CLINICOMYCOLOGICAL STUDY OF TINEA CAPITIS

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ABSTRACT

BACKGROUND
Dermatophytosis is a superficial skin disease caused by the species of the genera Trichophyton, Microsporum and Epidermophyton which are highly specialised parasites interrelated by their common morphological features and physiological adaptations to a parasitic mode of existence on keratinised tissue of man and animal. Tinea capitis, ringworm of the scalp and is of worldwide distribution. While most species of Trichophyton and Microsporum can cause Tinea capitis, it is interesting that Epidermophyton floccosum, Trichophyton concentricum and Trichophyton interdigitale never cause Tinea capitis. It was found that the incidence of Tinea capitis was more in South India than North India and was more common in males than females and the commonest age group was 1-10 years.

MATERIALS AND METHODS
Suspected cases of Tinea capitis, attending the Department of DVL, Osmania General Hospital, Hyderabad for a period of eight months, from October 2015 to May 2016 were included in the present study. A detailed history was taken and complete clinical examination was done in all the patients and the details were recorded in the proforma enclosed. Later all the cases were subjected to direct microscopic examination (10% KOH) and culture on Sabouraud dextrose agar medium, and the results were recorded in the proforma.

RESULTS
Of the 708 patients with dermatophytosis, who attended the DVL Department of Osmania General Hospital, Hyderabad during the period of study, 100 cases were of Tinea capitis which gives a prevalence of 14.12%. 93 out of 100 patients belonged to 1-12 years age group i.e. prepubertal children and only one patient was beyond 18 years. Coming to the incidence of sex in present series, out of 100 patients 49 (49%) were males and 51% females with a male to female ratio of 1:1.1. Majority of patients in present series were school children i.e. 86 out of 100, 13 were preschool children and one adult female was housewife. Out of 100 cases, only 24 patients gave history of contact with dogs either in the house or outside. 32 out of 100 patients gave history of contact with Tinea infection among family members. 72 out of 100 had the disease for 2 weeks to 2 months. Only 6 (6%) patients had associated Tinea corporis lesion over the body. All the 100 patients had the symptom of hair loss, though the severity varied from case to case. Only 31 (31%) patients complained of itching and all the 15 patients with kerion experienced pain. All the four types of clinical manifestation described in Tinea capitis were seen in the present study. Grey scaly type predominated 51 (51%) with cases followed by Black dot type with 30 (30%) cases, Kerion 15 (15%) and agminate folliculitis (4%) cases.

CONCLUSION
Trichophyton violaceum was found to be the commonest species (44.90%) followed by T. rubrum (28.57%), T. mentagrophytes 12.24%, species of the Microsporum 2.05%, and Epidermophyton were not encountered in present study. 90.7% of them belonged to socially and economically backward sections who live in overcrowded and congested areas. Common usage of combs and towels was present among family members in all cases. It is suggested that more number of studies of similar nature may throw some more light in this direction.

KEYWORDS
Tinea Capitis, Trichophyton, KOH Mount, Wood’s Lamp.

and Trichophyton interdigitale never cause Tinea capitis. It was found that the incidence of Tinea capitis was more in South India than North India (Jagtap et al). Khare et al found that Tinea capitis was more common in males than females and the commonest age group was 1-10 years. Jagtap et al found that the contributory factors for the spread of Tinea capitis were poverty, living in poor hygienic conditions and unhygienic personal habits such as using unclean combs, caps, etc. The report from Hyderabad (Nagabhushanam et al) gave an incidence of 3%, this relatively higher incidence thought to be predominant in Muslim community who wear caps. Earlier studies by Powell, Nair, had no mention of Tinea capitis (Kamalam and Thambiah). However, Klokke and Durairaj from Vellore had reported a large number of cases of Tinea capitis, with an incidence of 28.54% and considered that contrary to popular belief it was not uncommon in India. Later it was considered that Tinea capitis was rare in North India (Hajiniet al), but was endemic in South India (Kamalam and Thambaiah, Das Gupta et al).

Geographical Distribution
The species of dermatophyte most likely to be causing Tinea capitis vary from country to country and from region to region in the same country. Trichophyton violaceum is the commonest cause of Tinea capitis in India. In India, T. schoenleinii is more commonly found in Jammu and Kashmir (Ghosh et al).

