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ORIGINAL ARTICLE

Frequency of Bacterial Vaginosis Amongst Pregnant Women Attending the Tertiary Care Hospital

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ABSTRACT

Background: The poly-microbial illness known as bacterial vaginosis is defined by the depletion of the normal vaginal flora. Bacterial vaginosis is a common problem in pregnant women.

Objective: To find out the frequency of bacterial vaginosis amongst pregnant women attending the tertiary care

Methodology: This study was descriptive cross sectional carried out at the Gynecology department of Khalifa Gulnawaz Hospital, Bannu for duration of six months from January 2022 to July 2022. Under aseptic condition, vaginal swab was taken by using high vaginal swab procedure and sent to the concerned laboratory for determination of bacterial vaginosis. All the analysis of data was done by using IBM SPSS version 24.

Results: In the current study, totally 250 pregnant women were included. The mean age was 28.12 years with standard deviation of 9.15. The mean (SD) gestational age was 24.15 (3.25) weeks. Out of 250 pregnant women, bacterial vaginosis was observed in 48 (19%) patients.

Conclusion: Our study concludes that bacterial vaginosis is highly prevalent in pregnant women. Awareness programs should be started on national level to educate women about bacterial vaginosis during pregnancy.

Keywords: Prevalence; Bacterial vaginosis; Pregnancy

INTRODUCTION

When anaerobic bacteria like mycoplasma spp and Gardnerella spp displace the normally lactobacillus-dominated vaginal flora result in a disease known as bacterial vaginosis [1]. It is an incredibly common vaginal disease that may lead to vaginitis in women during pregnancy and in non-pregnant women [2].

A diversity of Lactobacillus species may be found in the vaginal environment of healthy women, which represents a balanced environment. By producing organic acids like lactic acid and other antimicrobial compounds such as hydrogen peroxide and bacteriocins, as well as by competing with other microbes for receptors of glycoprotein and mannose and adhering to the epithelium, such bacteria prevent the development of other pathogens. It is well established that bacterial vaginosis is linked to a lack of these vaginal Lactobacilli [3, 4].

Since the majority of women who are of childbearing age will, at some point in their lives, suffer from vaginitis of some form or another and it is common for people to think that vaginitis is a normal part of a woman's reproductive life. There are three main types of vaginosis. The bacteria vaginosis responsible for 40 to 45% cases of vaginosis, fungal vaginosis accounts for 20 to 25% cases while parasitic vaginosis is responsible for only 15 to 25% cases [5]. Therefore, bacterial vaginosis is a common vaginal infection and the leading cause of vaginitis in women of reproductive age [6]. When they encounter an irregular vaginal discharge, the majority of women are typically hesitant to pursue medical attention since they frequently think it to be a normal discharge. Gynecologic morbidity is concealed by this "culture of silence," which is pervasive in society [5]. Usually bacterial vaginosis infected women have no symptoms [6]. Bacterial vaginosis in women of reproductive age is widespread over the world [7]. Asian pregnant women are more likely to get bacterial vaginosis than other ethnic groups, with prevalence rates as high as 13.6% in Japan, 15.9% in Thailand, and 18% in Indonesia [8]. Additionally, the incidence of bacterial vaginosis during pregnancy is greater than other asymptomatic infectious problems [8]. Bacterial vaginosis during pregnancy is associated with many major complications for the both mother and child, including preterm birth, low weight at birth, intraamniotic infection, post-cesarean endometritis and chorioamnionitis [9].

This indicates that by treating bacterial vaginosis earlier during pregnancy and diagnosing and treating it earlier can help to avert the difficulties associated with it. Bacterial vaginosis can be diagnosed by Nugent criteria based on gram stain and by Amsel's composite criteria which is considered as gold standard criteria.

Up now no specific data is available in our setting about the frequency of bacterial vaginosis in pregnant women. This study was thus carried out to assess the bacterial vaginosis prevalence in pregnant women attending the tertiary care hospital for their routine checkup.

MATERIALS AND METHODS

This study was descriptive cross sectional carried out at the Gynecology department of Khalifa Gulnawaz Hospital, Bannu. The duration of the current study was six months from January 2022 to July 2022. The study approval was taken from the hospital ethical and research committee. All the pregnant women having age ≥18 years with abnormal discharge from vagina and willing to participate in our study were included whereas all the pregnant women with no abnormal vaginal discharge, females on antibiotic treatment and those not willing to take part in our study were excluded from the study. The overall sample size in our study was 250 patients by taking frequency of bacterial vaginosis as 31.5% according to previous study [10]. All the information including age, parity, gravidity and gestational age were collected by using pre-designed questionnaire. Under aseptic condition, vaginal swab was taken by using high vaginal swab procedure and sent to the concerned laboratory for determination of bacterial vaginosis. In the laboratory, all the samples were processed by expert laboratory technologist. Bacterial vaginosis was diagnosed by conventional culture and identification technique. All the analysis of data was done by using IBM SPSS version 24. Variables like age, parity, gestational age were determined in the form of means and standard deviations while variables like bacteria vaginosis was determined in the form of frequencies and percentages.

