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Original Research Article

## Prevalence of bacterial vaginosis among reproductive age group women in a tertiary care centre

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### ABSTRACT

**Background:** Vaginal discharge in reproductive age poses a serious problem in the developing countries. Bacterial vaginosis also known as non-specific vaginitis is the most common cause of vaginal infections, detecting the organism at an early stage and initiating a proper treatment is very difficult in our country due to lack of awareness and proper follow-up. The disease manifests in the form of vaginal discharge with or without itching. It has a strong association with preterm labor, preterm premature rupture of membranes and low birth weight in pregnancy. The objective of this study was to find out the prevalence of bacterial vaginosis among the reproductive age group women, in a tertiary care centre.

**Methods:** A cross sectional study was conducted among 150 women of the reproductive age group in the department of obstetrics and gynaecology Sree Mookambika Institute of Medical Sciences over a period of one month October 2018 the diagnosis was made with history and Nugent's scoring system.

**Results:** Out of the total 150 women enrolled in the study 74 had positive results, 50% of them were of the age group 26-30.

**Conclusions:** The study shows us the high prevalence of bacterial vaginosis.

**Keywords:** Bacterial vaginosis, Discharge, Preterm, Reproductive age, Vaginal candidiasis, Vaginal flora

### INTRODUCTION

Vaginal discharge in reproductive age poses a serious problem in the developing countries. Detecting the organism at an early stage and initiating a proper treatment is very difficult in our country due to lack of awareness and proper follow-up.<sup>1</sup> The skin of a normal vagina is lined with tough stratified squamous epithelium devoid of any glands. The high acidity creates a hostile environment for the growth of many pathogens. Besides, the normal flora present in the upper third of the cervical canal viz. Lactobacilli (Doderlein's bacilli), Group B and D streptococci, Coagulase negative Staphylococci, Diptheroids etc., inhibit the growth of harmful flora.<sup>2</sup> The extremes of age are more prone for vaginal infections.

There are times when the vaginal defence mechanisms are reduced like, during menstruation, after abortion and labor. Some of the specific vaginal infections that occur in the women of reproductive age group are, Bacterial Vaginosis, Moniliasis, Chlamydial, Gonococcal and Trichomonad. Except bacterial vaginosis, the rest of them are mostly sexually transmitted.<sup>3</sup> Bacterial vaginosis also known as non-specific vaginitis is the most common cause of vaginal infections. The causative organism being Gardnerella vaginalis, the disease is associated with minimal inflammatory response. It is characterized by a change in the vaginal flora with a reduction in the number of Doderlein's bacilli and an increase in Gardnerella vaginalis and resident anaerobic bacilli. The disease manifests in the form of vaginal discharge with or

without itching. It has a strong association with preterm labor, preterm premature rupture of membranes and low birth weight in pregnancy. It may lead to pelvic inflammatory disease and infertility predisposing factors for Candida infection is mainly due to antimicrobial usage, chemotherapy.<sup>4,5</sup>

Mostly infertility is due to post inflammatory changes in fallopian tube, tube ovarian mass that leads to change in vaginal flora. The other organisms such as mycoplasma, Chlamydia, neiss can also cause infertility.<sup>6</sup> Most prevalent among the population of low socio economic status and where due to lack of knowledge, vaginal discharge, some of the factors leads to imbalance of the micro organism population-mainly due to immunodeficiency status, sexual activities, antibiotics. These vaginal infections lead to painful sexual intercourse, chronic pelvic pain, itching in the genitals. Changes in secretions like colour, smell, quantity, lesions in vagina will show the symptoms of infection. This study was conducted to study the prevalence of bacterial vaginosis among the reproductive age group women, in tertiary care center, Kulasekharam.

The objective of this study was to find out the prevalence of bacterial vaginosis in reproductive age group.

**METHODS**

A cross sectional study was conducted among 150 reproductive age group Women with vaginal discharge attending the Gynaecology outpatient Department at Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari district over a period of one month October 2018 were included in the study to determine the incidence of bacterial vaginosis. A detailed history and information regarding age, symptoms, character and quantity of discharge, colour, odour and pruritus were all collected in the questioner. A thorough clinical examination to examine the condition of vagina and cervix was done. An informed consent was taken from all the patients. We collected basic patient like name, age, parity, marital history, potential risk factors were all collected in the questionnaire.

