

# FREQUENCY OF BACTERIAL VAGINOSIS IN PATIENTS WITH VAGINAL DISCHARGE

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## ABSTRACT

**OBJECTIVE:** To determine the frequency of bacterial vaginosis (BV) in married; sexually active patients presenting with vaginal discharge.

**METHODS:** This cross-sectional study was conducted over a period of 6 months (1st September 2006 to 1st March 2007) on 150 patients presenting with vaginal discharge. All the patients under went sterile speculum examination after taking written informed consent. An Amsel criterion was used for the diagnosis of bacterial vaginosis.

**RESULTS:** Out of 150 patients with vaginal discharge, 53 (35.3%) patients had bacterial vaginosis. Majority of patients (n=30/53; 56.6%) were from age group 16-25 years followed by 26-35 years (n=13/53; 24.5%). Out of 53 cases of BV, 20 (37.7%) were pregnant and 33 (62.3%) were not pregnant. Out of 53 cases of BV, 10 (18.8%) had used intra-uterine contraceptive device (IUCD) and 43 (81.2%) were non-user of IUCD. Only 22.6% (n=12/53) of patients with BV had symptoms of dysuria. Overall, majority of the patients had copious discharge which was watery in 71/150 (47.3%) and milky in 54/150 (36%) patients.

**CONCLUSION:** Frequency of BV in patients with vaginal discharge was 35.3% and more common in women of 16-25 years of age. BV was more common in non-pregnant and non-IUCD users.

**KEY WORDS:** Vaginal Discharge (MeSH); Vaginosis, Bacterial (MeSH); Contraceptive Devices, Intrauterine (MeSH);

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## INTRODUCTION

Majority of the patients presented to gynecology clinic with complaints of vaginal discharge. Many infectious and noninfectious agents are the causative agents. Candidiasis, trichomoniasis, chlamydial vaginitis and bacterial vaginosis are among the common infections.<sup>1</sup> It has been estimated that one billion women around the world are suffering from non-sexually transmitted urogenital infections annually; including bacterial vaginosis (BV), candidiasis and urinary tract infections (UTI).<sup>2</sup> BV is a poly microbial infection resulting from replacement of normal hydrogen peroxide producing

lactobacilli in the vagina with anaerobic bacteria, *Gardinerella vaginalis* and *Mycoplasma hominis*, without any signs of inflammation. It is found in 40-50% of cases presenting with vaginal discharge in gynae clinic.<sup>3</sup> Whether BV is acquired from endogenous or exogenous source is still controversial.<sup>4</sup> Two main risk factors for acquiring BV are, douching and exposure to new sexual partner,<sup>5,6</sup> both of these are thought to disrupt the vaginal ecosystem.<sup>7</sup> Oral contraceptives are protective while intra uterine contraceptive device (IUCD) has been reported to either increase or have no association with BV risk.<sup>8</sup>

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BV is associated with many complications which include post-operative infection following hysterectomy<sup>9-11</sup> and post abortion pelvic inflammatory disease.<sup>12,13</sup> BV may lead to genital tract shedding of HIV in HIV infected women and increase the women's risk of acquiring HIV and other sexually transmitted diseases from an infected partner.<sup>14-16</sup> It also increases the risk of UTIs than others.<sup>17</sup> BV is a common vaginal infection that affects 12-32% of pregnant women<sup>18</sup> and is associated with increased risk of preterm delivery<sup>19,21</sup>, low birth weight babies<sup>22</sup>, clinical chorioamnionitis<sup>23</sup> and neonatal sepsis<sup>20</sup>. BV is usually diagnosed by using Amsel criteria<sup>24</sup>. Some clinicians confirm their diagnosis by taking vaginal secretions for culture. Recently Nugent scoring of gram stain slide of vaginal secretion is becoming increasing used for the diagnosis of BV.<sup>25</sup> The present study was aimed to determine the frequency of bacterial vaginosis in married; sexually active patients presenting with vaginal discharge.

