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"A STUDY OF CLINICAL, MYCOLOGICAL AND TRICHOSCOPIC FEATURES OF TINEA CAPITIS IN CHILDREN"

Paediatrics

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ABSTRACT

Background: Tinea capitis (TC) is a common superficial fungal infection seen predominantly in children. The etiological factors vary from one region to the other. The clinical microbiological and trichoscopic features of the same were studied in children attending dermatology department of JJMMC Davangere. **Aims:** To delineate the various patterns of TC observed in central karnataka and to assess the clinical, microbiological and trichoscopic findings in children. **Methodology:** Retrospective study was conducted between November 2020 - November 2021, medical records were analysed for the clinical-epidemiological, mycological and trichoscopic features of TC in children. **Results:** Out of 25 children, 14(56%) were male and 11(44%) were female. 13(52%) were aged between 5-10 years. Hair loss was the commonest presenting symptom in 100% followed by itching in 7(28%) of cases. Most of the children were living in crowded conditions 22(88%). Grey patch variety was the commonest 9 (36%) followed by black dot 7(28%), kerion 4(16%) and agminate folliculitis 5(20%). KOH mount was positive in 80% and culture in 40% of cases. T.violaceum was the commonest 4(40%) species isolated followed by T.mentagrophyte and T rubrum. Comma hair was the most common trichoscopic finding noted in study. **Conclusion:** In the present study, clinical examination microscopic and trichoscopic findings along with epidemiological factors were considered which attributed that the most common group affected is the lower socioeconomic population. Though the causative fungi was found to vary between different regions and time, T.violaceum was the most common organisum isolated in our study. Comma hair and broken hair was most common trichoscopic findings in our study.

KEYWORDS

INTRODUCTION

Tinea capitis (TC) is a common superficial fungal infection in children that affects scalp, hair shaft and hair follicles.[1] Common sources of infection are humans, pets and soil.[4] TC predominantly affects between the age group of 3–7 years.[2] Most common presenting features of TC in children includes patchy alopecia with broken hairs, scales, exudates associate with pruritus, pain due to inflammatory process, cervical lymphadenopathy, boggy plaques.[3]

The diagnosis of TC capitis is made with the help of clinical presentation, microscopic examination for the fungal agents and culture studies. In very few may require scalp biopsy to know the cause.[5] Fungal culture studies showed T. violaceum is the most common followed by T. Rubrum, T. tonsurans, M. audouini and T. terrestrae.[9]

Trichoscopy is one of the emerging non-invasive wonderful tool, which helps in recognition of structures that are not appreciated by naked eyes.[6] Trichoscopy not only useful in making quick diagnosis of TC from the other conditions of alopecia but also helps in follow-up of the patients.[7] Trichoscopy is highly sensitive non-invasive tool in diagnosing TC in children.[8]

Oral antifungals are considered mainstay along with supportive therapy like sporicidal shampoos and local antifungal agents.[10]

MATERIALS AND METHODS:

The study was conducted after the approval from ethical committee of JJM Medical college Davangere. Duration of study is between November 2020 and November 2021. All children with suspected TC who were attended the out-patient department of Bapuji and Chigateri hospitals were included in the study.

Age, gender, duration of symptoms, previous therapies, socio-economic status were registered for each patient and medical records were analysed for KOH examination, culture and trichoscopic results. Samples of the scalp hair, including both scaly material from cutaneous scraping and plucked hair, were collected.

Potassium hydroxide 10% was used to prepare specimens for microscopic examination. Microscopic examination was considered positive in the presence of spores (both ectothrix and endothrix), hyphae. Samples were also sent for fungal cultures. Sabouraud dextrose agar culture media was used to make fungal culture tests.

Aim of the study:

To delineate the various patterns of TC observed in central karnataka and to assess the clinical, microbiological and trichoscopic findings in children.

RESULTS:

A total of 25 children were recorded by retrospective analysis from the medical records, Out of 25 childrens,14(56%) were male and 11(44%) were female with slight male predominance (1.3:1). 13(52%) children belonged to 5-10yrs of age group.

Hair loss was the commonest symptom in 100% followed by itching in 7(28%) of cases. Most of the children were living in crowded conditions 22(88%),12(48%) people from urban and 13(52%) people from rural area.

Grey patch variant was the commonest clinical variant which was recorded in 9 (36%) children followed by black dot in 7(28%), kerion in 4(16%) and agminate folliculitis in 5(20%). KOH mount was positive in 80% and culture in 40% of cases. [Table 1]

T.violaceum was the commonest species isolated in 4(40%) children, followed by T.mentagrophyte and T.rubrum in 2(20%) children, T.tonsurans and M.gypseum in 1(10%) each.[Table 2]

Trichoscopy findings showed, Comma hair was the most common trichoscopic finding noted in our study and other findings are listed in Table 3.

Table 1: KOH and culture examination

Lab diagnosis	Number of cases	Percentage
KOH positive	20	80%
Culture positive	10	40%
total	25	100%

Table 2: clinical and mycological correlation

Organism	Grey patch	Black dot	kerion	folliculitis	Total(percentage)
T.violaceum	1	3	0	0	4(40%)
T.mentarophytes	2	0	0	0	2(20%)
T.rubrum	1	0	1	0	2(20%)
T.tonsurans	0	0	0	1	1(10%)
M.gypseum	0	0	0	0	1(10%)

Table 3: Trichoscopic findings.

