



A STUDY OF CLINICAL AND MYCOLOGICAL PROFILE OF TINEA INFECTIONS

Dermatology

**Dr. Thappeta
Deepak Tony Raj** (Senior resident)

**Dr. Vennapusa
Sravan Kumar
Reddy*** (Post graduate). *Corresponding Author

**Dr. Chappidi
Bhargavi** (Post graduate)

ABSTRACT

INTRODUCTION: Dermatophytic infections, also known as ringworm, is one of the most common fungal infections of the skin around the world. The most common symptom seen with dermatophyte infection is pruritis. The varied presentation of tinea is often confusing with other skin diseases. It may be due to the irrational application of broad-spectrum steroid ointments and creams, leading to misdiagnosis and mismanagement. This study was begun to know the prevalence, clinical, and mycological profile of various dermatophytes

OBJECTIVES OF THE STUDY:

1. To study the prevalence of tinea infections.
2. To study the clinical presentation of patients with tinea infections.
3. To study the mycological profile of various tinea infections.

METHODS: Clinical assessment was done, which include a detailed history, general physical examination, and examination of the lesion. After a complete review, the evaluation took place.

Direct Microscopic Examination. Culture helps in the identification of species.

CONCLUSION: To conclude, dermatophytosis is very common in India. It has been registered all over the world but with a different distribution, incidence, and epidemiology from location to location. Geographic location, climate, overcrowding, health care, immigration, personal and environmental hygiene, culture, and socioeconomic status have been attributed as major risk factors for these variations

KEYWORDS

Tinea Corporis, Dermatophytes, Mycological profile

INTRODUCTION:

Dermatophytic infections, also known as ringworm, is one of the most common fungal infections of the skin around the world. It shows a widespread prevalence in a tropical country like India, thus essential to know the etiology and various clinical presentations. Prevalence of superficial mycotic infection worldwide is 20-25%

It is commonly known as ringworm or Tinea. The literal meaning of tinea is larva, as Romans mistakenly thought that the disease is due to insects. It affects the keratinized tissue of the nail, hair, and skin. Trichophyton, Microsporum, and Epidermophyton are collectively called dermatophytes.^{5,6} Dermatophytes affect the stratum corneum of the epidermis. (Fig 1&2) The mode of spread is by direct contact from infected human beings (anthropophilic), animals (zoophilic), soil organisms (geophilic), or indirectly from fomites. Affected by environmental conditions, personal hygiene, overcrowding, healthcare, and habits.^{5,6} The most common symptom seen with dermatophyte infection is pruritis. Depending upon the morphologic appearance they are classified mainly into three genera

Epidermophyton (Infect nail, skin, and not hair) Trichophyton (infect hair, skin, and nails) Microsporum (infect hair and skin and not nail).

Varied clinical presentation of tinea is often confusing with other skin diseases. It may be due to the irrational application of broad-spectrum steroid ointments and creams, leading to misdiagnosis and mismanagement. Early and accurate use of antifungal agents will decrease the morbidity of the patient. India is a subcontinent with a varied topography with tropical and subtropical climate favoring for the acquisition of mycotic infection. Thus, this study was begun to know the prevalence, clinical, and mycological profile of various dermatophytes. (Fig 3&4)

AIM OF THE STUDY:

1. To study the prevalence of tinea infections.
2. To study the clinical presentation of patients with tinea infections.
3. To study the mycological profile of various tinea infections.

Study Period:

This study is a cross-sectional one performed in the Department of

Dermatology, PESIMSR, Kuppam, for a duration of 18 months from January 2018 to August 2019.

Study Setting:

Patients with tinea infections attending the Outpatient Department of Dermatology Venereology and Leprosy.

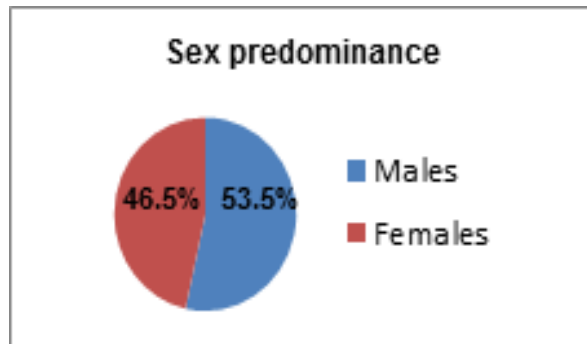
SAMPLE SIZE: Two hundred patients were included and assessed during the study period after taking informed written consent.

INCLUSION CRITERIA:

Patients with clinical features of superficial dermatophytic infection of all age groups and either sex.

EXCLUSION CRITERIA:

- I. Annular lesions with micaceous scales.
- II. Annular form lesions formed by violaceous flat-topped papules.
- III. KOH negative annular lesions.
- IV. Patients having taken prolonged immunosuppressives and antibiotic therapy.
- V. Patients having taken recent topical or systemic antifungal therapy (within one week).