RESULTS

In our research work, totally 250 pregnant women were included. The mean age of females included was 28.12 years with standard deviation of 9.15. The minimum and maximum age observed were 19 years and 37 years respectively. Patient's distribution based on age was observed as; 130 (52%) patients in the age group 18-30 years while 120 (48%) patients were observed in 31-45 years age

group. (Figure 1) Based on gestation age 102 (40.8%) patients were in the first trimester, 85 (34%) patients were in the second trimester while 63 (25.2%) patients were in their third trimester of pregnancy. (Figure 2) The mean (SD) gestational age was 24.15 (3.25) weeks. The mean (sd) parity was 1.12 (0.25) with the minimum and maximum party of 1 and 5 respectively. On the basis of parity, 160 (64%) patients were observed in 1-3 parity group while 90 (36%) patients were observed in 4-6 parity group. (Figure 3) Out of 250 pregnant women, bacterial vaginosis was observed in 48 (19%) patients. (Figure 4)

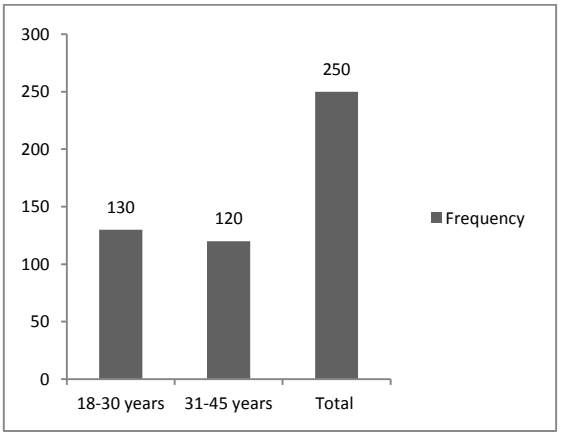

Figure 1: Distribution of patients based on age

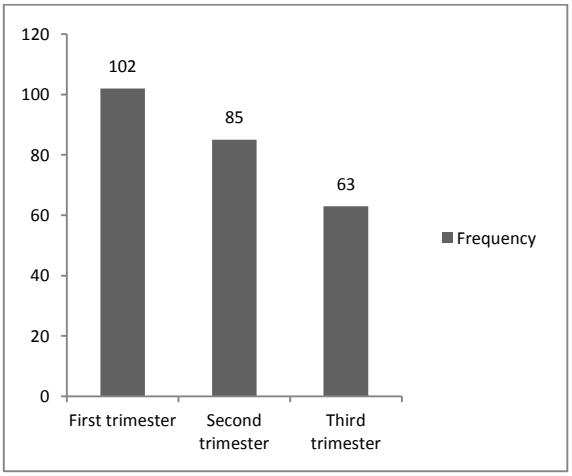

Figure 2: Distribution of patients based on gestational age

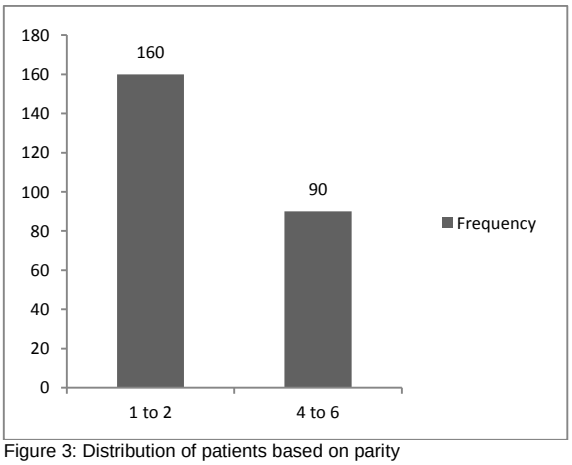

Figure 3: Distribution of patients based on parity

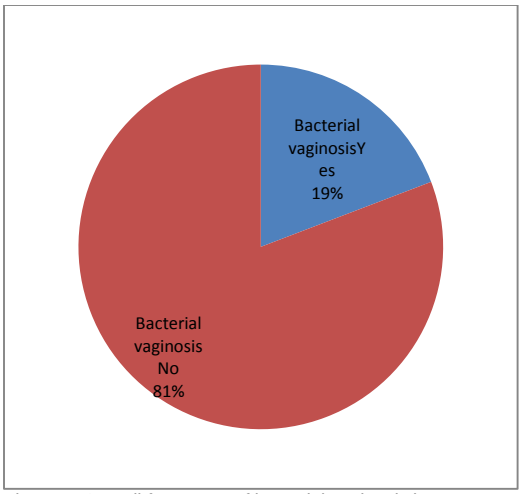

Figure 4: Overall frequency of bacterial vaginosis in pregnant women

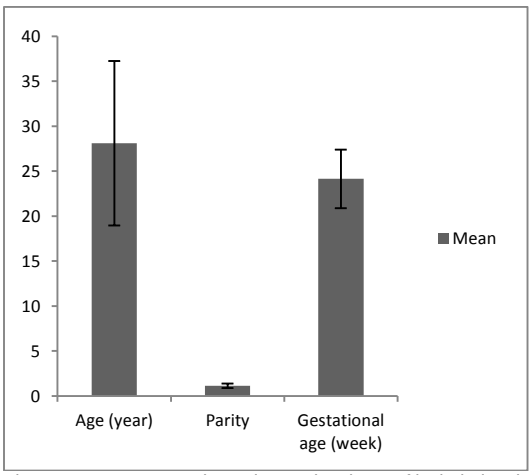

Figure 5: Mean age, parity and gestational age of included patients

DISCUSSION

The poly-microbial illness known as bacterial vaginosis is defined by the depletion of the normal vaginal flora, primarily Lactobacillus spp., which produces hydrogen peroxide, and the rise in the quantity and kinds of other bacteria in the fluid of vagina. Variations in vaginal fluid features like viscosity and odor may result from a reduction in lactobacilli and a rise in facultative and anaerobic bacteria [11, 12].

Bacterial vaginosis has been closely associated with preterm labor and premature rupture of membranes. Abnormal flora in the second trimester of pregnancy is a predictor of premature delivery (PTB). The risk of developing postpartum endometritis is 10 times greater bacterial vaginosis patients as compared to women with normal flora, and the risk of developing chorioamnionitis, a condition that affects 1 in 100 births, is likewise associated with bacterial vaginosis. Babies born to pregnant mothers who have bacterial vaginosis are more likely to be underweight.

In our research work, totally 250 pregnant women were included. The mean age of females included was 28.12 years with standard deviation of 9.15. Based on gestation age 40.8% patients were in the first trimester, 34% patients were in the second trimester while 25.2% patients were in their third trimester of pregnancy. The mean (SD) gestational age was 24.15 (3.25) weeks. The mean (sd) parity was 1.12 (0.25) with the minimum and maximum party of 1 and 5 respectively. On the basis of parity, 64% patients were observed in 1-3 parity group while 36% patients were observed in 4-6 parity group. Out of 250 pregnant women,

