STUDIES

CLINICOMYCOLOGICAL STUDY OF TINEA CAPITIS

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Clinicomycological spectrum of 72 patients of tinea capitis attending dermatological out patient departments of Kalawati Saran Children and Sucheta Kriplani Hospitals, New Delhi from May 1992 to April 1994 is studied. Majority of the patients were children (94%). Males and females were equally involved. Most of them belonged to low socioeconomic group; lived in the crowded environment; had regular bathing habit; used mustard oil and shared combs. Family history of tinea capitis was available in 29% of the cases. Duration of disease varied from 20 days to 10 years. Large number (60%) of patients had multiple lesions. Commonest site involved was occiput. Non inflammatory type of lesions were observed in 68% of the cases. KOH examnination revealed endothrix and ectothrix spores in 56 and 7 patients respectively. Positivity of culture was observed in 47% of the cases and Trichophyton violaceum was the commonest species isolated.

Key Words: Tinea capitis, Mycological

Introduction

Tinea capitis represents infection of the hair and scalp with Trichophyton and Microsporum species of dermatophytes. Various clinical manifestations are recognised. The paucity of reports from Northern India[1,2] encouraged us to undertake this study to evaluate clinicomycological profile of tinea capitis.

Materials and Methods

The material for this study constituted 72 patients of tinea capitis attending dermatological out patient departments of Kalawati Saran Children and Sucheta Kriplani Hospitals, New Delhi from May 1992 to April 1994. Age, sex, socioeconomic status, place of residence and duration of disease were noted in a preset card. Patients were inquired regarding common use of caps, combs, bathing habits, type and frequency of oil applications and house pets. Any dermatophyte infection in sibling and other family members was recorded. The cases were studied for morphological features and divided into inflammatory (kerion and pustular inflammatory) and non-inflammatory types (grey patch, black dot and seborrhoeic). The hair roots and scalp scrapings of these patients were examined under microscope with 10% potassium hydroxide for type of hair involvement (ectothrix/endothrix) and were also subjected for fungal species isolation by standard mycological techniques.

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Results

Age and sex distribution of the patients is shown in table I. Majority of the patients were children (94%), the youngest being 1½

Table I. Age and sex distribution the cases

Age (years)	No. of patients		Total	%
	Male	Female		
0-5	13	13	26	36.1
6-10	16	14	30	41.7
11-15	4	8	12	16.6
16-20	0	2	2	2.8
21-25	1	1	2	2.8
Total	34	38	72	100.0

years old. The duration of disease varied from 20 days to 10 years. Majority of the patients belonged to a low socioeconomic group (57%). Twenty eight (39%) who were from families with 4 or more members, were living in a single room house. History of regular bathing, familial contact and having pets was available in 77.7%, 29% and 2.8% respectively. Majority (87.5%) shared combs and 70% used mustard oil. One 24 years female patient had tinea corporis and goitre in addition to tinea capitis.

Clinical types of tinea capitis observed in this study are shown in Table II. Non-inflammatory type of lesions were observed in 68% of the cases, multiple lesions were seen in 60% of the cases and commonest site involved was occiput.

Table II. Clinical types of tinea capitis

S.No.	Clinical types	No. of patients	%
1.	Grey patch	21	29.2
2.	Seborrhoeic	16	22.2
3.	Black dot	12	16.7
4.	Pustular inflammatory	13	18.0
5.	Kerion	10	13.9
	Total	72	100.0

KOH examination revealed endothrix and ectothrix spores in 56 (72.7%) and 7 (9.7%) patients, respectively. In 9 patients KOH examination was negative. Out of 72 patients, cultures were done in 64, of which 30 (47%) were positive. We observed that 26 were KOH and culture positive, 34 KOH positive but culture negative and 4 KOH negative but culture positive.

Clinicoaetiological correlations of tinea capitis are shown in Table III. All the species isolated were responsible for both inflammatory and non-inflammatory type of lesions. Trichophyton violaceum was isolated in 12 (40%) patients followed by Trichophyton rubrum 11 (36.7%) T tonsurans (20%) and Trichophyton mentagrophytes (3.3%). There was no specific pattern. Black dot was caused by T violaceum and T tonsurans.

Discussion

In our study majority (94.4%) of the patients were children as reported by others.[3-6] Inspite of well known fact of fungistatic and fungicidal action of adult sebum,[7] we observed four cases in the adults, where one case had widespread tinea corporis and goitre. This requires detailed evaluation of immune mechanism and sebum activity. But contrary to other reports,[2-5] where boys were effected more, in our series boys and girls were equally involved.

The disease was more common in low socioeconomic group and history of familial contact was present in 29% of the cases. This observation confirmed that tinea capitis is a communicable disease and over crowding, use

Table III. Clinicoaetiological correlation

S.no.	Clinical type	No. of cases	T rubrum	T violaceum	T tonsurans	T mentagrophytes	No growth
1.	Grey patch	19	2	4	2		11
2.	Seborrhoeic	16	5	2	1	1	7
3.	Black dot	11	-	5	1	-	5
4.	Inflammatory pustular	11	3	1	1	-	6
5.	Kerion	7	1		1	-	5
	Total	64	11	12	6	1	34

of common combs, brushes, towels may have contributed to the spread of the disease.

Like other studies[2,8] grey patch was the commonest clinical type. This was followed by seborrhoeic type without any clinically obvious involvement of the hair which is an atypical presentation of tinea capitis.

Trichophyton violaceum[3,6,8,9] was the predominant species and it caused both inflammatory and non inflammatory types of lesions as observed by earlier workers.[6] T rubrum was next common species and mainly caused non inflammatory lesions.

In four of the seborrhoeic type patients where KOH mounts were negative, culture was positive. Hence all the clinically suspected cases of seborrhoeic type tinea capitis should be cultured irrespective of negative KOH mounts.[10]

References

1. Hajini Gh, Kandhari KC, Mohapatra LN, et al. Tinea capit is in North India. Sabouraudia 1970; 8: 170-3.
2. Sehgal VN,Saxena AK, Kumar S. Tinea capitis-a clinicoaetiologic correlation. Ind J Dermatol 1985; 24: 116-9.
3. Kamalam A, Thambiah AS. Tinea capitis in Madras. Sabouraudia 1973; 11: 106-8.
4. Jagtap P, Grover S, Junnarkar RV. A clinical and mycological study of tinea capitis in Nagpur. Ind J Dermatol Venereol 1972; 38: 20-6.
5. Rajagopal A, Girgla HS, Pandey SS. Clinical, mycological and immunological study of tinea capitis. Ind J Dermatol Venereol Leprol 1991; 47: 146-50.
6. Reddy BSN, Swaminathan G, Kanugo R, et al. Clinicomycological study of tinea capitis in Pondicherry. Ind J Dermatol Venereol Leprol 1991; 57: 180-2.
7. Perlin HH. Paediatric dermatology. Chicago: The Year Book Publishers, 1960: 274.
8. Kumar AG, Lakshmi V. Tinea capitis in Tirupati. Ind J Pathol Microbiol 1990; 33: 360-3.
9. Wolf R, Krakowsky, Alteras I, et al. Tinea capitis among children of Ethiopian immigrants. J Med Veter Mycol 1982; 24: 85-6.
10. Prevost E. Non fluorescent tinea capitis : a diagnostic problem. JAMA 1979; 242: 1765-7.