Clinical and Fungal Study of Pityriasis Versicolor Infection among Patients with Skin Mycoses in Baquba

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Abstract:

Objective: To explore the infection rate, clinical patterns, and laboratory investigations of pityriasis versicolor infection among patients with skin mycosis attending Baquba General Hospital.

Materials & methods: This study was conducted in Baquba General Hospital and Public Health Laboratory for the period from October/2003 to Augest/2004. Skin scrapings were collected from 64 patients who were clinically diagnosed as having pityriasis versicolor infection. Direct microscopic examination and culture of specimens on Sabouraud's dextrose agar was done. Patient's information including age, sex, residence and previous family history were recorded. All data were statistically analyzed.

Results: During the study period, of 248patientswith skin mycoses, 64 (25.8%) were clinically and microscopically diagnosed as having pityriasis versicolor infection. Clinically the white patchy lesion was higher than dark-brown lesion (67.2% *vs.* 32.8%). The site of infection was more frequently on the neck (40.6%). A significantly higher infection rate was found among males compared to females (73.4% *vs.* 26.6%). Additionally, the infection rate was significantly higher (45.3%) among the age group 22-31years compared to other age groups.

Conclusion: About one quarter of skin mycoses are attributed to pityriasis versicolor infection.

Key Words: Pityriasis Versicolor, Mycoses, Baquba

Introduction:

Pityriasis versicolor is a chronic mild superficial infection of the stratum corneum caused by *Malassezia furfur* and perhaps other species of malassezia[1]. Invasion of the cornified skin and the host response are both minimal. Discrete, serpentine, hyper or hypopigmented maculae occur on the skin usually on the chest, upper back, arms and abdomen. The lesion occur as macular patches of discolored skin that may enlarge and coalesce, but scaling, inflammation and irritation are minimal[2,3].

M. furfur is a lipophilic yeast requiring lipid in the medium for growth. The diagnosis is confirmed by direct microscopic examination of scraping of infected skin treated with 10% KOH or stained with lactophenol cotton blue stain. Short branched hyphae and spherical cells are observed[4].

Pityriasis versicolor is a worldwide in distribution, particularly in tropical areas. Infection by pityriasis versicolor has varied according to age and gender[5]. It usually infects adults due to increase sebum secretion after puberty[6]. In Iraq, the pityriasis versicolor infection rate in Baghdad was found to be 5% and the mean age at infection was 20.8 years[7]. While in Basrah, the infection rate was 40.5% and the male: female ratio was 3:2 and the age group 11-20 years was mostly affected [8].

Materials & methods:

This study was conducted in Baquba General Hospital and Public Health Laboratory for the period from October/2003 to Augest/2004. Clinical examination and skin scraping were collected from 64 patients who were diagnosed as having pityriasis versicolor infection. Direct microscopic examination of specimens with 10% potassium hydroxide (KOH) and lactophenol cotton blue stain and culture on Sabouraud's dextrose agar were done. Patient's information including age, sex, residence and previous family history were recorded. The human privacy was respected by taken patient's contest. All data were statistically analyzed.

Results:

The results showed that among 248 patients who were clinically and laboratory diagnosed as having cutaneous mycoses, 64 (25.8%) were found to be infected with pityriasis versicolor.

Clinically, the site of infection was more frequently observed on the neck (40.6%) followed by shoulders (31.3%) and upper arms (15.6%).other sites were less frequently affected. The difference was statistically insignificant($P > 0.05$), table 1.

Regarding the clinical patterns of pityriasis versicolor, 67.2% of patients were presented with white patches compared to 32.8% with dark-brown patches. The difference was statistically significant ($p < 0.05$), table 2.

Itching accompanied pityriasis versicolor infection was recorded in 25(39.1%) of the patients compared to 39(60.9%) without itching. The difference was statistically significant ($p < 0.05$), table 3.

The results also revealed that the infection rate among those patients with positive family history of

pityriasis versicolor was lower (26.6%) than those who denied a family history (73.4%). The difference was statistically significant ($p<0.05$), table 4.

Table (1): The rate of infection according to the site of infection.

