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**Original Research Article**

# Study of morphological patterns of dermatophytosis

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## ABSTRACT

**Background:** Dermatophytosis (tinea) refers to the superficial mycosis of keratinized tissues like hair, skin or nail caused by dermatophytes. It is a problem of significant importance because of the increasing trend in the number of cases that are unresponsive to treatment and presenting with recurrence.
**Methods:** 148 patients with dermatophytosis attending the outpatient department of dermatology were enrolled based on inclusion and exclusion criteria during the 3-month time period between April 2021 and June 2021.
**Results:** Out of the 148 cases, 93 (62.83%) were males and 55 (37.16%) were females. Highest number of cases were seen in the age group 21–30 with 61 (41.21%) cases. Among the 148 cases, 139 (93.91%) cases presented with dermatophytosis at a single site while 9 (6.09%) cases had multiple sites of dermatophytosis. Out of the 139 cases who had dermatophytosis at a single site, 77 cases (55.39%) were found to have corporis pattern.
**Conclusions:** The most common pattern of dermatophytosis found was the annular pattern and young males were the most commonly affected population.

**Keywords:** Dermatophytosis, Tinea, Fungal infection

## INTRODUCTION

Dermatophytosis refers to the superficial mycosis of keratinized tissues like hair, skin or nail caused by Trichophyton, Microsporum and Epidermophyton species which are fungal organisms collectively called dermatophytes.[1] It is estimated that 10% to 15% of the population will be infected by a dermatophyte at some point in their lives.[2] Dermatophytosis is also called tinea. There are multiple presentations of tinea which are named according to the site of manifestation: *Tinea corporis* – (ringworm) fungal infection of the arms, legs, and trunk; *Tinea cruris* – fungal infection of the groin area; *Tinea faceii* – fungal infection of the face; *Tinea pedis* – (athlete's foot): fungal infection of the feet; *Tinea capitis* – fungal infection of the scalp; *Tinea manuum* – fungal infection of the palms; *Tinea unguium* – fungal infection of the nails and nail beds; *Tinea barbae* – fungal infection of facial hair; and *Tinea incognito* – fungal infection with an altered clinical appearance due to inappropriate treatment.

Dermatophytosis has always been prevalent worldwide but it is now a problem of significant importance because of the increasing trend in the number of cases that are unresponsive to treatment and presenting with recurrence.[3,4] Our study is therefore aimed to identify the morphological pattern of dermatophytosis among different age groups and gender.

## METHODS

This prospective descriptive study was carried out over a period of 3 months from April 2021 to June 2021 in the dermatology outpatient department (OPD) at a tertiary care centre in Chennai. 148 patients diagnosed with dermatophytosis who were willing to participate in the study was enrolled. There were no exclusion criteria for

our study. After obtaining an informed consent their detailed history was recorded. A thorough dermatological, general and systemic examination was done. Their diagnosis was confirmed based on their history and examination. The patients were classified based on the age, gender, duration of disease and morphological pattern of dermatophytosis. The statistical analysis was carried out on the above data. Microsoft excel was used to make tables. Descriptive statistics like mean and percentages were used to infer results.

## RESULTS

In our study, out of the 148 cases, highest number of cases (41.21%) were seen in the age group 21–30 and one case (0.68%) were seen in the age group 71–80 (Table 1). 93 (62.83%) were males and 55 (37.17%) were females (Table 2).

**Table 1: Age distribution.**

| Age group (in years) | No. of patients | Percentage |
|---|---|---|
| **0–10** | 3 | 2.03 |
| **11–20** | 19 | 12.84 |
| **21–30** | 61 | 41.21 |
| **31–40** | 26 | 17.57 |
| **41–50** | 28 | 18.91 |
| **51–60** | 8 | 5.41 |
| **61–70** | 2 | 1.35 |
| **71–80** | 1 | 0.68 |

**Table 2: Gender distribution.**

| Gender | Number of cases | Percentage |
|---|---|---|
| **Male** | 93 | 62.83 |
| **Female** | 55 | 37.17 |

**Table 3: Dermatophytosis based on site.**

| Pattern of dermatophytosis | Number of cases | Percentage |
|---|---|---|
| **Corporis** | 77 | 52.03 |
| **Incognito** | 29 | 19.59 |
| **Cruris** | 18 | 12.16 |
| **Faceii** | 5 | 3.38 |
| **Pedis** | 4 | 2.70 |
| **Capitis** | 3 | 2.03 |
| **Mannum** | 3 | 2.03 |
| **Corporis + cruris** | 5 | 3.38 |
| **Corporis + faceii** | 4 | 2.70 |
| **Total number of cases** | 148 | |

Dermatophytosis involving a single site was seen in 139 (93.91%) cases while 9 (6.09%) cases had involvement of multiple sites. Out of the 139 cases that presented with a single pattern of dermatophytosis, 77 cases (55.39%) were found to have corporis pattern, 29 cases (20.86%) had incognito pattern, 18 cases (12.95%) were diagnosed with cruris pattern, 5 cases (3.60%) were identified as faceii pattern, 4 cases (2.88%) were of pedis pattern, 3 cases (2.16%) were found to be of capitis pattern and 3 cases (2.16%) had manuum pattern. 5 (55.56%) cases presented with corporis and cruris while 4 (44.44%) cases presented with corporis and faceii (Table 3). Out of the 148 cases, 138 (93.24%) cases had annular type of lesion morphology, 8 (5.40%) cases were of papulosquamous type and 2 (1.36%) cases were eczematous in nature (Table 4).

