Study of Prevalence of bacterial vaginosis among reproductive age group women

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Abstract

Bacterial vaginosis is the most common cause of vaginal discharge among women in reproductive age. The normal flora of the vagina varies from person to person, but lactobacilli are usually the preponderant organism. Bacterial flora also contains other aerobic and anaerobic microorganisms. Some of these are considered to be pathogenic. It is recognized that, bacterial vaginosis may be associated with pelvic inflammatory disease, preterm premature rupture of the membranes (PROM), post operative gynaecologic infections and abnormal Papanicolaou smear. Objective is to find the prevalence of bacterial vaginosis. A total of 60 consecutive women with symptoms of vaginitis or excessive vaginal discharge were enrolled for this study. For the diagnosis, the Nugent's scoring of gram staining was used. Bacterial vaginosis in this study was 46.66 %, intermediate scoring was 21.66 %, normal nugent scoring about 31.66%. The study showed higher prevalence of Bacterial Vaginosis.

Key words : Bacterial vaginosis , Prevalence.

Introduction

Bacterial vaginosis (BV) is the most common cause of vaginitis in women of reproductive age group [1]. It the most common infection encountered in the Gynaecological outpatient setting. The prevalence of Bacterial vaginosis in adult population ranges from 17.8% to 63.7% in India [2]. The normal flora of the vagina varies from person to person, but lactobacilli are usually the preponderant organism. Bacterial flora also contains other aerobic and anaerobic microorganisms. Vaginitis and vaginosis refer to vaginal infection, skin diseases involving the vagina, or a disruption of the normal vaginal flora. BV is a poly-microbial synergistic infection characterized by complex changes in the normal vaginal flora attributed to reduction in the prevalence of Lactobacilli and an increase in the concentration of pathogenic organisms [3]. It is recognized that, bacterial vaginosis may be associated with pelvic inflammatory disease, preterm premature rupture of the membranes (PROM),

spontaneous abortion, post operative infections [4,5].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.[6] Bacterial vaginosis also known as non-specific vaginitis is the most common cause of vaginal infections. The causative organism being Gardnerella vaginalis, the disease in 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.[7] BV is clinically characterised by a thin homogenous, malodorous adherent vaginal discharge,[8] pruritis, pain during coitus and lower abdominal pain. It also increases the susceptibility to HIV infection by altering the target cells for HIV in the vaginal wall. The presenting symptoms alone are not reliable for the diagnosis of BV since it can co-exist with other STIs. Hence Amsel's criteria are widely used for the clinical diagnosis. It is based on laboratory diagnostic methods including microscopy, culture and serodiagnosis.[9] The complications include acquisition of sexually transmitted infections (HIV, Gonorrhoea, Chlamydia, HSV), spontaneous PID, second trimester miscarriage, post-abortal endometritis, spontaneous pre-term birth, pre-mature rupture of membranes, low birth weight, post-Cesarean section endometritis, post-hysterectomy cuff cellulitis.

Material and Methods

This Study was conducted in the Tertiary care hospital . A total of 60 consecutive women with symptoms of vaginitis or excessive vaginal discharge were enrolled for this study. 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

Inclusion criteria:

All the patients, clinically having the symptoms of vaginal discharge, were included in the study.

Exclusion criteria:

Patients in menstrual period and patients who had taken antibiotics or received any treatment for vaginitis with in the previous month were excluded from this study

Objective of the study: To find out the prevalence of bacterial vaginosis

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 60 women were examined, who were all married, sexually active, between the age group 23 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.

Nugent criteria

Bacterial morpho type	**SCORING**				
	NONE	**1+**	**2+**	**3+**	**4+**
Lactobacilli Type(Large, Gram positive rods)	4	3	2	1	0
Gardnerella/Prevotella species (Small Gram Negative or variable rods)	0	1	2	3	4
Mobiluncus species (Curved gram negative or Variable Rods)	0	1+ or2+	3+ or4+		

Interpretation:

< 1per oil immersion field - 1+,

1- 5per oil immersionfield-2+,

6-30per oil immersion field - 3+ ,

>30/ oil immersion field - 4+

Score: 0-3 – Normal, 4-6 -Intermediate,7-10- Bacterial vaginosis

Results

Table 1: Age group of Subjects

Age group(years)	Subjects n=60	Percentage
23-30	30	50 %
31-35	18	30 %
>35	12	20 %

50% subjects were in age group of 23-30 years

Table 2: Nugents scoring of Gram staining for Diagnosis of Bacterial Vaginosis

Nugents scoring	Positive patients n=60	Percentage
BV	28	46.66 %
Intermediate	13	21.66 %
Normal	19	31.66 %

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

Bacterial vaginosis in this study was 46.66 %, intermediate scoring was 21.66 %, normal nugent scoring about 31.66% (Table 2).

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 46.66% which was higher than the study conducted previously by Sangeeta et al (40.66%) and in bardados (33%).[10-11] Various other review literature have been reported between prevalence of 25.4% to 38.6%.[12] Bacterial vaginosis is the commonest infection among women of reproductive age group. It can cause complications like miscarriage, pre-term delivery, low birth weight baby, pre-mature rupture of membranes, chorioamnionitis, post-partum endometritis, vaginal cuff cellulitis and pelvic inflammatory disease if not identified and diagnosed. [13] Then term 'Bacterial Vaginosis' (BV) is a variant of bacterial vaginitis and is the most prevalent vaginal infection.[14]It is a clinical syndrome associated with Gardnerella and anaerobes and is characterized by foul smelling discharge. There are different diagnostic criteria like Amsel's, Spiegella, and Nugent criteria. BV is the most common vaginal infection; however reported prevalence varies and based on the population studied.BV is a clinical syndrome characterized by disequilibrium in the vaginal microbiota with decline in the number of lactobacilli.[15] BV has been identified as an independent risk factor for the acquisition of sexually transmitted infections (STIs).[16] The Gram stain provides a direct look at the bacteriologic morphologies and is thus unaffected by factors such as menses,

recent intercourse, which may alter pH and by technical variables such as observer interpretation of clue cells. The vaginal gram stain has been shown to have excellent intra and interobserver reproducibility [17]. The main difficulty for the clinician is the lack of access to direct microscopy, hence it is advised that Amsel's criteria may be used for the diagnosis of BV at the OPD as it is simple, easy, and cost effective and fast and reliable [18].Currently, the Nugent scoring method is the most frequently used laboratory-based diagnostic tool for detecting BV, and it is considered as the gold standard although its inter- and intraobserver reliabilities have been questioned [19]. The field size of the microscope has a bearing on the results which is another issue of concern [20]. Nugent's score was more sensitive than Amsel's criteria for diagnosis of BV. But 90 % of women with BV can be diagnosed correctly based on Amsels criteria [21]. As the prevalence of BV in developing countries are high, countries with limited resources have a great need for inexpensive diagnostic methods that are reliable and unifies clinical and microbiological parameters to make it more sensitive while retaining its specificity.

Conclusion

The study shows us the high prevalence of Bacterial Vaginosis. 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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