating that the culture approach for isolating *Candida* is superior. Trichomonial vaginosis was shown to be prevalent in T.V. Misra's 1997 study (10.75%) and Snehalatha *et al.*'s 2000 study (10%) ^[14, 15]. This is consistent with the current research (10.4%). The overall prevalence of trichomonial vaginosis ranges from 6.9% to 14.9%, depending on the location and study.

Conclusions

Nevertheless, leucorrhoea is brought on by distinct creatures. The frequency of each causal agent varies depending on a number of parameters, such as age, sexual activity, number of partners, other sexually transmitted diseases, sexual customs, menstrual cycle phase, examination methods, specimen collection methods, and laboratory procedures. Clinical presentation alone cannot always be used to make a diagnosis. Thus, the confirmation of a clinical diagnosis requires laboratory diagnosis.

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Conflict of Interest

None

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