VULVOVAGINAL CANDIDIASIS IN PREGNANCY

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ABSTRACT
Vulvovaginal candidiais (VVC) is a common cause of vaginitis during pregnancy. Although the disease is rarely life threatening, it is a source of great physical and psychological discomfort and suffering. High Vaginal swabs (HVS) were collected from 50 pregnant women and subjected to Gram's smear, 10% KOH wet mount and culture. Candida was isolated from 48% of all cultures. However, Gram's smear and KOH mount revealed only 38% positivity with 10% showing both Candida spores and pseudohyphae. Multigravidae (60%) were more commonly affected than primigravidae (40%). The common presenting signs and symptoms of VVC in present study were excessive vaginal discharge (100%), vaginal pruritis (91.6%) and vaginal burning (75%). Although Gram's stain/ KOH mount is a valuable method in rapid diagnosis of symptomatic VVC as the invasive forms of yeast can also be demonstrated, yet its low sensitivity as compared to cultures could restrict the use in routine practice. Thus the best approach for the diagnosis of VVC is a combination of culture and Gram's smear / or KOH mount.

INTRODUCTION

Vulvovaginal Candidiasis (VVC), an opportunistic mucosal mycosis caused by Candida albicans, is one of the most common causes of vaginitis.[1,2] Its incidence has increased markedly during the last three decades [3]. Approximately 75% of all pregnant women experience at least one episode of VVC during their lifetime and 50% of them suffer recurrent events.[4-6] The incidence of VVC is doubled in the third trimester of pregnancy and multigravida suffer significantly more than primigravida.[7,2] Moreover, a significant proportion of women with chronic or recurrent Candidiasis first present with this infection while pregnant.

The mechanisms by which pregnancy encourages Candida colonization are complex[3]. During pregnancy, levels of both progesterone and estrogen hormones are elevated. Progesterone has suppressive effects on the anti-Candida activity of neutrophils[8], while estrogen have been found to reduce the ability of vaginal epithelial cells to inhibit the growth of Candidia albicans and also decreases immunoglobins in vaginal secretions resulting in increased vulnerability of pregnant women to vaginal Candidiasis.[9,10] Several additional factors like gestational diabetes[11], frequent antibiotic therapy[12], HIV status[13], contraceptives[5], reproductive hormones[4,8] also predispose women to acute and chronic VVC.

The principal symptoms of VVC are vulvar and/or vaginal pruritus and a thick curd/cheese like vaginal discharge[14]. However, painful urination and/or dyspareunia are also common.[15,2] Unfortunately, none of the clinical signs and symptoms of VVC either individually or collectively are pathognomonic of the disease[16]. As a myriad of infectious and non infectious factors may cause identical signs and symptoms, a reliable diagnosis cannot be made on the basis of clinical evidence alone without the corroborative evidence of laboratory tests[5]. Although culture is the most sensitive method of diagnosis of VVC, clinicians usually recommend immediate diagnosis based on Gram's stained smear.

This study was aimed to screen symptomatic VVC among pregnant women and to evaluate Gram's stain / KOH mount as a rapid diagnostic tool for symptomatic VVC.

MATERIALS AND METHODS

This study was conducted on 50 pregnant women, presenting in the antenatal clinic of a local private Hospital, Lahore during the last trimester of their pregnancy, mainly presenting with excessive vaginal discharge and itching (pruritis).

Patients who had taken antibiotics during the previous seven days or had had unprotected sexual intercourse in the preceding 24 hours were excluded from the study. Symptoms of vaginitis (pruritus, vulvar burning, urinary complaints and dyspareunia) were recorded.

During per speculum examination, duplicate High Vaginal Swabs (HVS) were collected using sterile cotton tipped swabs. Swabs were cultured on Sabouraud Dextrose Agar (SDA) with 0.05mg/mL Chloramphenicol and incubated at 37 C for 48-

72 hours. Cultures were examined for pasty, creamy and smooth white colonies of yeasts which were further identified by germ tube test. The duplicate swab was examined microscopically by KOH wet mount and Gram's staining for the presence of budding yeast cells and pseudo-hyphae of Candida species.

