

DERMATOPHYTOSES AT KURNOOL (RAYALASEEMA OF ANDHRA PRADESH)

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Summary

Among 125 cases of dermatophytoses studied 45 were positive for fungi by culture. The commonest clinical presentation was *T. corporis* (38.4%) which was followed by *T. pedis* (29.6%). Incidence of *T. capitis* was the lowest (4.8%). The frequency of *T. rubrum* infection was quite high (53.33%). Occurrence of *E. floccosum* was comparatively high in Andhra Pradesh and 4.44% was observed in the present series. *T. violaceum* was absent. 11.11% *M. gypseum* was encountered and showed incidence in par with *T. mentagrophytes*. *T. concentricum* species was rare having been isolated only once among the 45 isolates.

Superficial mycoses are common among mycotic diseases in India. Studies on the incidence of dermatophytoses from different parts of Andhra Pradesh have already been published. (Vasu¹; Nagabhushanam et al²; Sobhanadri et al³; and Rao & Annapurna⁴). Much work has been done on this aspect in different parts of the country and data are available (Kalra et al⁵; Mankodi & Kanvinde⁶; Mulay & Gar⁷; Verma et al⁸; Pramodnath & Agarwal⁹; Verma & Singh¹⁰; Nagarkatti et al¹¹; and Shah et al¹²).

The dermatophytes causing superficial mycoses differ from place to place. Their occurrence appears to be governed by environmental conditions, personal factors like nutrition, hygienic habits and individual susceptibility. A study of their prevalence in the region of

Rayalaseema, a part of Andhra Pradesh is attempted and the results of the same are presented here.

Material and Methods

The study was made on patients attending the Dermatology Unit of Government General Hospital, Kurnool, Andhra Pradesh. After treating the site of lesion with 75% alcohol, the scarpings from skin, hairs and nail clippings were collected on to sterile paper bits aseptically. The collected material was processed for mycological investigation in the department of microbiology. A portion of the sample was treated with 10% KOH and warmed for direct smear examination and the rest of the material was inoculated into Sabouraud's agar with chloromphenicol and actidion. The media after inoculation were incubated at room temperature 25°-28° C and 37° C. They were examined for evidence of growth for 21 days. The species were identified by colony characters, pigment production and slide culture (Ajeilo et al¹³).

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Results and Discussion

The commonest clinical presentation that was observed in the present study of 125 cases of dermatophytoses was *T. corporis* (38.4%). This finding is in conformity with the reports published by other workers (Vasu¹; Mulay et al¹⁴; Rao & Annapurna⁴ and Shah et al¹⁵).

Though Sobhanadri et al⁸; Verma et al⁹; Verma & Singh¹⁰ and Phadke et al¹⁵, had a high incidence of *T. cruris*, the frequency in the present series was only 11.2%. The severe itching associated with *T. corporis* and *T. cruris* may make the patient to seek medical advice and this may account for higher incidence noted by different workers in different parts of our country.

As generally agreed the incidence of *T. capitis* is low in the authors' series being only 4.8%, compared to other clinical types of Tinea (Table 1). Insignificant number of cases (0.5%) was recorded by Vasu¹, whereas Nagabhushanam et al¹⁶, had recorded 6.5% in his study. Rao and Annapurna⁴ reported 3% of *T. capitis* cases in their series which is lower than the incidence observed by the present workers. The incidence of 4.8% of *T. capitis* in this part of Rayalaseema area may probably be due to the predominance of muslim community though Nagabhushanam et al¹⁶ had disproved this conclusion in their later study. The most common clinical type found by Das Gupta et al¹⁷ was *T. capitis* (25%).

Incidence was maximum between the age group of 21-40 years (57.6%) (Table 1). This is similar to series reported by Panda et al¹⁸ Rao and Annapurna⁴ and Nagarkatti et al¹¹. As experienced earlier by Kurup and Ananthanarayan¹⁹ and Dutta and Rao,²⁰ the infection due to dermatophytes was high among males (60.8%) compared to females (39.2%) (Table 1).

T. barbae was not encountered in the present series though a low incidence was reported by other workers^{8, 4, 7, 11} (Table 2).

Out of 125 cases, only 11 were KOH positive and all the 11 were also culturally positive. Among 114 KOH negative samples 34 were culturally positive for dermatophytes. Among dermatophytes isolated, 53.33% was *T. rubrum*, 17.77% *T. tonsurans* and 11.11% *T. mentagrophytes*. An overwhelming majority of *T. rubrum* as an etiological agent in Dermatophytosis was reported by other workers^{1, 4, 10, 15} *T. tonsurans* was next in frequency (17.77%) and this compared favourably with reports by other workers (Table 3). This is in conformity with the incidence noted by Das Gupta et al¹⁷. All the 5 strains of *T. mentagrophytes* were isolated from *T. pedis* lesions only. Similar observations have been made by Kalra et al⁵. Incidence ranging from 0.1% to 20.5% was observed in relation to *E. floccosum* (Table 3). It is evident that the frequency of *E. floccosum* was conspicuously high in Andhra Pradesh.
^{1, 8, 4}

In the present mycological study even a single strain of *T. violaceum* was not recorded though this species was the commonest dermatophyte (27.5%) in the series by Das Gupta et al¹⁷.