Age
Tinea capitis was stated to be more common in children and maximum number of cases were seen in 1-12 years age group (Raigopal et al, Kamalam et al, Das Gupta et al, Marikodi et al) and very rare in adults, probably due to fungistatic property of adult sebum and presence of Thymus or its remnants during childhood.

Sex
Khareet al observed that Tinea capitis was more common in male children than female children. Raigopal et al reported that in rural areas male children were affected more commonly than female children (M:F 6:1) but in urban areas sex incidence was almost equal.

Pathogenesis
The hair shaft is a cornified structure that protrudes from the follicle above the skin surface. The hair shaft is a cornified structure that protrudes from the follicle above the skin surface. It has three components - the outer cuticle, the cortex and the innermost medulla. The medulla in human hair is discontinuous and sometimes absent of the many fungi that produce disease in man. Natural infection is acquired by the deposition of viable arthrospores or hyphae on the surface of the susceptible individual. The source of infection is usually an active lesion on an animal or another human. Fomite transmission can also occur. Dermatophyte growth is quite sensitive to temperature. Normal body temperature (37°C) inhibits growth of most strains and species. Moderately elevated temperatures (41°C) kill the organisms and cure experimental infection in animals. While invading hair, the dermatophytes follow one of several precise patterns of growth: In small spore ectothrix type of hair invasion, for example by M. canis and M. audouinii, the fungus penetrates the keratinised hair at about midfollicular level having grown down on hair surface. It then grows downwards within the hair towards the bulb until the zone of incomplete keratinisation is reached, where Adamson’s fringe is formed. Further up the shaft, hyphae from the existing mycelium grow outwards from inside the hair and proliferate on its surface. These secondary extrapilary hyphae are tortuous, then fragment into arthrospores, which rapidly roundup to become spherical structures and are seen as a randomly arranged coating of spherical spores on the surface of the hair.

In large spore ectothrix type, for example by Trichophyton verrucosum and T. mentagrophytes, spores are larger and arranged in straight chains and apparently arise from hyphae which have never entered the hair shaft. In endothrix type of invasion, for example by Trichophyton violaceum and T. tonsurans, the intrapilary hyphae fragment into arthrospores, which are entirely within the hair shaft. Hair thus affected is especially fragile and breaks off close to the scalp surface.

Trichophyton schoenleinii which causes favus invades hair without spore formation and with less mycelium than others. Broad hyphae and air spaces are seen in the hair shaft. The affected hair is less damaged and grows to normal lengths.

Clinical Features
Tinea capitis is defined as a dermatophyte infection of the scalp and hair, caused by species of Trichophyton and Microsporum (Conant et al). Although Tinea capitis does not ordinarily produce much disability or even great discomfort except in markedly inflammatory infections, it is cosmetically disfiguring, which may cause emotional and social embarrassment in adolescent girls and boys.

Tinea Capitis can be divided into the following Clinical Types
- Black dot type.
- Grey scaly patch type.
- Kerion.
- Agminate folliculitis.
- Favus.

Black Dot Type
This is most commonly caused by the species Trichophyton violaceum and T. tonsurans. In this type, the fungi invade the hairs and it is called endothrix infection. The infected hairs break off sharply at the follicular orifice leaving a spore-filled stub known as black dot.

Grey Scaly Patch Type
This type of lesions are most commonly caused by Microsporum audouinii and M. canis and rarely by Trichophyton violaceum and T. tonsurans. The infection begins as small erythematous papule around a hair shaft. Within a few days it pales and assumes a characteristic greyish, discoloured lustreless appearance. The hairs break off a few millimetres above the scalp. Usually the lesions are multiple, may be associated with itching. Inflammatory reactions and kerion formation are rare in M. audouinii infections, but are more common in lesions caused by M. canis, which may result in scarring and permanent alopecia.
In these lesions, the infected hairs show characteristic brilliant green fluorescence under Wood's lamp. But fluorescence may be absent in cases caused by T. violaceum and T. tonsurans. This type of infection is at least 5 times more common in boys than girls before puberty.

**Kerion**

(G: Honeycomb): It is defined as an acute dermatophytic perforating folliculitis of the scalp due to a hypersensitivity mechanism. It is a boggy, painful inflammatory mass in which hairs remain loose and pus oozes from the follicles. There may be sinus formation, on rare occasions mycetoma like grains may be found. Thick crusting with matting of adjacent hairs is common. Lymphadenopathy is frequent. This type of violent reaction is usually caused by ectothrix Trichophyton (T. mentagrophytes and T. verrucosum) which are zoophilic species. Rarely, it is also caused by geophilic and anthropophilic species. Resolution of the infection is accompanied by scarring and patchy permanent alopecia.

