

Study of Bacterial Vaginosis in Preterm Labor

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ABSTRACT

Bacterial vaginosis is portrayed by an unevenness in the vaginal microflora for example the quantity of lactobacilli morphotypes is diminished and the quantity of anaerobic bacterial morphotypes like Gardnerella vaginalis and Mycoplasma hominis is expanded. This was a Prospective-Observational study wherein the sample size was 100. The duration of the study was of 2yrs which started in May 2012 and lasted till April 2014. A study was performed on patients present with idiopathic preterm labor of the Department of Patient Medicine, Obstetrics and Gynecology of Krishna Institute of Medical Science, Karad. Bacterial vaginosis in pregnancy is common in young age and parity. Bacterial vaginosis in pregnancy is associated with a significant risk of preterm labor, PROM and, in the case of low birth weight APGAR and neonatal jaundice, preterm birth fetal morbidity bacterial vaginosis positive pregnancy is significantly higher among women and is likely lower gestational age is due to birth.

Keywords: Bacterial Vaginosis, Prospective-Observational, vaginal microflora, pregnancy

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INTRODUCTION

Bacterial vaginosis is portrayed by an unevenness in the vaginal microflora for example the quantity of lactobacilli morphotypes is diminished and the quantity of anaerobic bacterial morphotypes like Gardnerella vaginalis and Mycoplasma hominis is expanded. It is a polymicrobial disorder and isn't known to be brought about by a solitary irresistible operator; the current symptomatic methodology characterizes a group of stars of clinical discoveries [1]. It is an intricate change of the vaginal biological system, where the physiologic H₂O₂ creating lacto bacilli predominant verdure is supplanted by an excess of blended vegetation, with a high convergence of anaerobic microscopic organisms, typically present in the vagina in significantly less numbers [2]. The absolute convergence of microscopic organisms might be 100 to multiple times their typical levels in women with bacterial vaginosis [3].

The present will attempt to study the prevalence of bacterial vaginosis in idiopathic preterm work and will examine maternal and fetal complications related with bacterial vaginosis.

LITERATURE REVIEW

Bacterial Vaginosis Diagnosis

A variety of other diagnostic techniques have been developed and explored in the attempt to decrease the subjectivity of the diagnosis and to improve consistency between examiners, including identification of clue cells on pap smear sampled from the posterior fornix, often in combination with elevated vaginal fluid pH [4]. Gram stains of vaginal fluid interpreted using one of several systems, identification of several different vaginal fluid biochemical[5], culture or DNA probes for a predominant microorganism[6] [i.e. G Vaginalis] and quantitative microbiologic cultures.

Clinical Diagnosis

Microscopic examination of a saline “wet” mount preparation of vaginal fluid is essential for the accurate assessment of bacterial vaginosis. Clue cells may be distinguished from normal vaginal epithelial cells by their characteristic stippled and ragged appearance to normal vaginal epithelial cells, the characteristic long rods, or

common lactobacillus morphotypes, absent or rare. History bacterial flora tend to predominate in amount and small rods and coccobacillary types. Identification of clue cells may be hindered by adherence of normal bacteria; cellular debris, and availability and quality of the microscopy. Of these four clinical criteria, the presence of clue cells on saline wet mount examination is the single most specific and sensitive indicator of bacterial vaginosis. Identification of clue cells accurately predicts 85 to 90 percent of women with clinical bacterial vaginosis [7].

Alkalinization of vaginal fluid releases volatile amine, putrescine, cadaverine, and trimethylamine, which give of the characteristic “fishy” or “sharp” odour, distinctive of bacterial vaginosis[8].The presence of an amine odour is highly predictive of Bacterial vaginosis. However putrescine is also present in semen, and other anaerobic infections may result in positive amine tests [9].

Normal vaginal pH form menarche through menopause ranges between 3.8 and 4.2. Amsel and colleagues determined that vaginal fluid pH greater than 4.5 best discriminated between Bacterial vaginosis and normal vaginal fluid. Other factors present in the vagina may provide an elevated pH measurement these include semen, cervical mucous, menses, Trichomoniasis and possibly residue from recent douching. Samples for examination of vaginal fluid pH must be obtained from the lateral vaginal sidewall or posterior fornices to accurately reflect vaginal and not cervical pH. Similarly the pH indicator article must allow distinction between the normal vaginal pH (3.8 - 4.2) form pH greater than 4.5.