Trichoscopic findings	Total number	Percentage(%)
Comma hair	16	64
Corkscrew hair	15	60
Broken hair	8	32
Scaling	14	56

DISCUSSION:

- Tinea capitis is a disease of pre-pubertal children with common in age group of 5- 15years. The prevalence rates vary from place to place. Various factors play a role like socio-economic factors, nutrition, personal hygiene etc. The low incidence after puberty is believed to be due to the sebum containing fungistatic free fatty acids. The increased incidence in males is due to the presence of short hair in male and spores reach the scalp easily.[1,3,4]
- In our study we found that the clinical, mycological and trichoscopic features are similar to other studies.[13,14] In our study grey patch followed by black dot clinical variant is most common finding where as black dot variant followed by grey patch was similar to study done by Kalla et al.[12]
- In our study out of 25, 14(56%) were male and 11(44%) were female with slight male predominance (1.3:1) which is similar to study conducted by Gokhlae et al.[15]
- In our study, out of 25,13(52%) children were belong to 5-10yrs with hair loss was the commonest symptom in 100% followed by itching in 7(28%) of cases. Most of the children were living in crowded conditions 22(88%),12(48%) people from urban and 13(52%) people from rural area which is similar to the findings in other studies.[16]
- Grey patch variety was the commonest 9 (36%) followed by black dot 7(28%), kerion 4(16%) and agminate folliculitis 5(20%). T.violaceum was the commonest species identified in 4(40%) children followed by T.mentagrophyte and T.rubrum in 2(20%) each, T.tonsurans 1(10%), M.gypseum 1(10%) child, which is similar to findings that are noted in the study conducted by Singal at al.[17]
- Comma hair is the most common trichoscopic finding noted in our study followed by corkscrew and other non-specific findings. Presence of few findings are specific for TC those are comma hairs, corkscrew hairs, Morse code-like hairs, zigzag hairs, bent hairs, block hairs and i-hairs. Other non- specific findings include broken hairs, black dots, perifollicular scaling and diffuse scaling.[18]

CONCLUSION:

In the present study, clinical examination, microscopic and trichoscopic findings along with epidemiological factors were considered which imputed that the most common group affected is the lower socioeconomic population with most common age group affected is between 5-10 years. Though the causative fungi was found to vary between different regions and time, in our study T.violaceum is the most common organism isolated. In Trichoscopic examination Comma hair and broken hair was the most common trichoscopic findings were observed. Trichoscopy findings helps in diagnosis as well as in follow up of patients along with microbiological examination.

REFERENCES:

1. Ghannoum M, Isham N, Hajjeh R, Cano M, Al- Hasawi F, Yearick D, Warner J, Long L, Jessup C, Elewski B. Tinea capitis in Cleveland: survey of elementary school students. J Am Acad Dermatol. 2003 Feb;48(2):189-93.
2. Elewski BE. Tinea capitis: a current perspective. J Am Acad Dermatol. 2000;42:1-20.
3. Alvarez MS, Silverberg NB. Tinea capitis. Cutis. 2006;78(3):189-96.
4. Guptha AK, Mays RR, Versteeg SG, et al. Tinea capitis in children: a systematic review of management. J Eur Acad Dermatol Venereol. 2018;32:2264-2274.
5. Mounsey AL, Reed SW. Diagnosing and treating hair loss. Am Fam Physician. 2009;80(4):356-362.
6. Campos-do-Carmo G, Ramos-e-Silva M. Dermoscopy: basic concepts. Int J Dermatol. 2008;47(7):712-719.
7. Miteva M, Tosti A. Hair and scalp dermatoscopy. J Am Acad Dermatol. 2012;67(5):1040-1048.
8. Kumar P, Pandhi D, Bhattacharya SN, Das S. Trichoscopy as a diagnostic tool for tinea capitis: A prospective, observational study. Int J Trichol 2020;12:68-74.
9. Grover C, Arora P, Manchanda V. Tnea capitis in the pediatric population: A study from North India. Indian J Dermatol Venereol Leprol 2010;76:527-532
10. Pomeranz AJ, Sabnis SS. Tinea capitis: epidemiology, diagnosis and management strategies. Paediatr Drugs. 2002;4(12):779-783.
11 Rajagopal A, Girgla S H, Pandey S S. Clinical Mycological and Immunological Study of Tinea Capitis. Indian J Dermatol Venereol Leprol 1981;47:146-150.
12 Kalla G, Begra B, Solanki A, Goyal A, Batra A. Clinico mycological study of Tinea capitis in Desert District of Rajasthan. Ind J Dermatol Venereol Leprol 1995;61:342-5.
13 kandhari KC, Sethi KB, Dermatophytoses in Delhi area. J Ind Med Assoc 1964;42: 324326.
14 Dasgupta LR, Sharma KB, Fernandez D. Superficial mycoses in Pondicherry. Indian J Pathol Bacteriol. 1973;16(3):41-46.
15 Gokhale BB, Padhye AA. Tinea Capitis. Indian J Dermatol Venereol. 1965;31:1-5
16. Kamalam A, Thambiah AS. Tinea capitis an endemic disease in Madras. Mycopathologia. 1980;71(1):45-51.
17. Singal A, Rawat S, Bhattacharya SN, Mohanty S, Baruah MC. Clinico-myocological profile of tinea capitis in North India and response to griseofulvin. J Dermatol. 2001;28(1):22-26.
18 Waśkiel-Burnat, A., Rakowska, A., Sikora, M. et al. Trichoscopy of Tinea Capitis: A Systematic Review. Dermatol Ther (Heidelb). 2020;10:43-52.