**Inclusion criteria**

- Women of reproductive age group with complaints of vaginal discharge in reproductive age group attending the Gynecological OPD of Sree Mookambika Institute of Medical Sciences.

**Exclusion criteria**

- Women with chronic autoimmune or inflammatory condition like pelvic inflammatory disease or on any antimicrobials within the previous four weeks, women using any intrauterine device or hormonal contraceptives, burning and dysuria were excluded from the study.

The under strict aseptic condition, high vaginal swabs (HVS) were collected by using Cusco’s speculum inserted into the vagina to retract the vaginal walls. Using a sterile long rigid cotton swab was inserted carefully into the uterine cervix rotated gently and sent for culture and sensitivity. A total of 150 women were examined, who were all married, sexually active, between the age group 21 to 45 years were included in the study. Following a complete general examination, per abdomen examination and pelvic examination was performed. For the diagnosis, the Nugent’s scoring of gram staining was used.

**RESULTS**

**Table 1: Characteristics of women.**

Age	Number of patients	Percentage
21-25	12	16.21
26-30	37	50.00
31-35	12	16.21
>35	13	17.58

Out of the 150 reproductive age group women, 74% of the study population belongs to upper lower class according to modified Kuppaswamy socioeconomic status. Majority of the study population belongs to 26-30 years.

**Table 2: Nugents scoring of gram staining diagnosis of bacterial vaginosis.**

Nugents scoring	Positive patients	Percentage
Bv	33	44.8
Intermediate	11	13.6
Normal	30	41.6

0-3: Normal, 4-6: Intermediate, 7-10: BV.

**Table 3: Association between BV and other sexually transmitted infections.**

Infection	Positive patients	Percentage
Candida	26	35.13
Trichomonas	4	5.40
Hiv	2	2.70
Syphilis	1	1.35

50% of the women were between the age group 26-30years of age vaginal discharge collected was smeared on glass slides, dried, heat fixed followed by staining with Gram’s staining (Table 1). The bacterial morph type was studied using the following scheme: 1+, 30 per field. Large gram-positive rods were lactobacillus morphotypes; small gram negative to Gram-variable rods were considered as *G. vaginalis* and *Bacteroides spp.* morphotypes; curved gram variable rods were considered as *Mobiluncus spp.* morphotypes. Bacterial vaginosis in this study was 44.8%, intermediate scoring was 13.6%, normal nugent scoring about 41.6% (Table 2).

Candida infection accounts for 35.13%, trichomonas accounts for 5.40%, HIV association about 2.70% and syphilis accounts for 1.35% (Table 3).

## DISCUSSION

There have been multiple studies performed in various parts of India on the prevalence of bacterial vaginosis. The prevalence of bacterial vaginosis in our study was 49.33% which was higher than the study conducted previously by Sangeeta et al (40.66%) and in Barbados (33%).<sup>7,8</sup> Various other review literature have been reported between prevalence of 25.4% to 38.6%.<sup>9</sup> Vaginal candidiasis in our study was 35.13% and higher than trichomoniasis like the same found in Watcharotonee et al, there is also relation between contraceptive usage and many people in the study were unaware of the condition and serious complications associated with it like HIV, HPV etc, and many people were shy to cooperate fully in the study which is also true in many other study.<sup>10-12</sup> The highest frequency of (66.21%) vaginal candidiasis was observed in the age group of second decade (20-30) years, followed by age group of (30-40) years. Females above 40 years showed lower incidence as observed in our study which is in concordance with previous studies reported by Ako et al.<sup>13</sup> A research study undertaken by Sehgal also showed the age group 21-30 years had the highest incidence of vaginal candidiasis coinciding with our observation indicating women of childbearing age groups are more vulnerable to vaginal candidiasis.

## CONCLUSION

The study shows us the high prevalence of Bacterial Vaginosis, need of routine pap smear, needs to be emphasized to the women in the reproductive age group. The easy mode of diagnosis and treatment needs to be stressed on to prevent morbidities, health education regarding the complications related to bacterial vaginosis should be explained to the population.

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