RESULTS

The study comprised 50 pregnant women in the last trimester of their pregnancy. Vaginal Candidiasis was found in 24 women giving an incidence of 48%. The main complaint was vaginal discharge and pruritis, present in 50 (100%) and 44 (82%) women respectively followed by vaginal burning 28 (56%) Table 1. Majority of the women 30 (60%) were multi-gravidae while 20 (40%) were primigravidae (Table 2). Cultures revealed that 24 (48%) of the examined vaginal specimens contained Candida species, while Gram's stained smears / KOH wet mount gave lower results. Only 19 (38%) of the women were found positive for Candida spores and 5 (10%) of these females showed Candida spores and pseudo-hyphae on Gram's smear/ KOH mount (Table 3).

Table 1: *Signs and Symptoms of Vaginal Candidiasis in Pregnant Women (n=50).*

Signs and symptoms	Patients Number	Percentage (%)
Vaginal discharge	50	100
Vaginal pruritis	44	82
Vaginal burning	28	56
Dyspareunia	8	16
Painful micturation	6	12

(n= total number of cases)

Table 2: *Gravidity in Pregnant Women (n=50).*

Graidity	Patients Number	Percentage (%)
Primigravidae	20	40
Multigravidae	30	60

Table 3: *Diagnosis Based on Gram's / KOH Smear and Culture (n=50).*

Diagnosis	Gram's KOH Smear n=50		Culture n=50	
Vulvovaginal Candidiasis	+ ve 19	- ve 31	+ ve 24	- ve 26

(n= total number of cases)

DISCUSSION

Vulvovaginal Candidiasis in pregnant women is usually ignored in our country. It is a common and frequently distressing infection in women of child bearing age; approximately 75% of all women experience at least one episode of VVC during their lifetime[4,2]. Acute episodes of VVC often occur during pregnancy and has its consequences on the outcome as 70% to 80% of the affected mothers sub partially contaminate their infants with the yeast.[4,2]

VVC is commonly diagnosed on clinical features alone although as many as half of these women may have other conditions with the same symptoms[17]. The common presenting signs and symptoms in the present study were marked vaginal discharge (50 cases), vaginal pruritis (44 cases) and vaginal burning (28 cases) (Table 1). Hilalgo[14] and Eckert et al[18] also reported similar findings of VVC in pregnant women. The hormonal mileau of the vagina during pregnancy and several other factors can enhance Candida colonization and serve as risk factors for this symptomatic expression.[9,3]

In this study, majority of the women (30) were multigravidae (Table 2) and all the 50 pregnant females were in their last trimester (because of the strong belief in our community, of induction of abortion, if vaginal examination is done in early pregnancy). Similar to this study, Omar[2] reported that multigravidae suffered significantly more (37%) from VVC than primigravidae (24.6%) while Limia[7] and Xu and Sobel[3], reported highest attack rate of Candida vaginitis in third trimester pregnancy. Longer sexual history and use of contraceptives in mutigravidae are implemented as important risk factors associated with VVC.[19,2]

HVS cultures in the present study, revealed VVC in 48% pregnant women as compared to 38% on Grams stain / KOH preparation (Table 3). Similar results (43% and 46.6%) were documented by Donders[20] et al and Levett[21]. KOH wet mount was reported as 40 to 60% sensitive by different workers, however, false positive results were also observed with variable frequency.[22,18] Although culture is the most sensitive method for the diagnosis of VVC, clinicians usually recommend immediate diagnosis based on Gram stain smear[5]; however, its low sensitivity (30% to 50%) has restricted its use in routine practice[2]. Therefore, a reliable diagnosis cannot be made on the basis of Grams stain / KOH mount alone without the collaborative evidence of culture report.

Recent increase in the epidemiology and incidence of Candidiasis in pregnant women and its recurrence has raised concern among scientists to investigate and make an accurate diagnosis of this condition. The selective use of vaginal fungal cul-

tures can enhance the sensitivity of diagnosis in women with a compatible clinical syndrome. However, Candidiasis should not be diagnosed on the basis of clinical evidence or Grams stain / KOH mount alone. The best approach for the diagnosis of VVC is to consider microscopic examination of vaginal secretion or Grams smear with the culture result, which is believed to be the Gold standard for confirmation of VVC.

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