bacterial vaginosis was observed in 48 (19%) patients in our study. These findings are almost similar with the findings of the previous study who reported 19.36% prevalence of bacteria vagninosis among pregnant women [13]. The frequency of bacteria vaginosis ranges from 6 to 32% in numerous studies [14]. In concordance with our findings, a previous study done in Iran reported bacterial vaginosis in the range of 6 to 64% and they observed that this variability in the frequency of bacterial vaginosis depends on clinical features of included patients, race and geography [15]. In a previous study, amongst 200 pregnant women bacteria vaginosis was observed in 38% patients which is high prevalent as compared to our study [16]. Comparable frequency of bacterial vaginosis was also observed by another study who reported 16.6% prevalence of bacterial vaginosis [17]. A recent study carried out in Pakistan reported 24% prevalence of bacterial vaginosis and they also shows their association with pre-mature rapture of membrane in pregnant women [18]. A previous study carried out by Adinma et al. and Ibrahim et al in Nigeria reported comparable results to our findings [10, 19]. Another study done by Larrson et al. reported high prevalence of bacteria vaginosis than our study [20]. Other studies carried out by Afolabi et al. and Isik e t al. reported lower prevalence of bacterial vaginosis as compared to our study [21, 22]. These differences in the findings of our study and other studies might be due to different diagnostic techniques used for the bacterial vaginosis.

Socioeconomic status, sexual behavior, access to knowledge about reproductive health, and hygienic practices among adolescents and young adults are some of the factors hypothesized to account for the observed range in bacterial vaginosis prevalence. Most studies on bacterial vaginosis employ the clinical criteria developed by Amsel et al. [23]based on a composite of existing diagnostic criteria. Studies using gram staining of vaginal discharge to diagnose bacterial vaginosis have showed a high association with these clinical diagnostic criteria [24]. The main limitation of the current study was small sample size and short study duration. Other studies based on large sample size should be carried out on pregnant women to determine the bacterial vaginosis and also the bacteria associated with them.

CONCLUSION

Our study concludes that bacterial vaginosis is highly prevalent in pregnant women. Our results emphasize the necessity for health education initiatives that reach pregnant women via a range of media and enlighten them about the distinction of normal vaginal discharge from abnormal and when to see a physician. To facilitate early identification and treatment, frequent bacterial vaginosis testing by the health professionals also must take place during the regular prenatal routine care. To define future methods for prevention and management of bacterial vaginosis in pregnant women, additional multicentre investigations on the frequency of problems of bacterial vaginosis in pregnant women are required.

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