ORIGINAL PROF-806

BACTERIAL VAGINOSIS;
FREQUENCY IN GYNAECOLOGICAL POPULATION

RUBINA SOHAIL, FCPS
Department of Obstetrics & Gynecology,
Post graduate Medical Institute, Lahore.

GHAZALA AGHA, FCPS
Department of Obstetrics & Gynecology,
Post graduate Medical Institute, Lahore.

FARRUKH ZAMAN, FCPS
Department of Obstetrics & Gynecology,
Post graduate Medical Institute, Lahore

Correspondence:
Dr. Rubina Sohail
4 Abu Bakar Block, New Garden Town, Lahore.
Mobile:0300-8452105,
Residence:042-7562283
Clinic:042-5868880
Fax: 042-7592732, 042-5831433

ABSTRACT ... rubina95@hotmail.com **Objective:** To determine the frequency of bacterial vaginosis in patients presenting with vaginal discharge in Gynaecological outpatient department. **Place and Duration of Study:** From July 2001 to April 2002 in the Gynaecological clinic of Unit-II at Services Hospital. **Subject and Methods**: Five hundred patients with vaginal discharge were selected for study. They were evaluated using clinical composite criteria, whiff test, pH metry and microscopy for clue cells on wet mount. Bacterial vaginosis was diagnosed if any three of the four characters were present **Results:** The overall frequency of bacterial vaginosis was 27%, 70% had coital frequency of more than twice a week and 40.7% had history of abortions. **Conclusion:** Bacterial vaginosis was the commonest cause of vaginal discharge in women attending the Gynaecological clinic.

Key Words: Bacterial Vaginosis, Vaginal Discharge.

INTRODUCTION

Bacterial Vaginosis is caused by both aerobic and anaerobic vaginal flora [1-4], and accounts for at least one-third of all vulvovaginal infections[5].

Bacterial vaginosis is responsible for serious sequalae in pregnant and non-pregnant women It is significantly associated with vault hematoma, post-caesarean and postpartum endometritis. Strong correlation exists between bacterial vaginosis and premature onset of labour[6]. Evidence shows clinical and histological evidence of chorioamnionitis in placenta and membranes in patients with BV[7,8]. Maternal and neonatal sepsis is more common in preterm delivery of patients having BV.

Patients with bacterial vaginosis are mostly asymptomatic. The chief complaint maybe an annoying vaginal discharge, which is heavy,

persistent, has foul odor more pronounced after unprotected intercourse because the alkaline pH of seminal fluid elicit the odor. The pH of discharge is > 4.5, amine odor is accentuated by the addition of potassium hydroxide and wet mount preparation typically reveals clue cells. The most sensitive and specific method of rapid diagnosis is microscopic examination of gram stained vaginal smears (Nugent criteria) whose sensitivity and specificity are almost 100%. Tests as pH metry, amine test, clue cells and assessment of vaginal discharge should be used in complex and at least three should be present to confirm vaginosis[9-11]. Screening and treatment of bacterial vaginosis is useful to prevent complications[12].

SUBJECT & METHODS

Study Design:
Hospital based cross-sectional study to detect frequency of bacterial vaginosis in women with vaginal discharge.

Study Setting:
Five hundred subjects of Gynaecological outpatient department of Services Hospital, Lahore.

Study Period:
July 2001 to April 2002.

Exclusion Criteria:
Women who were pregnant, menstruating, had uncontrolled diabetes, on long-term immuno suppressants and on steroids were excluded.

Study Protocol:
After informed verbal consent subjects were evaluated using clinical composite criteria, whiff test, pH metry and microscopy for clue cells on wet mount. Bacterial vaginosis was diagnosed if any three of the four characters were present

RESULTS

Out of 500 women, bacterial vaginosis was diagnosed in 135 giving an incidence of 27%. It was more common (70%) in patients with coital frequency of 2-3/week, 40.8% had history of spontaneous abortions and 29.62% had induced abortions and 55.5% gave history of IUCD insertion.