Site of infection	No. infected	%
Neck	26	40.6
Shoulders	20	31.3
Upper arms	10	15.6
Chest	4	6.2
Face	2	3.1
Abdomen	2	3.1
Total	64	100

P> 0.05 (NS)

Table (2): The frequency of clinical patterns.

Clinical pattern	No. infected	%
White patches	43	67.2
Dark-brown patches	21	32.8
Total	64	100

P< 0.05

Table (3): The frequency of itching.

Presence of itching	No. infected	%
Yes	25	39.1
No	39	60.9
Total	64	100

P< 0.05

Table (4): The rate of infection according to family history.

Family history	No. infected	%
Yes	17	26.6
No	47	73.4
Total	64	100

X^2= 3.9, P< 0.05

The infection rate among males was 73.4% which is significantly higher than that among females (26.6%), and the female: male ratio was 1:7, table 5.

Table (6) showed that the infection rate was significantly higher among patients 22-31 years old compared to other age groups (X^2 =47.4, $p< 0.05$).

Regarding the residence of the patients, the results revealed that the rate of infection among those reside in urban areas (48.4%) was significantly different from that among those reside in rural areas (51.6%), table 7.

Table (5): The rate of infection according to gender.

Gender	No. infected	%
Male	47	73.4
Female	7	26.6
Total	64	100

X^2= 8.7, P< 0.05

Table (6): The rate of infection according to the age groups.

Age groups	No. infected	%
1-11	4	6.2
12-21	20	31.3
22-31	29	45.3
32-41	6	9.4
42 +	5	7.6
Total	64	100

X^2 =47.4, p <0.05

Table (7): The rate of infection according to the residence.

Residence	No. infected	%
Urban	31	48.4
Rural	33	51.6
Total	64	100

P> 0.05

Discussion:

During the present study, all skin scraping spec8mens collected from patients clinically diagnosed as having pityriasis versicolor infection were positive for *M. furfur* by direct microscopical examination. Generally most previous studies have affirm that *M. furfur* can e efficiently diagnosed by direct microscopical examination[7,9] However, the negative results obtained by culture may be due to inadequacy of specimen to grow the fungus, since most pityriasis versicolor infection appears clinically as patches of skin discoloration that impedes collection of adequate specimens. On the other hand, patients may apply certain antifungal a day or two before attending to seek medical advice[10].

The high frequency of neck and shoulders as sites of infection may be attributed to the fact that scalp, upper trunk and the face are rich in sebaceous glands compared to other parts of the body [5]. However, our results in this regard are consistent with those reported by [8,11].

The predominance of white patches obtained in the present study was consistent with previous studies[7,12,13]. Clinically the type of lesion depends on the natural color of the skin, exposure to sunlight and the severity of the condition[4]. It has been documented that the appearance of white patches is attributed to the toxic effect of dicarboxylic acid released by *M. furfur* on melanocytes and decreasing the production of melanin. Whereas, the appearance of dark-brown patches result from increased production of melanosomes by melanocytes [14].

Although the majority of pityriasis versicolor infection is asymptomatic, 39.1% of patients were complaining mild to moderate itching particularly during sweating or exposure to sunlight. This result is concordant with previous reports[7,13]. This may be due to cholinergic urticaria that ay associated with pityriasis versicolor infection [7].

Regarding the family history, significantly higher infection rate was recorded among those who had no family history of pityriasis versicolor compared to those with positive family history. It is worth to mention that previous studies have yielded controversial results [7,13]. So, it can be suggested that other risk factors rather than the presence of index case in a family may operate as predisposing factor for infection.

The significantly higher infection rate among males compared to females obtained in the current study is in agreement with the results of [6,7,8]. It has been documented that military personnel, athletes, and those doing hard works that usually associated with hyper sweating were more vulnerable to pityriasis versicolor infection [15]. Furthermore, sebaceous lands secretion is increased in males 15

years and older compared to females, and that may also promote pityriasis versicolor infection in males[7,16].

It was also found that a significantly higher infection rate among those 22-31 years old compared to other age groups. Similar results were reported by previous studies [8,17]. This may be attributed to adrenergic hormones, which are peaks between 16-40 years old [16].

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