

Microbes and Infectious Diseases

Journal homepage: <https://mid.journals.ekb.edu/>

Original article

Tinea versicolor disease distribution according to certain epidemiological factors among patients attending dermatological clinic outpatient in Tikrit Teaching Hospital

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ARTICLE INFO

Article history:

Received 29 July 2024

Received in revised form 28 August 2024

Accepted 3 September 2024

Keywords:

Tinea versicolor

Epidemiological factors

Tikrit

ABSTRACT

Background: Tinea versicolor is a benign, superficial fungal infection of the skin. It belongs to *Malassezia*-related diseases causing hyperpigmented or hypopigmented finely scaly macules. The most frequently affected sites are the trunk, neck, and proximal extremities. The most causative agents are *Malassezia furfur*, *Malassezia globosa*, and *Malassezia sympodialis*. It is more common in warm and humid conditions. **Aim:** To study certain epidemiological factors of tinea versicolor disease distribution among patients attending dermatological outpatient clinic. **Methods:** This descriptive study was conducted on patients suffering from tinea versicolor disease attending dermatological outpatient clinic in Tikrit Hospital from 1st January 2023 - 30th June 2023. The sample was a convenient sample which included all patients suffering from tinea versicolor disease (attending outpatients' clinic of dermatology in Tikrit Teaching Hospital. The sample size was 112 patients. The patient's demographic information and risk factor history was taken according to a suitable questionnaire which was fully filled by the researcher through direct interview with patient. The diagnosis was basically done on a clinical base by the dermatologist. **Results:** Tinea versicolor disease cases with a significant difference were among, adolescent age group (21-31 years) (59%), body back (51%) followed by shoulder area (26%) and those with outdoor work (72%). **Conclusions:** Tinea versicolor disease with a significant difference was among the adolescent age group, patients having oily skin, sweaty and those who work outdoor.

Introduction

Tikrit city is about 160 kilometers north of Baghdad on the Tigris River. The city is located within a semi-undulating area. It penetrates the branch and valleys and ends with very sloping slopes towards the Tigris River, with a height ranging between 45–50 meters [1]. The climate is classified as hot desert [2,3].

Pityriasis versicolor (tinea versicolor) is a benign, superficial fungal infection of the skin. It belongs to *Malassezia*-related diseases. Its clinical features include either hyperpigmented or hypopigmented finely scaly, oval or round macules/patches of the skin. The most frequently affected sites are the trunk, neck, and proximal extremities [4-7]. It is caused by *Malassezia*, a dimorphic lipophilic fungus

DOI: 10.21608/MID.2024.308309.2116

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(Pityrosporum). It is a component of normal skin flora [4,8,9].

The main species isolated in pityriasis versicolor are *Malassezia furfur*, *Malassezia globosa*, and *Malassezia sympodialis* [10-12]. It is more common in warm and humid conditions. Its prevalence is as high as 50% in tropical countries and as low as 1.1% in cold climates. Skin colonization increases with age; 25% of children and almost 100% of adults are affected [13]. The disease occurs more frequently in adolescents and young adults. Pityriasis versicolor disease affects men and women equally and no specific ethnic predominance has been noted [14,15].

The pityriasis versicolor disease diagnosis is often made on clinical grounds alone (hyperpigmented or hypopigmented, finely scaling patches or plaques) [16-18]. Sometimes to confirm the diagnosis, potassium hydroxide for skin scrapings and woods lamp examinations are done [19].

The objectives of this study were to determine the frequency of tinea versicolor according to certain epidemiological factors and also the prevalence of tinea versicolor based on age group, gender, occupation, prior history, and family history. The study also aimed to ascertain the incidence of tinea versicolor based on the impacted area besides its prevalence based on a history of oily skin and perspiration.

Patients and methods

This study was conducted on patients suffering from tinea versicolor disease attending dermatological outpatient clinic in Tikrit Hospital from 1st January 2023- 30th June 2023

Study design:

In this descriptive study, samples were convenient, including all patients suffering from tinea versicolor disease (attending outpatients' clinic of dermatology in Tikrit Teaching Hospital.

Study population:

All patients suffering from tinea versicolor who were attending dermatological outpatients' clinics during the study period fulfilled the inclusion criteria. The sample size was 112 patients.

Inclusion criteria:

All patients attending the outpatients' clinics and suffering from tinea versicolor disease.

The patient's demographic information and risk factor history was taken according to a suitable questionnaire which was fully filled by the researcher through direct interview with patient. The diagnosis was basically done on a clinical base by the dermatologist.

For statistical analysis, the Chi-square test was calculated. p -value ≤ 0.05 was considered a significant.