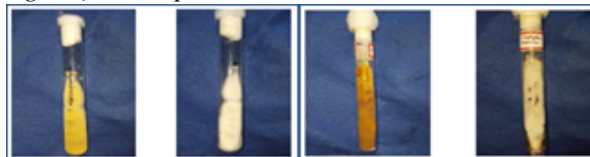
RESULTS:**SEX DISTRIBUTION:**

AGE DISTRIBUTION:

S.No	Age	No of patients	Percentage (%)
1.	10-20 yrs	87	43.5
2.	21-30 yrs	31	15.5
3.	31-40 yrs	29	14.5
4.	41-50 yrs	28	14
5.	51-60 yrs	18	9
6.	61-70 yrs	7	3.5
7.	Total	200	100

TYPE OF ORGANISM ISOLATED :

S.No	organism	No of patients	Percentage (%)
1.	T. rubrum	40	65.60
2.	T. mentagrophyte	21	34.42
3.	Total	61	100

**Fig:1&2)Tinea corporis****Fig3)Trichophyton mentagrophyte-Flat creamy white colonies with yellow reverse seen****Fig: 4) Trichophyton rubrum-Reverse deep red colony seen****DISCUSSION:**

In this study, males outnumbered females. The reason is, males are exposed more to fungi as they are more involved in outdoor activities, due to usage of public bathrooms, sporting activities, occlusive wear and the type of shoes and socks they wear. Tinea can affect any age group. In this study, majority of patients were between 10 to 20 years of age. This is supported by the study done by Tony burns et al.⁷ and Sumana MN et al.⁸, in which the majority of cases belonged to the age group of 11-20 years. In our study, the incidence of dermatophytosis is more in rural area (72%) compared to urban area (28%) which is supported by other studies done by Upadhyay V et al. 60% of cases had a duration of more than one month, 28% had an illness for one month, and 12% had a duration of illness within 1-7 days. In our study, 98% of the patients were bathing daily. Among which 28% are taking a bath from a common pool and rest are taking a bath from other sources. This explains the importance of educating the people regarding the usage of common pools for bathing as a source of infection. the incidence of secondary infection among all the cases was 12.5%. According to the study done by Gupta AK et al., the incidence of secondary infection was 9%. In the current study the most common isolate was T. rubrum (65.60%), followed by T. mentagrophyte (34.42%) which is closely related with the studies done by Kumar S et al., Bhagra S et al.⁸⁶ and Nawal P et al. in which T. rubrum was the most common isolate accounting for 65.09%, 66.17% and 67% respectively.

CONCLUSIONS:

In our study, males outnumbered the females. The majority of patients were between 10 to 20 years of age. The influence of hormones after puberty is supposed to be responsible for the decreased incidence of age. In our study, the increased incidence was seen among students and farmers. All cases came with itching as the major complaint, and maximum patients had symptoms lasting for more than one month, indicating its chronicity and 44% had similar complaints in the family. The present study highlights creating awareness regarding preventive measures such as maintenance of personal hygiene, avoidance of tight clothing, early diagnosis, and treatment until cure in order to prevent a recurrence, that plays a significant role in its control. Both direct microscopy and culture should be done simultaneously in all clinically suspected cases of superficial mycosis.

REFERENCES:

1. Ganeshkumar P, Hemamalini M, Lakshmanan A, Madhavan R, Raam Mohan S. Epidemiological and clinical pattern of dermatomycosis in rural India. *Ind J Med Microbiol* 2015;33(5):134-136.
2. WHO, 2005. Epidemiology and management of common skin diseases in children in developing countries. World Health Organization, Geneva. WHO/FCH/CAH/05.12.
3. Rippon JW. Dermatophytosis and dermatophytomycosis. In : Medical mycology. The pathologic fungi and the pathogenic actinomycetes. Philadelphia: WB Saunders 1982;154-9.
4. Balakumar S, Rajan S, Thirunalasundari T, Jeeva S. Epidemiology of Dermatophytosis in and round Tiruchirapalli, Tamilnadu, India. *As Pac J Trop Dis* 2012;2(4):286-9.
5. Babel DE, Baughman SA. Evaluation of the adult carrier state in juvenile tinea capitis. *J Am Acad Dermatol*. 1989;21:1209-12.
6. Havlickova B, Czaika VA, Friedrich M. Epidemiological trends in skin mycoses worldwide. *Mycoses* 2008;51(4): 2-15.
7. Hay RJ, Ashee HR. Mycology. In: Burns T, Breathnach S, Cox N, Griffiths C. *Rooks Textbook of Dermatology* vol II. 8th ed. United Kingdom: Wilkey-Blackwell publishers; 2010. p. 36.1- 93.
8. Sumana MN, Rajagopal V. A study of dermatophytes and their in-vitro antifungal sensitivity. *Ind J path and Microbiol* 2002;45(2):169-72.