

Original article

Analysis of socio-demographic and microbiological profile of vaginal discharge in patients attending Kathmandu University Hospital, Nepal

Shrestha A¹, Tuladhar NR², Chawla CD³

Abstract:

Background: Vaginal discharge and associated vaginal symptoms is very common amongst women of South East Asia, hence it is necessary to make accurate diagnosis and also for appropriate treatment by identifying the causative microorganisms. **Objectives:** To analyze the socio-demographic and microbiological profile of vaginal discharge. **Methodology:** This is a prospective, non-randomized study performed in one hundred and ninety three patients attending in Department of Obstetrics and Gynecology in Kathmandu University Hospital, Dhulikhel, Nepal. The patients with vaginal discharge and age of ≥ 16 years included. Vaginal discharge was taken from the posterior and lateral fornices. The swab was cultured on blood, chocolate and Mac Conkey's agar and incubated at 37°C for 24-48 hours. Fungus when isolated was subcultured onto Sabouraud dextrose agar. The data were analyzed using the SPSS 11.5 software. **Result:** The frequency of vaginal discharge was 1.67%. Most of the patients fell within 16-25 years. 50.3% patients were illiterate whereas only 3.1% was having master degree. 50.3% patients were having class V socioeconomic status where as only 2.6% had class I status. Housewife accounted for 67.9% whereas other occupation (petty business) accounted for only 5.2%. Most of the patients with vaginal discharge were from Newar and Tamang ethnic group. Bacterial vaginosis was isolated in 36.3% and normal flora accounted for 20.7%. **Conclusion:** There is still lack of awareness about the vaginal discharge be it abnormal discharge or physiological leucorrhoea and related problems. So, it is worthwhile to create public awareness and also to find out the socio-demographic factors affecting the pattern of microbiological flora variation in vaginal discharge, as it gives us the clue regarding the use of appropriate antimicrobial therapy and the changes that can be made to the quality of life of the women.

Keywords: bacterial vaginosis; fungus; microorganisms; vaginal discharge

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Introduction:

Vaginal discharge and associated vaginal symptoms like itching, irritation, non blood stained discharge is very common amongst women of south east Asia where one in four women complains of vaginal discharge and it being the main reason for seeking medical advice by women.¹⁻⁵ Hence it is necessary to make accurate diagnosis and give appropriate treatment. To prevent women from such distress and

uncomfort it is important we find the causative agent amongst the affected women.^{6,7} There are different investigations, laboratory tests and microbiological tests which helps to identify the correct organisms. Since there are lots of cases vaginal discharges in our community, we performed this study to analyze the socio-demographic and microbiological profile of patients with vaginal discharge.

Materials and Methods:

1. Abha Shrestha, Assistant professor, Department of Obstetric and Gynecology, Kathmandu University Hospital, Dhulikhel, Kavre.
2. Nuche Ratna Tuladhar, Professor, Department of Microbiology, Kathmandu University Hospital, Dhulikhel, Kavre.
3. Chander Dev Chawla, Professor, Department of Obstetric and Gynecology, Kathmandu University Hospital, Dhulikhel, Kavre.

Corresponds to: Dr. Abha Shrestha, Assistant professor, Department of Obstetric and Gynecology, Kathmandu University Hospital, Dhulikhel, Kavre. **Email:** abhaobgy@gmail.com

This is the prospective, nonrandomized study performed in one hundred and ninety three patients with vaginal discharge attending the out patient department of obstetrics and gynecology in Kathmandu University hospital, Dhulikhel, Nepal from 1st April 2010 to 31st March 2011.

The patients having vaginal discharge and age of ≥ 16 years included and patients with pregnancy and having menstrual cycle were excluded from the study. Approval was taken from the Institutional review committee of Kathmandu University hospital for the study. Then, a written consent was taken from the patients who were included in the study. Detailed clinical history regarding age, cast, occupation, socioeconomic and educational status was taken. For socioeconomic status, we had used the modified B.G Prasad's classification.⁸ Vaginal discharge, was collected from the posterior and lateral fornices with sterile plain cotton tipped swabs with the utmost care to avoid surface contamination and the swab were transported to the microbiology laboratory for further processing. The swab were cultured on blood, chocolate and Mac Conkey's agar and incubated at 37 degree for 24-48 hours. Fungus when isolated were subcultured onto sabouraud dextrose agar to identify the fungal species. All the organisms isolate were identified according to standard microbiological methods.⁹

The data were analyzed using the SPSS 11.5 software.

Results:

There were 193 women included in the study group among 11,568 out patients. So, the frequency of vaginal discharge was 1.67%. Regarding the age distribution, most of the patients with vaginal discharge fell within 16-25 years as shown in table 1.

Table 1. Showing age distribution (n=193)

Age Groups	Frequency	Percent
16-25years	106	54.9
26-35years	76	39.4
36-45years	7	3.6
≥ 46 years	4	2.1
Total	193	100.0

*mean=26.12 \pm 6.64

Regarding the education, 50.3% patients were illiterate whereas only 3.1% patient were having master degree as shown in table 2.

