BACTERIAL VAGINOSIS IN PATIENTS AT MH RAWALPINDI

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ABSTRACT

The objective of the study was to assess the complications caused by the bacterial vaginosis and its prevalence among the patients in gynaecology out patient department, labour and gynae ward.

It was a descriptive study carried out in Military Hospital Rawalpindi from June 2001 to May 2002. Sampling was at random. Only high risk patients of B.V. like those with pre-mature rupture of membranes, pain lower abdomen, with history of recurrent abortion, intra-uterine growth retardation without Pregnancy Induced Hypertension (PIH), diabetes and other chromosomal abnormalities were excluded. Detailed history, general physical and systemic examination (abdominal and pelvic examination) was conducted. Investigations like PH assessment, whiff test, direct microscopy, gram staining, high vaginal swab for culture and sensitivity were carried out. The study was based on obtaining samples from majority of symptomatic women during 12 months. The ratio of positives and negatives in a sample of 328 women was 1:2 approximately.

Out of 328 patients infections was diagnosed by clinical impression in 139 women i.e. 42.4%. Out of these, 10% had intermediate vaginal flora, 14.9% vaginal candidiasis, 6.2% vaginal tricomoniasis and 11.3% had bacterial vaginosis. Bacterial vaginosis was positive in 45% symptomatic and about 4% in asymptomatic population. In view of this study it is recommended that timely diagnosis and proper treatment can save community from prenatal and gynecological complications and also wealth of the nation.

Keywords: Bacterial vaginosis (BV), intermediate vaginal flora

INTRODUCTION

Bacterial Vaginosis is primarily an anaerobic infection associated sometimes with fishy smell and increased vaginal discharge, but not accompanied by leucorrhoea, vulvar burning or pruritis. It is currently understood to be a poly microbial clinical syndrome distinguished by characteristic abnormalities of vaginal secretions and a disturbance of the vaginal ecology with displacement of normal lactobacillary flora by anaerobic micro-organisms. Term 'VAGINOSIS' is used for this condition instead of vaginitis because there is no inflammatory response in the vagina. Bacterial vaginosis is the most common type of Vaginal discharge and accounts for at least one third of all vulvo-vaginal infections. The other types are Candida vulvo-vaginitis and Trichomoniasis [1] .Its incidence in prenatal clinics varies from 10-26% and in patient attending gynecology and family planning clinics is 23%-29% [2].

Previously B.V. was considered as a harmless condition but recent work has linked it to numerous upper genital tract complications. Preterm labour, and pre-labour rupture of membranes which continues to complicate 10% of all pregnancies has strongly been linked with bacterial vaginosis [3-5]. Recent studies have identified an association between BV and occult or clinical intra-amniotic infections [6]. This can threaten the life of mother and her baby and increases the risk of preterm labour and pre-labour rupture of membranes [7]. Similarly incidence of post partum endometritis is ten times higher in patients with bacterial vaginosis than in women with normal flora [8]. Pregnant women with bacterial vaginosis are likely to deliver low birth weight babies [9]. In gynaecology, B.V has been

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linked with a number of complications like: cervical dysplasia, mucopurulent cervicitis, pelvic inflammatory disease, post surgical infections, urinary tract infections, infertility and ectopic pregnancy.

The frequency of bacterial vaginosis in sexually active women has led to the proposal that bacterial vaginosis is sexually transmitted [10]. While pathology and transmission are still not completely understood, however it is now possible to establish a definite diagnosis for nearly all patients with abnormal vaginal discharge.

PATIENTS AND METHODS

Over the period of one year ranging from June 2001 to May 2002 female patients reporting in the gynaecological OPD, gyanecological and labour wards of Combined Military Hospital and Military Hospital Rawalpindi were selected at random for the study. These were predominantly belonging to social class III and IV and age group ranging from 16 to 43 years. During the study vaginal swabs were taken by doctors from the following category of patients:

a. Women reporting with vaginal symptoms.

b. Women reporting for family planning advice.

c. Women who attended antenatal clinics from first trimester to third trimester.

d. Women requiring cervical smears cytology for pelvic pathology.

The sample size was of 328 women with positives and negatives in a ratio of approximately 1:2. Swabs were assessed by microscopy for clue cells and amine whiff test by doctors and technicians. Microbiological culture was performed in Army Medical College Laboratory. Pap smears were assessed in histopathological laboratory of Armed Forces Institute of Pathology. All the participants were asked to have a pelvic examination. Vaginal and cervical samples were obtained. Examination and collection of the samples were performed by one investigator in almost all cases. In pregnant women gestational age was confirmed by ultra-sonographic measurement of the gestational sac, crown rump length in early pregnancy, biparietal diameter and femur length of fetus in evolving pregnancy.

