

## Epidemiological Profile Of Tinea Capitis At Ibn Sina Hospital In Rabat (2007-2016)

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### Abstract

*Tinea capitis*, a fungal infection of the scalp, remains a public health concern, particularly in developing countries. This retrospective study, conducted at the Ibn Sina Hospital in Rabat (HIS) over a 10-year period (2007-2016), examines the epidemiological profile of tinea capitis. Among the 131 confirmed cases, the average age of patients was 11 years, with a male predominance (sex ratio M/F of 2.43). Children under 15 years of age accounted for 63.81% of cases. *Trichophyton violaceum* was the most frequently isolated pathogen (62 cases), followed by *Microsporum canis* (56 cases). A notable increase in *M. canis* infections was observed compared to previous studies, likely due to the growing popularity of pets. These results highlight the importance of epidemiological surveillance of tinea capitis and the need for targeted preventive measures, particularly in schools.

**Keywords:** *Tinea capitis*, dermatophytes, epidemiology, *Trichophyton violaceum*, *Microsporum canis*, *Trichophyton schoenleinii*, *Trichophyton verrucosum*, *Trichophyton mentagrophytes*, *Trichophyton rubrum*

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Date of Submission: 11-12-2024

Date of Acceptance: 21-12-2024

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### I. Introduction

*Tinea capitis*, a fungal infection of the scalp caused by dermatophytes, mainly affects children and remains prevalent in developing countries like Morocco. It is characterized by the invasion of hair shafts from their supra-bulbar segment by dermatophytes. These infections can cause inflammatory lesions and alopecia. This study aims to analyze the epidemiological profile of tinea capitis diagnosed at Ibn Sina Hospital in Rabat (HIS) over a 10-year period, to better understand the evolution of this pathology and guide prevention strategies.

### II. Materials And Methods

This is a retrospective study including all patients referred to the central parasitology-mycology laboratory of HIS between January 1st, 2007, and December 31st, 2016, for suspected tinea capitis. The diagnosis was confirmed by a complete mycological examination including: Direct examination of samples (scales, hair) after clarification with 30% potassium hydroxide to highlight fungal elements. Culture on Sabouraud-chloramphenicol and Sabouraud-actidione agar. Cultures were incubated at 25°C and examined regularly for 4 weeks. Identification of isolated dermatophytes based on their macroscopic characteristics (colony appearance, pigmentation, texture) and microscopic characteristics (morphology of mycelial filaments, macroconidia, and microconidia).

Demographic data (age, sex) and causative pathogens were collected from the department's archives.

### III. Results

Over the study period, 131 cases of tinea capitis were confirmed, including 128 cases of scalp ringworm and 3 cases of sycosis barbae. The average age of patients was 11 years (range: 18 months - 60 years). Children under 15 years of age were predominantly affected (63.81%), while adults represented 36.19%. The male-to-female sex ratio was 2.43.

The results are presented according to the distribution of tinea types (Table 1) and the distribution of isolated dermatophytes (Table 2):

- **Trichophytic tinea:** This type accounted for 51.15% of cases (67 out of 131). This group includes infections caused by different species of *Trichophyton*, notably *T. violaceum*, *T. verrucosum*, and *T. mentagrophytes*.
  - **Microsporic tinea:** Representing 44.27% of cases (58 out of 131), this type is mainly caused by *Microsporum canis*, a dermatophyte often transmitted by pets.
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- **Suppurative tinea:** Uncommon in our series, this type accounted for only 1.53% of cases (approximately 2 out of 131). These infections are characterized by significant inflammation of the scalp.
- **Sycosis barbae:** This type of tinea, which affects the beard in men, also represented 1.53% of cases (approximately 2 out of 131).
- **Favus tinea:** Caused by *Trichophyton schoenleinii*, this type has become rare, representing only 1.53% of cases in our study (approximately 2 out of 131).

**Table 1: Distribution of different types of tinea capitis**

Type of tinea capitis	Number of cases	Prevalence (%)
Trichophytic tinea	67	51,15%
Microsporic tinea	58	44,27%
Suppurative tinea	2	1,53%
Sycosis barbae	2	1,53%
Favus tinea	2	1,53%

**Distribution of dermatophytes:**

- **Trichophyton violaceum:** This was the most frequently isolated dermatophyte, representing 48.44% of cases (62 out of 131). It is responsible for inflammatory tinea capitis, often observed in children.
- **Microsporum canis:** Accounting for 43.76% of cases (56 out of 131), this is the main causative agent of microsporic tinea. Its transmission is often linked to contact with animals, especially cats and dogs.
- **Trichophyton verrucosum:** This dermatophyte, responsible for inflammatory tinea capitis, was isolated in 2.34% of cases (3 out of 131). It is generally transmitted by cattle.
- **Trichophyton mentagrophytes:** Also responsible for inflammatory tinea capitis, it represented 2.34% of cases (3 out of 131). It can be transmitted by animals or through human-to-human contact.
- **Trichophyton schoenleinii:** The causative agent of favus, it has become rare, representing only 1.56% of cases (2 out of 131).
- **Trichophyton rubrum:** Usually responsible for onychomycosis and epidermomycosis, it was isolated in 1.56% of cases (2 out of 131), suggesting possible auto-contamination from other foci.

**Table 2: Distribution of isolated dermatophytes**

Isolated dermatophyte	Number of cases	Prevalence (%)
<i>Trichophyton violaceum</i>	62	48,44%
<i>Microsporum canis</i>	56	43,76%
<i>Trichophyton verrucosum</i>	3	2,34%
<i>Trichophyton mentagrophytes</i>	3	2,34%
<i>Trichophyton schoenleinii</i>	2	1,56%
<i>Trichophyton rubrum</i>	2	1,56%

Despite a downward trend, tinea capitis remains a public health concern in Morocco. This decrease in prevalence observed at HIS could be attributed to improved living conditions and hygiene, corroborating observations from similar studies in Morocco and Tunisia [1, 2]. As expected, children of school and preschool age were the most affected, due to factors favoring interhuman transmission, such as sharing objects, close contact, and poor hygiene [3, 4]. The male predominance observed in our study is also reported in the literature [5, 6].

*Trichophyton violaceum* remains the most frequently isolated dermatophyte in Morocco, confirming data from previous studies [7]. However, a significant increase in *Microsporum canis* infections was observed, from 14.41% between 2001 and 2003 [7] to 43.75% in our study. This increase is likely linked to the growing popularity of pets (cats and dogs) in Morocco. This phenomenon is also described in Algeria and Europe, where *M. canis* has become the main causative agent of tinea capitis [8, 9]. This evolution in the etiological profile of tinea capitis highlights the importance of integrating the zoonotic dimension into the management and prevention of these infections.

Conversely, favus (*T. schoenleinii*) and *T. mentagrophytes* infections have become rare. The isolation of *T. rubrum*, usually responsible for onychomycosis and epidermomycosis, suggests auto-contamination from other infectious foci. Finally, the presence of *T. verrucosum*, a zoophilic dermatophyte transmitted by cattle, is probably linked to livestock activities. Continuous monitoring of the distribution of dermatophyte species is essential to adapt treatment and prevention strategies.

**IV. Conclusion**

This study confirms the predominance of trichophytic tinea and the increasing rarity of favus in Morocco. Although *T. violaceum* remains the majority species, the increase in *M. canis* infections underscores the importance of raising awareness about zoonotic transmission and implementing preventive measures including hygiene education and control of animal populations.

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