
The role of Indirect Immunofluorescent test in diagnosis of *Candida albicans* in Iraq

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Abstract:

Objectives: to study immunodiagnostic of *Candida albicans* by IFAT, which illustrate the reaction at 1:16 dilution to 1:256 with infected sera.

Materials & Methods: One hundred vaginal swabs and blood samples were obtained from non – pregnant women (i.e. marriage women) with vaginal discharge. Blood samples for serum separation, to study antibody titer by using indirect Immunofluorescent test (IFAT). During the period between September 2002 to May 2003. Attending to out patients clinic of Obstetric and Gynecology of Medical city /Baghdad teaching Hospital,

Results: Out of the one hundred examined women patients, *Candida spp.* was isolated from 80 patients. Among the 80 isolated of *Candida spp.* 51(63.7%) were *C. albicans*. 41(51.25%) of infected women were positive for specific IgG and 10(12.5%) of them specific for IgM against *C. albicans* by IFAT.

Conclusion: This study was carried out, to apply IFAT test for *Candida albicans*.

Key words: *Candida albicans*, IFAT, Vaginal discharge.

Introduction:

Candida spp. are commensals commonly found in the human gastro- intestinal tract, mouth, and vagina. They become pathogenic only when natural defense mechanisms fail, *C. albicans* is the species that most commonly associated with infection in man [1, 2]. These vary from mild superficial, localized infections in a healthy individual to disseminated often fatal infections in the immunocompromized [3, 4]. This yeast is a normal inhabitant of the female vagina, but in some unclearly understood cases, the candidal load increase causing intensely irritant vaginitis with a cheesy vaginal discharge. This may be accompanied by urethritis and dysuria and may present as urinary tract infection [5, 6]. Many studies were carried out in Iraq to describe candidiasis [7-9]. This work was carried out to study the distribution of candidiasis among non-pregnant married women and the role of indirect immunofluorescent test (IFAT) in the diagnosis of candidiasis.

Patients & Methods:

Vaginal swabs were obtained from 100 female patients attending Obstetric and Gynecology of Medical/teaching Hospital. During the period between September 2003 and February 2004 were included in this study. Full information including medical and obstetrical histories and marital status was collected. Direct microscopical examination was done after suspending vaginal discharge in normal saline [7]. Culture was carried out on Sabouraud dextrose agar (Difco) methods. Indirect Immunofluorescent test (IFAT) was done as described by Lydard [8]. IFAT was done using IgG and IgM antibodies [9, 10].

Result:

Out of the 100 examined vaginal swabs, 80(80%) female patients were positive for culture. *C. albicans* was isolated from 51(63.7%) vaginal swabs. *C. glabrata* was isolated from 17(21.2%), *C. krusei* 5(6.2%), *C. tropicalis* 4(5%), *C. parasilosis* 2(2.5%), and *C. pseudotropicalis* 1(1.2%) as shown in table 1. Table 2 shows the age distribution of candidiasis, 75% of *Candida* infected female were below 38years.

Table 1: Candida spp. isolated from vaginal discharge.

Candida spp.	infected patients	
	No.	%
C. albicans	51	63.7
C. glabrata	17	21.2
C. krusei	5	6.2
C. tropicalis	4	5
C. parapsilosis	2	2.5
C. pseudotropicalis	1	1.2
Total	80	80

Table 2: Age distribution of candidiasis

Age groups	patients	
	No.	%
18-28	45	45
29-38	30	30
39-48	20	20
49-56	5	5
Total	100	100

Out of the 80 women had candidiasis, 35(43%) were using antibiotic, 19(23%) were using intra uterine contraceptive device (IUDS), and 12(15%) were using oral contraceptive (OCs) as illustrated in table 3. While 14(17.5%) were diabetic patients.

Eight out of the 100 non – pregnant married women were positive for candidiasis by culture .41(51.25%) of infected women were positive for specific IgG against C. albicans by IFAT .10(12.5%) of them had specific IgM positive against C. albicans by IFAT as shown in (table 4).

Table 3: The relationship between vaginal candidiasis and different predisposing factors.

Predisposing factors	Patients	
	No.	%
Antibiotic uses	35	43
IUDs	19	23
Diabetic patients	14	17.5
OCs	12	15

Table 4: Distribution of positive Indirect Immunofluorescent test (IFAT).

Test		Total no. examined	positive	
			No.	%
Culture		100	80	80
IFAT	IgG	80	41	51.25
	IgM	80	10	12.5

Discussion:

This study revealed that 80% of non – pregnant married women were infected with *Candida. C. albicans* was found in (63.7%) among the infected women. It is lower than that of AL – Hashmie ^[11], who reported that 72.7% of non – pregnant married women in Baghdad had candidiasis. It is higher than that of Kider ^[12] who reported that 42.85% *C. albicans* of non – pregnant married women in Baghdad. These differences may be attributed to the differences in sampling.

This study demonstrated that younger non-pregnant married women had the highest prevalence of candidiasis. It is consistent with AL-Omer ^[13] this result may be due to high sexual activity in younger females ^[14, 15].

Use of antibiotics and contraceptives were the main predisposing factors for candidiasis. This finding is similar to that of AL –Omer ⁽¹³⁾ and Al –

Hashmie ^[11]. They are known predisposing factors for candidiasis ^[16, 17].

It was found that 14 (17.05%) of non-pregnant women with candidiasis were diabetic. Diabetes mellitus produce a biochemical change in the vaginal mucosa similar to that produce during pregnancy ^[18].

The finding that 41 (51.25%) of the examined sera were positive for IgG by IFAT, may be due to previous infection, while 10 (12.5%) were positive for IgM which may indicate a recent infection. Al – Omer ⁽¹³⁾, reported that (51%) of his studied cases were positive for IgM. This difference may be attributed to difference in the methodology of the study.

It can be concluded from this study that IFAT test is not as sensitive as culture in diagnosis of candidiasis.

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