



Prevalence of Bacterial Vaginosis During Pregnancy in Tertiary Care Hospital, Lahore

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ABSTRACT

Introduction: Pregnancy is a condition usually associated with increased vaginal discharge including vaginal infections like bacterial vaginosis, leading to adverse perinatal outcomes due to disturbance in vaginal ecosystem that warrants further evaluation and timely management.

Aims & Objectives: The study was conducted to determine the prevalence of bacterial vaginosis in pregnancy and its contributing factors.

Place and duration of study: Out Patient Department of Obstetrics & Gynecology, Shaikh Zayed Hospital, Lahore. Duration of the study was six months.

Material & Methods: 120 pregnant females with age 20-40 years with singleton pregnancy of more than 12 weeks' gestation were included. Women who were immunosuppressed and history of diabetes and hypertension and recent history of use of antibiotics were excluded. Vaginal swab specimen was taken & bacterial vaginosis was labelled after fulfilling Amsel criteria. Data was analyzed using SPSS version 21.

Results: In this study, 120 cases were taken and mean age of participants was 27.55 ± 3.97 years. The mean duration of gestation was 18.76 ± 6.14 weeks. Bacterial vaginosis (BV) was seen in 24 (20%) of the cases. BV was seen in 19 (20.65%) cases with age 20-29 years' vs 5 (17.86%) cases in age group 20-40 years with $p= 1.0$. Bacterial vaginosis was nearly significantly high in multiparous women where this was seen in 13 (27.65%) cases as compared to 11 (15.06%) cases in primiparous women with $p= 0.11$. Out of 20 cases of bacterial vaginosis, low education was seen in 12 (60%) of the cases.

Conclusion: The prevalence of bacterial vaginosis in pregnancy at local setup is high and is seen nearly in 1 out of 5 cases. This demands health educational programs to enlighten women regarding screening and early detection & treatment to prevent complications during pregnancy.

Key words: Amsel criteria, Bacterial vaginosis, Female Genital Health, Pregnancy, Vaginal Flora.

INTRODUCTION

Normally, vaginal ecosystem is characterized by the presence of Gram-positive Lactobacillus which plays an important role in maintaining female genital health. Disturbance in vaginal ecosystem and simultaneous replacement of normal flora with anaerobic bacteria leads to bacterial vaginosis causing malodorous vaginal discharge.¹ Pregnancy is a condition usually associated with increased vaginal discharge including vaginal infections like bacterial vaginosis, leading to adverse perinatal outcomes including risk of late miscarriages, preterm labor, risk of chorioamnionitis and postpartum wound infections or endometritis.^{2,3}

The prevalence of bacterial vaginosis ranges from 5% to 58.5% in different population and in pregnancy, its prevalence is 11-16% in developed countries.^{2,3} Recent studies showed significant

reduction in adverse outcomes with the help of appropriate screening and treatment.⁴ Due to adverse perinatal outcomes associated with bacterial vaginosis especially in pregnancy, pathological vaginal discharge warrants further evaluation and timely management. In spite of 20% prevalence of bacterial vaginosis in pregnancy, evidence of epidemiology of BV in pregnancy in developing countries is still scarce.⁵

This study aims to provide data on prevalence of bacterial vaginosis among pregnant females and its contributing factors for early screening and detection which will be beneficial to prevent adverse perinatal outcome and improve quality of health.

MATERIAL AND METHODS

A cross sectional study was done in Out Patient Department of Obstetrics & Gynecology, Shaikh Zayed Hospital, Lahore from 01-04-2019 to 01-10-

2019 enrolling 120 pregnant females with age 20-40 years with singleton pregnancy of more than 12 weeks gestation via non probability consecutive sampling technique. Women who were immunosuppressed and history of diabetes and hypertension and recent history of use of antibiotics (within 4 weeks) were excluded.

After the approval of Ethical Committee of Shaikh Zayed Hospital (SZH), Lahore an informed consent was taken from each patient fulfilling the inclusion criteria. Socio demographics and clinical data like age, parity, monthly household income, level of education and duration of gestation at presentation was taken and recorded on a specially designed proforma.

All cases underwent vaginal examination by Cusco's Speculum and a sterile swab specimen was taken from vagina and was examined by using Amsel criteria: (three of the following four criteria must be present)⁶: presence of homogenous white-grey vaginal discharge, presence of clue cells under microscope & a fishy amine odor of the vaginal discharge before and after addition of 10% KOH (positive whiff test); a vaginal pH of > 4.5.

Statistical analysis:

Data was analyzed with the help of SPSS version 21. Quantitative variables like age and duration of gestation at presentation were documented in terms of mean ± SD (Standard Deviation). Frequency & percentages were calculated for parity, monthly household income and bacterial vaginosis. Effect modifiers were controlled through stratification of age, parity, monthly household income, educational status, trimester of pregnancy to see the effect on bacterial vaginosis. P-value ≤ 0.05 was taken as significant.

RESULTS

In this study there were total 120 cases and the mean age of the participants was 27±3.97 years and mean duration of gestation was 18 ±6.14 weeks as in Table-1.

Frequency of parity and monthly household income is depicted in Table-2. Bacterial vaginosis (BV) was seen in 24 (20%) of the cases (Table-2).