Results

Figure 1 shows that cases were slightly more prevalent among males (52%) than females (48%) without a significant difference. **Figure 2** revealed that tinea versicolor was more common among the age group (21-31years) (59%) followed by the age group (20 years and less) (23%) and the lastly among those with 31 years and more (18%), with a significant difference. **In figure (3)**, common sites of disease distribution were body back (51%) followed by shoulder (26%), neck (19%) and chest (4%).

A highly significant difference existed among patients with past history (25%), family history (23.2%), with a $p= 0.0000$ in both (**Table 1**).

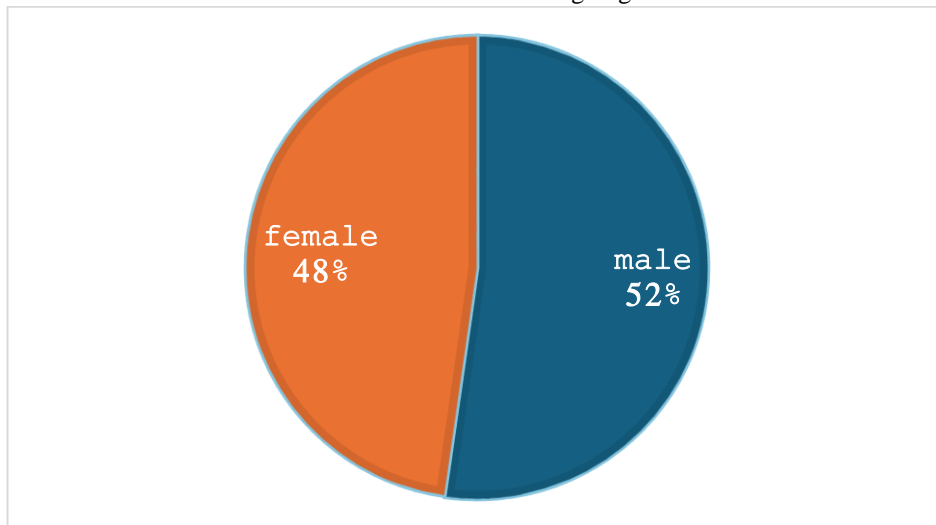
Regarding other risk factors, patients with oily skin, sweating, and outdoor working were more than those without (58%, 57.1%, and 72% respectively) with no significant difference except among outdoor workers where a significant difference existed (**Table 1**).

Table 1. Distribution of tinea versicolor disease cases according to certain risk factors.

Tinea versicolor cases (112)	Risk factors	Yes	No	Chi square test
	Past history	28 25%	84 75%	p-value: 0.000000***
	Family history	26 23.2%	86 76.8%	p-value: 0.000000***
	Oily skin	65 58%	47 42%	p-value: 0.088973*
	Sweating	64 57.1%	48 42.9%	p-value: 0.13057*
	Outdoor working	72	40	p-value: 0.002497**

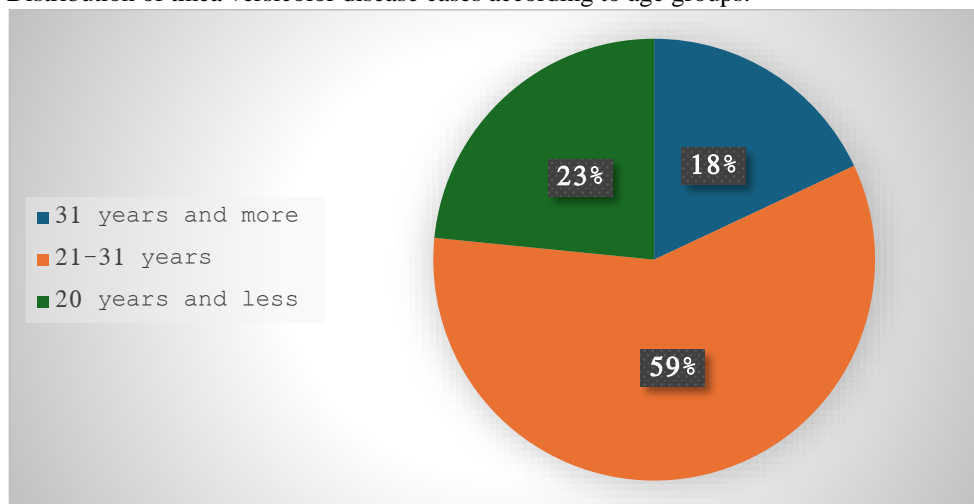
* No significant. ** Significant. *** Highly significant

Figure 1. Distributions of tinea versicolor disease cases according to gender.