All the patients in child bearing age were included while old patients (over 50 years), premenarche patients (less than 10 years), already diagnosed, under treatment and immunocompromised patients were excluded from the study.

Sampling Technique

Samples for culture from all the participants were collected from cervical Os and posterior fornix after the vault of vagina had been exposed sterile non lubricated vaginal speculum. Separate samples for M-hominis and Urea plasma urea lyticum directly into inoculated directly into 1ml liquid growth medium.

A saline (0.9% sodium chloride solution) wet amount was made for instant direct microscopy. To perform the amine test a vaginal wash with 2ml sodium chloride solution (0.9%) was taken and 10% potassium hydroxide was added to the specimen.

Diagnosing Bacterial Vaginosis

Amsel et al. internationally accepted criterion for diagnosis of bacterial vaginosis was applied. This included fulfillment of three of the four criteria.

a. Fluid from the top of the vagina with a pH value of more that 4.5.

b. Homogenous adherent discharge.

c. Clue cells on the saline wet amount.

d. Fishy odour after addition of 10% potassium hydroxide to the discharge (amine test).

The pH of the vaginal discharge was determined by pH indicator strips.

RESULTS

The study was based on practical consideration of obtaining samples from 328 patients. The mean age was 25.7 years and 15.9% were younger than 20 years of age. Majority of the patients belonged to lower socioeconomic group. All of them were non smokers; almost 80% had a lowest level of formal education. Infection was diagnosed by clinical impression in 139 women

Table-1: Prevalence of different types of genital infections according to clinical and laboratory diagnosis

	Clinical Impression		Laboratory Diagnosis	
Type of infection	**Number of patients**	**Percentage**	**Number of patients**	**Percentage**
Candida Albicans	49	14.9	53	16.15
Bacterial Vaginosis	38	11.3	41	12.56
Intermediate Flora	33	10.0	22	6.7
Chlamydia Trachomatis	-	-	-	-
Trichomonas Vaginalis	19	6.2	07	2.1
Total	139	42.4	123	37.51

(42.4%). Out of these 10% had intermediate vaginal flora, 14.9% vaginal candidiasis, 6.2% had vaginal trichomoniasis and 11.3% bacterial Vaginosis (Table-1). The laboratory diagnosis of these patients also revealed almost the same result as observed during clinical impression table-1. Eight women had more than one infection out of the total of 130 positive tests sent to the laboratory. The infection with highest prevalence was vaginal candidiasis (16.15%) followed by bacterial Vaginosis (12.56%), and intermediate vaginal flora (6.7%). The other infections studied had much lower prevalence.

DISCUSSION

The rate of vaginal infection in my study may be considered as high as approximately 37% probably due to the reason that the study only included symptomatic group. Raised incidence may be related to the increased awareness about the disease and better diagnostic facilities. Some studies including a few from Brazil carried out in prenatal and out patient clinics found a much higher prevalence of Bacterial vaginosis in their patients than observed in my study. These studies were carried out between Oct 1991 to Feb 1993 in out patient clinics of Hospital de Clinicas at the university dade Estadual de Campinas Brazil. In United States the prevalence has been reported 32% in Obsterical population.

Amsel's criteria provided rapid and accurate diagnosis of bacterial vaginosis. Diagnostic tests used were simple, rapid and inexpensive. pH was accurately measured with inexpensive pH indicators strips paper. Special care was taken not to include endo cervical secretions as they are alkaline. Sterile speculum was used without lubricant, so that lubrications may not change the pH. Even after observing all these measures the pH was found to be raised in 90% of cases

Table-2: Clue cells study group

Early Pregnancy Loss	Evolving Pregnancy
8(38%)	14(8.7%)

Table-3: Vaginal Leukocytosis

	Early pregnancy Loss (n=21)	Evolving Pregnancy
Less then 5 Leucocytes/hpf (n)	1(4.8%)	29(15%)
Less than 10 leucocytes/hpf (n)	6(29%)	67(34%)
More than ten leucocytes/hpf (n)	7(33%)	64(32%)
Red cell number	2 (10%)	15 (7.6%)
Epithelialcytolysis	2 (10%)	27 (14%)
Candidahyphae (n)	6 (29%)	49 (25%)

showing the high sensitivity of the test, although specificity was not reliable.