**Table 4: Distribution of lesion morphology.**

| Type of lesion | Number of cases | Percentage |
|---|---|---|
| **Annular** | 138 | 93.24 |
| **Papulosquamous** | 8 | 5.40 |
| **Eczema** | 2 | 1.36 |
| **Lichenoid** | 0 | - |
| **Bullous** | 0 | - |
| **Imbricata** | 0 | - |
| **Total cases** | 148 | |

## DISCUSSION

In our study, males (62.83%) were more commonly affected than females (37.17%) with a male to female ratio of 1.6:1 this was in concurrence with study done by Noronha et al.[5] However, the study by Sivaprakasam et al demonstrated a female preponderance.[6] The higher prevalence in males may be accounted for by their increased physical and outdoor activity leading to excessive sweating which leads to moist local conditions favouring fungal growth. In our study population we observed that the maximum number of cases was noted in the age group of 21–30 years (41.21%) which was in concordance with the study by Lyngdoh et al, Meghalaya but differed from the study by Vineetha et al which showed that the most commonly affected population belonged to the first decade.[7,8] Younger active individuals who stay at work for long in unhygienic and non-temperature-controlled situations are at high risk of acquiring fungal infections. They might also be in the habit of ignoring personal hygiene either due to lack of awareness or due to other distractions. The most common lesion morphology was found to be annular type in this study with 93.24%, similar result was observed by Sultan et al in their study.[9] In our study the commonest clinical manifestation was found to be *Tinea corporis* (55.39%) which is supported by the observation made by Sudha et al and Narasimhalu et al.[10,11] The second most common pattern in our study was found to be *Tinea incognito* which differed from both the above studies. This type of tinea occurs due to modification of the morphology on using topicals with antifungal and steroid combination. Our study found that 6.09% of the cases presented with dermatophytosis at multiple sites which is in contrast to the studies conducted by Pathania et al and Chabbra et al.[12,13]

Limitation of the study was that neither fungal culture nor identification of dermatophytes were done in this study.

## CONCLUSION

From this study we conclude that young males are the most affected population. *Tinea corporis* in an annular pattern is most common presentation. *Tinea incognito* was found to be the second most common presentation among our study population. This denotes the unchecked use of over-the-counter topical medications which have combination of corticosteroids and antifungals. Patients has to be educated about benefits of consulting a dermatologist rather than using cheap over the counter medication.

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## REFERENCES

1. Weitzman I, Summerbell RC. The dermatophytes. Clin Microbiol Rev. 1995;8(2):240-59.
2. Pires CA, Cruz NF, Lobato AM, Sousa PO, Carneiro FR, Mendes AM. Clinical, epidemiological, and therapeutic profile of dermatophytosis. An Bras Dermatol. 2014;89(2):259-64.
3. Hassanzadeh Rad B, Hashemi SJ, Farasatinasab M, Atighi J. Epidemiological Survey of Human Dermatophytosis due to Zoophilic Species in Tehran, Iran. Iran J Public Health. 2018;47(12):1930-6.
4. Kaul S, Yadav S, Dogra S. Treatment of Dermatophytosis in Elderly, Children, and Pregnant Women. Indian Dermatol Online J. 2017;8(5):310-8.
5. Noronha TM, Tophakhane RS, Nadiger S. Clinico-microbiological study of dermatophytosis in a tertiary-care hospital in North Karnataka. Indian Dermatol Online J. 2016;7(4):264-71.
6. Sivaprakasam K, Govindan B. A clinico-mycological study of chronic dermatophytosis of more than years duration. Int J Sci Res. 2016;5:551-4.
7. Lyngdoh CJ, Lyngdoh V, Choudhury B, Sangma KA, Bora I, Khyriem AB. Clinico-mycological profile of dermatophytosis in Meghalaya. Int J Med Public Health. 2013;3(4):254-6.
8. Vineetha M, Sheeja S, Celine MI, Sadeep MS, Palackal S, Shanimole PE, Das SS. Profile of Dermatophytosis in a Tertiary Care Center. Indian J Dermatol. 2018;63(6):490-5.
9. Sultan S, Aslam A, Iqbal I, Younus F, Hassan I. Dermatophytosis: an Epidemiological And Clinical Comparative Study in a Tertiary Care Centre. Int J Contemp Med Res. 2020;7(6):f1-5.
10. Sudha M, Ramani CP, Anandan H. Prevalence of dermatophytosis in patients in a tertiary care centre. Int J Contemp Med Res. 2016;3:2399-401.
11. Narasimhalu CRV, M Kalyani, Somendar S. A Cross-Sectional, Clinico Mycological Research Study of Prevalence, Aetiology, Speciation and Sensitivity of Superficial Fungal Infection in Indian Patients. J Clin Exp Dermatol Res. 2020;7:324.
12. Pathania S, Rudramurthy SM, Narang T, Saikia UN, Dogra S. A prospective study of the epidemiological and clinical patterns of recurrent dermatophytosis at a tertiary care hospital in India. Indian J Dermatol Venereol Leprol. 2018;84(6):678-84.
13. Chhabra N, Khare S, Das P, Wankhade AB. Clinicomycological Profile of Chronic Dermatophytosisin a Tertiary Care Centerfrom Raipur, Chhattisgarh. Indian Dermatol Online J. 2020;12(1):165-8.

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