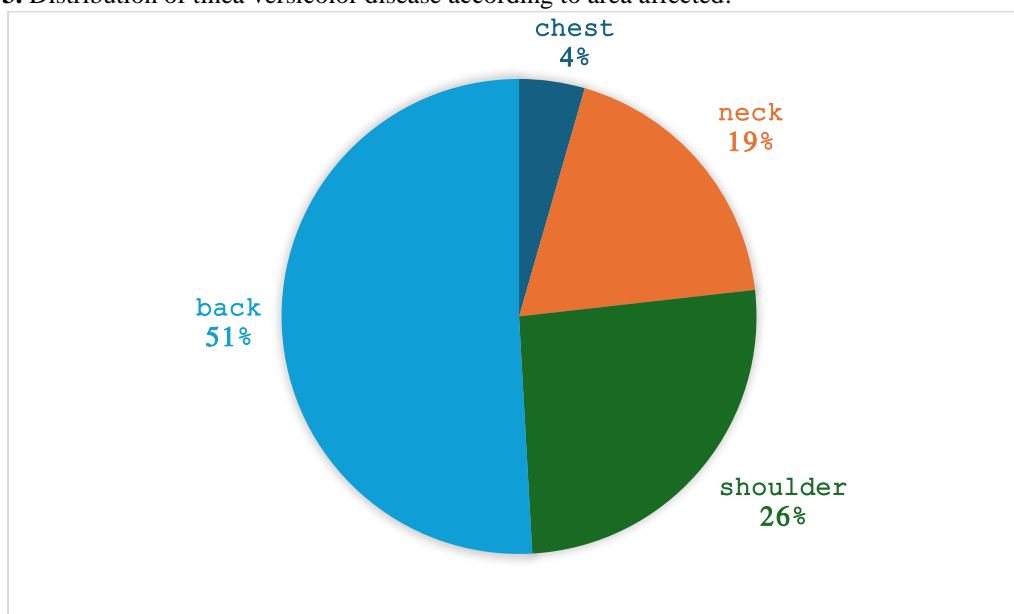


p-value: 0.570 ; non-significant.

Figure 2. Distribution of tinea versicolor disease cases according to age groups.



p-value is < .00001.

Figure 3. Distribution of tinea versicolor disease according to area affected.

p -value is $< .00001$.

Discussion

The disease is a benign skin disease leading to scaly macules or papules on the skin. *Versi* means several, the disease can lead to skin discoloration. The pathogen is a normal inhabitant of the skin and considered not contagious [7].

In the current study tinea versicolor cases were slightly more among males (52%) than females (48%) with no significant difference. This result was nearly similar to that reported by other studies [20-23]. On the other side, some studies reported that there was no difference between males and females [14,15]. A study in Venezuela reported that cases were more among females [24]. Regarding the age group, the disease was more common among those aged 21-31 years (59%) followed by those aged 20 years and less (23%) with a highly significant difference. This result was similar to that found by other studies [20,23,25-27] who explained the role of sebum and hormones in adults in which there is lipid rich environment [28,29].

Regarding the site of infection, the disease distribution was more in the back area (51%) than other areas; (shoulder 26%), neck (19%) and lastly chest (4%). Other studies found the following distribution (chest area (55%), neck 24% and back 15.5% [30], while others found that (chest 48.2%, back 41.8% [29]. **Rao et al.** reported the distribution as follows: neck 71.6%, back 41.8%, chest 58.3% [28].

In the current study about 25% of cases had a positive past history of the disease. This result was lower than that reported by another study which revealed that about 60% of patients had a positive past history of the disease [27], 55.2% of patients with recurrent history [31].

This study showed that 23.2% of patients were with positive family history, this result was lower to that reported by others (33.6%) [27,31], and higher than that documented by others (17%) [32,33]. This relation may be attributed to genetic effects of disease occurrence [22,28,30,34-36].

In the current study about 58% of cases had oily skin, while another study reported that only 21.1% of patients were with oily skin. Excessive lipids are one of the risk factors for tinea versicolor disease [5,37-39].

Regarding the presence of sweating conditions among patients' sample, it was reported that about 57.1% of cases were with sweating conditions while another study showed that sweating condition was reported among 32.8% [27].

Regarding outdoor work, it has been documented that about 72% of patients were outdoors workers with a significant difference. This result was higher than that found in another study (57.5%) [27].

Conclusions

Tinea versicolor disease was more frequent among patients, who were in the adolescent age

group, and those with oily skin, sweaty as well as outdoor workers.

Acknowledgment:

This work used data obtained from patients suffering from tinea versicolor who were attending outpatient dermatological clinic in Tikrit General Hospital; therefore, the authors would like to thank all doctors for their valuable assistance and suggestions.

Funding: None.

Conflicts of interest

There are no conflicts of interest.

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