Table -I Association of coital frequency

Coital Frequency	Number	Percentage
2 or more/week	85	63
1-4/month	30	22.2
1 / 2-3 month	10	7.4
Nil	10	7.4

Table - II Association of spontaneous and induced abortions

Abortion	Number	Percentage
Induced abortions		
None	15	11.1
One or more	40	29.6
Spontaneous abortion		
None	25	18.5
One or more	55	40.8

Table - III Association of IUCD

IUCD insertion	Number	Percentage
Yes	75	55.6
No	60	44.4

Table - IV Diagnostic criteria for Bacterial Vaginosis Consistency of vaginal discharge

Characteristics	Number	Percentage
Thin	105	77.8
Thick	30	22.2

Table -V. Diagnostic criteria for Bacterial Vaginosis Vaginal pH		
Vaginal pH	Number	Percentage
> 4.5	135	100
< 4.5	Nil	-

Table - VI Diagnostic criteria for Bacterial Vaginosis Whiff Test		
Whiff Test	Number	Percentage
Positive	135	27
Negative	365	73

Table - VII Diagnostic criteria for Bacterial Vaginosis Clue cells		
Clue Cells	Number	Percentage
Positive	70	51.9
Negative	65	48.1

DISCUSSION

In the study, frequency of bacterial vaginosis in Gynaecological patients was 27%. Other studies give a similar incidence, Steinhandler et al[13] 29%, Thomson[14] 31% and Reis et al[15] 38%..

The frequency of bacterial vaginosis may vary from 15-40% depending on the criteria and diagnostic tests applied. A study by Langsford[16] gives incidence of bacterial vaginosis of 28%, which is consistent with the current study of 27%.

In a local study by Farrukh[17] in Ganga Ram Hospital in 2000 the frequency of Bacterial Vaginosis was 28%. A study by Georgijevic[18] in Belgrade gives an incidence of 10-30% in Gynaecological and Obstetrical patients.

The clinical features are suggestive but not diagnostic. It is important to confirm BV by using diagnostic criteria. In all 135 patients pH was > 4.5. In a similar study to assess effectiveness of pH in Thailand on 422 women, sensitivity was 73.5% alone and 81.3% when correlated with clinical features[19].

In the study all patients of bacterial vaginosis had a positive Whiff test. This test provides a specific and relatively sensitive method for diagnosing bacterial vaginosis. Another diagnostic test was the presence of clue cells on wet mount.

Out of 135 patients, 70 patients were positive for clue cells. Clue cells are vaginal epithelial cells that have a stippled appearance due to adherent cocobacilli, the cell edges appear fuzzy as compared to the sharp edges of vaginal epithelial cells. To be significant for bacterial vaginosis, more than 20% of the epithelial cells on the wet mount should be clue cells.

Bacterial vaginosis is more common in sexually active women. In this study 85% women were sexually active and majority had a coital frequency of 2-3 times a week.

These observations are comparable Majeroni[20] who concluded that the disease commonly occurs in the sexually active, concurring the study by Anne[21].

This study demonstrated that frequency of spontaneous abortions is high amongst women having bacterial vaginosis (40%). These finding are comparable with the study of Ralph[22] at Leeds.

The results illustrated that 31.6% women had a significantly increased rate of miscarriages. Similarly another study conducted by Donders[23] in Belgium investigated a link between first trimester miscarriages and bacterial vaginosis. His study concluded that bacterial vaginosis play a causative role in spontaneous abortions and early pregnancy loss.

The study also showed some increase in frequency of bacterial vaginosis amongst intrauterine contraceptive device users (55%) as compared with non-users (45%). This can be compared with the study of Joseph[24] who indicated that bacterial vaginosis was more common (47.2%) amongst IUCD users as compared with non-IUCD users (29.9%).

In this study the difference of frequency of bacterial

vaginosis between IUCD can be risk factor of bacterial vaginosis but not strongly related to it. However in the study of Joseph this difference is 18.5%, which is significant and shows IUCD is related to increased frequency of bacterial vaginosis.

CONCLUSION

Bacterial vaginosis has a frequency of 27% in Gynaecological population and is associated with various complications. It is recommended that all women presenting with discharge should be screened for Bacterial Vaginosis.

REFERENCES

1. Speigel CT, Amsel R. **Anaerobic bacteria in non-specific vaginitis.** N Engl J Med 1980; 303:601-7.

2. Moore B. **Observation on a group of anaerobic vaginal vibrios.** J Path Bacterial 1954; 67:641-73.

3. Mardh PA. **The vaginal ecosysterm.** Am J Obstet Gynecol 1991; 165: 1163.

4. Amsel R, Totten PA, Siesgel CA, Chen KCS, Eschenbach D, Holmes KK. **Nonspecific vaginitis: diagnostic criteria and microbial epidemiologic association.** Am J Med 1983; 74:14-22.

