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Lubna Tahir, Saima Ali, Seema Amin, and Sajeela Amin

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To determine the prevalence of bacterial vaginosis among reproductive age women in DHQ hospital Timergara

[1]Lubna Tahir, [2]Saima Ali, [3]Seema Amin, and [4]Sajeela Amin

[1]Senior District Gynecologist D.H.Q Hospital Timarghra Lower Dir, Pakistan.

[2,3]Senior registrar Department of Obstetrics & Gynecology, Saidu Teaching Hospital Swat, Pakistan.

[4]Medical Officer DHQ Hospital Timarghra Lower Dir Pakistan.

Corresponding Author: Dr Lubna Tahir

Email: drlubnat@gmail.com

ABSTRACT

Background: Bacterial Vaginosis (BV) is one the most common causes of vaginal discharges that occur in women of reproductive age. This cross sectional study was focused on the prevalence of BV in patients presenting to DHQ hospital, Lower Dir, KP.

Objectives: To determine the prevalence of bacterial vaginosis. Study was conducted at DHQ hospital Timergara, Dir Lower, KP Pakistan after taking approval from hospital.

Materials and methods: This cross sectional study was conducted at DHQ hospital Timergara, Dir Lower, KP after taking approval from hospital's ethical committee. Patients from 18 to 45 years were included (only married patients). Written consent was taken from the patients. Patients having bacterial vaginosis were enrolled in the study.

Results: A total of 384 patients of reproductive age group with symptoms of bacterial vaginosis presented to DHQ Hospital Timergara from April 2020 till September 2020. The results showed that higher number of bacterial vaginosis was detected in age group of 21 to 30 years that is 61 (32.4%) while the lowest number was 31 (16.5%) which was detected in 18-20 years' age group. Bacterial vaginosis was found to be statistically insignificant with age groups keeping $P < 0.05$).

Conclusion: It was concluded that Bacterial Vaginosis is common cause of vaginal discharge. Proper hygiene should be maintained. Medical professional such as gynecologists should help the patients understand the dangers of BV and how to avoid it through proper counselling.

Recommendation: The overall prevalence according to this study was 49%, the mean age of the patients was 30.76±8.75 while the highest prevalence was found in the age group of 21 to 30 years. Proper counselling by the gynecologists regarding hygiene is needed to control bacterial vaginosis.

Keywords: *Determine, Prevalence, Bacterial Vaginosis. Reproductive age*

INTRODUCTION

Bacterial Vaginosis is one the most common causes of vaginal discharges in women of reproductive age. It usually asymptomatic but if symptoms occur they include vaginal discharge, burning, dyspareunia and itching. The discharge may have a strong and unpleasant smell often described as fishy.[1-2] It is the common causes of vulvovaginitis. Other causes include trichomoniasis and candidiasis.[3] Gynecologists are consulted worldwide complaining of vaginitis and approximately 5 to 10 million need advice in this regard.[4] The vaginal PH is acidic due to the presence of lactobacilli. These bacteria produce lactic acid, bacteriocins and hydrogen peroxide due to which the growth of other microorganisms is restricted. Lower levels of lactobacilli may cause the vagina to become less acidic. This gives other bacteria the chance to grow which is related to Bacterial Vaginosis.[5-6] Both pregnant and non-pregnant females can be affected by Bacterial Vaginosis. It was observedin a study that vaginal discharge could be triggered by BV even in the absence of inflammation.[7] A vaginal discharge caused by BV can be identified as off-white fluid, usually observed after menstruation and intercourse. It has a PH of 4.5 and has a fishy smell. Moreover, it can also be associated with absence or deficiency of lactobacilli, a deficient number of polymorphonuclear leukocytes (PMNs) and the presence of clue cells.[8] BV is referred as vaginosis instead of vaginitis. The reason behind this is that it is usually asymptomatic and there is absence of inflammation.[9] A few years back BV was considered to be of little importance but soon it was found that patients having this problem had a high chance of catching human immunodeficiency virus (HIV) and STI's like herpes simplex virus type-2 (HSV-2) and trichomoniasis, gonorrhea. Having BV can also increase the risk of preterm labor and delivery miscarriages, chorioamnionitis and postpartum complications in pregnant women.[11-18]

Diagnosis of BV can be made by using different techniques such as Wet Mount Test, Whiff Test, Vaginal PH and Oligonucleotide probe. In Wet Mount test, a sample of vaginal discharge is test to determine the presence of bacteria, white blood cells and clue cells (abnormal cells). The presence of cells confirms BV. In Whiff test a special solution is mixed with the sample of vaginal discharge to observe whether a fishy odor is created or not. A fishy odor confirms the presence of BV. In vaginal PH test acidity of vaginal secretions is test by a strip. Abnormal PH confirms the presence of BV. Oligonucleotide test is not widely used. In this test vaginal secretions are tested for the presence of bacterial DNA. Antibiotic treatment is considered to be the remedy for BV. Different studies have been conducted worldwide to show the prevalence of BV. In developed countries the prevalence is 15-30% in non-pregnant females while it ranges from 11-10% in pregnant females.[19-22] Studies from African counties like South Africa and Kenya showed a prevalence of 21-29%.[23-24] Prevalence of BV was reported to be 11.3%[28] and 49.4%[29] in studies conducted in Pakistan.

