

Prevalence of tinea faciei and tinea capitis in rural population of chitradurga in India

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Abstract

Introduction: Dermatophyte infections are common skin diseases and affecting millions of people globally. Commonly seen in normal healthy as well as immunocompromised subjects. The present study is aimed to study the prevalence of Tinea faciei and Tinea capitis in Chitradurga rural population.

Materials and methods: This is a prospective observational study, conducted at Department of Dermatology, Basaveshwara Medical College and Hospital, Chitradurga. A total of 426 patients showing lesions typical of dermatophyte infection were included in this study. Among 426 tinea suffering patients, 55 patients had Tinea faciei, 21 patients had Tinea capitis. A detailed clinical history was taken from study subjects. Mycological examinations including direct microscopy and culture studies were done.

Results: A total of 426 patients with suspected dermatophyte infections were analyzed. Among them 55 were clinically diagnosed as Tinea faciei and 21 were clinically diagnosed as Tineacapitis. Out of 55 Tinea faciei patients, 45 were KOH positive and 27 were culture positive whereas 10 patients were KOH negative but culture positive. Out of 21 Tinea capitis patients, 16 patients were KOH positive and 11 were culture positive whereas 05 patients were KOH negative but culture positive.

Conclusion: In the present study, we screened 426 subjects of dermatophytosis, the prevalence of Tinea faciei was found to be 8.6% (37 subjects, both culture and KOH positive) and prevalence of Tinea capitis was found to be 3.7% (16 subjects, both culture and KOH positive). From this study results, it may be concluded that identification of dermatophyte infection is important to prevent transmission of infection and for prompt treatment.

Keywords: Dermatophyte infection, Tinea capitis, Prevalence.

Introduction

Dermatophyte infections are very common skin diseases and affects millions of people globally. These are commonly seen in normal healthy as well as immunocompromised subjects. Globally, the prevalence of dermatophytosis is 10-25%.^{1,2} Among the dermatologic conditions, Tinea infections are quite common worldwide. India being tropical country, many people have affected by dermatophyte infections.³ The clinical diagnosis of dermatophyte infection done according to the different body sites involved. These can be named as Tinea faciei, Tinea capitis, Tineapedis, Tineacorporis, Tineagenitalis, Tineacurris, Tineaunguim etc.³

Tinea Faciei, relatively uncommon, dermatophyte infection, limited to glabrous skin of face and it is usually clinically misdiagnosed, because of its variable appearance.^{4,5} Clinical shape of Tinea faciei: face skin infection except the areas of men's beard. Mainly caused by *Trichophyton rubrum* or *Trichophyton mentagrophyte*.⁶

Tineacapitis is a dermatophyte infection, invades the keratinized tissues-corneous layer of skin and hair. It is a prevalent in school aged children under tropical conditions. The prevalence is reported to be high and common in India, happens predominantly in rural areas.⁷ Prevalence of Tineacapitis related to life style, low socioeconomic status, poor hygienic and close contact and spread through contact with an infected person or indirect transmission by sharing facilities. The spores are long lived and can infect another individual month's later.⁷ The infection originates from

human, animals and/or soil with high frequency occurring in school-going children.⁸

Tinea capitis clinical shape: infection of scalp hair and can be seen as endothrix and ectothrix. The appearance of lesions may be dry along with turbid hair in which the inflammation is light or does not even exist, they are often created by *Microsporum* (*M. audouinii*) and sometimes appear as the areas with alopecia with black dots for which *Trichophyton tonsurans* and *Trichophyton violaceum* are the most known causes.^{8,9} The present study is aimed to study the prevalence of Tinea faciei and Tinea capitis in Chitradurga rural population.

Materials and methods

This prospective observational study, carried out at Outpatient Department of Dermatology, Venereology and Leprology, Basaveshwara Medical College and Hospital, Chitradurga. A total of 426 patients with suspected dermatophyte infections were analyzed. Among them 55 were diagnosed as Tinea faciei and 21 were diagnosed as Tineacapitis. The initial diagnosis of Tinea faciei and Tinea capitis was based on patient's clinical examination and history. Clinical and physical examination was done for all the subjects. Included age, sex, site of infection, duration of disease, family history of similar illness, socioeconomic status, occupation, history of recurrence, lifestyle and history of associated diseases were elicited and recorded in proforma. Patients those who are taking any topical or antifungal treatment were excluded from the

study. Mycological examinations including direct microscopy and culture studies were done.

