CLINICAL PROFILE OF PATIENTS WITH CHRONIC DERMATOPHYTOSIS- A DESCRIPTIVE STUDY FROM A TERTIARY CARE CENTRE IN KERALA

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ABSTRACT

BACKGROUND
Chronic dermatophytosis is increasing in an alarming proportion all over India. This study was undertaken to understand the possible factors predisposing to chronic dermatophytosis in patients attending the OPD of this tertiary care center in Alappuzha district of Kerala.

MATERIALS AND METHODS
50 consecutive patients with chronic dermatophytosis attending the OPD of the tertiary care centre in Alappuzha district, Kerala, were enrolled in the study after taking informed consent. Detailed history, physical examination, direct microscopy and culture was done in all patients.

RESULTS
50 patients with chronic dermatophytosis were studied. 66% were females. Maximum number (32%) of patients were in the fourth decade. 52% were manual labourers. 64% patients had sun exposure for more than 3 hours per day. 20% patients had contact with animals. 22% had associated diabetes mellitus. 80% patients were using topical steroid as part of treatment. 94% were not compliant to treatment. 56% of patients had both T. cruris and T. corporis. Trichophyton rubrum was the most common species isolated.

CONCLUSION
Avoidance of topical steroids and strict adherence to the treatment schedule is very important to prevent the development of chronicity in dermatophyte infection. Detailed study about the various aspects of fungal resistance and also the genetic, host and environmental factors is needed further to curtail the occurrence of this menace.

KEYWORDS
Chronic Dermatophytosis, Topical Steroids, Trichophyton Rubrum.

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rubrum and Trichophyton mentagrophytes can produce biofilms, which can confer resistance to both antimicrobial agents and host immunity leading to chronicity.7

About 10-15% of the patients attending our OPD presents with chronic dermatophytosis. We conducted this study to find out the possible causes predisposing to chronic dermatophytosis in the coastal district of Alappuzha in Kerala so that effective measures can be taken to reduce the occurrence of chronicity.

MATERIALS AND METHODS
Fifty consecutive patients with chronic dermatophytosis who attended the OPD of Dermatology and Venereology, Government TD Medical College, Alappuzha, Kerala, during the period between June 2016 and December 2016 who were willing for the study were included for this descriptive study. Age, sex, occupation, duration of sun exposure, socioeconomic status, contact with animals, associated diseases, detailed treatment history, duration of illness, sites involved were noted in detail in all cases. Patients currently on antifungal treatment either topical or systemic were excluded. Skin scraping from the active margins of lesions were taken for direct microscopic examination using 10% KOH to look for highly refractile septate, branching hyphae in all cases. The specimen were inoculated into Sabourauds dextrose agar with and without antibiotics. Antibiotics include were chloramphenicol and cycloheximide. Cornmeal agar with 1% glucose was used to detect pigment production and to produce better sporulation. The tubes were incubated at room temperature for 4 weeks. If there was no growth after 4 weeks, the culture was declared negative. The species identification was done by microscopic examination of microconidia, macroconidia and hyphal arrangement. Rate of growth, gross morphology of the colony on SDA, pigmentation and the microscopic appearance in lactophenol cotton blue mount was noted. All results were entered in MS excel spreadsheet and analysed.

RESULTS
Age and Sex of Patients
In our study of 50 patients with chronic dermatophytosis, 34% (n=17) were males and 66% (n=33) were females. Figure 1 shows the sex distribution pattern among patients with chronic dermatophytosis. The male:female ratio was 1:1.9.

Exposure to Sun Light
64% of the patients (n=32) in the study gave a history of sun exposure for more than 3 hours as part of their daily work. They included manual labourers and housewives.

Excessive Sweating
Maximum number of patients (86%; n=43) belonged to lower socioeconomic category or the BPL group. 68% patients with chronic dermatophytosis gave a history of excessive sweating.

Family History
20% (n=10) of the patients had one or more of the family members also having ringworm infection and majority (80%) of these patients gave a history of sharing clothes, towels footwear among family members or nonfamily members.

Contact with Animals
20% (n=10) of the patients with chronic dermatophytosis had close contact with animals either as pets or as livestock. Among them, 60% were rearing cattle.

Associated Diseases
30% (n=15) of the patients had associated atopic diathesis, 8% (n=4) of the patients showed ichthyosis vulgaris. 22% (n=11) had associated diabetes mellitus. 8% (n=4) patients had hypothyroidism. Table 2 shows the co-morbid conditions that were seen patients with chronic dermatophytosis in our study.
the clinical pattern of chronic dermatophytosis causing much distress to the patients, socially, economically and financially. The epidemiologic, clinical, microbiologic and immunologic factors, which is contributing to this is being studied in different centres.