**Agminate Folliculitis**

It is a less severe inflammatory ringworm of the scalp, consisting of sharply defined dull red plaques studded with follicular pustules. It is also seen in zoophilic infections.

**Favus**

(L: Honeycomb): It can be defined as a perforating Tinea capitis provoked by a small number of dermatophytes, mainly Trichophyton schoenleinii, but also T. violaceum and Microsporum gypseum (Lahiri et al14). It is characterised by the presence of scutula. The scutula are masses of keratinised as well as parakeratotic cells, exudate and inflammatory cells intermingled with hyphae and spores. These masses are located at the infundibulum of the hair follicle. Adjacent cysts enlarge to become confluent and form a mass of yellow crust. In longstanding cases, extensive patchy hair loss with atrophy develops resulting in a cicatricial alopecia. Unlike other types of Tinea capitis, it does not clear spontaneously at puberty.

**Differential Diagnosis**

Tinea capitis has to be differentiated from many conditions capable of causing patchy baldness with inflammatory changes of the scalp. These include Alopecia areata, Psoriasis, Seborrhoeic dermatitis, Bacterial folliculitis, Cicatricial alopecia, Traumatic alopecia, Trichotillomania and even discoid lupus erythematosus.

**Wood's Lamp**

Wood's lamp is used to diagnose clinical and subclinical cases of Tinea capitis, to know the extent of actual diseased area, to assess the response to treatment or spontaneous cure, to pick up the infected hairs for laboratory tests and also to screen the children in schools during epidemics of Tinea capitis. Hairs infected with Microsporum audouinii and M. canis produce a brilliant green fluorescence easily recognised in a darkened room. M. distortum also regularly produces fluorescence, but M. gypseum and M. nanum do so occasionally. Trichophyton schoenleinii produces pale green fluorescence, whereas endotrich infections with T. violaceum and T. tonsurans do not show any fluorescence. The fluorescent substance is probably produced by the interaction of fungi with growing hairs and these substances were pteridines.

**Histopathology**

In histologic sections, fungi may present two structures: hyphae (or mycelia) and spores. Hyphae are thread like structures that may be septate or nonseptate, they grow by extending and branching. Spores appear as round or ovoid bodies, they grow by budding. For the demonstration of fungi in histological sections, two stains can be used: (1) The Periodic Acid Schif (PAS) reaction, which stains fungi deeply red and (2) Methenamine Silver nitrate method, which stains fungi black.

In Tinea capitis, mycelia and spores are seen within hair follicles. Sometimes a break occurs in the follicular wall and the fungus reaches the dermis. The dermis around the hair follicles usually contains no fungi. Depending on the severity and on the stage of the inflammatory reaction, either an acute or a chronic inflammatory infiltrate is predominate around the hair follicles in the dermis. In well-established lesions, the inflammatory infiltrate contains many plasma cells, as well as microabscesses and small aggregates of foreign body giant cells.

**Treatment**

Choice of treatment for tinea capitis is determined by the species of fungus concerned, the degree of inflammation, and in some cases, by the immunologic and nutritional status of the patient.

After microscopic or culture confirmation, medical therapy should be initiated. Systemic administration of griseofulvin provided the first effective oral therapy for tinea capitis, and resistance to the medication has remained minimal. Dosing in the pediatric population is weight based. Recommended dosing is 20-25 mg/kg/day in single or two divided doses for micronised griseofulvin or 15-20 mg/kg/day in single dose or two divided doses for ultramicrocrystallised griseofulvin. The duration of treatment should be between 6 and 8 weeks.

Topical treatment alone usually is ineffective and is not recommended for the management of tinea capitis.

Newer antifungal medications, such as itraconazole, terbinafine, and fluconazole have been reported as effective alternative therapeutic agents for tinea capitis. Of these agents, itraconazole and terbinafine are used most commonly. There may be some advantage to giving itraconazole with whole milk to increase absorption.

Selenium sulphide shampoo may reduce the risk of spreading the infection early in the course of therapy by reducing the number of viable spores that are shed.