The characteristic homogeneous and adherent vaginal fluid is the most subjective indicator of bacterial vaginosis. This fluid is described as if “milk or cream” had been poured in to the vagina. Vaginal fluid may appear “frothy” in some women with bacterial vaginosis. Although an increased discharge is a common presenting complaints for women with Bacterial vaginosis the quantity often differs and may range from scant, moderate, or profuse. Due to its low intensity and accuracy, the trait of vaginal fluid should be used in combination with certain diagnostic parameters and not as the sole predictor of bacterial vaginosis. Especially leucorrhoea, which is characteristic of normal pregnancy, may interfere with

recognition of the discharge characteristic of bacterial vaginosis.

Adverse Effects from Treatment

Holst et al [2] in their study concluded that the mean gestation age did not differ in patients who were presenting with idiopathic preterm labour regardless whether they were positive or negative for bacterial vaginosis. They did not find any difference in parity or maternal age among the patients positive and negative for bacterial vaginosis. They found significant difference between birthweight of preterm neonates of mothers who were positive for bacterial vaginosis and negative for bacterial vaginosis.

Kiran et al [10] in their study from January 2005-June 2006 concluded that genital tract infections play a major role in initiating preterm labour, bacterial vaginosis contributing to 32% of their cases. Hiller et al [11] had a prevalence of 16% in their study and concluded it was related to preterm delivery of a low birth infant independent of other recognised other risk factors. Mean gestation age of 32 weeks and mean birth weight of 1827 gm. Modares et al [12] had a prevalence of

bacterial vaginosis of 25% in patients presenting with preterm labour as compared to only 11% in patients presenting with term labour. There was no difference in terms of age, parity and previous history of abortions in both the groups attributing bacterial vaginosis to be an important causative factor of preterm labour. Gaikwad et al [13] in 2012 had reported 45% patients in preterm labour had bacterial vaginosis as compared to only 13% of patients presenting at term.

MATERIALS AND METHODS

This was a Prospective-Observational study wherein the sample size was 100. The duration of the study was of 2yrs which started in May 2012 and lasted till April 2014. A study was performed on patients present with idiopathic preterm labor of the Department of Patient Medicine, Obstetrics and Gynecology of Krishna Institute of Medical Science, Karad. The analysis was carried out further. Continuous variables were analyzed by Student's unpaired t test, qualitative variables were analyzed using chi-square and Fisher's exact test

OBSERVATIONS AND RESULTS

Bacterial Vaginosis's Prevalence

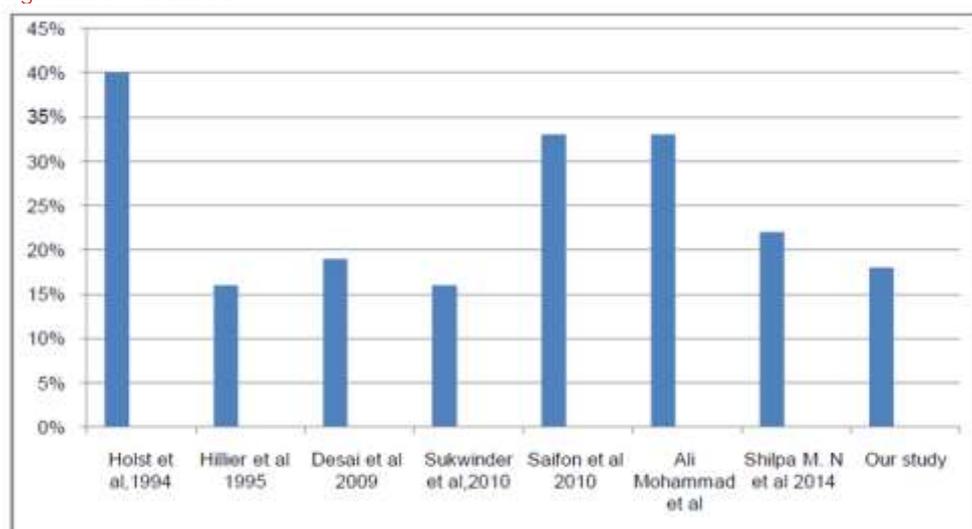


Figure 1: Bacterial Vaginosis Rate

There was no significant difference in obstetric age, obstetric index between positive and negative cases for bacterial vaginosis. Similar results Holst et al [2], Desai et al [14], Saifon et al [15], Azam Arragoon et al [16], Vida Modares et al [12]. Silli was concluded by M.N. et al [17]. Significant differences in gestational age were found.