5. Eschenbach DA, Hillie S, Crithlow C. **Diagnosis and clinical manifestations of bacterial vaginosis.** Am J Obstet Gynecol 1988; 158:819-28.

6. Honorary PE, Morgan DJ. **A longitudinal study of bacterial vaginosis during pregnancy.** Br J Obstet Gynecol 101: 1048-53.

7. Romero R, Salafia M, Athanassiadis AP. **The relationship between acute inflammatory lesions of the preterm placenta and amniotic fluid microbiology.** Am J Obstet Gynacol 1992; 166: 1382.

8. Newton ER, Piper J, Peairs W. **Bacterial vaginosis and intraamniotic infection.** Am J Obstet Gynecol 1997; 176(3) 672-7.

9. Robert P Nugent, Marijane a, Krohn, Sharon L, Hiller. **Reliability of diagnosing bacterial vaginosis is improved by a standaized maethod of Gram stain interpretation.** J Clin Microbiol 1991;297-301.

10. Ankirskaia AS, Murav' eva VV, Akopian TE, Bairamova GR. **Evaluation of the sensitivity and specificity of methods of rapid diagnosis in bacterial vaginosis.** Klin Lab Diagn 1997; 7:41-5.

11. Schwebke JR, Hillier SL, Sobel JD, McGregor JA, Sweet RL. **Validity of the vaginal gram stain for the diagnosis of bacterial vaginosis.** Obstet Gynecol 1996; 84(4 pt 1): 573-6.

12. Brocklehurst P, Hannah M, McDonald H, **Interventions for treating bacterial vaginosis in pregnancy.** Cochrana – Database Syst Rv 2000; 2: CD000262.

13. Steomjamd;er LE, Peipert JF, Montagno A, Cruickshank C. **Combination of leukorrhea and bacterial vaginosis as a predictor of cervical chlamydia trachomatis or neissera gonorrhea infection.** Obstet Gynecole 2000; 95:5.

14. Glantz JC. **Screening and treatment of bactetial vaginosis during pregnancy: a model for determining benefit.** Am J Perinatal 1997; 14: 487-90.

15. Reiss MA, Blust D, Duff P. **Epidemiology of bacterial vaginosis in an indugent obstet population.** Obstet Gynecol 2000; 95:41-2.

16. Langsford MJ, Dobbs FF, Morrison GM, Dance DA. **The effect of introduction of guideline on the management of vaginal discharge and in particular bacterial vaginosis in primary care.** Fam Pract 2001; 18: 253-7.

17. Farrukh R, Kamal F. **Incidence of bacterial vaginosis among patients with vaginal discharge.** Annals of King Edward Medical College, Lahore 2000; 6(4).

18. Georgijevic a, Cjukic-Ivancevic S, Bujko M. **Bacterial vaginosis: Epidemiology and risk factors.** Srp arh Celok Lek 2000; 128(1-2): 29-33.

19. Thinkhamrop J, Lumbiganon P, Thongkrajai P, chongsomchai C, Pakarasang M. **Vaginal fluid pH as a scressning test for vaginitis**.

20. Majeroni BA. **Bacterial Vaginosis:** an update. 1998.

21. Walling AD. **Urinary tract infections in women with bacterial vaginosis.** Obstet Gynecol 2000; 95:710-2.

22. Ralph SG, Rutherford AJ, Wilson JD. **Influence of bacterial vaginosis on conception and miscarriage in the first trimester:** cohort study. BMJ 1999; 319:

220-3.

23. Donders GG, Van bulck B, Caudron J, Londers L, Vereecken A, Spitz B. **Relationship of bacterial vaginosis and mycoplasmas to the risk of spontaneous abortion.** Am J Obstet Gynecol 2000; 183(2): 431-7.

24. Joesoef MR, Karundeng A, Runtupalit C, Moran JS, Lewis JS, Ryan CA. **High rate of bacterial vaginosis among women with intrauterine devices in Manado, Indonesia. Division of STD Prevention; Centres for Disease Control and Prevention.** Atlanta: USA. mrjl@cdc.gov.