SUPERFICIAL MYCOSES IN SIMLA

N. L. SHARMA * M. L. GUPTA † R. C. SHARMA ‡ PREM SINGH §
AND NEELAM GUPTA ||

Summary

A clinico-mycological study of 114 cases of dermatophytosis is presented. Tinea pedis (38.6%) is the commonest clinical type found in this region. A relatively high prevalence of tinea unguium (23.7%) was observed. T. rubrum was the commonest isolate (46.2%). An unusual finding was the isolation of T. schoenleini in four cases of tinea pedis. The factors responsible for high prevalence of tinea pedis and tinea unguium are discussed.

KEY WORDS: Dermatophytoses.

The pattern of superficial fungal infections has been reported from most of the parts of India. Simla is situated at a height of about 2000 metres above sea level and has a temperate climate. The present study was undertaken to find out the pattern of dermatophyte infections existing in this region under these environmental conditions.

Material and Methods

The material for this study consisted of skin scrapings, nail clippings or hair from 114 clinically diagnosed cases of dermatophytoses. A complete history of the patients including the site of lesions was recorded. Depending upon the site involved, material from skin, nails or infected hair was taken and examined in 10% KOH by direct microscopy. The material obtained from the infected site was also sent for culture and identification of the fungus.

The culture was done in duplicate on Sabouraud's dextrose agar (SDA) incorporated with chloramphenicol and SDA incorporated with chloramphenicol and cycloheximide. The inoculated tubes were incubated at 25°C and 37°C and observed upto 4 weeks before discarding as negative. The isolated fungus was identified on the basis of colony and microscopic characteristics[1,2,3].

Results

Out of a total of 114 cases included in this study 86 were males and 28 females giving a ratio of 3 : 1. All age groups were affected; the youngest patient being a one month old child and the oldest 74 years of age. Detailed age-wise distribution of the

* Assistant Professor in Skin & STD.
† Lecturer in Microbiology
‡ Professor in Skin and STD.
§ Associate Professor in Microbiology
|| Registrar in Skin and STD.
Study done in the departments of Skin and STD & Microbiology H. P. Medical College Simla
Reprint request to :
Dr. N. L. Sharma
Assistant Professor in Skin & STD.
H. P. Medical College,
Simla-171001
Received for publication on 18—10—1983

TABLE 1

Showing Agewise incidence of Different Clinical Types

Age in years	Total	T. capitis	T. cruris	T. mannum	T. unguium	T. pedis	T. corporis	T. cruris with pedis	T. corporis with pedis	T. corporis with unguium	T. unguium with mannum	T. cruris with corporis	T. unguium with pedis	4 sites involvement
0—10	7	5	—	—	—	—	2	—	—	—	—	—	—	—
11—20	21	—	5	1	9	3	3	—	—	—	—	—	—	—
21—30	24	—	6	1	—	8	4	1	—	—	—	4	—	—
31—40	35	—	5	—	6	12	3	2	1	1	—	2	2	1
41—50	11	—	1	—	2	5	1	—	—	—	—	—	2	—
51 & above	16	—	4	—	1	5	3	—	—	—	1	—	1	1
Total	114	5	21	2	18	33	16	3	1	1	1	6	5	2
Percentage (alone)		4.3	18.4	1.7	15.8	28.9	14	2.7	0.9	0.9	0.9	5.3	4.3	1.8
Percentage total		4.3	28.1	2.6	27.7	38.6	22.8							

patients is shown in Table 1. Maximum number of patients (30.7%) were in the 31-40 years age group. All cases of tinea capitis and two of tinea corporis were from pre-pubertal group.

A total of 101 (88.6%) cases were KOH positive by direct microscopy and out of these 48 gave positive cultures. Of the 13 KOH negative cases, 4 were positive in culture. In all, 52 cultures were isolated, giving a positivity rate of 45.6%. Most common clinical type encountered in our study was tinea pedia (38.6%) occurring either alone (28.9%) or in combination with other types (9.7%). Tinea cruris was the second commonest (28.1%), occurring alone (18.4%) and in combination with other types (9.7%). In 95 cases (83.3%) only one type was seen; in 17 (14.9%) two types while in two cases (1.8%) four types were seen.

