

# A comparative study for etiology of vaginal discharge as diagnosed by WHO syndromic and microbial diagnosis at tertiary health care centre

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## Abstract

**Background:** Sexually transmitted diseases are important because of its prevalence, social stigma and its association with HIV and cancers of genital tract. Vaginal discharge is most commonly observed syndrome in sexually transmitted diseases. **Aim and Objective:** To compare the etiology of symptomatic vaginal discharge by WHO syndromic and microbial diagnosis **Methodology:** 200 patients enrolled in the study who were diagnosed as vaginal discharge by syndromic approach. These patients underwent microbial tests like gram staining, KOH mount, saline wet mount. Results of both the approach was compared and analyzed. **Results and Discussion:** Majority of patients (47%) were in the age group of 31-40 years followed by 21-30(32.5%) years. Microbial diagnosis showed bacterial vaginosis contributed about 41.5% among all the patients diagnosed by syndromic approach. Candidial infection was diagnosed in 25 patients contributing 12.5% of all. Two patients (1%) were diagnosed with trichomonas.

**Key Words:** etiology, trichomonas.

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## INTRODUCTION

Vaginal discharge is most often a normal and regular occurrence. However, there are certain types of discharge that can indicate an infection. Abnormal discharge may be yellow or green or have a foul odor. Bacterial vaginosis, trichomonas infection and fungal infection like candida are commonest infections causing vaginal discharge. Bacterial vaginosis is a quite common bacterial infection. It causes increased vaginal discharge that has a strong, foul, and sometimes fishy odor, although it produces no symptoms in some cases. Trichomoniasis is

another type of infection. It's caused by a protozoan, or single-celled organism. The infection is usually spread by sexual contact. It results in a yellow or greenish discharge that has a foul odor. Pain, inflammation, and itching are also common symptom. Fungal infection produces white, cottage cheese-like discharge in addition to burning and itching sensations. Gonorrhoea and chlamydia are sexually transmitted infections (STIs) that can produce an abnormal discharge. It's often yellow, greenish, or cloudy in color. From 1984 to 1991 the World Health Organization (WHO) published the simplified (syndromic) approach based on field experience from countries such as Kenya, Swaziland and Zimbabwe<sup>(1)</sup>. Since then, based on available evidence, the WHO has updated the guidelines on syndromic case management<sup>(2,3)</sup>. Women who do report to a healthcare facility for any RTI/STI symptom are usually managed by the syndromic approach of the World Health Organization (WHO). Syndromic diagnosis is mostly carried out without offering any laboratory-based diagnosis, because of the high costs involved and the lack of facilities countrywide. This syndromic approach may lead to overtreatment hence this study was carried out to compare the etiology

of symptomatic vaginal discharge by WHO syndromic diagnosis and microbial diagnosis.

### AIM AND OBJECTIVE

To compare the etiology of symptomatic vaginal discharge by WHO syndromic and microbial diagnosis

### MATERIAL AND METHODS

This study was conducted at a tertiary care centre. Study population was married women in the reproductive age group (18-49 years) who consulted the OBGY OPD with vaginal discharge for the treatment.

#### Inclusion Criteria

1. Age 18-49 years
2. Married.

#### Exclusion Criteria

1. Pregnant women
2. Women with known HIV infection
3. Those who are not willing to participate.

Study was approved by ethical committee of the institute. A valid written consent was taken from patients after explaining the study to them. Patients visiting OBGY OPD for symptoms of vaginal discharge were enrolled. Data collection was done with a pretested questionnaire. Data included socio-demographic data and clinical examination. Patients underwent investigations for microbial diagnosis. For diagnosis of bacterial vaginosis, Gram stained smear were examined and graded as per standardized, quantitative, and morphological classification developed by Nugent. Total score of 7 was considered positive for bacterial vaginosis, 4-6 was intermediate, <4 was negative.<sup>4</sup> For diagnosis of trichomonas, Normal saline wet-mount slide preparations were made and observed under light microscope. For candidal infection KOH mount was prepared and presence of pseudohyphae and budding yeast cells was considered diagnostic of *Candida* infection. All patients were referred to the Integrated Counseling and Testing Centre (ICTC) at tertiary care centre for voluntary testing. Data analysis was done with appropriate statistical tests.

