

# Analysis of socio-demographic and microbiological profile of patients with complaints of leucorrhoea attending at tertiary medical college

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## Abstract

**Background:** Leucorrhoea and its associated symptoms are the most common complaints of women in Southeast Asia, hence it is imperative to make accurate diagnosis and institute appropriate treatment by identifying the causative microorganisms. **Objectives:** Analyse socio-demographic and microbiological profile of vaginal discharge in patients. **Methodology:** This is a prospective non randomized study performed at department of obstetrics and gynaecology of Government Medical College (GMC) Srinagar over a period of 1<sup>1/2</sup> yr. Patients of all age groups with complaints of leucorrhoea were included except those on antimicrobial treatment, genital prolapse and genital malignancy. After proper consent a detailed history was taken and examination done. Vaginal discharge collected from post and lateral fornices with the help of sterile cotton tipped swabs. One was immediately processed and wet mount prepared. The other swab was used for gram staining and culture. **Result:** Most of the patients (47%) fell within 20-29 years of age group and 76% of patients belonged to rural population. 57% of the patients were illiterates and 67% of the patients belonged to socio-economic status IV,V. 72% of the patients were housewives by occupation. 57% of patients had bacterial vaginosis while 35% had candidiasis and 3% trichomoniasis. **Conclusion:** Lower socio-economic status, poor hygiene, high illiteracy, rural population are associated with increased prevalence of leucorrhoea, so improvement in living standards, hygienic conditions, mass education and by creating awareness about this disease can decrease the prevalence. The most ideal approach is micro-biological diagnostic approach for etiological diagnosis of symptomatic vaginal discharge. It helps in institution of appropriate anti-microbial therapy and prevents long term sequelae and can improve the quality of life of a woman.

**Key Words:** Bacterial vaginosis, vaginal discharge, leucorrhoea, trichomonas vaginalis, trichomoniasis.

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## INTRODUCTION

Leucorrhoea is a very common complaint amongst women of south east Asia where one in every four women complains of vaginal discharge and is one of the most common referral to gynaecology clinic.<sup>1-3</sup>

Leucorrhoea occurs in 1-14 percent of all the women in the reproductive age group and is responsible for 5-10 million<sup>4</sup> OPD visits per year throughout the world. The prevalence of excessive vaginal discharge in India is estimated to be 30 percent<sup>4</sup>. The present study on Analysis of socio demographic and microbiological profile of patients with complaints of leucorrhoea was conducted in the Postgraduate Department of Obstetrics and Gynaecology, Government Medical College, Srinagar and its associated hospital, Government LallaDed Hospital Srinagar. 100 patients presented in OPD of Government LallaDed Hospital Srinagar and were enrolled in this study after fulfilling proper inclusion and exclusion criteria and taking Generic Informed Consent. The study group comprised of 84 patients from Gynaecology and 16 from Obstetrics. The study was aimed to assess socio demographic profile and role of

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microorganism(s) in causation of leucorrhoea and their prevalence so as to plan proper treatment and better patient care.

**MATERIAL AND METHODS**

This is a prospective non randomized study performed in 100 patients attending OPD of LD hospital GMC Srinagar from 1<sup>st</sup> april 2015 to September 2016 after obtaining clearance from ethical committee GMC Srinagar. All patients were included except those on antibiotic treatment, genital prolapse and genital malignancy. Written and informed consent taken from all patients included. Detailed history regarding age, occupation, caste, residence, socioeconomic status and educational status was taken. Vaginal secretions collected and transported in amies medium to microbiology department. A wet mount was prepared immediately at the time of collection and examined under low power and high power microscope for:

1. Trichomonads
2. Clue cells<sup>5</sup>
3. Whiff test done using 10% KOH. Then gram staining and culture was done on SDA, chocolateagar, blood agar and HBBT agar. Amsels criteria<sup>6,7</sup> and nugent scoring system<sup>8</sup> was also used for diagnosis of bacterial vaginosis. The data were analysed using SPSS (20.2version).

**RESULTS**

There were 100 females with the complaints of vaginal discharge included in the study. The frequency of leucorrhoea cases in the study sample was more in the age group of 20-29 viz 47(47%) followed by 29(29%) in 30-39 age group, 17(17%) in 40-49 age group and 7(7%) in <20 age group respectively (Table 1).

**Table 1:** Distribution of Leucorrhoea cases as per age

Age (years)	Frequency	Percentage (%)
< 20	7	7
20-29	47	47
30-39	29	29
40-49	17	17
<b>Total</b>	<b>100</b>	<b>100</b>

The data presented in Table-2 indicates that the cases of leucorrhoea in the study sample were more from rural areas (76%) as compared to that of patients from urban areas (24%).

**Table 2:** Distribution of Leucorrhoea patients as per residence

Residence	Frequency	Percentage
Rural	76	76
Urban	24	24
<b>Total</b>	<b>100</b>	<b>100</b>

As per the socioeconomic status, the distribution pattern

of leucorrhoea patients in the study sample was higher in lower middle class families. (67%) followed by upper middle class families (31%) and least were presented under upper class families (2%) respectively (Table 3).

