

Excessive vaginal discharge of reproductive age : common causative agents

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Abstract

Background: Excessive vaginal discharge is a common health hazard of reproductive age women in South Asia including Bangladesh. It may be a physiologic or a pathological manifestation. A pathological vaginal discharge may be infective or non-infective. **Objective:** To find out the prevalence of infective vaginal discharge with their common causative agents in reproductive age. **Methods:** This was a cross-sectional descriptive type of study conducted at Out Patient Department of Obstetrics and Gynaecology, Rajshahi Medical College Hospital. The sample size was 245. Three vaginal swabs from each patient were collected to identify the causative pathogens by wet mount preparation of Gram staining and culture in different culture media. Descriptive analytic techniques were done using SPSS for window in computer. **Result:** A total of 245 patients, 142 (57.9%) were infective. Bacterial vaginosis was the most common (67, 27.3%) microbiological cause. Both bacterial vaginosis and candidiasis were predominant in the age group 25-35 years and trichomoniasis was common in younger women than older. **Conclusion:** Before prescribing antibiotics in patients having complain of excessive vaginal discharge, physicians should be confirmed the etiological agents by proper laboratory investigation.

Key words: vaginal discharge, reproductive age, bacterial vaginosis, candidiasis, trichomoniasis

Introduction

Excessive vaginal discharge is a common complain of sexually active women in gynaecological practice.¹ About 5-10 million women visited the gynaecologist with the complain of excessive vaginal discharge per year throughout the world.² Studies have shown that of women seeking advice in the primary and secondary health care setting, 11% to 38.4% in India, and 34% in Ethiopia with excessive vaginal discharge.^{3,7} In Bangladesh, 83% of married women of reproductive age suffered from abnormal vaginal discharge.⁸ Vaginal discharge is one of the predisposing factor of pelvic inflammatory diseases, infertility, endometriosis, abortion, preterm labor and delivered of low birth weight baby.⁹

Vaginal discharge may be a normal physiologic occurrence or a pathological manifestation. It is often challenging to distinguish abnormal from normal discharge, both from the patient's and the health care provider's perspective.^{10,11} A pathological vaginal discharge may be infectious or noninfectious. The symptom of vaginal discharge was also associated with psychosocial factors of non-infectious etiology.¹² Infectious vaginal discharge is usually related to one of the three conditions, like bacterial vaginosis (BV), vulvovaginal candidiasis (VC), and

trichomoniasis.^{13,14} Other less common, pathogens include *Neisseria gonorrhea*, *Chlamydia trachomatis*, and Herpes simplex virus.¹⁵ In Asia, bacterial vaginosis was 20-30% and in African & American blacks it was ranging from 45-55%.¹⁶ In India, excessive vaginal discharge cases was 30%, of which bacterial vaginosis was 33%-47%, candidiasis was 20%-40% and trichomoniasis was 8%-10%.^{2,17} In Bangladesh, bacterial vaginosis was 29.2%, candidiasis was 53.6% and trichomoniasis was 10.8%.¹⁸ There are some non-infectious causes such as chemical irritation, allergic responses, ectropion endocervical polyp, intra uterine contraceptive device (IUCD), vesicovaginal fistula, rectovaginal fistula, promiscuity, local use of traditional herbal preparations etc.^{16,19}

This study was undertaken to find out the prevalence of infective vaginal discharge with their common causative agents among the study population, Which will be helpful for healthcare providers to manage the problem.

Methods

This cross sectional study was conducted at Department of Obstetrics and Gynaecology, Rajshahi Medical College Hospital (RMCH), Rajshahi, Bangladesh. All the female patients of reproductive age (15-49 years) having a complain

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of excessive vaginal discharge attending at the OPD of Obstetrics and Gynaecology, RMCH constituted the study population. A total number of 245 cases were included in the study after taken their written consent. Three vaginal swabs were taken from each case. A vaginal suspension was prepared with one of the three vaginal swabs and examined under microscope for identification of *Candida* and *Trichomonas*. A thin uniform smear was prepared with the second swab and stained with gram stain for demonstration of *Candida* and clue cells. The last swab inoculated in to blood agar, chocolate agar, MacConkey's agar and Sabouraud's dextrose agar media for the growth of bacteria and *Candida*. The colony morphology, zone of haemolysis, gram stain, catalase, coagulase, oxidase, whiff test, pH determination and IMVic tests were done for identification of bacteria. *Candida albicans* was identified by positive germ tube test. All the laboratory tests and cultures were done in the Department of Microbiology, Rajshahi Medical College, Rajshahi. The cases with complaints of vaginal discharge, but no pathogens were identified, were grouped under non-specific causes. Data were computed and processed using SPSS for window. Descriptive analytic techniques involving frequency distribution, computation of percentage etc. were done.

Result

A total 245 patients with the complain of excessive vaginal discharge were included in the study. The vaginal swabs were collected and tested for identification of causative agents.

Table 1. Microbiological etiology of excessive vaginal discharge among the study subjects.

Aetiology of excessive vaginal discharge	Number of patients n = 245	Percentage
<i>Gardnerella Vaginalis</i>	67	27.3
<i>Candida albicans</i>	55	22.4
<i>Trichomonas vaginalis</i>	20	8.2
Non-specific causes	103	42.0

A total of 245 patients presented with abnormal vaginal discharge were examined. Among them causative agents were identified in 142 (57.9%) cases and non specific causes were 103 (42.0%). *Gardnerella vaginalis* was the most common (67, 27.3%) microbiological cause followed by *Candida albicans* (55, 22.4%) and *Trichomonas vaginalis* (20, 8.2%) (Table 1).

