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Original Research Article

Assessment of Morphological Patterns of Dermatophytosis

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Abstract:

Background and Aim: Dermatophytosis that is recurrent and clinically unresponsive is becoming more common in our country. It has a long history of exacerbations and remissions. However, there is little information in the published literature about the scope of the problem and the characteristics of recurrent dermatophytosis. The goal of our research is to discover the morphological pattern of dermatophytosis in different age groups and genders.

Material and Methods: This 6-month prospective descriptive study was conducted in the dermatological outpatient department (OPD) of a tertiary medical centre in India. The study enlisted 200 patients with dermatophytosis who were willing to participate. A comprehensive dermatological, general, and systemic examination was performed. Based on their narrative and inspection, their diagnosis was verified. The patients were categorised based on their age, gender, disease duration, and dermatophytosis morphology.

Results: In our study, the majority of the 200 instances (40.5%) were seen in the age group 21-30, with one case (0.5%) seen in the age group 71-80. There were 124 men (62%) and 76 women (38%). Dermatophytosis involving a single site was identified in 188 (94%) instances, with multiple site involvement seen in 12 (6%) cases. Out of the 188 cases with a single pattern of dermatophytosis, 100 cases (53.19%) had corporis pattern, 36 cases (19.14%) had incognito pattern, 23 cases (12.23%) had cruris pattern, 5 cases (2.65%) had faceii pattern, and 6 cases (3.19%) had pedis pattern.

Conclusion: Young boys are the most vulnerable group. Tinea corporis is most commonly seen in an annular pattern. Tinea incognito was the second most prevalent manifestation in our study sample. This refers to the uncontrolled use of over-the-counter topical drugs with a mix of corticosteroids and antifungals.

Keywords: Corporis, Cruris, Dermatophytosis, Tinea incog.

Introduction

Dermatophytosis is a common superficial mycosis that causes severe cutaneous morbidity. The itching is excruciating, and crippling sores on the genital and other places create social shame and reduce quality of life. [1] Dermatophytosis is a fungal infection caused by dermatophytes, which include three genera: Trichophyton, Microsporum, and Epidermophyton, and are capable of penetrating keratinized tissues in humans and animals such as skin, hair, and nails. [2]

The etiologic agents of infection are found all over the world, and it is believed that 20%—25% of the global population has experienced at least one type of dermatophytosis. [3] The distribution of dermatophytes and dermatophytosis in a specific geographical location changes over time due to climate, environmental or socioeconomic variables, immigration, and tourism. Many factors have been connected to the increased occurrence of dermatophytosis, including tropical climate, overcrowding, urbanisation, communal accommodation such as living in hostels, the use of occlusive footwear, tight fitting clothes, community showers, and sports activity. [4]

Dermatophytosis is also known as tinea. Tinea manifests itself in a variety of ways, each with its own name based on where it appears: Tinea corporis (ringworm) is a fungal illness of the arms, legs, and trunk; Tinea cruris (groyne infection); Tinea faceii (facial infection); Tinea pedis (athlete's foot) is a fungal infection of the feet; Tinea capitis (scalp infection) is a fungal infection of the scalp. Tinea manuum is a fungal infection of the palms; Tinea unguium is a fungal infection of the nails and nail beds; Tinea barbae is a fungal infection of facial hair; and Tinea incognito is a fungal infection with an altered clinical appearance as a result of improper treatment. Dermatophytosis has always

been common worldwide, but it is currently a substantial problem due to an increase in the number of cases that are refractory to treatment and present with recurrence. [5,6] The goal of our research is to discover the morphological pattern of dermatophytosis in different age groups and genders.

Material and Methods

This 6-month prospective descriptive study was conducted in the dermatological outpatient department (OPD) of a tertiary medical centre in India. The study enlisted 200 patients with dermatophytosis who were willing to participate. Patients with just tinea ungium, immunocompromised patients, pregnant and breastfeeding ladies were all eliminated.

Their detailed history was recorded after they provided informed consent. A comprehensive dermatological, general, and systemic examination was performed. Based on their narrative and inspection, their diagnosis was verified. The patients were categorised based on their age, gender, disease duration, and dermatophytosis morphology.

Statistical analysis

The collected data was assembled and input into a spread sheet programme (Microsoft Excel 2007) before being exported to the data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). The confidence level and level of significance for all tests were set at 95% and 5%, respectively.