**Table 3:** Distribution of leucorrhoea cases as per socio-economic Status

Socio Economic Status	Frequency	Percentage
Upper Class	2	2
Upper Middle Class	31	31
Lower Middle Class	67	67
<b>Total</b>	<b>100</b>	<b>100</b>

While recording the education level of the leucorrhoea patients under study it was observed that 57 per cent patients were Illiterate and only 43 per cent were literate (Table 4).

**Table 4:** Distribution of Leucorrhoea cases based on literacy

Literacy	Frequency	Percentage
Literate	43	43
Illiterate	57	57
<b>Total</b>	<b>100</b>	<b>100</b>

While recording the occupation of the leucorrhoea patients under the study it was observed that 72% were housewives, 12% were students and 16% were government employees.(table 5).

**Table 5:** Distribution of Leucorrhoea cases based on occupation

Literacy	Frequency	Percentage
Housewife	72	72
Student	12	12
Govt Employee	16	16
<b>Total</b>	<b>100</b>	<b>100</b>

**Microbiological Examination:** The results of microbiological studies are presented in Table-6. It is evident that out of 100 samples only 88 samples have shown microbial growth. Out of which bacterial vaginosis was found in 50 per cent of the cases followed by *Candida albicans* in 31 per cent cases, *Trichomonasvaginialis* in 3 percent cases and other *Candida* species in 4 per cent cases respectively. In 12 cases no specific etiology was found, where some of the cases could be due to *Chlamydia trachomatis* which could not be detected.

**Table 6:** Analysis of specific pathogenic organisms in Wet Film, Gram's Stain and culture

Organism	Frequency	% age	
Bacterial	<i>Bacterial Vaginosis</i>	50	50
Fungal	<i>Candida albicans</i>	31	31
	<i>Candida Non-albicans</i>	4	4
Protozoal	<i>Trichomoasvaginialis</i>	3	3
Etiology not found		12	12

## DISCUSSION

Leucorrhoea is one of the common complaints among females of reproductive age group (15 - 45 years) throughout the world associated with excessive vaginal discharge with or without local pathology<sup>9</sup>. Under present investigation leucorrhoea was established in 47 per cent of the cases in the age group of 20-29 years and 29 per cent of the cases were in the age group 30-39 years. It was revealed during the study that leucorrhoea was more common in age group of 20-39 years because of high sexual activity: accounting for 76 per cent of entire study group (Table-1). Among the study group majority of women belonged to rural population (76%). The incidence was more in low socioeconomic group (67%) probably due to poor hygienic conditions and less in upper class with educated patients who are likely better informed. Majority of women in present study were illiterates (57%). This correlates with the study of Bansal *et al.* (2001)<sup>10</sup> who reported the highest number of Leucorrhoea cases in the age group of 21 – 30, showing a relation with period of high fertility, illiteracy, poor hygienic conditions. Aring *et al.* (2012)<sup>11</sup> reported that 64.90 per cent of women with leucorrhea were of the age 21-30 and 17.54 per cent were in the age group 31-40 years. Among the study group majority of the women belonged to rural population (76%) (Table-2). The incidence of leucorrhoea was recorded more in lower middle class (67%) whereas that of upper middle class group (31%) (Table-3), due to poor hygienic conditions in rural areas and in families of lower socio-economic status. Present studies are in agreement to those of studies by Sathyavathi (1959) on leucorrhea in pregnancy reporting that the incidence of leucorrhoea is significantly higher in women of low socioeconomic group and rural area<sup>12</sup>. Majority of the women in the present study were illiterate (57%) than the literate (47%)(Table-4). The present findings are in accordance to those Nishat *et al.*, (2013) who has reported that the problem of leucorrhoea was more among illiterate (59.2%) than the literate (40.8%) in Hyderabad, India<sup>13</sup>. In the present study on the analysis of the wet films, Gram's stain and culture, bacterial vaginosis was found in 50 per cent of the cases followed by *Candida albicans* in 31 percent cases, *Trichomonas vaginalis* in 3 percent cases and other *Candida* species in 4 percent cases respectively (Table-6). In a similar study Nishat *et al.* (2013) found that the prevalence of bacterial vaginosis was the predominant (24%) followed by vulvovaginal candidiasis (24%) and trichomoniasis.(12%)<sup>13</sup>. In agreement with present study Jack and Sobel (1997) found Bacterial vaginosis in around 50 per cent cases followed by vulvovaginal candidiasis (25%) and trichomoniasis (20%) cases<sup>14</sup>.

## CONCLUSION

From the present study it was concluded that:

- Known predisposing factors for symptomatic vaginal discharge are low socioeconomic status and poor hygiene, so improvement in the living standards and improving the hygienic conditions can decrease the prevalence and burden of this disease.
- Rural population and high rate of illiteracy is also associated with increased prevalence of leucorrhoea, so by mass education and by creating awareness about this disease can decrease the prevalence of leucorrhoea.
- The most ideal approach is microbiological diagnostic approach for etiological diagnosis of symptomatic vaginal discharge. This helps clinician to institute appropriate antimicrobial therapy to treat these conditions and prevent long term sequelae and also prevent the over treatment and development of resistance against various antibiotics.

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