



Vulvovaginal Candidiasis in Women Attending an STD Clinic in Mumbai

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ABSTRACT

Vulvovaginal candidiasis is one of the commonest but distressing conditions experienced by women of reproductive age group. The aim was to study the prevalence of vulvovaginal candidiasis in a randomly selected group of women attending a STD clinic. 166 women with complaints of abnormal vaginal discharge were subjected to speculum examination. Vaginal swabs were collected for microscopy, culture and identification. Abnormal vaginal discharge was noted in 16.8%. Candida was detected in 40.4% with *C. albicans* predominating (78.5%) followed by *C. parapsilosis* (6.2%), *C. stellatoidea* (4.6%), *C. guilliermondi* (4.6%), *C. tropicalis* (3.1%), *C. krusei* (1.5%), *C. lipolytica* (1.5%). High prevalence of candidal infection suggests that laboratory diagnosis be carried out as a routine screening procedure in women attending STD and antenatal clinics for appropriate treatment.

KEYWORDS

vulvovaginal candidiasis, abnormal vaginal discharge, Candida

INTRODUCTION

Candidal vulvovaginitis is the second most common cause of vaginitis, affecting millions of women especially in the reproductive age group (Sobel, 1997), causing distress in most.

There is estimated 15-54% incidence in the general population. 75% of women experience at least one episode of vaginitis during their lifetime and up to 5% of women with acute infection experience recurrent vulvovaginal candidiasis. The labia and vulva are often swollen, erythematous and symptoms include thick, white-coloured vaginal discharge, vulvar pruritus, dyspareunia and dysuria (Ling Zhi Heng et al, 2012).

One of the common causes is a fungi, candida, probably due to disruption of the normal balance between Candida, bacterial flora and immune defense mechanisms leading to its colonization (Sobel, 1998; Sobel, 2005) favoured by an abundance of carbohydrates and an acidic environment. Several risk factors for vulvovaginal candidiasis include sexual transmission from the partner, pregnancy, menstruation, broad spectrum antibiotics usage, hormonal fluctuations diet, stress, personal hygiene. Frequent sexual intercourse is a strong risk factor (seven or more times a week), B Foxman, 1990.

MATERIALS AND METHODS

This was a prospective study conducted at the STD clinic of Municipal Corporation of Greater Mumbai attached to the Topiwala National Medical College, Mumbai. During the one-year study period 994 patients attended the clinic with various complaints. A total of 166, randomly selected patients with complaints of abnormal vaginal discharge were included in the study. All patients were in the reproductive age group, the youngest 15 and the oldest 45 years of age. Clinical history and findings were recorded. All samples were collected after obtaining consent from the patients. A sterile warm water lubricated speculum was introduced into the vagina. The vagina was exposed with a powerful overhead lamp. Three specimens were collected from posterior fornix of the vagina in quick successions using sterile swabs. The physical characters of the discharge such as colour, consistency, type and amount were observed.

One swab was dipped into Stuart’s transport medium for culture, one in saline suspension and the other used for gram staining. All samples were transported to the laboratory for further processing.

The swab for direct smear examination was stained by gram

stain for demonstration of pseudohyphae and yeast cells. Saline wet mount was taken on a clean glass slide with cover slip and examined under high power (40X) for blastospores. The swabs from Stuart’s media were cultured on Sabouraud’s dextrose agar and incubated aerobically at 37°C. and observed daily for growth. The isolates were identified based on standard microbiological methods including cultural morphology, Gram staining, germ-tube test, demonstration of chlamydospores and sugar fermentations tests (Cruickshank et al, 1975). The pigmented yeasts were identified by smear morphology, colour, India ink staining and urease tests.

OBSERVATION AND RESULTS

The frequency of abnormal vaginal discharge was 16.8% (166/994).

Table 1 : Status of the patients

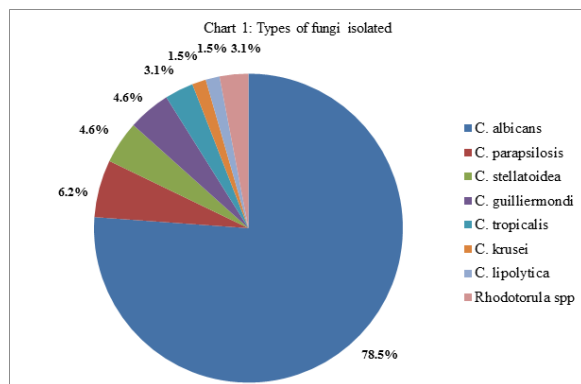
Status	Cases studied
Non-pregnant women (not commercial sex workers)	81 (48.8%)
Commercial sex workers	71 (42.8%)
Pregnant women	14 (8.4%)
Total cases	166

65.7% of the women were in the age group 21- 30 years. Yeasts were isolated from 40.4% of the patients.

Table 2: Age-wise distribution of patients

Age groups	Number of cases	Percentage
15 – 20 yrs	30	18.1
21 – 25 yrs	40	24.1
26 – 30 yrs	69	41.6
31 – 35 yrs	12	7.2
36 – 40 yrs	9	5.4
41 – 45 yrs	6	3.6

Chart 1:



The discharge was thick, curdy discharge was noted in 50.7% of the patients with candidial infection. Flea-bitten appearance was seen in 4.5% and bleeding on collection was noted in 1.5% of the patients.