**MATERIALS AND METHODS**

**Selection of Patients**

Suspected cases of Tinea capitis, attending the Department of DVL, Osmania General Hospital, Hyderabad for a period of eight months, from October 2015 to May 2016 were included in the present study. A detailed history was taken and complete clinical examination was done in all the patients and the details were recorded in the proforma enclosed. Later all the cases were subjected to direct microscopic examination (10% KOH) and culture on Sabouraud’s dextrose agar medium, and the results were recorded in the proforma.
Written Consent of the Patient
Name of the Patient, Registration No., Bed No. & Ward No. 1
underservedly and in my full senses give my complete consent for
my diagnostic examination and no responsibility will be
attached to the Hospital Staff. Signature of the Patient.

Collection of Specimen
The area was cleansed with 70% ethyl alcohol and allowed to
dry. The infected hairs are usually small, lustreless and brittle
and such hairs are easily epilated. These hairs were removed
with forceps and collected in a clean filter paper. At least 20
hairs were collected. The surrounding scalp was also scraped
with a glass slide and the scales collected. In the case of black
dot lesions, where the hair had broken off close to the surface
of the scalp, more difficulty may be experienced in the
removal of stubs.

Direct Microscopic Examination
Two or three small stubs of hair were placed in a drop of 10%
KOH on a clean glass slide and a cover glass was gently placed
over the preparation avoiding any air bubbles and the slide
was heated gently over a low flame. Then it was examined
under low power objective of the microscope, for the
presence of spores and/or hyphae, and their location (i.e.
endothrix or ectothrix).

High power objective was used to confirm observations,
mycelium was removed on the point of an inculcating wire
and transferred into a drop of Lactophenol blue stain on a
microscope slide. There it was teased out using two
dissecting needles. A cover glass was applied and excess stain
removed if any with a blotting paper. The needle mount was
then examined microscopically first with low power and then
with high power objective.

A search was first made for the presence of macroconidia.
These are long, elongated bodies which are formed at the tips
of certain hyphae and when mature are divided by visible
transverse septa into several (2-10) segments.

RESULTS AND DISCUSSION
Out of 100 patients in the present study, 68 patients were
Muslims and 32 patients were Hindus. Out of 68 Muslim
patients, 36 patients were females, 32 patients were males,

Socioeconomic Status and Personal Hygiene
This data regarding socioeconomic status and personal habits
is in agreement with other studies. Jagtap et al\(^2\) pointed out
that contributory factors for the spread of Tinea capitis were
poverty, living in poor hygienic conditions and unhygienic
personal habits such as using unclean wombs, caps, etc.

Incidence
Of the 708 patients with dermatophytosis, who attended the
Dermatology Department of Osmania General Hospital,
Hyderabad during a period of study, 100 cases were of Tinea
capitis which gives an incidence of 14.12%.

Other workers also reported similar incidence. Verma and
Singh\(^5\) reported the incidence of Tinea capitis as 6% and
Leela Naidu et al\(^6\) as 4.80% and Rajgopal et al\(^7\) as 4.90%.

Incidence of Tinea Capitis
AGE: In the present series though the age of the patients
varied from 1-47 years, 93 out of 100 patients belonged to 1-
12 years age group i.e. prepubertal children and only one
patient was beyond 18 years.

Minimum Age: 1 year, Maximum Age: 47 years, Average
Age: 9.81 years.

Age and Sex Incidence of Tinea Capitis

<table>
<thead>
<tr>
<th>Age in Years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>No.</td>
</tr>
<tr>
<td>Male</td>
<td></td>
</tr>
<tr>
<td>&lt;1</td>
<td>1</td>
</tr>
<tr>
<td>1-6</td>
<td>18</td>
</tr>
<tr>
<td>7-12</td>
<td>21</td>
</tr>
<tr>
<td>13-18</td>
<td>49</td>
</tr>
<tr>
<td>&gt;18</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
</tr>
</tbody>
</table>

Similar higher incidence of Tinea capitis among
prepubertal children was also observed by Mankodiet al\(^13\)
93.3%, Rao et al (83.33%), Leda Naidu et al\(^6\) 83.3% and
Rajgopal et al\(^7\) 85%.

In the present series, one woman aged 47 had scaly type
at Tinea capitis associated with Tinea Corporis. The higher
incidence of Tinea capitis in prepubertal children was
attributed to lack of sebaceous secretion, which has got a
fungistatic property in adults and to the presence of Thymus
or its remnants in children.

Sex
Coming to the incidence of sex in present series, out of 100
patients 49 (49%) were males and 51 (51%) females with a
male to female ratio of 1:1.1.