The rarity of *M. gypseum* as an etiological agent in this country is brought out in literature. (Table 3). This fungus was isolated in 11.11% of cases showing almost the same incidence as for *T. mentagrophytes*. The incidence of *T. concentricum* is very low (2.2%) in the present series and was found to be associated with *T. cruris*. In other series *T. concentricum* had been very rarely encountered.

TABLE 1

Incidence of different clinical types in relation to age and sex.

| Clinical condition | 0-10 years | 11-20 years | 21-30 years | 31-40 years | 41-50 years | 51-60 years | 61-70 years | Total | Total Number of Clinical types | Total incidence of clinical types % |
|--------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|--------------------------------|-------------------------------------|
| | M-F | M-F | M-F | M-F | M-F | M-F | M-F | | | |
| Tinea corporis | 0-0 | 2-4 | 12-9 | 12-5 | 0-2 | 1-1 | 0-0 | 27-21 | 48 | 38.4 |
| Tinea pedis | 3-7 | 0-3 | 7-2 | 5-2 | 5-2 | 1-0 | 0-0 | 21-16 | 37 | 29.6 |
| Tinea cruris | 0-1 | 2-0 | 4-0 | 4-0 | 0-0 | 2-0 | 1-0 | 13-1 | 14 | 11.2 |
| Tinea manuum | 0-0 | 0-0 | 2-2 | 2-1 | 1-4 | 0-0 | 0-0 | 5-7 | 12 | 9.6 |
| Tinea unguium | 1-1 | 3-0 | 2-1 | 0-0 | 0-0 | 0-0 | 0-0 | 6-2 | 8 | 6.4 |
| Tinea capitis | 3-2 | 1-0 | 0-0 | 0-0 | 0-0 | 0-0 | 0-0 | 4-2 | 6 | 4.8 |
| Total Number | 7-11 | 8-7 | 27-14 | 23-8 | 6-8 | 4-1 | 1-0 | 76-49 | 125 | |

TABLE 2

Incidence of various clinical types of Dermatophytoses observed by different workers

| Author's name | Year | T. cruris % | T. corporis % | T. capitis % | T. pedis % | T. unguium % | T. manuum % | T. barbae % |
|------------------|------|-------------|---------------|--------------|------------|--------------|-------------|-------------|
| Mulay et al | 1970 | 38.02 | 58.01 | 0.18 | 1.04 | 1.02 | 0.70 | — |
| Phadke et al | 1973 | 57.03 | 28.07 | 0.58 | 4.68 | 9.35 | — | — |
| Nagarkatti et al | 1975 | 47 | 34 | 7 | 5 | 2 | — | 1 |
| Rao & Annapurna | 1973 | 40 | 44 | 3 | 2.5 | 4.05 | — | 1.5 |
| Shah et al | 1975 | 33.23 | 52.47 | 8.06 | 0.42 | 1.98 | 0.14 | 3.67 |
| Sobhanadri et al | 1970 | 53.75 | 52.05 | — | 1.66 | — | — | 0.41 |
| Vasu | 1966 | 23.64 | 60.09 | 0.49 | 9.35 | 3.44 | — | 2.95 |
| Verma et al | 1970 | 45 | 42 | 2 | — | 4 | — | 4 |
| Verma & Singh | 1972 | 34 | 25 | 6 | 11 | 2 | — | — |
| Present series | 1975 | 11.02 | 38.04 | 4.8 | 29.6 | 6.4 | 9.6 | — |

N.B.: T ... Tinea

TABLE 3

Incidence of various species isolated from Dermatophytoses by different workers

| Author's name | Year | T. rubrum % | T. mentagrophytes % | T. tonsurans % | T. concentricum % | T. violaceum % | M. gypseum % | E. floccosum % |
|-----------------------|------|-------------|---------------------|----------------|-------------------|----------------|--------------|----------------|
| Das Gupta | 1973 | 17.05 | 10 | 15.00 | — | 27.05 | — | — |
| Mulay & Garg | 1970 | 88.08 | 3.04 | 0.97 | — | 0.44 | 0.08 | 3.02 |
| Mulay et al | 1971 | 92 | 2.03 | 1.06 | — | 0.06 | — | 1.08 |
| Phadke et al | 1973 | 95.52 | — | — | — | — | — | 3.73 |
| Pramodhnath & Agarwal | 1971 | 44.05 | 22.89 | 9.27 | — | 3.70 | 1.15 | 5.80 |
| Rao & Annapurna | 1973 | 70 | 13.33 | — | — | 5 | 1.66 | 10 |
| Shah et al | 1975 | 80.07 | 1.01 | — | — | 12.05 | — | 0.01 |
| Sobhanadri et al | 1970 | 41 | 1 | — | — | 6 | — | 20.05 |
| Vasu | 1966 | 62.65 | 16.86 | 3.61 | — | — | — | 12.04 |
| Verma et al | 1970 | 88.88 | 8.33 | — | — | — | — | 2.77 |
| Verma & Singh | 1972 | 71.42 | — | 1.58 | — | 9.36 | — | 9.36 |
| Present series | 1975 | 53.33 | 11.11 | 17.77 | 2.22 | — | 11.11 | 4.44 |

N.B.: T ... Trichophyton
M ... Microsporum

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