The commonest complaint accompanying abnormal vaginal discharge was vaginal pruritus. None of the patients had history of diabetes mellitus.

Table 3: Associated complaints and symptoms:

Symptoms	Number
Vulval pruritus	11 (16.9 %)
Erythema	8 (12.3 %)
Burning micturition	5 (7.7 %)
Pain in abdomen	5 (7.7 %)
Body ache	3 (4.6 %)
Backache	1 (1.5 %)
Dysmenorrhoea	1(1.5 %)
Irregular mensus	1 (1.5 %)
Dyspareunia	1 (1.5 %)
Weakness	1 (1.5 %)
Giddiness	1 (1.5 %)

Table 4: The time of presentation at the clinic after onset of symptoms

Commercial sex workers (CSW)	Others	CSW		Others		CSW		Others	
		CSW	Others	CSW	Others	CSW	Others		
0 – 15 days		1 – 3months		4 – 9 months		1yr and above			
29	18	2	11	1	3	1	-		

Not much difference was noted in the incidence of candidiasis in the commercial sex workers 31(49.2%) and others 32 (50.8%). The incidence of commercial sex workers with candidiasis who presented early (within 15 days of symptoms) to the clinic was 44.6% compared to the other group 27.7%.

Higher incidence of fungal infection was encountered in pregnant women 9/14 (64.3%) and Candida albicans was the commonly encountered species 7/9(77.8%) in them also.

Discussion

Mumbai being a port as well as an industrial destination is home to people from all over the country. Commercial sex workers are considered reservoirs for sexually transmitted diseases. 42.8% of the women in this study were commercial sex workers. Most patients were exclusively from the low economic strata, from slums with poor personal hygiene and in the sexually-active reproductive age group 21 – 30 years, 109/166 (65.7%). The clinic where the study was carried out being a municipal STD clinic in Mumbai enables women of economically backward class to use the clinical facilities available.

Abnormal vaginal discharge is one of the commonest and the most vexing complaints recorded in women. They inflict wom-

en in all socio-economic strata. The frequency of abnormal vaginal discharge was 16.8%. The rate of candida detection from vaginal swabs was as high (40.4%) in this study. Other workers have reported similarly high incidences of candidial infection in commercial workers 40.6% (Ramjee G, et al, 1998), 45% (Bellitti F, et al, 2002). However the high incidence of fungal infection were equally distributed among both groups (sex workers & others)

Candida albicans is a known opportunistic pathogen but the mere presence should not be taken as synonymous with clinical disease. The pathogenicity is a matter of debate. There are many who believe that the isolation of C. albicans should lead to treatment. There are suggestions that persons who receive prolonged broad spectrum antibiotics be carefully observed for evidence of fungal infection. These suppress the susceptible bacteria and these may be replaced by yeast or yeast-like organisms. Another possible explanation is that it is due to the removal of bacteria that co-exist with candida. This results in enhancement of competitive power of C. albicans for the nutrients thus increasing the incidence.

C. albicans was the predominant (78.5%) candida species. This concurs with the findings reported by Bellitti F et al (2002), Buscemi L et al (2004), Ferrer J. (2000)

Though C. albicans is the common pathogen in 80-90% of cases, non-albicans candida species are gaining importance as pathogens over the past few decades (Kent, 1991) There has been an increasing trend in isolation of C. glabrata, C. krusei, C. parapsilosis from patients with symptomatic vulvovaginitis, (Mahmoudi Rad M et al, 2012). In the study the predominant non-albicans candida was C. parapsilosis (6.2%). How far the other candida species causes disease is still not clear but some of the species like C. stellatoidea, C. krusei and C. tropicalis are known to produce vulvovaginitis in occasional cases. It is reported resistance to commonly used antifungal drugs are increasing among them.

Rhodotorulla species has been isolated from various clinical samples like skin, urine, stool, sputum, respiratory secretions, gastric washing, blood, vagina, and cerebrospinal fluid of hospitalized patients (Dorey et al, 2002) and from biofilms (Nunes JM et al, 2013). However their pathogenicity is of doubtful significance and claimed to be a normal symbiont of humid skin and lacks pathogenicity. Rhodotorulla species was isolated in 3.1% of fungal isolates.

Candidiasis is said to be influenced by the female menstrual and pregnancy cycles. Though the number of pregnant women who attended the clinic was not enough for a good representation, a high incidence of candidiasis (64.3%) was noted in them and Candida albicans was the commonly encountered species (77.8%).

Vulvovaginal candidiasis is usually straight forward to treat but complicated and recurrent candidiasis can cause considerable psychological morbidity. A positive sign noted in this study was that 44.6% of the commercial sex workers presented earlier to the clinic than others (27.7%), some even presenting 9-12 months after onset of symptoms.

As the prevalence of candida infection was high in the study group it is recommended that laboratory diagnosis be carried out as a routine screening procedure in women attending STD and antenatal clinics and given appropriate treatment. A simple Gram staining procedure is a good reliable test for a presumptive diagnosis.

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