This higher incidence of Tinea capitis among female
children might be attributed to shorter hair styles and
repeated trauma to scalp by combing. It is interesting that in
present series, beyond 13 years of age females were affected
more commonly (3 females to 1 male).

Occupation
Majority of patients in present series were school children i.e.
86 out of 100, 13 were preschool children and one adult
female was housewife.

Because Tinea capitis is more common among
prepubertal children, naturally children of school going age
show higher incidence. Apart from this fact, occupation has
no definite relation to Tinea capitis. Khare et al\(^1\) had correctly
stated that occupation, religion and urbanisation do not seem
to determining factors in Tinea capitis.
Hair Oil
Almost all of the patients used coconut oil for hair dressing except two, who used either gingelly oil or a mixture of coconut oil and castor oil. None of them used mustard oil. This use of coconut oil may be a contributory factor to the higher incidence of Tinea capitis in South India compared to North India where mustard oil is used for hair dressing which is supposed to have some inhibitory action on dermatophytes (Dasgupta et al., 1999).

Contact with Pets and Fowls
Out of 100 cases, only 24 patients gave history of contact with dogs either in the house or outside, but there was no definite correlation between this contact and clinical presentation of the disease. Of these 24 patients, 8 presented with kerion, 10 with scaly type, 5 with black dot type and one with agminate folliculitis.

Rajgopal et al. (1999) reported that in their series of 54 cases, in all the 14 cases of inflammatory type, a definite history of contact with animals was available, but in present series only 10 out of 24 cases of inflammatory type, history of contact with animals was available.

Contact with Persons Suffering from Tinea
32 out of 100 patients gave history of contact with Tinea infection among family members which included 9 families where Tinea capitis was present in more than one child in the family.

This prevalence of Tinea capitis among families was also reported by Jagtap et al. (2000) who observed in their series of 100 cases, in four families more than one member was affected. Similarly, Desai et al. (2000) also mentioned about family incidence in four out of 13 families where more than one child was affected.

Only two patients gave history of contact in the school which has no significance present series.

Duration of the Disease
Though the duration of the disease varied from one week to one year, majority of cases, 72 out of 100 had the disease for 2 weeks to 2 months. On an average a patient suffered for 2 months before medical attention was sought. This in agreement with observations made by Raigopal et al. (2000) who also observed that the average duration of the disease was 2 months.

Associated Tinea Infections
Only 6 (6%) patients had associated Tinea corporis lesion over the body. Of these, two were adult women in whom the disease started as extensive Tinea corporis of trunk and neck, which extended on to the scalp.

Rajgopal et al. (2000) observed the associated Tinea corporis and Tinea faciale in 14.8% of their patients.

Symptoms
All the 100 patients had the symptom of hair loss, though the severity varied from case to case. Only 31 (31%) patients complained of itching and all the 15 patients with kerion experienced pain.

Mankodi et al. (2000) observed in their series, itching was present in 60% of the cases, whereas Kamalam et al. (2000) observed none of the 18 boys in their series had itching. This denotes that itching is not a constant symptom in Tinea capitis.

Clinical Types
All the four types of clinical manifestation described in Tinea capitis were seen in the present study. Grey scaly type predominated with 51 (51%) cases followed by Black dot type with 30 (30%) cases, Kerion 15 (15%) and agminate folliculitis 4% cases. In 48 out of 100 cases, the number of lesions were more than two. Single lesion was encountered more commonly in Black dot type.

Relative Incidence of Species of Tinea Capitis

<table>
<thead>
<tr>
<th>Worker (S)</th>
<th>T-Viol</th>
<th>T-Rub</th>
<th>T-Ment</th>
<th>T-Tones</th>
<th>Others</th>
<th>Total</th>
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<td>Present Series</td>
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<td>14</td>
<td>6</td>
<td>-</td>
<td>7</td>
<td>49</td>
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<tr>
<td>Khare et al12</td>
<td>9</td>
<td>1</td>
<td>2</td>
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<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Siddappa et al18</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Rajgopal et al12</td>
<td>34</td>
<td>6</td>
<td>9</td>
<td>2</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Prasad et al19</td>
<td>5</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>Rao et al20</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
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<td>Jagtap et al2</td>
<td>24</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>35</td>
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<td>1</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>20</td>
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<tr>
<td>Gokhale et al13</td>
<td>70</td>
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<tr>
<td>Desai et al17</td>
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<td>5</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>45</td>
</tr>
</tbody>
</table>

These observations are in agreement with those of other workers. Rajgopal et al. (2000) had reported that Black dot was the commonest type of Tinea capitis constituting 61.1% of his cases, followed by Kerion 18.5%, grey scaly patch type 14.8% and agminate folliculitis 7.4%.