Table 2. Showing the educational status (n=193)

Educational status	Frequency	Percent
Illiterate	97	50.3
Primary	30	15.5
Secondary	34	17.6
intermediate	16	8.3
bachelor	10	5.2
Master	6	3.1
Total	193	100.0

Table 3 showed that 50.3% patients were having class V socioeconomic status where as only 2.6% patients had class I status.

Table 3. Distribution of socio-economic status (modified B.G Prasad classification). (n=193)

Socio-economic status	Frequency	Percent
Class I	5	2.6
Class II	5	2.6
Class III	15	7.8
Class IV	71	36.8
Class V	97	50.3
Total	193	100.0

Table 4 showed that housewife accounts for 67.9% whereas others (petty business) accounted for only 5.2%.

Table 4. Distribution of occupation(n=193)

Occupational status	Frequency	Percent
Housewife	131	67.9
Student	40	20.7
Teacher	12	6.2
Business petty	10	5.2
Total	193	100.0

The table 5 showed that most of the patients with vaginal discharge were from newar or tamang ethnic group. This is mainly because the districts surrounding Dhulikhel Hospital comprises mostly newar and tamang community

Table 5. Distribution of ethnic group(n=193)

Ethnic group	Frequency	Percent
Newar	69	35.8
Brahmin	32	16.6
Cheetri	32	16.6
Tamang	60	31.1
Total	193	100.0

Regarding the microorganisms isolation Bacterial vaginosis account for 36.3% whereas normal flora accounts for 20.7% as shown in table 6.

Table 6. Showing distribution of isolated organisms. (n=193)

Distribution of isolated organisms	Frequency	Percent
Bacteria Vaginosis	70	36.3
Candida species	49	25.4
Normal flora	40	20.7
E. coli	14	7.3
Staphylococcus aureus	5	2.6
Proteus mirabilis	4	2.1
B hemolytic streptococcus	3	1.6
Pseudomonas aeruginosa	3	1.6
Klebsiella pneumonia	2	1.0
Enterococcus species	2	1.0
Streptococcus pneumoniae	1	.5
Total	193	100.0

Discussion:

Since there are various organisms causing vaginal discharge, so it is important to find out the exact causative organisms for the effective treatment.

The frequency of vaginal discharge in our study was 1.96% which is similar to other study^{10, 11} but differs from the study performed by other authors which showed more prevalence than ours.¹²⁻¹⁴ Such a low frequency in our study may be because ours is a hospital based study, had it been a community based study, results would have been different.

Our study showed that there were total 54.9 % patients were within the age group of 25 years which differs from the study performed by Chaudhary V et al¹² and Mumtaz S et al¹⁵ which showed majority of patients within 31-45years. Such difference could be because of early marriage and thus early sexual activity.

Regarding the educational status, Most of the patients with vaginal discharge were illiterate. Our finding corresponds with the study performed by Chaudhary V et al¹² and Jindal et al.¹⁶ The reason behind is ignorance and also the poor health facility in the rural

areas of our community.

Our study showed that most of the housewives and also women with low socioeconomic status were suffering from vaginal discharge which corresponds with the study performed by Tariq N et al¹⁷ The reason could be because our patients are mainly from rural areas where women are busy looking after house and children. Also most of people from rural areas have low socioeconomic condition.

Our study showed that newar and tamang ethnic group had more vaginal discharge with frequency of 66.9%. This is because of large newar and tamang community around hospital area.

Regarding the isolation of organisms, the main organism isolated was bacteria vaginalis which is similar to other different studies.¹⁸⁻²² It is different compared to the study performed by Passo MRL et al²³ which showed only 21.7%

The isolation of normal flora in our study was 20% similar to the study performed by Tariq N et al¹⁷ and Demba E et al.²⁰

The isolation of candida species in our study was 25.3% which corresponds with the study performed by Chaudhary V et al¹², Pepin J et al¹⁹ and Karac M et al²⁴ but differs from the other study.^{20,22,25,26}

Likewise, there was also isolation of E.coli, pseudomonas, proteus, enterococcus, klebsiella and B hemolytic streptococcus. Other studies also showed the isolation of similar kind of organisms like ours.^{12,23,25} The reason could be because of close proximity of anal canal and genital tract. Other reason could be because of contamination of vagina with urine and also bathing in fecal contaminated water in rural areas.

There was also isolation of staphylococcus aureus in our study which was 2.5% like that of study performed by Corbishley CM.²⁷ This could be because of contamination with skin flora.

The main limitation of our study is the low sample size and tertiary hospital based study. So, the study is required to be performed in community in large sample to find out the exact pattern of organisms.

Conclusion:

There is still lack of awareness about the vaginal discharge and its related problems. So, it is worthwhile to create public awareness and also to find out the pattern of microbiological flora variation in vaginal discharge. As it gives us the clue regarding the use of appropriate antimicrobial therapy.

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