Results

In our investigation, the majority of the 200 instances (40.5%) were seen in the age category 21-30, with one case (0.5%) seen in the age group 71-80 (Table 1). Table 2 shows that 124 (62%) were males and 76 (38%) were females. Dermatophytosis involving a single site was identified in 188 (94%) instances, with multiple site involvement seen in 12 (6%) cases. Out of the 188 cases with a single pattern of dermatophytosis, 100 cases (53.19%) had corporis pattern, 36 cases (19.14%) had incognito pattern, 23 cases (12.23%) had cruris pattern, 5 cases (2.65%) had faceii pattern, 6 cases (3.19%) had pedis pattern, 4 cases (2.12%) had capitis pattern, and 4 cases (2.12%) had manuum pattern. 6 (3.19%) patients had corporis and cruris as well as corporis and faceii (Table 3).

Table 1: Age wise Distribution of study subjects

Age group (in years)	No. of patients	Percentage (%)
0-10	4	2
11-20	23	11.5
21-30	81	40.5
31-40	53	26.5
41-50	36	18
51-60	10	5
61-70	2	1
71-80	1	0.5

Table 2: Gender wise distribution of study participants

Gender	No. of patients	Percentage (%)
Male	124	62
Female	76	38
Total	200	100

Table 3: Dermatophytosis based on site

Pattern of dermatophytosis	No. of patients	Percentage (%)
Corporis	100	53.19
Incognito	36	19.14
Cruris	23	12.23
Faceii	5	2.65
Pedis	6	3.19
Capitis	4	2.12
Mannum	4	2.12
Corporis + cruris	6	3.19
Corporis + faceii	6	3.19
Total	188	100

Discussion

Dermatophyte infections are common and cause significant social, emotional, and financial

suffering in patients. Recurrent dermatophytosis is quickly becoming a problem for dermatologists in India. [7] In our study, 9.3% of all patients with dermatophytosis presented with recurrent dermatophytosis, with young adult males being the most affected. Since the study's end in 2015, we've seen a significant increase in recurrent dermatophytosis.

In our patients, we saw frequent sharing of towels, footwear, and clothing. This could aid in the spread of illness. Objects such as clothing, bed sheets, and towels can harbor fungal germs and spread the disease among family members. Furthermore, fungal spores can survive in household dust for months, resulting in recurring episodes of clinical illness. [8,9] Asymptomatic carriers among family members could also be a factor in recurrence. In the winter, one-third of our patients wore tight clothes such as jeans and woollen underwear, which were frequently unwashed for weeks, providing a wet environment favourable for dermatophyte proliferation.

Males (62%) were more commonly impacted in our study than females (38%), which was consistent with the findings of Noronha et al. [10] The study by Sivaprakasam et al, on the other hand, revealed a female predominance. [11] Males have a higher prevalence because of their increased physical and outdoor activity, which causes excessive perspiration and moist local circumstances that support fungal development.

The highest number of cases was observed in the age group of 21-30 years in our study population, which was consistent with the study by Lyngdoh et al, Meghalaya, but differed from the study, by Vineetha et al, which found that the most commonly affected population belonged to the first decade. [12,13]

Younger energetic people who work long hours in unsanitary and non-temperature-controlled conditions are more likely to contract fungal infections. They may also have a propensity of ignoring personal hygiene due to a lack of awareness or other distractions. The annular form was found to be the most common lesion morphology in this investigation, accounting for 93% of all lesions; a similar finding was obtained by Sultan et al in their study. [14] Corticosteroid topical treatment was common in our patients. Topical corticosteroid treatments first decrease inflammation and ameliorate tinea signs and symptoms. Dermatophytes, on the other hand, thrive, causing a flare-up of the condition. [15] Tinea treatment in India is typically polypharmacy with corticosteroid combinations and sub therapeutic antifungal dosages provided by general practitioners and quacks.

Tinea corporis (53.19%) was found to be the most common clinical manifestation in our study, which is corroborated by Sudha et al and Narasimhalu et al. [16,17] Tinea incognito was determined to be the second most prevalent pattern in our analysis, which differed from both of the previous investigations. This kind of tinea develops as a result of morphological changes caused by topical antifungal and steroid combinations. In contrast to the investigations conducted by Pathania et al and Chabbra et al, our study discovered that 6% of the subjects had dermatophytosis at numerous places. [18,19] With the expanded use of molecular techniques, the taxonomy of dermatophytes is developing, and T. mentagrophytes and T. rubrum are now regarded a species complex, with multiple species defined within each species.

Conclusion

Young boys are the most affected demographic. Tinea corporis is most commonly seen in an annular pattern. Tinea incognito was the second most prevalent manifestation in our study sample. This refers to the uncontrolled use of over-the-counter topical drugs with a mix of corticosteroids and antifungals. Patients must be informed on the advantages of seeing a dermatologist rather than relying on over-the-counter medications.

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