Table 2. Distribution of causative agents according to age.

Age in yrs	Bacteria	Yeast	Protozoa
	<i>G.vaginalis</i> N (%)	<i>C.albicans</i> N (%)	<i>T.vaginalis</i> N (%)
15-24	7(10.45)	8(14.55)	12(60.0)
25-34	38(56.71)	30(54.55)	5(25.0)
35-45	22(32.84)	17(30.9)	3(15.0)
Total	67(100.0)	55(100.0)	20(100.0)

G.vaginalis and *C.albicans* were more predominant in age group 25-34 years than the other age groups. *T.vaginalis* was more predominant in age group 15-24 years than the others (Table 2).

Discussion

Bacterial vaginosis (BV) (27.3%) is the most common disease found in this study, which is similar to the study conducted by Begum *et al.*²⁰ in Bangladesh. Koumans *et al.*²¹ who had also found a 29.2% prevalence of BV which is consistent with the present study. Whereas Nessa *et al.*²² in Bangladesh reported 48.1% cases of BV among the sex workers. This high prevalence may be the result of disturbance of vaginal microflora resulting from frequent sexual intercourse and the subsequent frequent washing with water and disinfectant.

Vaginal candidiasis (22.4%) is identified as one of the common microbiological cause of abnormal vaginal discharge in this study. Somia *et al.* (2013)²³ reported a similar result in Pakistan, where their isolation rate was 29.4%. But it was quite high observed in a study of Yusuf *et al.* (2011)¹⁸ in Dhaka, Bangladesh. It may be due to the difference of their study population or seasonal variation.

The frequency of *Trichomonas vaginalis* (20.8.17%), which is the etiological agents of trichomoniasis identified in this study was with the similar rates detected by Nessa *et al.*²², Rahman *et al.*²⁴ and Alam *et al.*²⁵ in Bangladesh.

The high rates of bacterial vaginosis and candidiasis found in this population are of concern. There is evidence that these two infections are associated with adverse pregnancy outcomes, including premature rupture of the membranes, preterm labor, preterm birth, intra-amniotic infection and postpartum endometritis.²⁶ Kiss *et al.*²⁷ reported a 46% reduction in the preterm birth rate in a randomized controlled trial of screening (15 and 19 weeks gestation) and treatment of asymptomatic bacterial vaginosis, candidiasis and/ or trichomoniasis in early pregnancy. The present study findings suggest to proper management of the women of reproductive age having a complain of excessive vaginal discharge for prevention of adverse pregnancy outcomes.

The bacterial vaginosis and vaginal candidiasis in the present study are profound at the age of 25 to 34 years. It is consistent with the findings of Yusuf *et al.* (2011)¹⁸ in Bangladesh. Rylander *et al.*²⁸ and Nwadioha *et al.*²⁹ also found similar results in Sweden and Nigeria in 2004 and 2010 respectively. The reason for the high isolation rates in this age group may be due to comparatively higher sexual activity than the other age groups.

In this study, *Trichomonas vaginalis* is detected in the highest rate at the age group of 15-24 years. It may be the women in this age group usually poor nourished due to growing age and inadequate knowledge about personal hygiene.

Our study possesses a methodological limitation that must be taken into consideration, i.e. most common pathogens responsible for excessive vaginal discharge, like bacterial vaginosis (BV), vulvovaginal candidiasis (VC), and trichomoniasis were identified in this study. But less common, pathogens include *Neisseria gonorrhoea*, *Chlamydia trachomatis*, and Herpes simplex were not identified in this study. Due to this limitations, the less common pathogens were not identified. The women having infection of these pathogens were falsely labeled as noninfective. Total prevalence of less common pathogens among the women having excessive vaginal discharge is not more than 5% in Bangladesh.^{30,31} That suggests, at least more than 30% of the study subjects were noninfective.

Vaginal discharge is a common presenting symptom observed by general practitioners, gynecologists, and those working in family planning clinics and departments of genitourinary medicine.³² It can be quite bothersome to the patient. It is present in the vast majority of women during their reproductive age and the distress it causes is usually extremely subjective. Some patients are annoyed by the slightest amount of discharge, while others make no complaints in spite of marked discharge. This subjectivity makes it difficult to evaluate the degree to which the amount and the quality of discharge affect the patient's wellbeing. Therefore the physician must estimate the parameters of the condition's effect and tailor the treatment to the individual.³³ There is strong temptation to prescribe antibiotics solely on the of clinical symptoms, without confirmation through the laboratory tests and cultures.¹⁵ But this approach is not rationale, because a remarkable proportion of the patients complaining excessive vaginal discharge was noninfective, it may result in treatment failures and drug resistant.^{15,19} The findings of the present study also agreed with this.

The results of this study have certain implication in clinical practice however. Since the complain of vaginal distress is extremely subjective and a remarkable proportion of the patients complaining vaginal discharge are non infective. So before prescribing antibiotic, physicians should be confirmed about the etiology by proper laboratory test and culture.. Otherwise it put the women at risk for side-effects and promotes antibiotic resistance.

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