In our study, it was observed that chronic dermatophytosis was most common (32%) in the age group 31–40 years. Bindu et al in the study from Calicut in Kerala reported maximum number of patients in the second decade. Ranganathan et al in their study recorded that 88.2% of patients with chronic dermatophyte infection were between age 20–60 years. The differences in the incidence between age groups reflect the differing rate of sebum production and fluctuation of immunity with age.

66% patients in our study were females. Bindu et al has observed that males outnumbered females in study from Calicut. Our female preponderance could be due to the fact that this district with lot of paddy fields in its eastern part has most of the females working in the fields under the hot sun.

64% of patients with chronic dermatophytosis in our study gave a history of exposure to hot sun for more than 3 hours and 68% patients gave a history of increased sweating. Prasad et al in his study has reported that excessive sun exposure for more than 3 hours/day favour the growth of dermatophytosis.

In our study, 86% patients belonged to the low socioeconomic group. In the study by Ranganathan et al, 20.3% of the patients with chronic dermatophytosis were of very low income group and 17.8% of the patients belonged to the low income group. People of this segment may mostly manual labourers and hence may have to work under the hot sun for more than 3 hours/day to earn their living thus making them predisposed to chronic dermatophytosis. Income may also affect their treatment compliance.

20% of the patients in our study had a family member with ringworm infection and majority of these patients (80%) shared towels, dresses or footwear among family members. In the study by Bindu et al history of contact with infected family members was seen in 16.6% comparable with our study.

20% of our patients had contact with animals and 60% among them were rearing cattle as a means of income to the family. There are no studies regarding this statistics. The animals could be a source of dermatophytes, if not treated, thus leading to chronic dermatophytosis in people who handle them.

The various comorbid conditions noted in our study were atopy in 30%, diabetes mellitus in 22%, ichthyosis vulgaris in 8% and hypothyroidism in 8%. In the study by Prasad et al, 13.3% were atopic and 17.3% had diabetes mellitus. Bindu et al has reported that diabetes was seen in 10.6% and atopic diathesis in 10%. Retained keratin often acting as a source for ringworm infection in ichthyosis vulgaris and a shift of immunity to Th2 cytokines in atopic dermatitis...
could predispose these patients to chronic dermatophytosis.  

80% of patients using topical medication were applying topical steroids either alone or in combination with antifungal or antibiotic. There are no definite statistical data regarding the application of topical steroids. The easy availability and rampant use of corticosteroids by general practitioners and the lesser price of steroid antifungal combination when compared to antifungal alone could be the cause of rampant use of topical steroids. The local immune suppression from the use of topical steroids can promote widespread tinea infection.  

94% of the patients in our study were not compliant to the treatment, stopping the treatment as and when there was improvement. This was because the patients were satisfied initially with the start of the treatment and most of the patients being manual labourers, stopped the treatment for want of money to continue treatment.  

56% of the chronic dermatophytosis patient in our study had both tinea corporis and tinea cruris. In the study by Ranganathan et al, recurrence and chronicity were more commonly associated with tinea cruris and corporis.  

8% of our patients had associated onychomycosis. In the study by Prasad et al, onychomycosis was observed in 28% of the patients and was found to be a major cause of chronicity.  

In our study, 80% patients demonstrated positive fungal scraping. In study by Bindu et al, overall positivity by fungal scraping was 64%. Prasad et al in his study demonstrated KOH positivity in 86%. The negative KOH smear could be due to minimal scaling and rampant use of topical steroids.  

68% of the patients in our study had culture positivity. In the study by Prasad et al, positive culture was seen in 41.3% of the patients and Bindu et al in their study showed culture positivity in 45.3% patients. Culture negativity could be due to bacterial contamination or maybe due to delay in processing of the specimen.  

Among the species isolated, Trichophyton rubrum was the commonest isolate (41.2%) in our study followed by Trichophyton violaceum (20.6%). In the study from Calicut, T. rubrum was the most common species isolated in 66.2% patients followed by T. mentagrophytes in 25%. T. violaceum was isolated in majority (55.76%) in a study from Rajasthan followed by T. rubrum in 42.3%. Huda et al in a study from Assam also showed T. rubrum as the commonest offending agent leading to chronic dermatophytosis.  

CONCLUSION  

In the present study, it was found that widespread use of topical preparations containing steroids and lack of compliance to the full course of treatment were the most common causes leading to chronic dermatophytosis in Alappuzha, a coastal district of Kerala. Low-socioeconomic conditions, prolonged sun exposure, excess sweating, contact with animals especially cattle, sharing of cloths, com-

REFERENCES  