Methods and Materials

This cross sectional study was conducted at DHQ Hospital Timergara, Lower Dir after taking approval from the hospital's ethical committee. Women with symptoms of bacterial vaginosis were enrolled in the study. Age group was from 18-45 and all the married females were included. Written consent was taken from patients. Patients having menstruation, those above 45 years and those who were already taking treatment for Bacterial Vaginosis were excluded from the study. Vaginal swabs were taken and sent to a private laboratory in sterile properly labelled containers. The swabs were examined by microbiologist using gram staining technique. Interpretation was

done by using Nugent Scoring System.[3] then smeared on a glass slide and were examined by a microbiologist after making vaginal gram stain of the vaginal secretion from the swabs. The microbiologist used the gram stain interpretation of Nugent et al[3]. Nugent et al proposed a system for vaginal swabs to diagnose bacterial vaginosis. A score of 0-10 is used. A score of 7-10 showed the presence of bacterial vaginosis. A sample size of 384 patients was selected for the study based on the prevalence of 49%[29] of Bacterial Vaginosis with 95% CI and 5% margin of error using openepi sample size calculator. Frequencies and percentages were calculated for presence of Bacterial Vaginosis and age groups and Mean and SD were calculated for age. Chi square test for used for stratification of Bacterial Vaginosis and different age groups. P value of < 0.05 was considered statistically significant.

Results

A total of 384 patients of reproductive age group with symptoms of BV were presented to DHQ Hospital Timergara April 2020 to September 2020. According to age distribution it was found that out that the highest number of patients belonged to the age group of 21 to 30, which were 134 (34.9%). Minimum age was 18 and maximum was 45 as shown in table 1. Frequency of BV among the patients was 188 (49%) while frequency of symptomatic infections other than BV was 196 (51%) as indicated in table 2. Our results showed that the higher number of Bacterial Vaginosis detected patients belonged to the age group 21 to 30 years which is 61 (32.4%). While the lowest number recorded was 31 (16.5%) which belonged to the age group of 18 to 20. Bacterial Vaginosis was found to be statistically insignificant with age groups keeping P<0.05 as shown in table 3.

Table 1: Minimum and maximum age.

	N	Minimum	Maximum	Mean	Std. Deviation
Patient's Age in Years	384	18	45	30.76	8.759

Table 2: Frequency of BV and symptomatic infections other than BV among the patients.

Bacterial Vaginosis	Frequency	Percent
Detected	188	49.0
Not Detected	196	51.0
Total	384	100.0

Table 3: Statistical insignificance of Bacterial Vaginosis.

P value = 0.29		Age Groups			
		18 to 20	21 to 30	31 to 40	41 to 45
Test Result	Detected	31	61	54	42
		16.5%	32.4%	28.7%	22.3%
	Not Detected	26	73	65	32
		13.3%	37.2%	33.2%	16.3%
Total		57	134	119	74
		14.8%	34.9%	31.0%	19.3%

Discussion

Bacterial vaginosis is considered to be the most common cause of vaginal discharge. It affects millions of women of reproductive age worldwide. It can also lead to HIV and STI. It can lead to adverse obstetric outcomes in pregnant patients like preterm delivery, miscarriages abd postpartum complications. It can cause a lot of stress leading to a poor quality of life in females of reproductive age. This study was conducted to find the prevalence of Bacterial Vaginosis in women presenting to DHQ Hospital Timergara, Lower Dir. It was found that the prevalence of Bacterial Vaginosis was 49% was comparable to a study conducted in India that showed a prevalence of 45%[30]. The findings regarding the age group revealed that the incidence of Bacterial Vaginosis was higher in the age group of 21 to 30 which was 34.9%. Similar results have been recorded by a study conducted in Pakistan[29] which showed the incidence of Bacterial Vaginosis was higher in the age group of 20 to 30.this was found that the difference between Bacterial Vaginosis and age groups was not statistically significant. The higher number of cases in the age group of 21 to 30 may be due to the fact that these patients were in their active reproductive age. Researchers suggest that certain measures can be taken to avoid Bacterial Vaginosis. PH balance of the vagina should be maintained. Perineal and vaginal area should be kept clean and washed with warm water instead of using soap. Douching should be avoided as well as it creates an imbalance between friendly and harmful bacteria which may increase the chances of BV.

Conclusion

It was concluded that concluded that Bacterial Vaginosis is a common cause of vaginal discharge. Proper vaginal hygiene should be maintained. Medical professionals such as gynecologists should help the patients understand the dangers of BV and how to avoid it through proper counselling.

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