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DERMATOPHYTOSIS PROFILE IN A MADHUBANI MEDICAL COLLEGE AND TERTIARY CARE HOSPITAL

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Abstract

INTRODUCTION:

The current perception among dermatologists based on their experience in the outpatient's clinics is that there is a huge change in clinical profile, both qualitative and quantitative, in the patients presenting with dermatophytosis. The prevalence of superficial mycotic infection is about 20%–25% of the world population, and dermatophytes is the leading microorganism responsible. Now there is a changing trend in the dermatophytic infections, the cases are presenting as chronic, not responding to usual treatment and also there are recurrent cases. Dermatophytosis is a contagious disease that spreads by direct or indirect contact. Until a few years ago, it had been a disease treated with ease using antifungal agents. In the recent past, there has been a failure of treatment with conventional therapy and emergence of an epidemic of recurrent and chronic dermatophytosis in India.

MATERIAL AND METHODS: Our study population included 112 patients who were clinically diagnosed as dematophytosis in the Outpatient department (OPD). Clinical history of all patients was taken. Demographic data such as age, sex, occupation, duration of disease, history of recurrence, habits and associated diseases was recorded. Culture were done in all suspected cases. Nail scrapings, clippings and sub-ungual debris were collected.

RESULTS: In present study there were in all 112 patients among which maximum number of patients about 33% belonged to age group 11 to 20, majority of which were males 66.96% whereas 33.04% were females. 50% were culture positive among all patients and microscopy was positive in 58.93% of cases. Trichophytonrubrum species was isolated predominantly in 57.1% cases, Trichophytonmentagrophyte was found in 23.2% of patients followed by microscoporumgypsium isolated in 12.5% cases and E.floccosum was seen isolated in 7.1% among all clinical types. Percentage of tineacorporis, tineacapitis and tineacruris was 39.3%, 18.8% and 13.4% respectively.

CONCLUSION: Dermatophytosis was found to be common in second decade of life and male were commonly affected. T. rubrum was most common isolate. The need of the hour is carry out multicentric large epidemiologic studies that can effectively establish the prevalence of fungal isolates and its antifungal resistance status.

Introduction

One of the common diseases encountered by the dermatologists is dermatophytosis and there has been an increasing trend of dermatophytosis over the last few years in different parts of India[i]. Dermatophytosis can be defined as superficial fungal infection of keratinised tissues caused by dermatophytes. The current perception among dermatologists based on their experience in the outpatient's clinics is that there is a huge change in clinical profile, both qualitative and quantitative, in the patients presenting with dermatophytosis[ii]. The prevalence of superficial mycotic infection is about 20%–25% of the world population, and dermatophytes is the leading microorganism responsible. The current upsurge of complicated dermatophytosis in India has also been noted in other parts of the world, particularly the tropics[iii]. Now there is a changing trend in the dermatophytic infections, the cases are presenting as chronic, not responding to usual treatment and also there are recurrent cases[iv].

Dermatophytosis is a contagious disease that spreads by direct or indirect contact. Until a few years ago, it had been a disease treated with ease using antifungal agents. In the recent past, there has been a failure of treatment with conventional therapy and emergence of an epidemic of recurrent and chronic dermatophytosis in India[v], [vi]. Dermatophytes are classified as asexual or imperfect an (anamorphic) mould which belongs to three genera, i.e. Trichophyton, Microsporum,

and Epidermophyton and there are about 40 species of dermatophytes under these three genera[vii]. The taxonomy of dermatophytes is an evolving area and the use of molecular studies to study the relatedness of species has led to confusion and conflicts in the literature. Dermatophyteshas three different ecological sources, humans, animals, and soil, based on which dermatophytes are classified into geophilic, zoophilic, and anthropophilic species. In India, common species noted are Trichophytonrubrum, followed by Trichophyto-nmentagrophytes and Microsporumgypseum[viii]. Atypical tinea presents with clinical appearances which ranges from eczematous, psoriasis-like, pustular lesions, pseudoimbricata (concentric rings), and rosacea-like lesions which are resistant to treatment[ix].

MATERIAL AND METHODS

The present study was carried out in the department of Dermatology at Madhubani Medical College, Madhubani Bihar. Our study population included 112 patients who were clinically diagnosed as dematophytosis in the Outpatient department (OPD). Clinical history of all patients was taken. Demographic data such as age, sex, occupation, duration of disease, history of recurrence, habits and associated diseases was recorded.

The patients were classified according to the sites of fungal involvement. From the edges of the lesions and roof of the vesicles skin scrapings were taken. In tineaunguium nail scrapings, clippings and sub-ungual debris were collected. Direct microscopy was done in 10% KOH for skin scrapping and 40% KOH for nail clipping. Cultures were done in all suspected cases. For primary isolation Sabouraud's dextrose agar slopes with chloramphenicol and cycloheximide were used. Subculture was done in Sabouraud's dextrose agar without antibiotics.

