PREVALENCE OF DERMATOPHYTE INFECTION IN DISTRICT RAJKOT

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Abstract: Dermatophytosis is common in superficial fungal infection of keratinized tissues. Although common, the precise size of the problem defies measurement. To access the clinicoepidemiological profile of dermatophyte infection. To identify the species of fungus and to compare the clinical diagnosis by KOH smear and culture. Two hundred clinically suspected cases of dermatophytosis were subjected to direct smear examination and isolation. Out of 200 cases, 138 (69%) were positive for fungus in direct microscopy, while 97 (48.5%) were culture positive. Young adult in age group of 21-30 years were mainly affected. Tinea corporis (41%) was the most common clinical presentation followed by Tinea cruris (24%). Trichophyton rubrum was the most common species isolated. Tinea corporis was the most common clinical presentation and T. rubrum was the predominant fungus. Male to female ratio was 2.03:1. Majority of the patients belonged to the low-income group.

Key words: Dermatophyte, Trichophyton rubrum, Tinea corporis, Tinea cruris.

INTRODUCTION

The dermatophytes are a group of closely related fungi that have the capacity to invade keratinized tissues (skin, hair and nail) of humans and other animals and produce an infection, commonly referred to as ringworm [1]. There are three genera of dermatophytes, Trichophyton, Microsporum and Epidermophyton [2]. Infections are generally restricted to the skin and they do not penetrate the deeper tissue or organs of immunocompetent host. Dermatophytosis is a common disease in tropical countries due to factors like heat and humidity. India is a large subcontinent with remarkably varied topography, situated within the tropical and subtropical belts of the world. Its climate is conductive to the acquisition and maintenance of mycotic infections [3]. The present study was undertaken to assess the clinicoepidemiological profile of dermatophytic infection, to identify the species of fungi and to compare the clinical diagnosis with KOH smear and culture.

MATERIAL AND METHODS

The study population included 200 patients, diagnosed clinically as having dermatophytosis who attended the outpatient department of Dermatology and Venereology, P.D.U. Medical College and Hospital, Rajkot from January 2005 to December 2005. Patient’s personal history
including age, sex, and economical status were noted. Clinical history like site, type and duration of lesion along with any predisposing factor like occupational exposure to animal source [farmers, veterinary personals, pet keepers] or family contact were noted. Patients were examined and classified in different clinical types depending upon the site of involvement e.g. Tinea cruris, Tinea capitis etc. The skin scrapings were collected from the active edge of the lesions and roof of the vesicles if any. In Tinea capitis, infected and lusterless hairs were collected along with skin scraping. In Tinea unguium nail scrapings, clippings and sub-ungual debris were collected. Each specimen was subjected to direct microscopy (in 10% KOH) and culture on Sabouraud’s dextrose agar slopes with chloramphenicol, gentamicin and cycloheximide. Cultures were incubated at 25°C and 30°C for 4 weeks and checked twice in a week for any growth. In absence of growth even after four weeks, the culture was declared negative. Identification of dermatophyte was done on the basis of colony characteristics as well as microscopic morphology. Special tests like culture on cornmeal agar, potato dextrose agar, urease test and hair perforation test were done when necessary [4].

RESULTS

Out of the 200 patients, the maximum cases were seen in the age group 21-30 (39%). In this study, 134 (67%) of the patients were male and 66 (33%) were female. Male to female ratio was 2.03:1. Majority of the patients belonged to the low-income group. Tinea corporis (41%) was the commonest clinical type followed by Tinea cruris (24%). (Table 1) Tinea capitis was the predominant dermatophytosis in children (58.33%). Tinea unguium was seen predominantly in females and Tinea corporis and Tinea cruris were predominant in males. Tinea incognito was seen in 0.5% of patients. Mixed clinical types were also seen. The positive culture was 97 (48.5%) and positive direct microscopy was 138 (69%). Out of 200 patients 7 were negative by KOH but yielded growth on culture, while 48 though showed fungal element on KOH but did not grow on culture [Table 2]. T. rubrum (75.25%) was the predominant species isolated followed by T. mentagrophytes (13.4%), E. floccosum (8.24%), T. violaceum (2.06%) and M. audouinii was (1.03%) [Table 3].

DISCUSSION

In this study, maximum number of patients was seen in the third decade in the age group of 21-30 years (39%) with males outnumbering females. Similar findings have been reported by other worker [5-7] although some authors found higher incidences in the second decade [8]. The higher incidence in young males could be due to greater physical activity and increased sweating [9]. Higher prevalence of dermatophytic infection was seen in lower socioeconomical
group in this study. Similar findings were reported by other workers [10,11]. The reason behind this may be living condition, large family size and close contact, either directly or by sharing facilities, including combs and towels is common between family members in low socioeconomic people [11].

The major clinical type encountered in this study was Tinea corporis (41%) followed by Tinea cruris (24%). This is in agreement with majority of all cases of recurrent disease and extensive disease. Other studies showed the same result [3,8]. Less aeration due to tight clothing, maceration and high rate of sweating in groin and waist region make this site more vulnerable to dermatophytosis [10]. Recurrence and chronicity were observed to be more frequent in Tinea corporis and Tinea cruris [10], the severe itching associated with these two conditions, making them seek medical advice. History of contact with infected family members was seen 3.09 % in this study, while Bindu et al. [8] reported 16.6 % in her study. The incidence of Tinea capitis was 6 % in this study. Suman et al. [3] also reported similar results (6.92%) [3].

Tinea capitis was seen predominantly in children. Infants and children are susceptible to fungal infections because frequent shaving of scalp and sharing of caps [8]. They have immature immune system and enhanced exposure to subclinical infection carriers in the school and at home. They are unable to maintain hygiene, hence prone to repeated and frequent trauma and till puberty the lack the effective fungistatic activity of sebum [12].

The prevalence of Tinea capitis is closely related to socioeconomic status, life style and commonly occurs in poor hygienic condition [11]. The incidence of Tinea pedis in this study was 13.5% which is comparable with report from other part of India [3]. The predominance of Tinea pedis in western countries could be because of regular use of shoes and socks, predisposing to perspiration and maceration [3]. The prevalence of other clinical entities like Tinea mannum (9.5%), Tinea unguium (3.5%), Tinea barbae (1%), Tinea faciei (1%) and Tinea incognito (0.5%) was also recorded.

Trichophyton species were more commonly isolated than Microsporum and Epidermophyton. We also isolated T. rubrum, T. mentagrophyte, T. violaceum, E. floccosum and M. audouinii. Among these, T. rubrum was the most commonly (75.25%) isolated form followed by T. mentagrophytes (13.40%). This is comparable with other studies from India [3,8,9,12,13].

REFERENCES