BV was seen in 19 (20.65%) cases with age 20-29 years vs 5 (17.86%) cases in age group 30-40 years with p=1.0. Bacterial vaginosis frequency was increased in multiparous women i.e. 13 (27.65%) cases as compared to 11 (15.06%) cases in primiparous women with p= 0.11. Also it was high in women with low education 19 (22.35%) as compared to 5 (14.28%) with higher education

(p=0.34) There was no significant association of BV with monthly household income and trimester of pregnancy (Table-3).

	Age (years)	Duration of gestation (weeks)
Mean	27	18
Std. Deviation	3.97	6.14

Table-1: Age & duration of gestation at presentation in study subjects (n= 120)

Factors	Frequency N=120	Percentage
Parity		
Primiparous	73	60.83%
Multiparous	47	39.17%
Monthly household Income		
<Rs. 20,000/-	72	60.00%
>Rs. 20,000	48	40.00%
Bacterial Vaginosis		
Present	24	20.00%
Absent	96	80.00%

Table-2: Frequency and percentage of factors in study subjects (n=120)

Sociodemographic	Bacterial Vaginosis		Total	P value
	Yes	No		
Age				1.0
20-29	19 (20.65%)	73 (79.35%)	92 (100%)	
30-40	5 (17.86%)	23 (82.14%)	28 (100%)	
Total	24 (20%)	96 (80%)	120(100%)	
Parity				0.11
Primiparous	11 (15.06%)	62 (84.94%)	73 (100%)	
Multiparous	13 (27.65%)	34 (72.35%)	47 (100%)	
Total	24 (20%)	96 (80%)	120(100%)	
Monthly household Income				1.0
<Rs 20,000/-	14 (19.44%)	58 (80.56%)	72 (100%)	
>Rs. 20,000/-	10 (20.83%)	38 (79.17%)	48 (100%)	
Total	24 (20%)	96 (80%)	120(100%)	
Educational status				0.34
Under-Graduate	19 (22.35%)	66 (77.65%)	85 (100%)	
Graduate&Above	5 (14.28%)	30 (85.72%)	35 (100%)	
Total	24 (20%)	96 (80%)	120(100%)	
Gestational Age (Trimester Wise)				0.61
2 nd	14 (17.5%)	66 (82.5%)	80 (100%)	
3 rd	10 (25%)	30 (75%)	40 (100%)	
Total	24 (20%)	96 (80%)	120(100%)	

Table-3: Association of bacterial vaginosis with sociodemographic factors. (n= 120)

DISCUSSION

Globally bacterial vaginosis is an emerging gynaecologic concern especially in women of childbearing age because this is considered as one of

the risk factors for adverse perinatal outcomes including risk of miscarriages, preterm labour, preterm premature rupture of membranes, and postpartum wound infections.⁷

The methods for diagnosis of Bacterial Vaginosis also have a great impact on the variation of Bacterial Vaginosis prevalence. Although the gold standard for diagnosis of BV is proposed by Nugent. But the clinical criteria by Amsel⁶ is suitable for daily routine as it does not require laboratory facilities hence, no delay in reporting. It is arduous to evaluate all of these criteria for diagnosis in busy practice; and requires the ability of the gynaecologist to analyze wet mount microscopy.^{8,9}

In the present study Bacterial vaginosis (BV) was seen in 24 (20%) out of the 120 cases. These results were comparable to the findings of the previous studies where almost similar burden of the disease was found. According to a study done by Ibrahim SM et al, the bacterial vaginosis was seen in 17.3% of pregnant cases.¹⁰ Slightly higher percentages were noted by the results of other studies, where they revealed this percentage in more than 30% of the cases. Romoren M et al. revealed BV in 38% of the pregnant ladies.¹¹ while in another study by Habib A & Siddiqui I revealed its prevalence as 35.3% of cases.¹² This variability of the results can be due to difference in criteria for diagnosis. In another study regarding the prevalence and its contributing factors this was noted in 19.4%, in their study by Mangistie Z et al.¹³ The incidence of BV is 30-35% in a study conducted by Ries AJ.¹⁴ However, study by Gul F, et al. showed frequency of BV of about 2.5% in women presenting to antenatal clinic of a tertiary care hospital in Peshawar.¹⁵

Furthermore, regarding various contributing factors leading to bacterial vaginosis, Mengistie Z et al. found higher number of cases having bacterial vaginosis in younger age (21-29 year) where this was seen in 21.2%, low educational status (less than 12 grade) in 23.1% and 3rd trimester pregnancy in 14% of the cases.¹³ These results were also comparable to the present study findings, where BV was seen in 19 (20.65%) cases with age 20-29 years' vs 5 (17.86%) cases in age group 20-40 years with $p=1.0$; though this difference was statistically insignificant. And among various contributing factors leading to bacterial vaginosis, low education was seen in 19 (22.35%) of the cases while 3rd trimester of pregnancy had 10 (25 %) cases and younger age group was seen in 19 (20.65%) cases each.

In another study conducted by Chaudhury and colleagues, the peak age of BV was 25-34 years.¹⁶

In index study the peak age of infection was 20-29 years.

There were few limitations of this study as this study did not look for concomitant contributing factors like urinary tract infection which was an important confounder and also did not look for the foeto -maternal outcomes.

However, there were many strengthening points as well as this study highlighted a very underrated entity.

CONCLUSION

The prevalence of bacterial Vaginosis in pregnancy at local setup is high and is seen nearly in 1 out of 5 cases. Among various contributing factors low education was the commonest. This demands for health educational programs to enlighten women regarding screening and early detection & treatment to prevent complications during pregnancy.

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