## METHODS

The study was carried out in the Outdoor Patient Department of Gynae Unit, Khyber Teaching Hospital, Peshawar, Khyber Pakhtunkhwa, Pakistan. A series of 150 patients with vaginal discharge were included in the present study after taking informed consent fulfilling the predetermined selection criteria. All the patients were between the ages group of 16 to 45 years with history of vaginal discharge entered in this study while unmarried postmenopausal and those with history of pelvic surgery or any organic disease of genital tract were excluded. All the patients were interviewed about the complaints including the age of the patient, onset and amount of discharge,

its relationship with pregnancy, dysuria, and lower abdominal pain; the color of discharge, its offensiveness and presence of any pruritis, and soreness. A bivalve speculum was introduced into the vagina for inspection and the presence of discharge, its color, odor, consistency and any inflammatory sign like erythema was noted. Speculum was removed and discharge in the lips of the speculum was placed on two different slides, one with normal saline and the other with 10% potassium hydroxide (KOH). Slide with normal saline was inspected under the microscope for pus cells, epithelial cells or clue cells. Presence of any fishy odor was noted in 10% KOH added slide. pH of the discharge was tested with pH paper. All informations were collected and data was entered and analyzed by using SPSS version 10.0.

## RESULTS

A total of 150 married patients of reproductive age with vaginal discharge were studied. Bacterial vaginosis was found in 53 (35.3%) patients.

Distribution of subjects on the basis of age group is depicted in Table I. Maximum number of study subjects (n=73/150; 48.7%) were in the age group of 16-25 years followed by age group of 26-35 years (n=59/150; 39.3%). Amongst the BV positive cases 56.6% (n=30/53) were in the age group of 16-25 years followed by 24.5% (n=13/53) in age group of 26-35 years.

Thirty six patients (24%) were pregnant while 114 (76%) were non pregnant. Out of 53 vases of BV, 37.7% (n=20) were pregnant. Out of 36 pregnant patients 55.6% (n=20) were found to have BV. (Table II).

Table III depicts the relationship of IUCD use with BV in the study subjects. Out of 150 study subjects, only 21 (14%) patients were using IUCD. Among the 21 IUCD users, 10 (47.7%) patients were having BV. Among 53 patients with BV, 10 (18.8%) were IUCD users.

**TABLE I: RELATIONSHIP OF BACTERIAL VAGINOSIS WITH AGE**

Age group	Bacterial Vaginosis Positive (n=53)		Bacterial Vaginosis Negative (n=97)		Total (n = 150)	
	Fre-quency	%age	Fre-quency	%age	Fre-quency	%age
16-25 years	30	56.6	43	44.3	73	48.7
26-35 years	13	24.5	46	49.5	59	39.3
36-45 years	10	18.9	8	8.2	18	12.00

**TABLE II: RELATIONSHIP OF BACTERIAL VAGINOSIS WITH PREGNANCY**

Pregnancy status	Bacterial Vaginosis Positive (n=53)		Bacterial Vaginosis Negative (n=97)		Total (n = 150)	
	Fre-quency	%age	Fre-quency	%age	Fre-quency	%age
Pregnant	20	37.7	16	16.5	36	24
Non-Pregnant	33	62.3	81	83.5	114	76

**TABLE III: RELATIONSHIP OF BACTERIAL VAGINOSIS WITH INTRAUTERINE CONTRACEPTIVE DEVICE (IUCD) USE**

IUCD Use	Bacterial Vaginosis Positive (n=53)		Bacterial Vaginosis Negative (n=97)		Total (n = 150)	
	Fre-quency	%age	Fre-quency	%age	Fre-quency	%age
IUCD Use	10	18.8	11	11.3	21	14
IUCD Non-User	43	81.2	86	88.7	129	86

**TABLE IV: RELATIONSHIP OF BACTERIAL VAGINOSIS WITH DYSURIA**

Dysuria	Bacterial Vaginosis Positive (n=53)		Bacterial Vaginosis Negative (n=97)		Total (n = 150)	
	Fre-quency	%age	Fre-quency	%age	Fre-quency	%age
Dysuria present	12	22.6	18	18.6	30	20
Dysuria absent	41	77.4	79	81.4	120	80

Among 16/150 (10.7%) patients with history of mid trimester abortions, 5/16 (31.25%) patients had BV. Out of 53 patients with BV, 7 (13.2%) gave the history of premature delivery. Majority of the patients had copious discharge which was watery in 47.3% (n=71/150) and milky in 36% (n=54/150) patients.