Another diagnostic method used in this study was microscopic examination of unstained vaginal discharge (wet preparation) with drop of 0.9% sodium chloride. Our results demonstrated that frequency of clinical diagnosis was quite similar to that of the laboratory diagnosis table-2. Clue cells were demonstrated in 64% of cases, 26% had normal lacto bacillary flora, while 10% revealed predominating polymorph nuclear leukocytes, showing the presence of some other infections table-3.

For some clinicians such bed side tests (amine test, pH test) are sufficient, while other seek labôratory confirmation. Clinician can now use gram stain as well as amine test to confirm the diagnosis of bacterial vaginosis. Micro biologically confirmation of Gardenerella

vaginalis is not straight forward for service laboratories and identification is costly and takes number of days to be notified to the clinicians [11]. In clinics where microscopy is not available the amine test is rapid, easily performed, inexpensive test with good sensitivity and specificity which can allow immediate treatment. Later confirmation can be attained by cytology.

If BV causes preterm delivery, one would expect an association between BV and upper genital tract infection, because upper genital tract infection, has been highly associated with preterm delivery. Indeed BV is associated with upper genital tract infections in pregnancy. A 2.7 to 4.9 fold increased risk of amniotic fluid infections occurred in patients with BV. Additionally, about 55 % of patients with amniotic fluid infection having the anaerobic bacteria associated with BV isolated from amniotic fluid. A 3.2 fold increased risk of chorioamnionitis occurs among patients with BV in preterm labour [12].

A significant reduction in preterm births occurred in two randomized metronidazole treatment trials conducted in the 2nd trimester among patients of high risks for preterm delivery. The birth rate in treated group was reduced to the level present in patients without BV. Thus patients at high risks for preterm delivery should be screened and treated for BV in pregnancy [13].

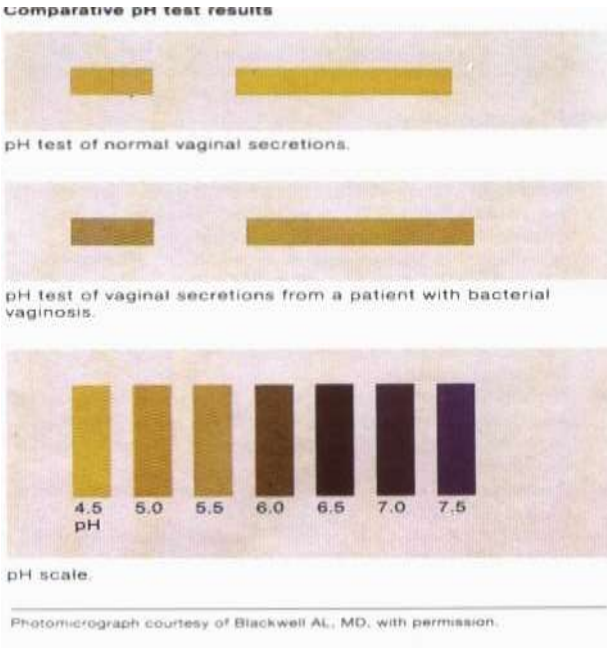
Post abortion pelvic inflammatory disease occurred 2.4 times more commonly among patients with bacterial vaginosis than those with the lacto bacillus dominant flora. Near patients test are under going a revival in Europe and America and a need for such development has been identified in National Health Service. We hope this test will increase awareness of bacterial vaginosis and ease in its diagnosis. Such a diagnosis is particularly important in identifying that such groups of women with bacterial vaginosis are at increased risks of preterm labour and late onset miscarriage.

CONCLUSION

Bacterial vaginosis accounts for about 45% of symptomatic vaginitis. The prevalence of symptomatic and asymptomatic bacterial vaginosis in non-pregnant woman is quite variable ranging

Patient with bacterial vaginosis.

Classic vaginal discharge of patient with bacterial vaginosis– a "cup of milk" poured into the vagina.



from 4% in asymptomatic and 15% to 25% in patients attending gynaecology clinics. From 12 % to 22% of pregnant patients had bacterial vaginosis and it represents one of the more common lower genital tract infections. Since the goal of therapy is to establish a normal lactobacillus dominant vaginal flora, intra vaginal lactobacillus could help establish the return of lactobacillus dominance to the vaginal flora. Early and timely diagnosis and proper treatment can save community from prenatal and gynecological complications.

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