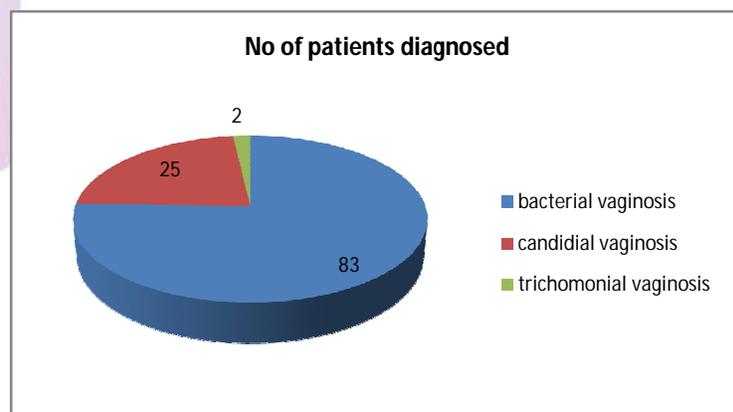
### RESULTS

Table 1 shows distribution of patients according to different variables. Majority of patients (47%) were in the age group of 31-40 years followed by 21-30(32.5%) years. Below 20 years 6 patients complained of vaginal discharge. 64% patients were from urban and 36% were from rural area. Out of 200 patients 78 were illiterate contributing 39%. Among the literate, majority were educated upto secondary school (34%) followed by primary schooling (12.5%).out of 200 patients,112 were housewife and 88 were employed. Out of 200 patients 110 were diagnosed with infectious etiology and 90 were

having non infectious etiology for vaginal discharge. In patients with infectious etiology majority patients were diagnosed with bacterial vaginosis (83). It contributed about 41.5% among all the patients. Candidial infection was diagnosed in 25 patients contributing 12.5% of all. Two patients were diagnosed with trichomonas infection by saline mount. When compared the syndromic diagnosis with microbial diagnosis we found that in diagnosing the vaginal discharge sensitivity of syndromic approach was 90% but specificity was low 70%.

**Table 1:** Distribution of patients according to socio-demographic characters

Sr no	Variables	No of patients (200)	Percentage
1	Age		
2	< 20	06	3%
3	21-30	65	32.5%
4	31-40	94	47%
5	41-49	35	17.5%
6	Residence		
7	Urban	128	64%
8	Rural	72	36%
9	Education		
10	Illiterate	78	39%
11	Primary school	25	12.5%
12	Secondary school	68	34%
13	Graduate	18	9%
14	Post graduate	11	5.5%
15	Occupation		
16	House wife	112	56%
17	Employed	88	44%



**Figure 2:** Distribution of infectious patients diagnosed according to microbial tests

### DISCUSSION

Out of 200 patients 110 were diagnosed with infectious etiology and 90 were having non infectious etiology for vaginal discharge. In patients with infectious etiology majority patients were diagnosed with bacterial vaginosis (41.5%). Similar results were observed in Shah M *et al* where they found that of 183 cases diagnosed clinically as

vaginal discharge syndrome, 20.7% were positive by laboratory investigations.<sup>5</sup> In a study by Chauhan V *et al* bacterial vaginosis was diagnosed in 29.2%, *C. albicans* in 11.5% and *T. vaginalis* in 3.8% sexually active females with vaginal discharge.<sup>6</sup> Another study done in sub-Saharan Africa found no significant associations between patient-reported STIs symptoms and laboratory confirmed STIs tests.<sup>7</sup> When compared the syndromic diagnosis with microbial diagnosis we found that in diagnosing the vaginal discharge sensitivity of syndromic approach was 90% but specificity was low 70%. Similarly, Ray K *et al* reported high sensitivity of the syndromic approach for vaginal discharge syndrome, but the specificity of this method in diagnosing VD was low.<sup>18</sup> This difference in diagnosis could be due to labeling of physiological discharge as pathological, imperfect techniques of specimen collection. Syndromic approach has advantages like lower cost, better compliance but it may lead to overtreatment and will be problematic to patients in terms of side effects of drugs and development of resistance to antimicrobial drugs. While considering the patients of vaginal discharge both approach should be considered.

## CONCLUSION

Syndromic approach for diagnosing vaginal discharge has good sensitivity (90%) but has low specificity. At the tertiary care centers microbial tests should be added to syndromic approach during diagnosis of vaginal discharge to avoid overtreatment.

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