Out of 30 patients with dysuria, 12 (40%) had BV. Among 53 patients with BV, 12 (22.6%) had dysuria (Table IV).

## DISCUSSION

Vaginal discharge is the second most common gynecological problem after menstrual disorders. Some women regard almost any secretion from the vagina as abnormal discharge, and the first task for a primary care physician is to ascertain whether it is physiological or pathological. Although vaginitis is not a serious condition in strictly medical terms, it may have repercussion on woman's life.

In our study bacterial vaginosis was found in 35.3% of patients. A study done

by Wathne BI et al., (1994) which was done in 101 fertile women (15-51 year of age), consulting in general practice due to vaginal discharge and/or genital mal-odor. Bacterial vaginosis was diagnosed in 34% and vaginal candidiasis in 23%. *Trichomonas vaginalis* was demonstrated in 9%.<sup>26</sup> Another study was done by Rie's (1997) showed the incidence of 30-35%.<sup>27</sup> However, study by Gul F, et al showed frequency of BV of about 1% in women presenting with vaginal discharge to antenatal clinic of a tertiary care hospital in Peshawar. About 20% of patients with BV had history of vaginal discharge.<sup>28</sup>

In a study done by Chaudhury and colleagues<sup>29</sup>, the peak age of infection was 25-34 years. In our study peak age of infection was 16-25 years.

Many studies have shown a significant relationship between bacterial vaginosis and preterm labor. Azargoom A et al., have demonstrated a significant relationship of bacterial vaginosis pregnancy with preterm labor.<sup>30</sup> Other studies have verified this relationship.<sup>29</sup> Oakeshott and coworkers showed a significant reverse relationship between bacterial vaginosis and preterm labor.<sup>31</sup> Our results revealed no significant relationship between bacterial vaginosis and preterm labor.

Bacterial vaginosis has been correlated with use of intrauterine devices.<sup>32</sup> Among women using any form of contraception; IUCD use was still more common among patients with bacterial vaginosis, (13 of 51) than among normal woman (13 of 177).<sup>33</sup> A study done by Rewari N et al., showed higher association between bacterial vaginosis and IUCD.<sup>34</sup> Intrauterine devices which has been reported to be highly associated with bacterial vaginosis were found to be statistically insignificant in our study.

Urinary tract infection is the second most frequent type of infection treated in primary care clinics in 2000, for the first time, there was a report that women suffering from BV are at greatest risk of

UTI than others.<sup>35</sup> Harmenali et al, conducted a study and found a remarkable relation between BV and UTI.<sup>33</sup> Similarly Hillebrand et al concluded that BV in pregnancy increases the risk of UTI.<sup>32</sup> In our study there was no statistically significant relationship between BV and dysuria.

## CONCLUSION

BV is persistent problem among the women of reproductive age group. Frequency of BV in patients with vaginal discharge was 35.3% and more common in women of 16-25 years of age. BV was more common in non-pregnant and non-IUCD users. The high prevalence of bacterial vaginosis as a signal agent and its association with other pathogens in a large proportion of women is of significance since such infection not only predispose to ascending upper genital tract infection but are also associated with complications in pregnancy such as preterm labor and endometritis. Interventions to reduce its prevalence and complications are recommended.

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**CONFLICT OF INTEREST**

Authors declared no conflict of interest

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NIL

**AUTHOR'S CONTRIBUTION**

Following authors have made substantial contributions to the manuscript as under:

**AH:** Concept & study design, acquisition of data, drafting the manuscript, final approval of the version to be published.

**IS:** Acquisition and analysis of data, critical analysis, final approval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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