Species isolation from various clinical types is presented in Table 2. *Trichophyton rubrum* was the commonest isolate (46.2%) in the present study. Next common was *T. mentagrophytes* (30.8%). Mixed growth was obtained only from 6 tinea pedis cases. Candida was present in all these six cases where it occurred either with *T. mentagrophytes* or *T. rubrum*. Culture positivity rate was maximum from tinea corporis (81.2%).

Discussion

The present study reveals a male predominance of dermatophytic infection with a male to female ratio of 3 : 1 which is comparable to the figures of Stephen and Rao[4] and Desai and Bhatt[5]. This ratio varies depending on the size of the city under study. In big cities relatively larger number of females are affected. This has been attributed to the increased participation of women in outdoor activities, use of footwear and higher degree of health awareness of females living in big cities. In our study the ratio is similar to that seen in big cities.

TABLE 2

Showing Dermatophytes Isolated from Different Clinical types

Clinical types	T. rubrum	T. ment	T. viol	T. Scho	T. tons	T. flocc	Total	Total culture	Percentage of positivity
T. capitis	—	—	—	—	—	—	5	0	0
T. corporis	9	2	1	—	—	1	16	13	81.2
T. cruris	3	3	—	—	—	1	21	7	33.3
T. mannum	—	—	—	—	—	—	2	0	0
T. unguium	2	1	1	—	—	1	18	5	27.8
T. pedis	4	9	—	4	—	2	33	19	57.6
T. unguium+C pedis	2	1	—	—	—	—	5	3	—
T. cruris+C corporis	2	—	—	—	—	—	6	2	—
T. cruris+C pedis	2	—	—	—	—	—	3	2	—
T. corporis+C pedis	—	—	—	—	1	—	1	1	—
T. corporis+C unguium	—	—	—	—	—	—	1	0	—
T. unguium+C mannum	—	—	—	—	—	—	1	0	—
4 sites involvement	—	—	—	—	—	—	2	0	—
Total	24	16	2	4	1	5	114	52	
Percentage	46.2	30.8	3.8	7.6	1.9	9.6		45.6	

Excepting in the case of tinea capitis, the age group maximally affected was in the fourth decade. This observation is different from that on other Indian studies[4,6,7] where the most frequently effected group belonged to the third decade.

In the present study office goers are predominantly affected. The population of the Simla city proper comprises mainly of government employees with the labour and farmer class being a negligible group.

Isolation rate of cultures in the present series is 45.6% and is comparable to the results published by Maheshwariamma et al[8] and Mankodi and Shah[3].

Contrary to the findings reported in all other Indian Studies available so far, the most common clinical type of infection encountered in this study was tinea pedis (38.6%). This is similar to the pattern in European countries[10]. This may be explained on the basis of similarity of climatic conditions of Simla and Europe. In Simla people do not walk barefooted due to the cold weather during almost three quarters of the year. Footwear like sandals or chappals are not popular and most people use shoes and socks throughout the year. Majority of the local people have to walk long distances to their places of work and for other purposes as well. This results in excessive sweating and maceration of the skin of the feet which in turn contributes to the high prevalence of tinea pedis.

The second common clinical type of infection encountered was tinea cruris (28.1%). The prevalence of tinea unguium in the order of 23.7% is the highest so far reported in India. The high prevalence of tinea unguium could be attributable to the high prevalence of tinea pedis. Tinea corporis which

is the commonest clinical type reported in most of the Indian Studies[5,11,12]. takes only fourth place in the present series. The prevalence of tinea capitis (4.3%) and tinea mannum (2.6%) is comparable to that reported from other parts of the country. Two or more sites of involvement was seen in 16.7% of cases. Similar observation has been made by Rajgopal et al[13].

Like in all other Indian studies the commonest species isolated in our series was *T. rubrum*, but the percentage (46.2%) significantly lower than what was reported by Desai & Bhatt[5], Siddappa & Mahipal[6] and Shah et al[7]. The percentage of *T. mentagrophytes* isolation (30.8%) is relatively higher than in most other Indian studies[5,6,9,12]. *T. violaceum*, *T. tonsurans* and *E. floccosum* isolation rates were comparable to the rates reported by other Indian workers. *T. schoenleini* which is known to affect hair and isolated from 4 tinea pedis cases in our series needs special mention. This species is rare in India but has been isolated by others who have reported very low prevalence rate of 0.86–4.19%[14,15,16].

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