ANALYSIS OF 58 CASES OF TINEA CAPITIS IN TEHRAN
RAZI HOSPITAL

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ABSTRACT - Tinea capitis is the commonest dermatophytosis in children with diverse clinical presentations. The causative fungi of Tinea capitis vary with geographic area and time.
This study was aimed to identify the etiologic agents and to determine the related factors of Tinea capitis in Tehran, Iran. From clinically suspected cases of Tinea capitis, microscopy and culture were performed.
Of 58 patients, 95% were children below 12 years of age with the male/female ratio of 2:1. The common clinical manifestation was gray patch, followed by kerion, furfur (scutula), black dot and seborrhoeic dermatitis-like lesion. Trichophyton violaceum was the most common etiologic agent, responsible for 53.4% of infection, followed by T. schoenleini (24.1%), Microsporum canis (5.5%), T. mentagrophytes (5.4%), T. tonsurans (1.7%) and M. gypseum (1.7%).

Key Words: Tinea capitis, fungi, clinical manifestation

INTRODUCTION

Tinea capitis is the most common dermatophytosis of children, especially in warm climate. The clinical manifestations of the disease vary from an asymptomatic carrier state to marked inflammatory forms such as kerion (1,2). Various dermatophytes belonging to the genera Trichophyton and Microsporum cause Tinea capitis (2,3). The predominant organism may change with time and geographic area due to many factors including migrations. For example in 1940, the commonest cause of Tinea capitis in USA was M. audouini whereas since 1950s T. tonsurans and M. canis are the predominant agents (4-7).
The causative agent in Italy is M. canis and in U.K T. tonsurans (8-10).

Like other dermatophyosis, Tinea capitis is prevalent in Iran. Different studies have been conducted on the causative fungi in the past years.
This study aimed to identify the predominant pathogens and to determine a clino-etiologic correlation.

Patients and methods
This was a prospective, cross-sectional study carried out at the department of dermatology, Razi Hospital, Tehran, from April 1998 to March 1999. All the clinically suspected cases of Tinea capitis attending the outpatient clinic of our hospital were enrolled in the study. The patients had not taken any topical or systemic antifungal drug for at least 10 days and had not washed their hair for 3 days before taking the smear and only smear positive cases were considered valuable. After the lesions were cleaned with 70% alcohol, sample of skin scraping and hair was performed on a slide with 10% potassium hydroxide solution. Cases with positive microscopy were selected for culture. Sabouraud's dextrose agar containing chloramphenicol and cycloheximide was used as culture media.

The cultures were incubated for 1-4 weeks at 25-30°C C and the colonies were studied for both macroscopic and microscopic textures.
The history and clinical examination in each case were recorded in specially devised forms. The duration of the complaint, positive family history, contact with animals, the site and the number of the patches of scaling and hair loss were recorded and the clinical presentation was categorized as gray patch, black dots, seborrhoeic dermatitis-like kerion and faves according to the following criteria: gray patch - a scaly mildly erythematous patch with broken hairless hair; black dot-a patch of alopecia with prominent black dots; seborrhoeic dermatitis-like- diffuse scaling with or without erythema but no apparent hair loss; kerion-nodules, boggy swelling, discharging sinuses, alopecia; faves (scutula)-typical honey-colored, cup shaped, follicular crusts and alopecia.
Wood's light examination was performed for any fluorescence.

RESULTS
From 58 valuable patients, 39 (67.2%) were male and 19 (32.8%) female (male:female = 2.1). Their ages
DISCUSSION

Some factors determined the clinical presentation of Tinea capitis such as the pattern of hair invasion by the pathogenic fungi, its source, and the host immunologic status. Eccelinus types of Tinea capitis commonly present as gray patch whereas endothrix types cause black dots. The latter may persist beyond the anagen phase into the telogen phase and sometimes presents as seborrheic dermatitis-like diffuse scaling (1,2). If the causative fungi have zoophilic or geophilic origin, the host launches a variable degree of inflammatory response which clinically manifest as folliculitis or kerion.

Favus is generally caused by T. schoenleinii but occasionally by other dermatophytes such as T. violaceum or M. gypseum. The pathogens also show a peculiar geographic distribution, which may change with time (3,11).

The demographic data of our study confirm that the disease primarily affects the juvenile age group and the greatest frequency of Tinea capitis in boys in our study is in agreement with other comparable studies (12,13,14). Short hairs probably help in easy implantation of spores (15,16). Our study also highlights the fact that the clinical appearance of Tinea capitis is extremely variable. Although black dots are the usual clinical presentations of endothrix invasion, but in our study the most common presentation was gray patch. This is in agreement with some studies (7,8); however other studies report black dot to be the most frequent type (17,18).

Most of our gray patches (16 cases) grew T. violaceum. Kerion, the most inflammatory type of Tinea capitis, was seen in 14 cases (24.1%). In 4 cases clinically diagnosed as Kerion, T. schoenleinii grew in culture, whereas this agent usually causes scutula.
T. violaceum was the etiologic cause of 7 cases of kerion. Scutula, perhaps the most dreaded form of Tinea capitis, was observed in 10 cases (17.2%). In all cases T. schoenleini was isolated. Previous studies in many provinces of Iran indicate that this form is one of the most common forms of Tinea capitis (12,36), whereas in other studies this form was not so prevalent (12,13,24). Also in the study in Lahore Pakistan in 1998, no cases of favus (scutula) were found (3).

Black dot type of Tinea capitis was seen in 6 cases (10.3%) and all were due to T. violaceum. Some studies show that over 80-90% of cases of Tinea capitis were non-inflammatory types including gray patch and black dot (2,13). The seborrhoeic dermatitis-like presentation without significant hair loss was only seen in two patients. These are in agreement with other studies (7,8).

T. violaceum was the predominant pathogen in the present study. This is in agreement with some previous studies (12,21,25), but there is other data that indicates T. verrucosum (23) and T. schoenleini (20,26,27) as the most frequent causes of Tinea capitis in some parts of Iran. Some studies in recent years reveal that M. canis is the predominant cause of Tinea capitis especially after Iraq’s war in some parts of Iran (12,28).

In one recent study in Qom in the central part of Iran, M. canis T. schoenleini and T. verrucosum were equally the most common causes of Tinea capitis (29). T. violaceum has been the most common pathogen in Egypt (8), Jordan (30), South Africa (31), South Taiwan (9) and the Netherlands (32).

In our study, no case of T. verrucosum (the zoophilic type) was found which may be related to the improvement of life style and lower contact with infected animals.

As T. violaceum and T. schoenleini were isolated from 77.5% of all cases, this demonstrated that the disease was usually caused by anthropophilic dermatophytes.

In all cases which M. canis was isolated, a history of having an animal pet (usually a cat or dog in the house) was obtained.

A positive family history of 20.7% of cases emphasizes the contagious nature of the infection. Other studies also showed this familial infection (8,12), and in one study four girls had T. capitis and pediculosis capitis simultaneously (12).

The clinico-etiological correlation revealed that a single pathogen, T. violaceum, gives rise to both non-inflammatory and inflammatory types of Tinea capitis. This agent classically causes black dots, but can present as gray patches, kerion, or seborrhoeic dermatitis lesions.

Hence, the clinical presentation does not correctly indicate the causative fungi or vice versa; it appears that besides the host response and the type of offending fungus, other unknown factors may determine the clinical outcome. These findings are in agreement with previous data (1,2,7,8).

This study concludes that manifestations of Tinea capitis are highly variable, non-inflammatory lesions are more commonly seen than inflammatory lesions, and the causative dermatophytes in Tinea capitis vary from place to place and time to time.

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REFERENCES