Mankodi et al. (2000) also reported in their series of 30 cases, 13 (43.33%) were of Black dot type, with which the resent series is in agreement.

Wood’s Lamp Examination
None of the 100 patients showed any fluorescence under Woods’ lamp. This is in agreement with the observations made by Kamalam et al., Jagtap et al. and Raigopal et al.

Direct Microscopic Examination
Direct microscopic examination with 10% KOH preparation from infected hairs revealed spores and/or hyphae within (endothrix) or on the surface (ectothrix) of the hair.

Out of 100 cases, 68 (68%) were positive for fungus on KOH mounting. Of these 68 positive cases, 51 (75%) were of endothrix type, 12 cases of ectothrix type and 5 positive cases of spores were seen but exact position could not be determined. Hyphae were seen only in 18 cases.

Out of 18 (18%) cases where fungal elements could not be identified by direct microscopic examination, 9 cases were positive for growth on Sabouraud dextrose agar medium and remaining 9 cases did not show any growth on this medium.
Dermatophytes in Relation to Clinical Types

A total of 100 cases clinically diagnosed as Tinea capitis in Department of DVL, Osmania General Hospital, Hyderabad were studied in detail. The incidence of Tinea capitis among dermatophytoses was 14.2%. Age of the patients varied from 1-47 years, but 93% of them were 1-12 years age group and the average being 9.81 years. All the patients were from urban area only. 90.7% of them belonged to socially and economically backward sections who live in overcrowded and congested areas. Common usage of combs and towels was present among family members in all cases. Coconut oil was used for hair dressing in 91 cases and gingelly oil and a mixture of coconut and castor oil used in the rest of the 9 cases respectively and almost all the patients take head bath once a week. Only 24 cases out of 100 gave history of contact with dogs. 32 patients had contact with Tinea infection within the family and two in the school.

Dermatophytes in Relation to Clinical Types

A total of 100 cases diagnosed clinically as Tinea capitis attending the DVL Department of Osmania General Hospital, Hyderabad were studied in detail. The results obtained in the present study are compared with similar studies done in different parts of the country.

Out of 100 cases diagnosed clinically, the diagnosis was confirmed either by direct microscopic examination or by culture on Sabouraud dextrose agar medium in 68 cases.

SUMMARY AND CONCLUSIONS

One hundred patients clinically diagnosed as Tinea capitis in Department of DVL, Osmania General Hospital, Hyderabad during a period of eight months from Oct 2015 to May 2016 were studied in detail. The incidence of Tinea capitis among dermatophytoses was 14.2%. Age of the patients varied from 1-47 years, but 93% of them were 1-12 years age group and the average being 9.81 years. All the patients were from urban area only. 90.7% of them belonged to socially and economically backward sections who live in overcrowded and congested areas. Common usage of combs and towels was present among family members in all cases. Coconut oil was used for hair dressing in 91 cases and gingelly oil and a mixture of coconut and castor oil used in the rest of the 9 cases respectively and almost all the patients take head bath once a week. Only 24 cases out of 100 gave history of contact with dogs. 32 patients had contact with Tinea infection within the family and two in the school. Duration of the diseases varied from 1 week to 1 year, with an average of 2 months. All the 100 cases had the symptom of hair loss, but only 26 patients had itching. Only 6 patients had associated Tinea corporis and only one patient experienced remissions and exacerbations.

Clinically, 30% of cases were of Black dot type, followed by Grey scale patch type 51%, kerion 15% and agminate folliculitis. Kerion was associated with cervical adenopathy. Direct microscopic examination with 10% KOH mounting was positive for fungus in 68 (68%) of cases. Spores were seen in all these 68 cases, but hyphae were found only in 24 (35.29%) of cases. 51 cases were of endothrix type, 12 ectothrix and in the remaining 4 cases spores were seen but their position could not be determined. Culture on Sabouraud
Dextrose agar medium yielded positive result in 72.05% of cases.

Trichophyton violaceum was found to be the commonest species at 44.90% followed by T. rubrum 28.57%, T. mentagrophytes 12.24%; species of the Microsporum 2.05%, and Epidermophyton not encountered in present study. It is suggested that more number of studies of similar nature may throw some more light in this direction.

REFERENCES