Table 1 In our study there was a significant difference between groups positive and negative for bacterial vaginosis in terms of their religion. No specific reason as such in this distribution We observed that the mean gestational age in both the groups were almost the same (p Value being 0.22). Same was observed by Holst et al [2], Desai et al [14], Saifon et al [15]

Table 1: Bacterial Vaginosis In Terms of Religion

AUTHOR	B. Vaginosis Positive	B. Vaginosis Negative	MEAN AGE		Significance
			POSITIVE	NEGATIVE	
Helaye et al	32	93	22.7 yrs	22.6 yrs	Not significant
Saifonn et al	31	63	25.1 yrs	25.7 yrs	Not significant
Our study	18	82	21 yrs	21.9 yrs	Not significant

Presentation at stage of preterm labour was not significant in both the groups, although earlier intervention had better prognosis. Prompt treatment with tocolytics in both the groups had no significant difference i.e. arrest of progression to preterm delivery could be achieved in 73 % cases in positive group and 80% in negative group. Though not statistically important, the tocolytic result was higher in the negative community.

pH of vaginal discharge in my study was statistically found to be significant among both the groups (p<0.001) sensitivity being 44% and specificity being 96%. Desai Veena et al [14] had similar findings where in the mean vaginal pH in cases positive for vaginal pH was 4.48 +/-0.72. Saifon et al [15] had results of pH >4.5 in 69% of their cases presenting with preterm labour. Mohammad et al [16] had 100% cases of preterm labour with vaginal pH >4.5.

Whiff test or amine test, results between the two group were statistically significant (p <0.0001) sensitivity being 68 % and

specificity 91%. Positive predictive value being 61%. As contrast to study conducted by Desai Veena et al [14], wherein they did not find statistically difference between the groups positive and negative for bacterial vaginosis presenting with preterm labour but when group of term and preterm labour was compared, more number of patients of preterm labour had positive whiff test as compared to those with term labour. Mohammad et al [16] had 84% cases of bacterial vaginosis with positive whiff test. Saifon et al [15] had 25% of cases of preterm labour positive for whiff test (prevalence being 32%) in their study p value being <0.05. our study has no significant difference in presence of clue cells in both the groups (p=0.40), which were found on basis of wet mount, sensitivity being 21% and specificity being 81%, positive predictive value being 66%. Saifon et al [15] found p value of <0.05. Mohammad et al [16] had 84% of their cases with presence of clue cells on wet mount who were positive for bacterial vaginosis.

STUDY	SENSITIVITY	SPECIFICITY	POSITIVE PREDICTIVE VALUE
Eschenback et al			
Gram staining on			
a. Clinical criteria	97%	79%	69%
b. Clue cells on wet mount	93	85	80%
c. Clue cell on wet mount(isolation)	95%	57%	59%
Our study (wet mount)	21%	81%	66%

Figure 2: Presence of Clue Cells

Our study clinical diagnosis along with gram staining had a prognostic value for detecting bacterial vaginosis. This proved to be simple and inexpensive method to detect the same. Diagnostic tests had a better specificity than sensitivity. Patients were treated with tablet metronidazole 400 mg thrice a day if signs of bacterial vaginosis were present, along with inj isoxsuprine 40 mg in 5% dextrose at 8 drops/min. Patients were monitored for uterine contractions, and vitals. Statistically no difference were found in arrest of labour in both the

groups, this could be attributed to difference in stage of labour presented with preterm labour.

CONCLUSION

During this study, the prevalence of bacterial vaginosis in pregnant women with idiopathic preterm labor in the obstetric department and in the gynecological department KIMS Karad was 18%. The diagnostic method using Amsel's criteria in combination with Gram stain is a simple, inexpensive, easily reproducible, method for diagnosis and

can be used extensively. Bacterial vaginosis in pregnancy is common in young age and parity. Bacterial vaginosis in pregnancy is associated with a significant risk of preterm labor, PROM and, in the case of low birth weight APGAR and neonatal jaundice, preterm birth fetal morbidity bacterial vaginosis positive pregnancy is significantly higher among women and is likely lower gestational age is due to birth. Since bacterial vaginosis is one of the cause to initiate preterm labour, and since my study has proven that the clinical diagnostic tests have better specificity and thought these tests are at minimal cost it could be employed to detect and adequately treat patients visiting antenatal clinics especially those at high risk of preterm delivery or patients presenting with white discharge per vagina.

CONFLICT OF INTEREST

None

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