Microscopic examination, consisting of a 10% to 15% KOH preparation, from skin scrapings from peripheral margins using small scalpel blade and infected hairs, were collected with gentle rubbing with moist gauze and transported to laboratory. The specimens were carefully examined under low (X10) and high (X40) power objective lens for the presence of hyphae and bud.

Culture on Sabouraud's dextrose agar slopes with chloramphenicol (0.5mg/mL) and cycloheximide (0.5mg/mL). Cultures were incubated at 25 °C and 30 °C for 4 weeks and checked twice in a week for any growth. In absence of growth even after four weeks, the culture was declared negative. Identification of dermatophyte was done on the basis of colony characteristics as well as microscopic morphology.

Results

Out of 426 patients with dermatophytosis attending dermatology department, 55 were diagnosed with Tinea faciei infection and 21 had Tinea capitis infection. The initial diagnosis is done by clinically and after that mycological confirmation of presence of hyphae in KOH mounts under microscopy. Tinea capitis was the predominant dermatophytosis in children. Table 1 shows the details pertaining culture and KOH and table 2 tinea positive patients pertaining to sex and clinical manifestations.

Table 1: Details of culture and KOH tests among the total cases studied.

	KOH positive	KOH negative	Total
Culture positive	38	15	53
Culture negative	13	360	373
Total	51	375	426

Out of 426 patients studied, 53 were culture positive and 51 were KOH positive

1. Out of 53 culture positives (12.4%), 38 were both culture and KOH positive (8.9%) and 15 were culture positive (3.5%) but KOH negative
2. Out of 51 KOH positives (11.9%), 38 were both KOH and culture positive (8.9%) and 13 were KOH positive (3.0%) but culture negative

Table 2: Details of tinea positive patients with reference to sex and clinical manifestations

Clinical Manifestation	Number of subjects	Sex	
		Male	Female
Tinea Faciei	55 (72.3%)	25 (45.4%)	30 (54.5%)
Tinea Capitis	21 (27.6%)	16 (76.1%)	5 (23.8%)
Total	76	41	35

Out of 55 Tinea Faciei patients (12.9%), 25 were males and 30 were females.

1. 45 were KOH positive (10.5%) and 27 were culture positive (6.3%)
2. 10 were KOH negative but culture positive (2.3%)

Out of 21 Tinea Capitis patients, 16 were males and 05 were females.

1. 16 patients were KOH positive (3.7%) and 11 were culture positive (2.5%)
2. 05 were KOH negative but culture positive (1.1%)

Discussion

Tinea faciei accounts for approximately 19% of all superficial fungal infections in the pediatric population with dermatomycoses. It occurs at any age, but may be seen in two peaks: in childhood with a male prevalence, and in adults with a female prevalence. In the present study, the prevalence of Tinea faciei was 12.9%. Increased prevalence in female gender is mainly due to the fact that dermatophyte infections on the beard areas of males are often diagnosed as Tinea barbae, whereas in females they are more likely to be diagnosed as Tinea faciei. It is associated with moderate to severe inflammation.¹⁰⁻¹²

Tinea faciei, also seen in tinea corporis and tinea capitis. The causative factors for Tinea faciei varies according to the geographic regions.¹¹ There are many factors responsible for tinea faciei, like frequent visits to beauty parlours and salons, unethical mixing of potent topical steroids in cosmetics such as fairness creams, if used by T. faciei patient can worsen the condition and lead to atypical clinical presentation along with adverse effects.³

Most of the etiological agents of tinea capitis are limited to the genera Microsporum and Trichophyton.¹³ Higher occurrence of tinea capitis in less than 10 years of age may be due to lack of fungistatic secretion by scalp in childhood and close contact with each other while adult sebum has fungistatic action. Frequent shaving of scalp, contamination from place of barbing, sharing of caps and poor personal hygiene was found to be a contributory factor.¹⁴

Tinea capitis is most common superficial fungal infection in children. The main reason for the predominance of this is due to use of local barbers, poor hygiene and short hair, which promotes transmission from one scalp to other¹⁵⁻¹⁶. In the present study, Tinea capitis prevalence was found to be 4.9%. In a study from Rajasthan, the incidence of T. capitis found to be 4.43%.¹⁷⁻¹⁹

Conclusion

In the present study, we screened 426 subjects of dermatophytosis, the prevalence of Tinea faciei was found to be 12.9% and prevalence of Tinea capitis was found to be 4.9%. From this study results, it may be concluded that identification of dermatophyte infection is important to prevent transmission of infection and for prompt treatment. Early diagnosis and treatment can limit the spread of these infections. Both direct microscopy as well as

culture is important and both should be done simultaneously in all cases of clinically suspected dermatophyte infections.

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