OBSERVATIONS AND RESULTS

In our study 112 consecutive samples were taken from the patients attending dermatology OPD with strong clinical suspicion of dermatophytes.

Table 1: Age distribution of patients

Age group	N	%
11 - 20	37	33.04%
21 - 30	29	25.89%
31 - 40	22	19.64%
41 - 50	15	13.39%
51 - 60	9	8.04%

In present study there were in all 112 patients among which maximum number of patients about 33% belonged to age group 11 to 20 followed by age group 21 to 30 which included nearly 26% of patients.

Table 2: Sex distribution of patients

Sex	N	%
Male	75	66.96%
Female	37	33.04%

Among all patients in this study, majority of them were males about 67% whereas 33% were females. The male to female ratio is 2.02:1.

Table 3: Results of microscopy and culture

	KOH positive, Culture Positive	KOH negative, Culture positive	KOH postive, Culture negative	Total
Number	44	12	22	78
Percentage	39.29%	10.71%	19.64%	69.64%

It has been observed that 50% were culture positive among all patients and microscopy was positive in 58.93% of cases.

Table 4: Culture positive isolates

Clinical type	Number	%
Tricophytonrubrum	32	57.1%
Trichophytonmentagrophyte	13	23.2%
Microsporumgypsium	7	12.5%
Epidermophytomfllocosum	4	7.1%

Trichophytonrubrum species was isolated predominantly in 57.1% cases, Trichophytonmentagrophyte was found in 23.2% of patients followed by microscoporumgypsium

isolated in 12.5% cases and E.floccosum was seen isolated in 7.1% among all clinical types.

Table 4: Region wise distribution of dermatophyte

Disease	N	%
Tineacorporis	44	39.3%
Tineacapitis	21	18.8%
Tineacruris	15	13.4%
Tineaunguium	11	9.8%
Tineapedis	8	7.1%
Tineaaxillaris	5	4.5%
Tineamanuum	3	2.7%
Tinea incognito	2	1.8%
Tineafaciei	2	1.8%
Tineabarbae	1	0.9%

Percentage of tineacorporis, tineacapitis and tineacruris was 39.3%, 18.8% and 13.4% respectively. Tineaungunium was found to be 9.8% followed by tineapedis and tineaaxillaris at 7.1% and 4.5% respectively. Tineasmanuum was observed in 2.7% while tinea incognito and tineafaciei was seen in 1.8% and least was tineabarbae observed in 0.9% only.

DISCUSSION

The diagnostic difficulty of dermatophytosis has been posed in the recent past with the emergence of atypical dermatophytosis[x].Topical steroid misuse has been proposed as the main culprit for the atypical presentations. Many cases are also associated with cutaneous adverse effects of steroid abuse such as striae, atrophy of skin, acneiform eruptions, and rosacea[xi].

In our study maximum patients were in the age group of 11- 20 age group and the male outnumbered the female with 66.96% of male and 33.04% of female. Similar results were shown by Bindu et al. in their study.[xii] Increasing trend of chronic dermatophytosis has been observed in various studies. [xiii]Male-to-female ratio was approximately equal in first episode, but a slight male preponderance was seen in chronic cases and may be related to more outdoor activities in males.

It has been observed that 50% were culture positive among all patients and microscopy was positive in 58.93% of cases,but Surendran *et al*[xiv]. reported 39% culture positive

In our study Trichophytonrubrum was isolated predominantly in 57.1% cases, Trichophytonmentagrophyte was found in 23.2% of patients followed by microscoporumgypsium isolated in 12.5% cases and E.floccosum was seen isolated in 7.1% among all clinical types. In a study by Jain et al. *T. rubrum* was the most common species isolated in the first episode and in chronic dermatophytosis followed by *T. mentagrophytes while* species, such as *T. tonsurans* and single cases of *T. schoenleinii*, *E. floccosum* and *M. audouni,* were isolated from chronic cases[xv].

In a study it was reported that many atypical presentations of steroid modified tinea and it included erythema, pseudoimbricate, eczematous lesions, and pustules. The centrifugal spread of dermatophytosis is because of the CMI clearing the fungus in the center of the lesion and the dermatophyte moving radially further out at a rate that is faster than the rate of shedding of the outer corneocytes to survive[xvi].

In our study Tineacorporis, tineacapitis and tineacruris was 39.3%, 18.8% and 13.4% respectively. In astudy by Bindu et al Tineacapitis was seen predominantly in male children.

CONCLUSION

To conclude in our study dermatophytosis was found to be common in 2nd decade of life and male were commonly affected .the commonest isolate was T. rubrum. The need of the hour is carry out multicentric large epidemiologic studies that can effectively establish the prevalence of fungal isolates and its antifungal resistance status.

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